



The
University
Of
Sheffield.

Revolution in Marketing: Using Intentions and Willingness as Behavioral
Indicators for Adopting Neuromarketing

By
Anka Gorgiev

A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of
Philosophy

Department of Psychology
The University of Sheffield
December 2020

South East European Research Centre

Acknowledgements

I would like to express my sincere gratitude to my parents who have unconditionally supported me throughout my studies. Their sacrifices and dedication to my development and growth have enabled me to pursue my dreams and become who I am today. I am also indebted to my husband and daughter, who, over the years, have gifted me with patience and motivation to continue my studies. This accomplishment is my attempt of retribution for all the time I have missed in a pursuit of better life for us as a family. It is needless to say that my entire family is the reason for where I am today, and I will always acknowledge their fundamental role in any and all of my achievement.

I would also like to express my gratitude to my supervisors, who have guided and supported me over the years. Dr. Chris Martin has generously shared his knowledge and experience as an outstanding academic, from which I benefited greatly. He guided me with his extraordinary wisdom and infallible scientific ethos, which makes me a better researcher today than I was when I started. Dr. Nikolaos Dimitriadis inspired me to pursue my PhD when he first introduced me to the topic of neuromarketing and spoke about it with such a contagious excitement. His mentorship and dedication to my development have helped me get where I am today. This accomplishment would not have been possible without the tremendous influence from my supervisors, and for that I am incredibly grateful.

Additionally, I would like to thank the South East European Research Centre (SEERC) and all its staff for believing in my research and generously sponsoring my studies. It is a testament to the forward-looking vision and dedication to scientific progress that this institution embodies that provided me with the opportunity to pursue this ambitious research project. The support I received from SEERC, CITY College, International Faculty of the University of Sheffield, and The University of Sheffield over the years has enabled me to acquire the knowledge and skills to complete my studies, and the opportunities they presented me with allowed me to gain priceless international experience that paved the way for my career.

I would also like to thank Dr. Dimitrios V. Nikolaidis for his support early in the process. He has been a significant contributor to my early education as a lecturer and a great endorser of my work

as a department head. He helped enhance my profile as a marketing student and practitioner, for which I am grateful.

And finally, I would like to thank the external examiners, Prof. Alexandros Psychogios and Dr. Panayiota Alevizou, for their thoughtful questions, time investment, and incredibly valuable feedback that helped strengthen the work done as part of this research.

The experience I acquired during my studies has been a life-altering one. And coming to the end of this process, I can appreciate how much this journey of pursuing a PhD has enriched my life. They say that it is not about the destination, but what happens along the way that matters most. For me, that translates to some of the most brilliant minds and incredible human beings that I have encountered. Each person, regardless if it was a one-time encounter or a true friendship that was born, had an impact on the outcome of this research, and for that I am beholden to every single one of them.

Abstract

Marketing has experienced a number of significant developments, especially in the recent years. One such development is neuromarketing, an interdisciplinary approach that leverages knowledge and tools from an array of science disciplines. Marketing professionals face uncertainty in making complex decisions about investing their resources since there is a lack of empirical data to evaluate whether neuromarketing represents a revolution in marketing or just a temporary trend. This is especially important for geographical regions where resources are more scarce compared to larger economies.

The aim of this research was to investigate whether neuromarketing is a revolution in marketing, by studying the intentions and willingness of marketing professionals in USA and South East Europe for adoption. The theoretical framework used to study it combines the Theory of Planned Behavior, Technology Acceptance Model, and Prototype Willingness model. The current literature was analyzed to assess the current state of neuromarketing. In Study 1, qualitative interviews were conducted to uncover the beliefs and attitudes towards neuromarketing adoption. In Study 2, an Implicit Association Test and survey were used to measure existing beliefs and attitudes and enable formulation of a theoretical model that describes the variables that contribute to neuromarketing adoption.

Key finding suggests that neuromarketing has the potential to become a revolution, with subjective norms, perceived behavioral control, and acceptance of the technology reliably predicting the intention to adopt neuromarketing. While explicit and implicit attitudes were not found to directly affect the intention to adopt neuromarketing, they complement its current understanding. These findings provide significant contribution to the academic literature as one of the first attempts to empirically identify the contributors to neuromarketing adoption and its potential acceptance as the new revolution. In addition, they suggest an action model that can be used to accelerate the adoption of neuromarketing, as well as other developments.

Keywords: neuromarketing, consumer neuroscience, behavioral intention, behavioral willingness

Table of Contents

***List of Figures*..... 10**

***List of Tables*..... 11**

1.1 Background and Motivation for the Research 13

1.2 Research Aim and Objectives 16

1.3 Research Impact and Contributions..... 17

1.4 Structure of the Report..... 17

1.5 Chapter Summary 18

***Chapter 2. Evolution of Marketing* 19**

2.1 Introduction 19

2.2 Historical Development of Marketing Eras 19

 2.2.1 Definitions of Marketing..... 20

 2.2.2 Periodization in Marketing..... 25

 2.2.2.1 Production Era..... 30

 2.2.2.2 Sales Era..... 31

 2.2.2.3 Product Era..... 31

 2.2.2.4 Customer Era..... 32

 2.2.2.5 Market Era 33

 2.2.2.6 Relationship Era..... 33

 2.2.2.7 Societal Marketing Era 34

 2.2.2.8 Digital Era..... 35

2.3 Summary of the Periodization in Marketing 35

2.4 Problems with the Current Marketing Era..... 37

2.5 Chapter Summary 42

***Chapter 3. Science and Practice of Neuromarketing* 43**

3.1 Introduction 43

3.2 Neuromarketing 43

 3.2.1 Need for Interdisciplinary Approach 45

 3.2.2 Definition of Neuromarketing..... 46

 3.2.2.1 Neuromarketing as a New Tool for Market Research..... 49

 3.2.2.2 Neuromarketing as a New Research Area..... 51

 3.2.2.3 Neuromarketing as a New Marketing Era..... 53

 3.2.3 Scientific Foundations of Neuromarketing 54

 3.2.4 Neuromarketing Tools..... 56

 3.2.5 Neuromarketing Studies..... 60

 3.2.6 Criticism of Neuromarketing..... 67

3.3 How Neuromarketing Addresses Current Marketing Problems 68

3.4 Summary of Neuromarketing	68
3.5 Scientific Revolutions	69
3.6 Chapter Summary	71
Chapter 4. Identification of Gaps and Theoretical Approach to Address Them	72
4.1 Introduction	72
4.2 Identification of the Knowledge Gap in Literature	73
4.3 Research Problem	75
4.4 Research Approach	76
4.4.1 Ontological and Epistemological Background	76
4.4.2 Theoretical Framework.....	77
4.4.3 Theory of Planned Behavior	79
4.4.3.1 Attitudes.....	80
4.4.3.2 Subjective Norms	81
4.4.3.3 Perceived Behavioral Control.....	82
4.4.4 Prototype Willingness Model	82
4.4.4.1 Prototype	83
4.4.4.2. Theory of Planned Behavior and Prototype Willingness Model.....	85
4.4.5 Technology Acceptance Model	85
4.4.5.1 Perceived Usefulness and Perceived Ease of Use	86
4.4.5.1 Neuromarketing and Technology Acceptance Model.....	87
4.4.6 Theoretical Framework for Predicting Neuromarketing Adoption.....	88
4.5 Research Aim and Objectives	89
4.6 Research Design	91
4.7 Research Ethics	92
4.8 Chapter Summary	92
Chapter 5. Study 1: Elicitation of Beliefs Towards Neuromarketing Adoption	94
5.1 Introduction	94
5.2 Methodology	95
5.3 Sample	98
5.4 Pilot	100
5.5 Data Collection and Analysis	101
5.6 Results	103
5.6.1 Associations with Neuromarketing	108
5.6.1.1 Top of Mind Associations	108
5.6.1.2 Objects.....	109
5.6.1.3 Positive Word Associations	110
5.6.1.4 Negative Word Associations	111

5.6.1.5 Characteristics of Neuromarketing.....	112
5.6.1.6 Concepts that are Opposite of Neuromarketing	112
5.6.1.7 Other Terms to Describe Neuromarketing.....	112
5.6.2 Attitudes Towards Neuromarketing	113
5.6.2.1 Advantage-Based Attitudes of Neuromarketing	113
5.6.2.2 Disadvantage-Based Attitudes of Neuromarketing.....	115
5.6.2.3 Fields Associated with of Neuromarketing.....	115
5.6.2.4 Feelings Associated with of Neuromarketing.....	116
5.6.2.5 Technology Acceptance for Neuromarketing.....	117
5.6.2.6 Summary of Attitudes Towards Neuromarketing.....	119
5.6.3 Subjective Norms Related to Neuromarketing	120
5.6.3.1 Thoughts and Feelings of Other People About Neuromarketing	121
5.6.3.2 Opinions of Peers and Family About Neuromarketing.....	122
5.6.3.3 Approval of Neuromarketing Use.....	122
5.6.3.4 Summary of Subjective Norms Related to Neuromarketing.....	123
5.6.4 Perceived Behavioral Control.....	124
5.6.4.1 Barriers to Use Neuromarketing.....	124
5.6.4.2 Facilitators for the Use of Neuromarketing	126
5.6.4.3 Summary of Perceived Behavioral Control.....	127
5.6.5 Prototype Neuromarketing Behavior	127
5.6.5.1 Favorability of Prototype Neuromarketing Behavior.....	128
5.6.5.2 Summary of Prototype Neuromarketing Behavior.....	129
5.7 Discussion.....	129
5.8 Limitations.....	131
5.9 Chapter Summary	132
<i>Chapter 6. Study 2: Defining a Model for Neuromarketing Adoption</i>	<i>133</i>
6.1 Introduction	133
6.2 Methodology.....	135
6.3 Sample	141
6.4 Pilot	142
6.5 Data Collection and Analysis.....	143
6.6 Results.....	145
6.6.1 Descriptive Statistics.....	146
6.6.2. Theoretical Framework Variables	147
6.6.2.1 Knowledge of Neuromarketing.....	149
6.6.2.3 Explicit Attitudes.....	150
6.6.2.3.1 Advantages of Neuromarketing.....	150
6.6.2.3.2 Disadvantages of Neuromarketing.....	152
6.6.2.3.3 Acceptance of Neuromarketing	153
6.6.2.4 Subjective Norms	155
6.6.2.5 Perceived Behavioral Control.....	156
6.6.2.6 Behavioral Intentions and Willingness.....	157

6.6.3 Experience Implementing Neuromarketing.....	157
6.6.4 Implicit Attitudes.....	161
6.6.5 Internal Validity of the Scales.....	163
6.6.6 Regression Analysis.....	167
6.6.6.1 Variables Used in Regression Analysis	168
6.6.6.2 Regression Model Based on Theory of Planned Behavior.....	172
6.6.6.3 Regression Model based on Technology Acceptance Model.....	175
6.6.6.4 Regression Model Based on Prototype Willingness Model.....	178
6.6.6.5 Regression Model Based on Final Theoretical Framework	181
6.7 Discussion.....	186
6.8 Limitations.....	190
6.9 Chapter Summary	193
<i>Chapter 7. Integration of Findings, Implications and Future Research</i>	<i>194</i>
7.1 Introduction	194
7.2 Research Outcomes	195
7.2.1 Research Objective 1.....	196
7.2.2 Research Objective 2.....	197
7.2.3 Research Objective 3.....	198
7.2.4 Research Objective 4.....	200
7.2.5 Research Objective 5.....	201
7.3 Contributions	204
7.3.1 Theoretical Contributions	204
7.3.2 Methodological Contributions.....	205
7.3.3 Practical Contributions	205
7.4 Implications.....	206
7.4.1 Implications for the academic community	206
7.4.2 Implications for the practitioner community.....	207
7.4.3 Implication for the SEE region	208
7.5 Impact and Dissemination.....	209
7.6 Recommendations and Future Research	211
7.7 Chapter Summary	212
<i>Chapter 8. Conclusions and Final Thoughts.....</i>	<i>214</i>
<i>References.....</i>	<i>217</i>
<i>Appendices.....</i>	<i>266</i>
Appendix A: Informed Consent for Study 1	266
Appendix B: Discussion Guide for Study 1 Interviews	267
Appendix C: Informed Consent for Study 2	270

Appendix D: Debrief Form	271
Appendix E: Implicit Associations Test Experimental Design.....	273
Appendix F: Qualitative Data Analyses	274
Appendix G: Sample Frequencies Across All Variables.....	320

List of Figures

Figure 1. Philip Kotler on Marketing 5.0	36
Figure 2. Word Cloud Analysis of Consumer Neuroscience Definitions.....	47
Figure 3. Word Cloud Analysis of Neuromarketing Definitions.....	47
Figure 4. Systematic Review of Neuromarketing Definitions.....	48
Figure 5. Neuromarketing Contribution	49
Figure 6. Academic vs. commercial focus of neuromarketing	50
Figure 7. Fields of study associated with neuromarketing	56
Figure 8. Growth of Research Applying Neuromarketing Over Time	61
Figure 9. Interest in Neuromarketing.....	61
Figure 10. Google Hits on Neuromarketing	62
Figure 11. Web of Science Publications for Neuromarketing.....	63
Figure 12. Citations for Neuromarketing.....	63
Figure 13. Web of Science Publications for Marketing.....	64
Figure 14. Google trends for neuromarketing worldwide 2004 - 2020	65
Figure 15. Google trends for marketing worldwide 2004 - 2020	65
Figure 16. The Theory of Planned Behavior	80
Figure 17. Prototype Willingness Model.....	84
Figure 18. Prototype Willingness Model and Theory of Planned Behavior.....	85
Figure 19. Technology Acceptance Model.....	87
Figure 20. Theoretical Framework for Predicting Neuromarketing Adoption.....	89
Figure 21. Themes Coded in NVivo Software	103
Figure 22. Participant's Current Role.....	105
Figure 23. Participants' Years of Experience	105
Figure 24. Experience with Neuromarketing.....	107
Figure 25. Word Cloud About Neuromarketing Knowledge	107
Figure 26. Word Cloud for Top-of-Mind Associations	109
Figure 27. Word Cloud of Characteristics of People Using Neuromarketing.....	129
Figure 28. Study 2 Survey Questions	135
Figure 29. Example of IAT Screen.....	138
Figure 30. IAT stimuli categorization.....	138
Figure 31. IAT study design	139
Figure 32. Range of Implicit Attitudes Across Regions	162
Figure 33. Normal Distribution of TPB Model	174
Figure 34. Linear Plot of TPB Model.....	174
Figure 35. ANOVA for TAM.....	176
Figure 36. Normal Distribution of TAM	177
Figure 37. Normal Distribution for PWM	179
Figure 38. Linear Plot for PWM.....	180
Figure 39. Theoretical Framework for Predicting Neuromarketing Adoption.....	182
Figure 40. Normal Distribution for Theoretical Framework	184
Figure 41. Linear Plot for Theoretical Framework.....	184

List of Tables

Table 1. AMA Marketing Definitions	23
Table 2. Academic Marketing Definitions - Exchange Orientation	24
Table 3. Academic Marketing Definitions - Relationship Orientation.....	24
Table 4. Academic Marketing Definitions - Customer Orientation	25
Table 5. Marketing Periodization	27
Table 6. Eras of marketing in Contemporary Textbooks.....	Error! Bookmark not defined.
Table 7. Schools of Marketing Thought	29
Table 8. Summary of Marketing Eras.....	37
Table 9. Summary of the Methodology	93
Table 10. Study 1 Probing Questions	97
Table 11. Number of Mentions for Each Code.....	104
Table 12. Pilot Study Results.....	143
Table 13. Sample Descriptive Statistics	147
Table 14. Sample Descriptive Statistics	148
Table 15. Participants with Experience Implementing Neuromarketing.....	158
Table 16. Neuromarketing Experience - Current Role	159
Table 17. Implicit Attitudes.....	162
Table 18. Implicit Attitudes of Marketing Professionals with Neuromarketing Experience	163
Table 19. Internal Validity of Scales	164
Table 20. Improved Cronbach's Alpha - PBC.....	165
Table 21. Improved Cronbach's Alpha - Disadvantages.....	165
Table 22. Scale Items in the Variables	166
Table 23. Cronbach's Alpha for Final Scales.....	167
Table 24. Descriptive Statistics for Final Scales	167
Table 25. Descriptive Statistics for All Variables of the Theoretical Model	169
Table 26. Correlation Between the Variables.....	171
Table 27. Correlation between Variables in Theoretical Framework.....	172
Table 28. Multiple Regression for TPB.....	173
Table 29. ANOVA for TPB Model	175
Table 30. Multiple Regression for TAM	176
Table 31. ANOVA for TAM	176
Table 32. Multiple Regression for TAM with Knowledge.....	177
Table 33. Multiple Regression for PWM.....	178
Table 34. ANOVA for PWM.....	179
Table 35. Multiple Regression for PWM with Knowledge.....	181
Table 36. Multiple Regression for Theoretical Framework	183
Table 37. ANOVA for Theoretical Framework.....	183
Table 38. Multiple Regression for Theoretical framework - with Additional Variables 1	185
Table 39. Summary of Findings	203

Chapter 1. Introduction

“To prepare for [the] future, it is vital to understand that the greatest threat to progress is the inability to see around corners, the inability to respect our past and the unwillingness to realize that the way we succeeded is not the way we will succeed.”

- Thomas Harrison (2012)

In the world of marketing in 2020, several drivers of change are reaching their momentum and promising to alter the marketing mindset worldwide. The digital revolution has brought numerous developments that have revolutionized the practice of marketing. It has also given rise to the new types of behaviors that members of the community needed to understand at such a deep level to be able to serve customers sufficiently and authentically. The topic of customer experience has dominated the discussion as the imperative effort in engaging the contemporary customer and establishing brand relevance (Becker & Jaakkola, 2020). Artificial intelligence is becoming more relevant in increasing the productivity, optimization and personalization of company offerings (Pope, 2020). And the ever-expanding use of technology is focused on addressing continuously shifting consumer needs and behavior (Hoyer, Kroschke, Schmitt, Kraume & Shankar, 2020; Rejeb, Keogh & Treiblmaier, 2020). Among these trends, all described by the upcoming book by Kotler, Karatajaya & Setiawan (2021), is also neuromarketing, the latest subarea in marketing that represents a common denominator addressing or enabling these shifts.

In his Harvard Business Review article, Harrel (2019) said that while neuromarketing has originally been thought of as a ‘frontier science’, in recent years marketers have been using it more and more. And with that increasing application comes the inevitable question of its return on investment, which is particularly important for smaller economies, such as the one in SEE. This research is designed to evaluate the potential course of the marketing profession and inquiry for the years to come and to drive its progress along the same trajectory as many other related disciplines.

1.1 Background and Motivation for the Research

The field of marketing has been considered a somewhat dynamic field (Varadarajan & Jayachandran, 1999). There always seem to be new trends on the horizon and new ways of doing business to adopt. And the current state of marketing is no different. There are so many developments happening at any given time that it is difficult for members of the marketing community to keep up. As the result of the developments that have been accounted for primarily in the context of social and technological environment, the consumers have evolved significantly (Labrecque et al, 2013, Davies & Elliott, 2016). Most obvious change is the emergence of new patterns of behavior that consumers are engaging in, especially the ones that constitute a digital phenotype of a person (Onnela & Rauch, 2016). In addition to that, the nature of this new environment has generated the demand for more transparency and has opened an opportunity for more convenience in the way we consume products and services. And collectively, these changes have paved the way for the new meaning of value that companies provide (Merrilees, 2016; Iglesias, Ind & Alfaro, 2017).

As an example, the conversation is no longer focused only on online shopping, but has shifted towards mobile shopping as a considerable contributor to the economy (Chopdar, Korfiatis, Sivakumar & Lytras, 2018). The social media usage has expanded beyond the original intentions of just fulfilling social needs and networking, and now represents the key driver of the news curation and consumption among its users (Pentina & Tarafdar, 2014; Hermida, Fletcher, Korell & Logan, 2012). The growing access to information has led to the increasing importance that consumers place on the transparency of data. Multiple studies have explored the effects of transparency and found that it is an important contributor to the brand trust and loyalty (Bhaduri & Ha-Brookshire, 2017; Kang & Hustvedt, 2014; Kim, Barasz & John, 2014). And in an environment that is mediated by the importance of information availability and the pursuit of value, convenience has emerged as a driving force for constituting successful conduct (Farquhar & Rowley, 2009).

There is sufficient evidence that marketing has experienced expansion in recent years, both in its scope and scale (Achrol & Kotler, 2012). Marketers today have access to the entirely new tools at their disposal for gathering information and generating new insights, they have new channel

options and generally more choice in ways to engage with their customers, and have defined new metrics for measuring behavior, both established and new. The amount of new data generated about the consumers, the speed at which this data is generated, and its richness are transforming marketing fundamentally (Erevelles, Fukawa & Swayne, 2016). Yet, there is still a discrepancy between the availability of new opportunities and how these opportunities are being leveraged to produce value. Even though marketers have new ways to acquire information and generate market intelligence, the majority still rely on consumer self-reports. As a result, it is believed that still a large percentage of new products fail (Castellion & Markham, 2013; Crawford, 1987; Crawford, 1979). And marketing spending is still facing challenges with unsatisfactory return on investment (ROI) and the attribution rates of their spending (Castellion & Markham, 2013).

Nevertheless, the most significant shift that marketers had to adopt is the new realization of the nature of human behavior. Up until recently, marketers have confidently relied on the assumption that customers are rational human beings that are behaving in a way which will help them maximize their utility in any given situation. This is what many called Homo Economicus (Dimitriadis, Jovanovic Dimitriadis & Ney, 2019). This assumption entailed that customers are willing to share their emotions, experiences and future plans with companies because it will benefit them in a direct or indirect way. Many initial studies, however, have revealed that the true nature of human behavior and cognition is irrational at times. Indeed, recent findings have illuminated the fact that even the irrationality of people is highly predictable and follows specific patterns (Ariely, 2008).

This realization is having profound consequences on the business world with the rise of interdisciplinarity and the power that it brings to the fields that embrace it. The very nature of scientific inquiry is pushing for the revolutionary discoveries that are challenging the established dogmas across a number of fields. This change has been led by the proliferation of the study of the mind and, as a result, many scientific areas have experienced the influences from the behavioral and cognitive sciences (Meeker et al, 2016; Diamond & Vartiainen, 2012; Amir et al, 2005). There is evidence that the establishment of behavioral economics and its growing importance has put in the spotlight research on how non-economic factors affect economic decisions and behavior to the extent that Daniel Kahneman received a Nobel Prize for Economics in 2002 (Nobel Media AB,

2020; Butt & Saddar, 2012; Gurevich, Kliger & Weiner, 2012; Ariely, 2009; Jeffrey, 2006). We have seen the growing adoption of neuroleadership and its application in managing and growing human resources (Dimitriadis & Psychogios, 2016; Kiefer, 2010). Every day, we are pushing the boundaries of the promise of capabilities that artificial intelligence is bringing (Moore, 2019). One of the reasons why this approach is proving to be fruitful is because we have learned more about humans - how they think, how they behave, and why they behave in a certain way.

History of the marketing field is a rich one, with clear distinctions among different influences that shaped it - from the product era all the way to the digital era. With the digital as the most recent discourse, it is beyond dispute the impact that digital transformation had on business, as well as on the shaping nature of consumer behavior. And these types of effects are evident through the history of marketing, where its periodization has been based on the conceptualization of the world view at the given time and the change in those perceptions that originated with the shifting world view. There is now evidence that marketing professionals are embracing some of these scientific novelties from cognitive and behavioral sciences in the form of neuromarketing (Ariely & Berns, 2010). And even though the science and practice of neuromarketing has been around for almost two decades now, it hasn't been quite defined yet. There is still a lack of consensus on its definition, though there is a level of agreement that it represents an application of the tools, or even theories, from various scientific fields in marketing science and practice (Genco, Pohlmann & Steidl, 2013; Lee 2007; Renvois & Morin, 2007). The literature review conducted as a part of this research indicated potentially three different ways in which neuromarketing is currently being perceived - as a set of new tools, as a new research area, and as a new era - all of which can differently alter the trajectory of marketing progress.

Although a clear direction of change is unknown, there seems to be evidence that a new marketing era is emerging. However, there is still no sufficient evidence of it in academia to allow the formulation of the new theories, assumptions and models that represent the fundamental cornerstones of marketing science. And with that magnitude of change, there is the need to assess the extent of impact these new developments are having on marketing (Naughton, 2012). This interdisciplinary and human-centric trend is providing new challenges for marketing academics to take marketing theory and practice to the next level by challenging the established assumptions

and authoritative rules. That is why we need to understand the adoption of these findings in marketing.

The following section briefly introduces the background for the study, its aims and objectives, as well as its structure. In addition, the author shares the motivation for conducting this research and provides the derived conclusions on the impact of the study, as well as the desired contributions to the practice and the academic study of marketing.

1.2 Research Aim and Objectives

One of the responses that the marketing community has had to these new developments is by giving birth to the new field of neuromarketing, a field that shows the promise of leveraging existing knowledge from multiple areas of cognitive science and implementing it to further the understanding of consumer behavior. Nevertheless, the marketing community, both in academia and in the industry, is fragmented when it comes to the question of the foundational elements of neuromarketing. There still isn't a clear, widely accepted, definition of neuromarketing (de Oliveira & de Moura Engracia Giraldi, 2017). As a consequence, there isn't a defined scope of neuromarketing study and practice (Fisher, Chin & Flitzman, 2010). And while the current conduct is pursued with the evidence that is available, the products of these conducts can consequently be influencing the beliefs and attitudes towards neuromarketing and, by its extension, neuromarketing behavior and adoption. Therefore, there is insufficient empirical evidence to suggest the future adoption of neuromarketing among marketing professionals.

In an effort to contribute to this discussion, the present research aims to investigate whether and to what extent neuromarketing has the potential to contribute to the new era in marketing or to generate a revolution in the field. In pursuing this goal, the research provides answers to the following questions:

- What is the level of interest in neuromarketing?
- What beliefs and attitudes do marketing professionals hold towards neuromarketing?
- Do marketing professionals have intentions and willingness to adopt neuromarketing in their everyday marketing practices?

- What evidence exists for neuromarketing as a new marketing era?

1.3 Research Impact and Contributions

This research will focus on providing significant benefits to the communities it considers as stakeholders:

- For the academic community: contribute to clearer understanding of neuromarketing and its status within marketing science
- For the practitioner community: enable companies to better understand the value proposition of neuromarketing and its strategic role in the development of marketing field, based on scientifically obtained information
- For the South East Europe region: evaluate the stage of neuromarketing development in the USA and in the region and identify possible steps towards its further development.

1.4 Structure of the Report

The report consists of eight sections, each deliberately focusing on one important issue. The next three sections focus on the overview of relevant literature. The literature review is conducted to understand the history of marketing and its development to the recent years, the meaning and foundation of neuromarketing, and its history and scope. Following this, the author uncovers the gaps that exist in the literature pertaining to status and acceptance of neuromarketing and presents the methodological approach and specific research questions that are designed for closing these gaps. This research consists of two studies. Study 1 builds onto the findings from the literature review around the existing evidence around the acceptance of the idea of neuromarketing, elicits the beliefs and attitudes of marketing professionals towards neuromarketing, and provides qualitative insights into the facets of neuromarketing as self-reported by the marketing professionals. The Study 2 measures both implicit and explicit attitudes towards neuromarketing, as well as other factors that have been known to influence intentions and willingness to adopt a new behavior, in order to identify a model that can describe and predict neuromarketing adoption. Bringing all these studies together, the author provides the conclusions in the context of the behavioral intentions and willingness of the marketing professionals to use neuromarketing and leverages these findings as the main predictors of their future (neuro)marketing behavior.

1.5 Chapter Summary

Neuromarketing represents one of the latest trends in marketing science and practice. Still being far from its mass adoption, there is no clear and unified comprehension of its scope and impact, not just in the South East Europe region, but at the global scale. Nevertheless, there are indicators pointing towards neuromarketing becoming a revolutionary development in marketing. This research is designed to investigate the behavioral intentions and willingness of marketing professionals to use neuromarketing. The author uses these findings to investigate the future adoption of neuromarketing among marketing professionals in an effort to contribute evidence to the strategic decision-making process about the investment in this area. One of the most frequently cited barriers for the application of neuromarketing is its cost, not just of the equipment or the procedure, but also of the education level needed by the marketing staff that is leveraging these findings. For a development that only represents a mere trend or a hype, this investment might be considered unreasonable; however, if neuromarketing proves to be a fundamental influencer of marketing conduct that will have high applicability and fundamentally change some of the assumptions currently held about the field, that investment might represent a necessary cost of doing business. This research aims to provide further clarification for that debate.

Chapter 2. Evolution of Marketing

“Science in general, it is important to realize, does not consist in collecting what we already know and arranging it in this or that kind of pattern. It consists in fastening upon something we do not know and trying to discover it.”

- R.G. Collingwood (1994)

2.1 Introduction

With the marketing field experiencing new developments that are promising to further the progress of its study and practices, it is becoming important to understand what the impact of those developments is and how this might alter the future of the field. The following section aims to provide an overview of the history of marketing thought and its eras. This approach will help provide a better understanding how the current developments can be interpreted and to what extent they follow the previously established pattern. Robinson (1995) argues that fields of study cannot be fully understood just by examining the context of their current practices; rather, the study of their history is essential to establish their uniqueness, but also their interrelatedness with other fields, which is the first step towards interdisciplinarity. Within the context of this research, understanding the history of marketing offers a necessary identification of the gaps that exist in the current literature that are important to uncover in order to better understand the trajectory of marketing.

2.2 Historical Development of Marketing Eras

Even though marketing as a discipline is not as old as other disciplines, there have been numerous changes and occurrences noted in its history (Egan, 2008). Those familiar with marketing say that the field is very dynamic, and it is constantly changing and evolving (Cluley, Green & Owen, 2020; Lehmann, 2020; Kemper, Hall & Ballantine, 2019; Varadarajan & Jayachandran, 1999). And there is a lot to be learned from its rich history. There is a considerable number of academics who are pushing towards establishing research agenda in marketing that takes historical perspective into consideration (Baker, Holden & Holden, 1998; Shaw & Jones, 2005).

According to Savitt (1980), literature about historical events can add strength and quality to marketing literature; historical research can contribute to the creation of 'macro theories', explaining the broader phenomenon and patterns of its change (p. 52). In addition, Hollander (1986) argues that, generally speaking, historical evidence may suggest useful directions for the future. There are also some contemporary marketing academics who hold similar beliefs. As stated by Powers (2012), marketing frameworks that have been created in the earlier years can be used today in an effort to understand the shifts currently happening in the marketplace; these frameworks may help in guiding marketers towards their future actions. The main argument in support of the historical studies in marketing is that historical data can enrich the knowledge of marketing while a solid historical basis can facilitate the creation of future strategy for the field (Usui, 2011). Such a standpoint has also been taken by Baker (2006), who blames marketing academics for neglecting one of their scholarly principles, which includes considering previous works.

On the other hand, in the practice of marketing, historical data plays a crucial role in the activities undertaken to estimate and predict future directions. In planning production and sales, business professionals rely vastly on the historical record as the basis for their strategies and tactics (Lustig, 2013; Ye, Cheng & Fang, 2013). Similar is done by advertising professionals, who analyze activities and creative solutions that have brought success in the past whenever they are developing new campaigns (Heath, 2011). Therefore, it can be argued that while historical analyses are playing an important role in estimating future directions, they have not been as influential among the members of the marketing community in academia.

2.2.1 Definitions of Marketing

Marketing as an academic discipline has emerged from the area of applied economics, or at least that is what most historians agree upon (Shaw & Jones, 2005). The term *marketing* used in the context known today was mentioned for the first time in 1910 by Fred Wilbur Powell in his article published in *Quarterly Journal of Economics*, when describing the cooperation in distribution of fresh fruits (Ludicke, 2006). According to Ludicke (2006), after World War One marketing was rising; major marketing institutions were formed in the 1930s, such as the American Marketing Association (1937) and Journal of Marketing (1936). By the time the World War Two ended,

marketing academics had already tackled some of the major marketing issues that became popular at the end of the 20th century; some of the examples include customer orientation that was of interest in 1910s and became popular in 1960s, as well as the social responsibility that initially gathered interest in 1960s and got its dominant topic status in 2000s (Ludicke, 2006). Further on, some of the most influential marketing and behavioral theories in the contemporary marketing literature and practice have been developed in 1960s; these marketing pillars include the 4Ps developed by McCarthy (1964) and the marketing mix model introduced by Borden (1965), as well as the first edition of the "Marketing Management" book written by Kotler (1967). Therefore, the solid ground for marketing discipline has been established by the 1970s.

As has been mentioned earlier, the American Marketing Association (AMA) is one of the first marketing institutions, developed in the 1930s. Due to its long-standing tradition, significant size of 36,000 members and high diversity among members representing marketing managers, marketing researchers, marketing academics and marketing students, the American Marketing Association is considered as a professionally very strong and credible organization (Ringold & Weitz, 2007). Its predecessor, the National Association of Marketing Teachers, published the definition of marketing in 1935, which AMA accepted in 1948 as its first official definition and which remained unchanged until first revision in 1960, when they decided to keep it up until 1985 (Ringold & Weitz, 2007).

As presented in publication of Lusch (2007) and Keefe (2004), AMA defined marketing in the following way from its origin until 1985:

"Marketing is the performance of business activities that direct the flow of goods and services from producers to consumers" (p. 262; p. 17).

After the revision in 1985, AMA's definition of marketing had changed with the aim to reflect the current circumstances in the industry, academia and research activity (Darroch, Miles, Jardine, & Cooke, 2004):

"Marketing is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives" (p. 31).

In the same manner, AMA introduced a new definition in 2004 (Gundlach & Wilkie, 2009):

"Marketing is an organizational function and a set of processes for creating, communicating, and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders" (p. 259).

Nevertheless, this definition did not remain contemporary for long; in 2007 AMA published yet another report with a changed core definition (Gundlach & Wilkie, 2009):

"Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large" (p. 260).

After the board meeting in 2004, the decision was made to revisit the current definition every five years (Keefe, 2008). As a result, in 2013 it has been concluded that the existing definition of marketing is still valid (AMA, 2014).

Paying closer attention to all official AMA definitions of marketing, certain common topics can be noticed. Since the foundation of the American Marketing Association until 2004 the central foci of marketing science and practice seem to be product-related activities, including the 4Ps (product, price, place, promotion) aspects, and exchange activities; during the period from 2004 until 2007 the main focus of the marketing discipline is customer and customer relationship management; from 2007 onwards, the customer relationship orientation has been coupled with the societal aspect (Table 1).

Table 1. AMA Marketing Definitions

Year	Source	Definition	Focus
1948	Keefe (2004)	Marketing is the performance of business activities that direct the flow of goods and services from producers to consumers	product, exchange
1960	Keefe (2004)	Marketing is the performance of business activities that direct the flow of goods and services from producers to consumers	
1985	Darroch, Miles, Jardine, and Cooke (2004)	Marketing is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives	
2004	Gundlach and Wilkie (2009)	Marketing is an organizational function and a set of processes for creating, communicating, and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders	customer, relationship
2007	Gundlach and Wilkie (2009)	Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large	customer,relationships, society
2013	AMA (2013)	Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large	

(Source: compiled by the author based on Keefe, 2004; Darroch, Miles, Jardine & Cooke, 2004; Gundlach & Wilkie, 2009; American Marketing Association, 2013)

Similarly, in an article published by Ringold & Weitz (2007), the authors have presented sixty-one majorly influential marketing definitions ever compiled by acknowledged marketing academics. Analyzing these definitions, three major topic orientations can be noticed, including exchange activity, customer focus and relationship domination. Interestingly, these topics seem to have gone through a gradual transformation process from exchange to customer focus, with a variation including both exchange and customer topics, and from customer to relationship orientation, with a variation including both relationship and customer topics (Tables 2, 3 and 4). Analysis of the acknowledged marketing definitions provide an insight into the dominant concepts at certain times (Cooke, Rayburn, & Abercrombie, 1992). These concepts, combined with other outstanding topics, provide a strong basis for the discussion of the future of marketing.

Table 2. Academic Marketing Definitions - Exchange Orientation

Exchange Orientation
Marketing in a broad sense covers those business activities which have to do with the creation of place and time utilities (Converse, 1930, 1935, 1940, 1946, 1958)
Marketing, the exchange of goods and services, is a very common and ordinary activity which directs and controls the movement of goods and services from producers to consumers (Converse, 1965)
Marketing covers all business activities necessary to effect transfers in the ownership of goods and to provide for their physical distribution (Maynard and Beckman, 1927, 1932, 1939, 1946, 1957)
Marketing is the set of human activities directed at facilitating and consummating exchanges; Marketing management is the analysis, planning, implementation, and control of programs designed to bring about desired exchanges with target audiences for the purpose of personal or mutual gain (Kotler, 1972)
Marketing consists of individual and organizational activities aimed at facilitating and expediting exchanges within a set of dynamic environmental forces (Pride and Ferrell, 1977, 1980, 1983, 1985)

(Source: compiled by the author based on Ringold & Weitz, 2007)

Table 3. Academic Marketing Definitions - Relationship Orientation

Relationship Orientation
Marketing is a social process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others. Marketing management is the analysis, planning, implementation, and control of programs designed to create, build, and maintain beneficial exchanges and relationships with target markets for the purpose of achieving organizational objectives (Kotler, 1984)
Marketing is a societal process by which individuals and groups obtain what they need and want through creating, offering, and freely exchanging products and services of value with others. Marketing management [is] the art and science of choosing target markets and getting, keeping, and growing customers through creating, delivering, and communicating superior customer value (Kotler, 2003, 2006)

(Source: compiled by the author based on Ringold & Weitz, 2007)

Table 4. Academic Marketing Definitions - Customer Orientation

Customer Orientation	
Marketing is the performance of business activities that direct the flow of goods and services from producer to consumer or user in order to best satisfy consumers and accomplish the firm's objectives (McCarthy, 1960, 1964, 1968)	Marketing is the process of creating, distributing, promoting, and pricing goods, services, and ideas to facilitate satisfying exchange relationships in a dynamic environment (Pride and Ferrell, 1995, 1997, 2003, 2006)
Marketing is the analyzing, organizing, planning, and controlling of the firm's customer-impinging resources, policies, and activities with a view to satisfying the needs and wants of chosen customer groups at a profit (Kotler, 1967)	Marketing consists of individual and organizational activities that facilitate and expedite satisfying exchange relationships in a dynamic environment through the creation, distribution, promotion, and pricing of goods, services, and ideas (Pride and Ferrell, 1987, 1989, 1991, 1993)
Macro-marketing is concerned with designing an efficient (in terms of use of resources) and fair (in terms of distribution of output to all parties involved) system which will direct an economy's flow of goods and services from producers to consumers and accomplish the objectives of the society. Micro-marketing is the performance of business activities which direct the flow of goods and services from producer to consumer or user in order to satisfy customers and accomplish the company's objectives (McCarthy, 1971, 1975, 1978, 1981, 1984, 1987, 1990, 1993, 1996, 1999, 2002, 2005)	Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating, offering, and exchanging products of value with others. Marketing (management) is the process of planning and executing the conception, pricing, promotion, and distribution of goods, services, and ideas to create exchanges with target groups that satisfy customer and organizational objectives (Kotler, 1994)
Marketing is human activity directed at satisfying needs and wants through exchange processes. Marketing management is the analysis, planning, implementation, and control of programs designed to bring about desired exchanges with target markets for the purpose of achieving organizational objectives (Kotler, 1976, 1980)	Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others. Marketing (management) is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives (Kotler, 1988)
Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating, offering, and exchanging products of value with others. Marketing (management) is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives (Kotler, 1991)	Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating, offering, and exchanging products of value with others. Marketing (management) is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational goals (Kotler, 1997)

(Source: compiled by the author based on Ringold & Weitz, 2007)

2.2.2 Periodization in Marketing

Even though different periods in marketing development have different orientations and foci, what they all have in common is the fact that they initiated certain revolution in the approach to marketing at the given time (Demirdjian & Senguder, 2004). However, if one were to look deeper into the literature, one would observe that at a certain point in time there is one concept that dominated the literature, usually noted as the trend of that time. Having this in mind, the discussion on marketing evolution is based on the sequence of topics that represent the focal point of each period in the marketing history.

Even though marketing periodization is not defined based on the concept of a dominant revolutionary idea, it is based on the conceptualization of the world view at the given time and the change in those perceptions that originated with the shifting world view. As Shaw & Jones (2005) argue, the shift from traditional marketing approaches to modern marketing resulted in the increased research interest towards 'marketing management; marketing systems; consumer behavior; macromarketing; and exchange' as the new modern marketing schools of thought (p. 243).

According to Hollander, Rassuli, Jones & Dix (2005), there is a significant variation of opinions among academics regarding the historical periodization in the history of marketing. More precisely, after analyzing a large number of generated periodization models, there seems to be differences among those models in the selection of significant time periods and the central themes of each era, as well as the duration of the time periods selected by the original authors. Hollander, Rassuli, Jones & Dix (2005) seem to provide the most comprehensive and most inclusive collection of marketing history periodization developed by numerous authors (Table 5).

In a study conducted by Jones & Richardson (2005), there are ten different models of eras in marketing that have been developed by different academics, all of which are being used in contemporary marketing textbooks (Table 6). In addition, Shaw & Jones (2005) developed a framework depicting distinctive eras in marketing thought evolution based on the different questions addressed, levels of focus and key concepts and theories that resulted from each (Table 7). However, these lists of marketing eras do not include the most publicized one developed by Keith in 1960, who described four eras, including production, sales, customer and marketing; nevertheless, this model can be considered relevant only to the circumstances in Pillsbury Company, due to the fact that it does not correlate at any level to what other companies, institutions and third parties were doing, such as non-profit organizations (Holden & Holden, 1998).

Table 5. Marketing Periodization

Author	Year	Focus	10th Century	11th Century	12th Century	13th Century	14th Century	15th Century	16th Century	17th Century	18th Century	19th Century	20th Century
STAGE THEORIES													
Polanyi	1957	Societal Provisioning Agreements	Reciprocity Mutual Gift Giving Equivalency Concept	Redistribution Collection and Relinquish of Resources - Benefits Proportional to Contribution	Householding Aristotilian Self- Sufficiency	Marketless Trade Collective Exchange - Exchange by Treaty/Pact Administered Prices	Market Local	Market National	Decline of Markets Introduction of Regulation Free Markets Clash with Social Values				
Bohannon & Dalton	1962	Markets and Marketing Africa	INF	INF	Self-Sufficiency	Marketplace Central							
Clark	1940	Economic Development	INF			Primary Occupation Extractive & Rudimentary Agriculture	Secondary Sophisticated Agriculture & Basic Manufacturing	Tertiary Sophisticated Manufacturing & Services					
Hotchkiss	1938	Marketing	INF										
PERIODIZATIONS													
Beard	1938	W. Europe & U.S.	EXP	Heritage of Antiquity	12th Century	13th Century	14th Century	15th Century - 1700's Patrician City-Ruler	16th Century	17th Century	18th Century Monopolist	19th Century Individualist	20th Century 1914+ Organization Makers
Kuznets	1966	Economic Innovation	EXP	Feudal Organization	11th-15th century City Economy Epoch								
Gras	1939	Business Economic Development	EXP	Settled Village Economy	Petty Capitalism Peddlers, Shopkeepers								
Bucklin	1972	Retail Market Structure	EXP	Cultural Nomadic Economy	Periodic Markets								
Bucklin	1972	Wholesale Market Structure	EXP	Periodic Markets	Permanent Markets								
Hotchkiss	1938	Marketing	EXP	Periodic Markets	Permanent Markets								
Levitt	1929	Consumerism Great Britain	EXP	Periodic Markets	1100 - 1300 Free Towns	14th Century Merchant Guilds	14th-16th Centuries Craft Guilds	15th - mid 18th Century Merchant Capitalism	16th Century Pure Consumers Middleman	17 th - 18 th C Regulated Trading Companies	18th Century Mercantilism	18th Century Industrial Revolution	1873+ 1920-1930's Merchandising Retailing Era
Roslow	1965	Economic Development	EXP	Traditional Society	13th-14th Century Village Craftsmen	14th Century Greed	15th Century Sumptuary Laws Merchant Guilds	16th Century New Shopkeeping	Late 17th - Early 18th Century Technology Stimulus to Growth	18th Century Britain Drive to High Mass Consumption	1850 Britain Maturity	1937 Britain High Mass Consumption	1850 Era of Institutional Development Refinement & Formalization
Fullerton	1988	Marketing W. Europe	EXP	Era of Antecedents	1500 Era of Antecedents	1750 Era of Origins	1815-1870 Specialized Wholesaler Manufacturer	1870+ Manufacturer					
Porter & Livesay	1971	Marketing & Distribution	EXP	Colonial-1815 All Purpose Merchant									

(Source: Hollander, Rassuli, Jones & Dix, 2005)

All this suggests significant inconsistencies in the methodological approaches in all considered studies and speaks in favor of using an independent approach towards identification of noteworthy shifts in marketing knowledge through its century long history. According to Hollander, Rassuli, Jones & Dix (2005) and Converse (1959), the most appropriate and logical approach for determining periodization in marketing history is by using turning points, the key changes that took place during the evolution of marketing, due to the fact that periodization needs to reflect the important historical events. In addition, some marketing historians suggest *ex ante* approaches, which includes determining the significant events prior to conducting the research itself and approaching the process of periodization deductively; the same approach was undertaken in developing the marketing periodization based on the case of Pillsbury Company (Golder, 2000; Bentley, 1996; Keith, 1960).

Table 6. Eras of Marketing in Contemporary Textbooks

Boone and Kurtz (2005): Production (pre-1925) → sales (1920s–1950s) → marketing (1950s–1990s) → relationship (1990s–present)
Etzel, Walker, and Stanton (2004): Production (late 1800s–early 1930s) → sales (early 1930s–mid-1950s) → marketing (mid-1950s–present)
Evans and Berman (2002): Barter (pre–nineteenth century) → production (late nineteenth century) → sales (n.d.) → marketing department (n.d.) → marketing company (n.d.)
Kerin et al. (2006): Production (1850–mid-1920s) → sales (1920s–1960) → marketing concept (1960–1990) → marketing orientation (1990s–present)
Kinnear, Bernhardt, and Krentler (1995): Production concept (up to 1920) → sales concept (1920s–early 1950s) → marketing concept (n.d.)
Lascu and Clow (2004): Production (1870–1930) → sales (1930–1950) → marketing (1950s–present)
Pride and Ferrell (2006): Production (1850–1920) → sales (mid 1920s–early 1950s) → marketing (1950s–present)
Shapiro et al. (2002): Simple trade (pre–nineteenth century) → production (late nineteenth century–1920s) → sales (1930–1950) → marketing department (1950s) → marketing company (n.d.)
Solomon et al (2005): Production (pre-1925) → sales (1930s–1950s) → consumer (1950s–1990s) → new era (1990s–present)
Sommers and Barnes (2004): Production focus (pre-1930s) → sales (1930s–1960) → customer interest (1960–1980) → customer service (1890–1990) → customer relationship (1990s–present)

(Source: Jones & Richardson, 2005)

Table 7. Schools of Marketing Thought

School	Selected marketing pioneers	Question(s) addressed	Level or focus of analysis	Key concepts and theories
Marketing functions	Shaw 1912, Weld 1917, Cherington 1920, Clark 1922, Converse 1922, Maynard et al. 1927	What activities (i.e. functions) comprise marketing?	Macro: • Marketing Middlemen	Value added by marketing activities
Marketing commodities	Shaw 1916, Cherington 1920, Copeland 1924, Breyer 1931	How are different types of goods (i.e., commodities) classified and related to different types of marketing functions?	Macro: • Trade flows • Types of goods	Classification of goods: • Industrial and consumer • Convenience, shopping and specialty • Products and services • Search and experience
Marketing institutions	Weld 1916, Nystrom 1915, Clark 1922, Maynard et al. 1927, Breyer 1934, Mallen 1967, Stern 1969, Bucklin 1970	Who performs marketing functions on commodities?	Macro: • Retailers • Wholesalers • Middlemen • Channels of distribution	Channels of distribution: • Market gaps and flows • Parallel systems • Depots • Transactions and transvections • Sorts and transformations • Postponement and speculation • Conflict and cooperation • Power and dependence
Marketing management	Alderson 1956, 1965, Howard 1956, Kelley and Lazer 1958, McCarthy 1960, Kotler 1967	How should managers market goods to customers (clients, patrons, patients)?	Micro: • Business firm as seller/supplier • Any individual or organization as supplier	• Marketing mix • Customer orientation • Segmentation, targeting and positioning
Marketing systems	Alderson 1956, 1965, Boddewyn 1969, Fisk 1967, Dixon 1967	What is a marketing system? Why does it exist? How do marketing systems work? Who performs marketing work?	Micro: • Firms and households Macro: • Channels of	• Interrelationships between parts and whole • Unity of thought • Marketing systems • Micro and macro marketing • Societal Impact

Based on the discussion above, the marketing community seems not to agree on the evolutionary aspect of its discipline, including the evolution process of marketing thought. In addition, Ludicke (2006) believes that the discipline is dominated by globalization and digitalization, where marketing paradigms emerge quickly, evaporate fast and sometimes even go unnoticed. Mainly due to this reason, there is no standardized textbook categorization of marketing revolutions throughout its history that everybody accepts as the state of fact (Jones & Richardson, 2005). Having this in mind, the following analysis of the eras that took place throughout the academically acknowledged history of marketing are based on the topics that received the most attention, generated the critical mass and have provided significant novelty to the process of solving contemporary problems. As the previous literature recommends, the segments of the history have been determined *ex ante* and the process of deduction was used in making any conclusions. On the other hand, the criteria used in determining the eras in question reflects the market orientation for a particular concept. All the concepts have represented a focal point around which the marketing practice and science had been developing in the past.

Table 7. Schools of Marketing Thought (continued)

		Where and when is it performed?	distribution	
Consumer behavior	Dichter 1947, Katona 1953, Engel et al. 1968, Kassarian and Robertson 1968, Howard and Sheth 1969, Holloway et al. 1971, Cohen 1972	Why do customers buy? How do people think, feel, act? How can customers/people be persuaded?	• Aggregate marketing systems Micro: • Business buying • Consumer buying • Individual or household consumption	• Subconscious motivation • Rational & emotional motives • Needs and wants • Learning • Personality • Attitude formation and change • Hierarchy of effects • Information processing • Symbolism and signs • Opinion leadership • Social class • Culture and sub-cultures
Macro-marketing	Alderson 1965, Fisk 1967, Dixon 1967, Hunt 1976, Bartels and Jenkins 1977	How do marketing systems impact society and society impact marketing systems?	Macro: • Industries • Channels of Distribution • Consumer Movement • Public Policy • Economic Development	• Standard of living • Quality of life • Marketing systems • Aggregate marketing performance
Exchange	Alderson 1965, Kotler 1972, Bagozzi 1975, 1978, 1979, Shaw and Dixon 1980, Houston and Gassenheimer 1987, Wilkie and Moore 2003	What are the forms of exchange? How does market exchange differ from other exchanges? Who are the parties to exchange? Why do they engage in exchange?	Macro: • Aggregations of buyers and sellers in channels Micro: • Firms and households • Any two parties or persons	• Strategic and routine transactions • Social, economic and market exchange • Barter and market transactions • Generic exchange
Marketing history	Hotchkiss 1938, Bartels 1962, 1976, 1988, Hollander 1960, 1983, Shapiro and Doody 1968, Savitt 1980	When did marketing practices, ideas, theories, schools of thought emerge and evolve?	Macro: • Thought and practice Micro: • Thought and practice	• History of marketing practice • History of marketing thought

(Source: Shaw & Jones, 2005)

2.2.2.1 Production Era

At the early years of marketing, the main criteria for entering business were the availability of resources and ability to produce the product with such resources (Keith, 1960). Therefore, the main focus was the production process and the central business orientation was manufacturing and making sure that the production process is superior. This trend towards production centrality was further emphasized with the emergence of management theories advocating just-in-time management and total quality management. After they were introduced, these theories have captured significant attention originating from academic community (Foster, Wallin & Ogden, 2011; Perdomo, Gonzalez & Galende, 2009; Hayes & Pisano, 1994; Dietrich, 1993; Golhar & Deshpande, 1993; Hall, 1989; Finch & Cox, 1986; Rehder & Ralston, 1984). However, not only have they received a tremendous number of followers within this specific field, new marketing

approaches that were influenced by these developments were discussed, as well (Piercy & Morgan, 1997; Youssef, 1994; Du Gay & Salaman, 1992). The same pattern occurred with the popularization of business process re-engineering and the changed way of thinking it derived (Hussey, 1994; Omrani, 1992; Emery, 1991). This production orientation has recruited a significant number of followers and has significantly altered the overall perception of the scientific field and it has motivated the development of new frameworks. Observed in such terms, it appears that the production era represents a significant period in the history of marketing discipline, believed to be central in marketing practices all the way until the 1920s or early 1930s (Keith, 1960).

2.2.2.2 Sales Era

Sales represent one of the oldest activities associated with marketing (Ludicke, 2005). Marketing as a science has been functioning around the exchange paradigm that provided the necessary platform for its development (Achrol & Kotler, 2012; Kiel & Lusch, 1992). Large numbers of accepted marketing definitions are actually built around the concept of exchange (Table 3.2). Exchange represents "the act of giving or taking one thing in return for another" (Seth & Uslay, 2007, p. 302). According to Bagozzi (1975), this exchange is not necessarily limited only to the monetary transaction for goods and services. Rather, exchange as a paradigm has been acknowledged in other disciplines apart from marketing, such as psychology, sociology, politics, law, and many others (Seth & Uslay, 2007). As a result, many studies have been conducted in understanding and explaining the sales management in its function as a marketing activity (Lys, Rogers & Simms, 2011). Its significance lays in the fact that through sales companies started paying attention to the customers, though in the context of facilitating sales and distribution (Ludicke, 2005; Moncrief & Marshall, 2005). It also included behavioral aspects necessary for performing satisfactory sales activities (Buzzotta & Lefton, 1982). All this evidence speaks in favor of the importance of sales as an orientation, the breadth of its establishment in marketing activities and the strength of its presence in academic literature, especially after World War Two (Jones & Richardson, 2007).

2.2.2.3 Product Era

Even though marketing orientation towards the product era has not been significantly acknowledged in the history of marketing and it has not been mentioned as a separate era in Keith's

(1960) article, research interest of acknowledged academics in the 1970's indicates otherwise. During the 1970s and 1980s, the emergence of product life-cycle theory has drawn significant attention to the business and marketing community and opinion leaders of that time, such as Kotler, Porter, Levitt and Boston Consulting Group (Gardner, 1987). Both Hofer (1975) and Porter (1980) noted that such theory represents one of the most significant components of the business strategy, while Hambrick & MacMillan (1982) explored the significance of such concepts to the overall business community. Apart from the product life cycle, the product portfolio matrix developed by the Boston Consulting Group in 1968 has introduced significant disturbances into the marketing practice and study (Ludicke, 2006). This framework has challenged some of the previously accepted assumptions towards market analysis and strategic marketing decisions (Hambrick & MacMillan, 1982; Day, 1977). In addition to the rising popularity of these two models, the overall dominance was assigned to the 4Ps model, which has as its central motive the product that is being complemented with the aspects of pricing, distribution and promotion (Constantinides, 2006; McCarthy, 1964). Today, marketing academics and practitioners still acknowledge the 4Ps model as one of the revolutionary constructs within the field, mainly due to the fact that this theory provided a holistic approach towards marketing, finally providing the comprehensive description of the marketing function and defining the borders of the field (Dimitriadis, Jovanovic Dimitriadis & Ney, 2019).

2.2.2.4 Customer Era

Following the post-war period during which the equivalent for business success were sales figures, companies adopted the customer approach, putting their current and prospective customers as in the center of all major activities and actions. As the industries in many countries were recovering from the War, companies started seriously competing for the disposable income of the customers (Tadajewski, 2009). This gave customers more choice and multiple options to consider in purchase decisions, which provided the possibility to go beyond the functional attributes of the products and address other preferences, as well. Significant contributions to marketing literature in advocating the customer focus was provided by Levitt (1960), who argued that companies should focus on satisfying customers' needs rather than focus on the products that satisfy those needs. In addition, focusing on the customers meant changing the overall business approach. Companies first needed to find out what customers wanted, and then invest in delivering that or something very similar.

This amplified the concept of market research, where companies actually started employing different research techniques, focused primarily on the customer (Bailey, 2014).

As argued by Leach (1994), the customer era can be considered the birth point of consumers and consumerism. Along with many other indicators, this points towards the revolution in marketing science that puts customers in the central focus rather than the company itself, an idea so influential that is still found in marketing.

2.2.2.5 Market Era

The market era represents the period in the history of marketing development when the focus of researchers, academics and practitioners was on the activities that were happening in the market. Some of the products of this era represent the widely used management concepts, such as the five forces model, PEST and SWOT analyses (Coman & Ronen, 2009; Porter, 2008; Porter 1979). Many of these models are still used today as tools for modern-time marketing strategists (Jarratt & Stiles, 2010). This rise in the interest of understanding the market can be considered somewhat logical evolution since knowing what the competition is doing, what it plans to do, or whether the specific market is interesting enough in order for other companies to jump in can be crucial for a company in getting the additional edge needed to stay or move forward. As Jemison (1981) says, many strategic decisions that companies make are highly influenced by their understanding of the competition and the overall market environment. As a matter of fact, market orientation can be considered an expansion of the customer orientation since it includes orientation towards customers, competitors and internal resources (Davar & Kashyap, 2013). Nevertheless, Ruekert (1992) argues that market orientation represents a shift in attitudes held by management, which was initiated by more competitive market conditions, globalization, dynamics of technological inventions and declining performance of many companies.

2.2.2.6 Relationship Era

It is believed that after realizing the importance of customers' involvement in business processes, companies recognized the financial value of managing their relationships with the customers (El-Ansary, 2005). This period in marketing history is recognized as the relationship marketing paradigm (Ballantyne, Christopher & Payne, 2003). The premise of the relationship marketing, as defined by Ballantyne, Christopher & Payne (2003) and Gummesson (1987) is the recognition of

the importance of the relationships between buyers and suppliers, and service quality. One of the main postulates in the relationship era was that trust was not built to sell more, but to transfer the values of the brand to the values of the customers. Another key aspect of the relationship era is the view that customers are being viewed as active partners, and the level of influence in both directions, especially in the direction customers-companies, is continuously increasing (Rudawska, 2011). In order for a company to be truly focused on building customer relationships, the same has to be envisioned by the leaders because it required significant investment and adaptation of the entire existing system in order to experience long-term benefits (Angel, 2004). According to El-Ansary (2005), this period in the evolution of marketing science is characterized by a proliferation of loyalty programs, as well as an increasing significance and research conducted in the area of supply chain management and marketing strategy. Nevertheless, the management of relationships went from being a purely marketing approach to a full business philosophy. That is when customer relationship management (CRM) has gained momentum as a business strategy and has experienced a growing adoption rate by the practitioner and academic community (Jackson, 2005).

2.2.2.7 Societal Marketing Era

The notion of societal marketing has been incorporated in the definitions of marketing by both Kotler and AMA's signaling that marketing activities need to benefit both the individual consumer and the society at large (Gundlach & Wilkie, 2009; Ringold & Weitz, 2007). Marketing represents a social activity and as such it should be used to improve social well-being through satisfaction of a wide variety of customer needs (Kotler, 1991; Kotler & Zaltman, 1971). El-Ansary (1974) believes that marketing academics use the phrases social marketing and societal marketing interchangeably, even in combination with social responsibility marketing. More recently, the marketing community has been referring to the socially responsible activity of marketing as sustainability marketing (Henninger, Alevizou & Oates, 2016; McDonagh & Prothero, 2014; Rettie, Burchell & Riley, 2012; Jones, Clarke-Hill, Comfort & Hillier, 2008). Some authors suggest that societal marketing represents an extension of relationship marketing, which is achieved through customer advocacy and providing power to the customer who uses the strong partnership with the company to gain benefits for society (Urban 2005). Observed in that context,

the goal of societal marketing is to secure long-term profitability through the well-being of individual customers and society at large (Abratt & Sacks, 1988).

2.2.2.8 Digital Era

One of the most recent developments in marketing science and practice is its response and adaptation to the digital era. The internet, social networks, e-commerce, mobile applications and similar services have changed the way consumers interact with brands and with each other (Quinton, 2013). However, as Tsironis & Psychogios (2012) argue, e-business is about adapting to evolving customer and business needs rather than just the technology. Ultimately, this has had an effect on the overall consumer behavior, which is why academics and practitioners are still debating whether this trend represents a new orientation in marketing or just an extension of tools of the previous one. Major benefit that the digital era brought were a new form and new channels of communication with the customers, social networks, and an ability to collect and study novel forms of data, which further help with addressing evolving customer needs (Hendriyani & Auliana, 2018). This meant that immediate responses concerning any given issue, highly innovative ways of transmitting the message, interaction on the individual level, tailored approach to communication to appeal to the specific needs of the customer, became the widely accepted norm (Corniani, 2006; Confos & Davis, 2016; Andzulis, Panagopoulos & Rapp, 2012). In addition, the digital era brought the birth of an entire new industry and a new profession (Wymbs, 2011; Hayashi, 2004). All of a sudden, the transformation of communication channels resulted in a number of digital marketing agencies emerging and offering highly specialized services in the domain of social media and digital marketing (Royle & Laing, 2014). On the side of the companies, the digital era brought the birth of the profession Digital Marketing Officer, which later on developed into many variations, out of which the most known is probably the one containing the word “social”. And as a consequence, the already established traditional marketing agencies had to follow, developing whole new departments specifically for digital marketing.

2.3 Summary of the Periodization in Marketing

The scientific field of marketing might not have a long history, but it definitely has a rich one. Within the past century there have been trends that occupied marketing and initiated its shift towards new revolutionary ideas. Marketing seems to have been a subject of significant change

throughout the years. It went from production to product focus, from customer and market focus to relationship focus and from sales to societal focus. These major milestones in marketing were also identified by Kotler, Karatajaya & Setiawan (2016), who believes marketing shifted from product-centric to customer-centric and then to human-centric, and most recently to customer in the digital economy.

Even though there is still no academically accepted periodization in marketing history, there is sufficient evidence in the existing literature based on which one can obtain a clear sense of the history and the mechanisms behind it (Table 8). Whether it is seven or four eras in marketing, there seems to be evidence, both conceptually and empirically, that documented the evolution of marketing. These mechanisms are being discussed even now, as the digital marketing era might actually be coming to an end (O'Reilly, 2013). With the recent developments in a large number of fields that are related to marketing, the question becomes what will define the next era in marketing and what its main focus is going to be. One of such indications was recently provided by Philip Kotler (2020), who shared in a LinkedIn post that his new book Marketing 5.0 will include neuromarketing and brain science, among other topics (Figure 1.).

Figure 1. Philip Kotler on Marketing 5.0



(Source: Philip Kotler's LinkedIn activity, 2020)

Table 8. Summary of Marketing Eras

Eras in Marketing	Main Focus	Characteristics	Time Period
Production Era	Production Process	The main concern for company is the availability of resources and the ability to produce the product.	up to 1930s
Sales Era	Selling Process	As an extension of the broad exchange paradigm, marketing has been implemented as a support activity for sales.	1940s - 1960s
Product Era	Product	The priority is to strengthen the product, and its elements, as the main competitive advantage.	1970s and 1980s
Customer Era	Target Group	Focus is on satisfying the needs of people by putting customers at the center of all company strategies, tactics and activities.	1970s and 1980s
Market Era	Competitive Pressures	Decisions that company makes are highly influenced by the understanding of the competition and the overall market environment.	up to 1990s
Relationship Era	Relationship with Customers	Customers are viewed as active partners that have open communication with the company and take part in its activities.	up to 2000s
Social Marketing Era	Sustainability	Focus on acceptability of social ideas and creating value for individuals and society at large.	1970s - now
Digital Era	Individual Consumer	Interactions with the customer on the individual level are enabled by the new platform.	2000s - now

(Source: compiled by the author based on Quinton, 2013; Jones & Richardson, 2007; El-Ansary, 2005; Ruekert, 1992; Kotler & Zaltman, 1971; Keith, 1960; Levitt, 1960)

2.4 Problems with the Current Marketing Era

It is without a doubt that the digital era has introduced a significant innovation into the marketing field and has enabled a true disruption in many industries. At the same time, with common use of the established practices that belong to this era, certain shortcomings have been identified, as well (Ashman, Solomon & Wolny, 2015). For example, it is undisputed that the amount of data being collected today is significantly larger than ever; however, for the most part, this data is collected purposefully and in silos (Chaffey & Patron, 2012). While plenty of research is available around the ways in which marketing data is being generated, not much of it is addressing the benefits marketers get from the Big Data (Amado, Cortez, Rita & Moro, 2018). Without the guiding

framework being established at the very beginning of such conquest, the utility of this data is not optimal. This is limiting the ability to use the data for predictive and prescriptive purposes, even with the emergence of new tools that are mitigating the limitations of the traditional data acquisition techniques. And as the established science is maturing, there is a lot of discussion among the members of the marketing community around the post-digital era, which in itself might represent a significant indicator of a new shift in marketing (Cooperstein, 2012). In fact, Dimitriadis, Jovanovic Dimitriadis & Ney (2019) believe that marketing is experiencing “a midlife crisis” because there is a considerable level of confusion that marketers are left with due to the influences that data science, digital practices and neuroscience are having on the field.

Today’s economy is characterized by its digital characteristics. It seems that everything we do is done online or, at least, facilitated by the digital interactions. According to the digital trend report published by The Next Web, in 2019 there was a growth in device usage across all categories and internet users spent 7 hours online each day (Kemp, 2019). Whether that’s the actual purchasing of the product or service, finding more information about that product, or simply learning about a new product that somebody else is using - most of these activities are grounded in interactions that are happening on our devices. The specifics of these behaviors are determined by the generational characteristics of the users, yet still the core assumption is the same (Wind & Hays, 2016). For example, millennials have been the key drivers of the digital disruption, where everything is and should be done online. The centennials, on the other hand, are the first generation truly native to the digital environment and are prioritizing interactions that are aligned with their digital orientation. These two segments are the prime reason why we are seeing a disruption in many categories, going from the proliferation of digital-only businesses, such as Uber, AirBnB, telehealth medicine mobile application, and even mattress retailers (Davidovski, 2018; Godelnik, 2017; Berman & Marshall, 2014). This shift to digital-only or digital-first conduct has resulted in a valuable digital footprint that is being created by every single consumer that has adopted such an approach. And this footprint consists of numerous data points that are later used perpetually to further improve the consumer experience. And even though they are used to the benefit of the consumer, the fact remains that a great amount of data is being collected (Steelman, Hammer, & Limayem, 2014).

There is a fairly established understanding that the value of the data is only as good as the knowledge it creates (Strong, 2015). In that respect, companies seem to be very purposeful with collecting this data by having specific questions in mind that this data is designed to answer. With this in mind, marketing analytics professionals are very deliberate with designing queries and using advanced tools to analyze the data that are specific to these queries. One of such examples is the practice of social listening that has experienced growth in recent years. Social listening entails analysis of the content that is generated on any given topic and provides marketers with the insight into the trends around how a specific topic is being discussed online and the sentiment surrounding that interaction (Pina et al, 2019; Reid & Duffy, 2018; Schweidel & Moe, 2014). Similar utility has been established for Google Analytics, a platform that allows for in-depth analysis of the online behaviors, starting with the patterns of activity on company websites to all the actions taken to reach a specific destination in the digital realm (Chaffey & Patron, 2012).

Nevertheless, the value of this data collected is often limited to the purpose that has been defined at the very beginning of the process. And marketers have been at fault for narrowly thinking about how they define these queries. Most of the analyses are designed to answer the specific questions that represent a task at hand (Kitchens, Dobolyi, Li & Abbasi, 2018). For example, a query about search behavior will likely provide enough insight into the process a customer goes through when inquiring more information on a topic. However, what might be missed about this query is the larger context that explains this customer's behavior, such as motivation, personal characteristics, objective, etc. Therefore, these analyses provide a comprehensive overview of the particular action, yet this action often seems to be a fragment of the larger context within which it exists (Mahrt & Scharrow, 2013). With this playing out, the marketing exploration process becomes just a series of questions that the company is answering, one at a time, within one department, in an effort to optimize one specific objective from the marketing strategy.

There are numerous software applications available to marketers nowadays that allow for data integration across multiple inquiries and methodologies. This is proving to be very valuable in an effort to ensure all the data is 'speaking the same language' and the same data point can be leveraged across different marketing questions. However, in order to avoid having siloed data and to ensure the entire data collection is producing the insights that marketers can use for a more

comprehensive strategy, there needs to be a guiding framework that explains more than just how somebody finds and buys a specific product. Over the years, marketing community has been using multiple frameworks that all originated in the infamous McCarthy's 4Ps marketing mix - 7Ps (product, price, place, promotion, people, process, physical environment), Lauterborn's 4Cs (consumer, cost, convenience, communication), 7Cs (content, commerce, community, context, customization, communication, connection). Nevertheless, the continuous need to further extend the framework points out to the deficiencies of the framework itself and the need to identify one that encompasses all marketing activities.

The existence of one such framework that explains all marketing activities is also important because it allows for modeling of the activities in a manner that can predict the results of marketing efforts. With the development of AI (artificial intelligence) and its implementation into marketing practices, the field is experiencing significant progress. Primarily, artificial intelligence is used in the context of a decision support system, designed to ensure all information is considered in decision-making, as well as in data mining, specifically used for analyses of big data sets. In this context, machine learning and artificial intelligence has been shown to be useful to marketing professionals (Thomas, 2018). However, as stated previously, the model that AI is using is only as good as its inputs. And the quality of inputs depends on the initial framework that is leveraged to set up the entire data ingestion. In the context of marketing, where the framework that defines all its activities is still considered missing, pure technological advancements such as AI are only providing incremental progress (Ma & Sun, 2020).

This lack of framework is also contributing to a large amount of data being effectively 'left on the table' and not utilized by the marketing professionals. As part of the marketing inquiry, practitioners tend to focus their efforts on tracking, analyzing, and measuring the activity of users and the content of their interactions. What is usually neglected by these analyses is the social and behavioral context of those activities that can be observed from different types and varieties of data, such as sensors and device usage patterns (Onnela & Rauch, 2016). These large sets of data, when analyzed using the standard processing, as well as natural language processing, can provide really valuable digital phenotypes that can both describe, explain, and predict user behaviors. This

enables marketers to derive a much richer meaning of the data patterns and derive multifaceted models of the user behaviors.

In addition to the digitally acquired data, the currently available tools for market research are also demonstrating significant shortcomings. The reasons behind it can be found in the fact that the marketing research industry is vastly dependent on self-reporting data (Hsu, 2017; Bercea, 2012). Majority of the marketing knowledge that exists to this point is a result of surveys, interviews or focus groups research, or their combination. In a traditional marketing research setting, the consumers are usually invited to share their needs, experiences, and desires with the researchers, whether that is in a qualitative or quantitative nature. The entire premise of such an approach assumes that consumers are either aware of what they want or need or can predict with accuracy their behavior under specific circumstances. It also assumes that the consumers are willing to disclose their preferences, which can be particularly problematic for behaviors that can result in a change of social status or likability (Fisher & Katz, 2000). And these methods have proven over and over to be valuable tools in understanding consumers and their behavior due to the established premise of consistency between attitudes and affective states and behavior (Millar & Tesser, 1989; Chaiken & Baldwin, 1981).

However, the recent discussions across multiple fields have been focused on the impact that the unconscious processes have on decision-making and how studying these processes can be used to “recalibrate” the approach taken (Dimitriadis & Psychogios, 2016). Significant body of literature that emerged in the last two decades points towards the presence of heuristics and biases that are influencing customer decision-making (Lesic, de Bruin, Davis, Krishnamurti & Azevedo, 2018; VonBergen, Kernek, Bressler & Silver, 2016; Nenycz-Thiel, Beal, Ludwichowska, & Romaniuk, 2013; Holtgraves, 2004). And what precedes this phenomenon has been extensively studied and documented within the area of behavioral economics and the pivotal work done by Daniel Kahneman and Amos Tversky, as well as more recent work by Cass Sunstein and Richard Thaler (Kahneman, 2011; Thaler & Sunstein, 2009; Tversky & Kahneman, 1974; Tversky & Kahneman, 1973; Kahneman & Tversky, 1972).

The consequences of these shortcomings of the currently available research tools can be seen in the failure rates of new products due to inconsistencies that appear between what consumers indicate and how they behave once the implementation is completed. The business media often reports that up to 95% of new products that are brought to market fail, even though these products go through extensive market research and their positioning is thoroughly investigated prior to launch (Emmer, 2018). And even though many members of the academic community believe this to be an exaggeration as some studies have estimated that number to be somewhere closer to 35%, the failure rate should still not be neglected (Castellion & Markham, 2013; Crawford, 1987; Crawford, 1979).

2.5 Chapter Summary

The scientific field of marketing might not have a long history, but it definitely has a rich one. Marketing seems to have been subject to significant change throughout the years. It went from production to product focus, from customer and market focus to relationship focus and from sales to societal focus. Even though there is still no academically accepted periodization in marketing history, there is sufficient evidence in the existing literature based on which one can obtain a clear sense of the history and the mechanisms behind it. These mechanisms are being discussed even now, as the digital marketing era might actually be coming to an end (O'Reilly, 2013). It seems that marketing and its set of assumptions, rules and methods have faced problems that seem impossible to solve using traditional marketing methods. The traditional marketing practices have heavily relied on data that originates in self-disclosure even though there is a fair documentation of such data being biased and unreliable (Gorgiev & Dimitriadis, 2015). On the other hand, the digital approach has allowed an enormous amount of data to be collected. However, current practices are not able to process all that data and make the best use of it. As a result, there is also a lot of discussion of the post-digital era, which might be a strong indicator of a new revolution shift in marketing (Cooperstein, 2012). Nevertheless, the question still remains what the next step is for marketing science and practice and whether neuromarketing will fill that role (Kolev, 2012; Garcia & Saad, 2008).

Chapter 3. Science and Practice of Neuromarketing

“Only when existing scientific ideas fail where more daring ones succeed do new ideas get firmly established.”

- Lisa Randall (2015)

3.1 Introduction

While the examination of the history of one field provides a context in which all the developments and scientific progress has happened, it also allows for the examination of the current trends within that context. The key interest of this literature review chapter is neuromarketing, one of the most recent developments in marketing, and how it fits within this field of study. So far, the understanding of neuromarketing has varied and has been perceived as an application of new tools in marketing, an entirely new research area, and even a new era in marketing. Nevertheless, this lack of consensus does impose both theoretical and practical implications, especially for marketers who are currently or plan to be adopting it.

3.2 Neuromarketing

As the traditional marketing approach is being challenged, the entire field has been experiencing influences that are neither subtle nor ambiguous. One of the biggest influences, however, represents the notion that consumers might not be acting always rationally (Suh, 2019). This question of whether or not consumers act rationally has induced significant shifts in multiple fields and has initiated the quest for measures that go beyond the self-reports. According to Achrol & Kotler (2012), the source of the current shift in marketing may be assigned to several factors, among which is neurophysiology, a field that has generated the most influential discoveries recently. The knowledge from the field of neuroscience is being leveraged to other disciplines, a consequence of what Tallis & Taylor (2011) call *neuromania*. Every once in a while, there is a new field that has been added a “neuro” prefix, such as neuroeconomics, neuroleadership, neurodesign, neuroaesthetics and even neurourbanism (Adli et al, 2017; Pearce et al, 2016; Brosnan & Michael, 2014; Monestina et al, 2014; Kiefer, 2010). However, neuromarketing has been among the first unrelated fields to be associated with neuroscience; since 2005,

neuromarketing has been thought of as the next big thing (Moore, 2005). Therefore, the next evolution of marketing might be from digital to neuro focus.

Since the application of traditional marketing tools is facing difficulties providing competitive advantage, it is believed to be necessary to integrate other disciplines with marketing (Sharma, Koc & Kishor, 2014). With the growing interest in neuroscience and remarkable discoveries in neurophysiology, neuromarketing is considered as a serious contestant for the next revolutionary shift (Achrol & Kotler, 2012). The word ‘neuromarketing’ was used for the first time in 2002 by Ale Smidts even though the first neuromarketing studies are believed to have been conducted by Gerry Zaltman since 1999 (Sharma, Koc & Kishor, 2014; Vlasceanu, 2014). However, the popularity of neuromarketing has been constantly growing since the early 2000s. The supporting evidence for that can be found in a growing number of publications and search results on Google in the past years, as well as the increasing number of agencies offering neuromarketing services (Plassmann, Ramsay & Milosavljevic, 2011). As a matter of fact, de Oliveira & Giraldo (2017) found that there were 141 citations of neuromarketing by 2014. Numerous publications helped in spreading the interest in neuromarketing; *Journal of Consumer Behavior* had a special issue in 2008 dedicated to neuromarketing; numerous books have been published, among which Martin Lindstrom’s *Buy-ology* achieved great success; numerous articles were published in practitioner’s business magazines (Achrol & Kotler, 2012). Even the well-known publication series *For Dummies* has dedicated one issue to neuromarketing, which is rated as one of the most comprehensive books on neuromarketing (Cullinane, 2013). As a result of this growing interest, Neuromarketing Science and Business Association was founded in 2012 with the goal to promote the field of neuromarketing, provide education about neuromarketing, and connect people in this field (NMSBA, 2020).

Having this in mind, the following discussion focuses on the reasons why neuromarketing might be considered as a candidate to drive the next revolutionary change in marketing. Specifically, the next section looks at neuromarketing definitions and its disciplinary antecedents in an effort to address this very question.

3.2.1 Need for Interdisciplinary Approach

Marketing and its set of assumptions, rules and methods have faced problems that seem impossible to solve using traditional marketing methods. According to Repko (2012), the problem is considered complex when the components constructing this problem originate from different disciplines; therefore, in order to be able to provide a solution for one such problem, one needs to incorporate an interdisciplinary approach and study all the disciplines that are involved. As defined by Nissani (1997), interdisciplinarity represents an approach which combines two or more disciplines in the process of creating new knowledge.

Interdisciplinary research is strongly recommended to be employed when addressing broad issues not being solved by a single discipline, when insights into a problem are offered by theories originating from several disciplines, or when trying to achieve knowledge unification (Repko, 2012; Klein, 1990). As argued by Milgram (1969), interdisciplinary approach to problems sets the researcher free from rules and boundaries of their chosen discipline and enables novel look on the circumstances. This fresh perspective can also be achieved by bringing in researchers from other disciplines, who can enrich the process with knowledge and methods from their own disciplines and are less likely to resist conceptual changes (Nissani, 1997).

Having in mind that current problems in marketing discipline appear to be unsolved for quite some time, it would seem as a logical step to bring in diverse knowledge and innovations from unrelated disciplines to influence marketing theory and its practice. As Nissani (1997) claims:

“Many complex or practical problems can only be understood by pulling together insights and methodologies from a variety of disciplines. Those who forget this simple truth run the intellectual risk of tunnel vision and the social risk of irresponsible action” (p. 209).

Therefore, the following discussion will focus on identifying the disciplines that may hold the answer to certain parts of the problem and brought together, could help marketing knowledge and practice achieve its further progress.

3.2.2 Definition of Neuromarketing

Neuromarketing is a fairly new field, with a history of less than 20 years. Nevertheless, a historical review conducted by Iloka & Onyeke (2020) shows that it is indeed a revolutionary development in the field of marketing. It originated in the practitioner arena, where marketing professionals started using the innovative tools and methodologies from neuroscience to understand consumer behavior at a deeper level. What everybody seems to agree on is that neuromarketing is an interdisciplinary field; however, its scope, name and definition are still lacking broad consensus. By 2014 there had been 141 definitions at the Web of Science database (de Oliveira & de Moura Engracia Giraldi, 2017). Different members of the academic community have a different outlook and different perception of what neuromarketing is and should stand for. A recent meta-study of neuromarketing definitions over a period of ten years revealed three prominent trends: (a) that neuromarketing is primarily the study of the brain in the marketing context, (b) that its contribution is limited to the area of consumer behavior, and (c) that neuromarketing as a field of study belongs to the area of neuroeconomics (de Oliveira & de Moura Engracia Giraldi, 2017). On the other hand, analysis of neuromarketing definitions conducted by Fisher, Chin & Flitzman (2010) mainly focus on the ongoing debate about whether neuromarketing is a scientific field or a business activity.

To better understand the common concepts that are predominant when discussing neuromarketing and consumer neuroscience, word cloud analyses were performed using the definitions that are being discussed below (Figures 2 and 3). Word cloud analysis represents a visual representation of the frequency of particular words within a text (Atenstaedt, 2017). All the definitions were analyzed using a free online Wordcloud generator (www.wordclouds.com). The pattern that emerges suggests that neuromarketing is at the intersection of marketing and neuroscience. Another really important revelation that the word cloud is suggesting that unlike consumer neuroscience, neuromarketing has a consumer focus. Nevertheless, further exploration is conducted below to better understand the current state of the neuromarketing definition and its relationship to other scientific areas.

In order to understand currently available definitions of neuromarketing that are commonly referenced in the literature, a systematic review has been conducted. The review focused on the definitions for both neuromarketing and consumer neuroscience, as these two terms are often used interchangeably, to cover the scope of the field (Hubert & Kenning, 2008). To ensure the relevant definitions are being used, the systematic review includes only definitions that have been cited in the literature at least 10 times, as indicated by Google Scholar data. In addition, the review only includes what the author believes to be the original contributions to the literature, definitions that have been developed by the authors and are not paraphrased references to the previous work. The final review included a total of 28 original definitions (Figure 4).

Figure 4. Systematic Review of Neuromarketing Definitions

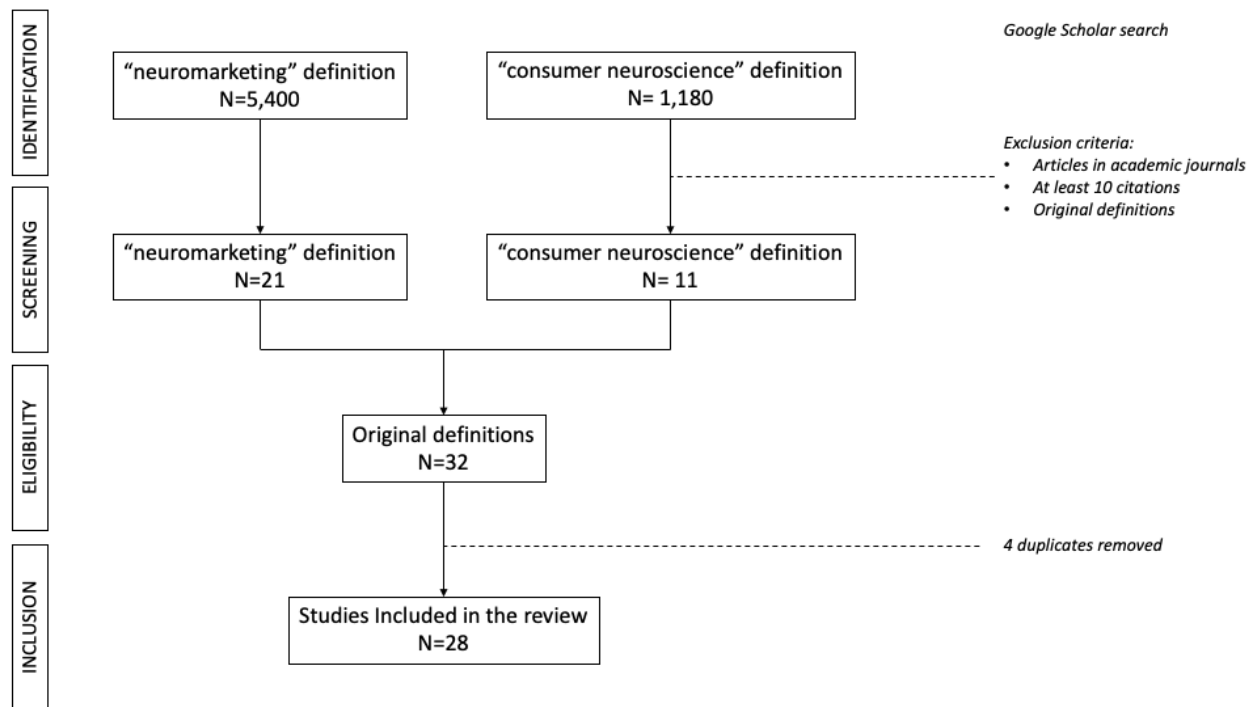


Figure 4. provides a schematic of the procedure behind the systematic review of commonly cited neuromarketing definitions that represent original contributions to the field.

The analysis points towards a pattern that can be used to group definitions based on the theoretical foundations at which the marketing community sees contributions of neuromarketing. Based on these definitions, there appear to be three different levels, or layers of depth, at which neuromarketing seems to provide contributions and introduce disruption, either offering new

research tools (methods), new research questions (problems) or new underlying assumptions (theories) for the marketing field (Figure 5).

Figure 5. Neuromarketing Contribution

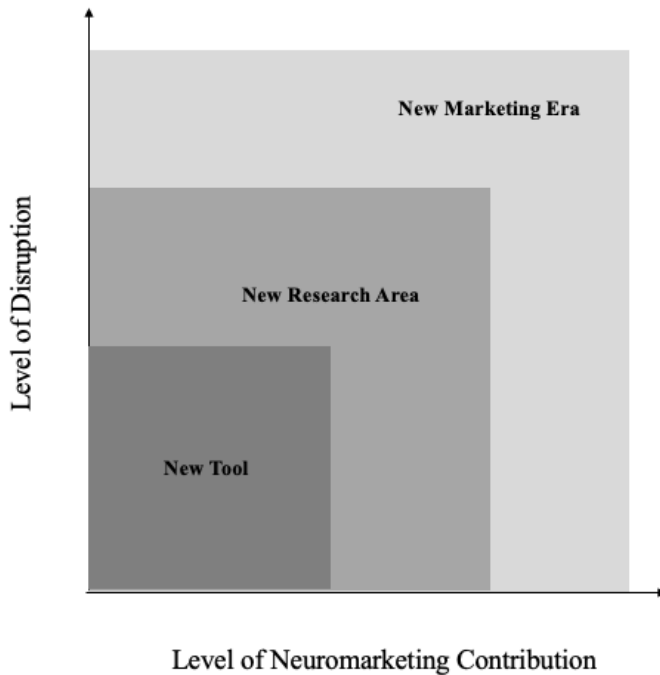


Figure 5. provides a summary of the different ways in which neuromarketing is being define, based on the level of disruption and the level of contribution it provides to the field of marketing.

3.2.2.1 Neuromarketing as a New Tool for Market Research

The first group of definitions analyzed here is the one with the core idea that neuromarketing represents a new tool used to solve problems that already exist in marketing. One of the simplest definitions of neuromarketing was provided by Ariely & Berns (2010), where they argue that neuromarketing represents the application of neuroscientific methods for the purposes of marketing consumer products. Plassmann, Yoon, Feinberg & Shiv (2011) similarly believe that neuromarketing refers to the use of neurophysiological tools by the practitioners to conduct commercial research, while Stipp (2015) looks at neuromarketing as a neuroscience-based research tool. In addition, there seems to be a spectrum of meaning, a movement away from neuromarketing as a marketing tool to neuromarketing as a neuroscience tool that would require

further work to apply it to neuromarketing (Figure 6). There is a lack of a clearly agreed definition, even within such apparently simple and general definitions.

Many more detailed definitions of the scope of neuromarketing reference specific neuroscience research tools, such as fMRI, EEG and eye tracking (for example, see Lee, Broderick & Chamberlain (2007), Eser, Islin & Tolon (2011), Hammou, Galib & Melloul (2013), Senior & Lee (2008), and others). Looking at all of the definitions that have the same common denominator, there appear to be the two prominent themes (Figure 6). The first one includes neuromarketing as the application of neurophysiological or neuroimaging research tools to psychological or neuroscientific research questions that may underpin commercially relevant behavior. The second refers to neuromarketing as the application of these tools with commercial outcome explicitly in mind (Eser, Islin & Tolon 2011; Ariely & Berns, 2010; Lee, Broderick & Chamberlain, 2007). As an example, relevant to this second theme, Garcia & Saad (2008) suggest neuromarketing is atheoretical in the sense that it is not concerned with theory and lacks coherence in the direction in which the studies are conducted.

Figure 6. Academic vs. commercial focus of neuromarketing

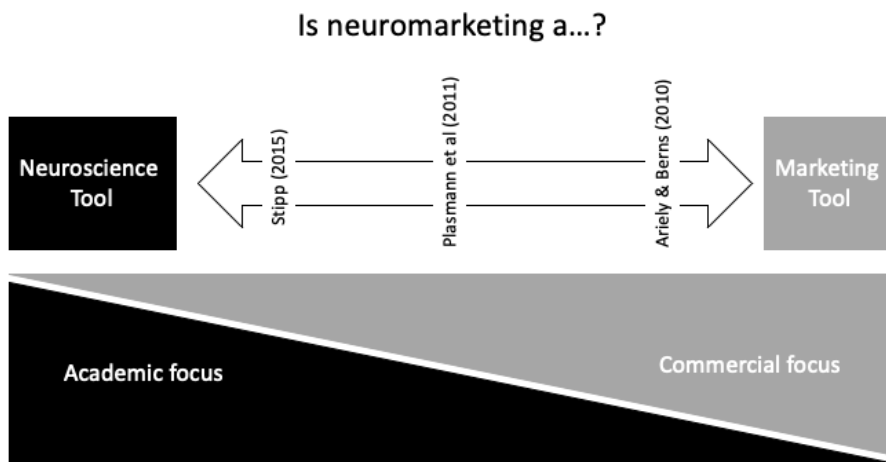


Figure 6. demonstrates the spectrum of meaning of neuromarketing definitions, going from academic to commercial focus.

At this level of definition, it is believed that neuromarketing encapsulates applying neuroscientific methods to better understand consumer behavior. This idea puts emphasis on the new methods,

above anything else, as the core contribution to marketing. With this focus, there has been a significant number of publications that explore all the different tools that marketers can use, such as fMRI, EEG, eye-tracking, galvanic response, facial expression analysis, and many others (Gorgiev & Dimitriadis, 2015). It is believed that by complementing the traditional marketing methods with neuroscientific tools, neuromarketing creates deeper and more valuable insights into consumer behavior (Stipp, 2015; Eser et al, 2011, Fugate, 2007).

Looking at the tool-focused definitions, there is a consistent belief that these tools are contributing to marketing as a better way to collect data. This conceptualization suggests neuromarketing is being used to solve research questions that have been present in marketing for a while now; it does not appear to include any theoretical frameworks that neuromarketing is leveraging from any of the disciplines where the above-mentioned tools traditionally belong. Rather, neuromarketing is defined as a new tool for market research.

3.2.2.2 Neuromarketing as a New Research Area

The second group of definitions assumes neuromarketing provides new questions to ask or problems to solve. This approach to neuromarketing is held by a number of academics and practitioners who believe that it represents a new field of study. Such belief is supported by either direct or implied use of theoretical frameworks, hypotheses, and ideas that originate from the fields that are not consumer-focused, but rather are investigating human behavior. Olteanu (2015) acknowledges the fact that neuromarketing is using neuroimaging as a data collection tool, but she also accepts it as a separate discipline, a view that is based on an extensive list of studies referenced in her paper. According to Lee (2007), neuromarketing scientists use neuroscientific methods to understand human behavior related to marketing practices. In addition to this, Boricean (2009) and Murphy, Illes & Reiner (2008) argue that a neuroscientific approach enables marketers to identify and understand the mechanisms in the brain that underlie consumer behavior, with the purpose of achieving commercial success. As an extension of such claims, some scientists believe that neuromarketing is a new field of research that applies neuroscientific methods in order to evaluate and investigate the brain responses to marketing stimuli (Renvois & Morin, 2007; Senior et al, 2007).

Fugate (2007) claims that neuromarketing is a new field of inquiry in the sense that it is generating new questions that marketing can now answer and, hopefully, expand the scope of the field. The success of the traditional methods has been mainly dependent on the predictive power of self-reporting measures to understand consumer behavior, based on the willingness and ability of participants to describe it themselves (Pozharliev, Verbeke & Bagozzi, 2017). Thus, traditional marketing can be viewed as being able to provide “the what” elements of the decision-making equation. In addition, it can be argued that traditional approaches can also provide “the why” by asking the target audience to share their reasons as they appear consciously available to them.

Neuromarketing, on the other hand, can provide the “why”, one that is free from cognitive biases and comes as a result of behavioral evidence (Gorgiev & Dimitriadis, 2015). Moreover, neuromarketing can provide the “how” by outlining the sequential path of neurological and physiological processes that lead to certain behaviors. By analyzing the patterns of brain or body processes, marketing academics and practitioners can better understand the correlational and causal effects of marketing stimuli (Fortunato, Giraldi & de Oliveira, 2014; Eser et al, 2011). This provides the new avenue for insight generation by asking the questions that can be answered by applying the new methodologies.

One point of clarification, though - none of the authors mentioned here suggests that neuromarketing as a research field is intended to replace the existing market research approaches. On the contrary, Ohme (2009) argues that neuroscientific methods do not compete with the traditional ones; rather, they enrich them with further information that is not directly available to the respondent.

Analyzing the definitions that belong to this group, as well as some of the studies that helped these authors conceptualize their understanding of neuromarketing, it appears that the main contribution of neuromarketing as a new research field is the opportunity to provide answers to the new questions that are emerging as a result of the new tools that neuromarketing leverages from multiple disciplines. Nevertheless, in this view, neuromarketing remains rooted in the assumptions, objectives and underlying principles previously established within the discipline of marketing: it does not represent a new discipline.

3.2.2.3 Neuromarketing as a New Marketing Era

The third group of definitions argues that neuromarketing provides new underlying assumptions for the entire field of marketing. The interpretation of the definitions that belong to this group suggest that, in addition to the new tools and new research questions, neuromarketing is leveraging insights from other fields and bringing them to marketing as a new and updated foundation. Many authors argue that neuromarketing provides insights that allow for a different and more accurate prediction of consumer behavior (de Oliveira, Giraldi, Jabbour, Netto & Betti, 2015; Stoll, Baecke & Kenning, 2008).

However, new studies are constantly expanding and updating these assumptions. In his book “*Neuromarketing: Exploring the Brain of the Consumer*”, which is often considered to be a comprehensive introduction to the field by the neuromarketing community, Zurawicki (2010) set out to synthesize findings from past studies into one cohesive interpretation of consumer behavior, observed through the biological predispositions of human behavior (Laroche & Richard, 2011). Genco, Pohlmann & Steidl (2013) explain how neuromarketing is providing the new insights at the meta-cognition level regarding marketing activities. Mileti, Guideo & Prete (2016) argue that neuromarketing is providing new insights into the unconscious drivers and the role of emotions in consumer decision-making. More so, it seems that many new insights come from the understanding of how emotions work and how humans think, which allows marketers to update some of the widely used consumer behavior models (Venkatraman et al., 2015; Hammou, Galib & Melloul, 2013). This perspective is very important since emotions are the important determinants of human motivation and urgency to behave in a certain way (Dimitriadis & Psychogios, 2016).

However, when looking at the studies that have been classified as neuromarketing, it becomes clear that new evidence is being used in all the areas of marketing. While it is well established in product and advertising/communication research, neuromarketing has also found its applicability in distribution and pricing research (Hubert & Kenning, 2008; Fugate, 2007). While Shahriari, Feiz, Zarei & Kashi (2020) argue that the increasing interest in neuromarketing has been seen in these areas, they conclude that the attention is shifting towards the application of neuroscience in developing marketing strategies.

Looking at the various definitions, it appears that the authors whose works fit within this group also believe that neuromarketing and consumer neuroscience represent one and the same field. Specifically, Fugate (2007) argues that neuromarketing or consumer neuroscience addresses marketing relevant problems with methods from brain research. The same terminology is used by Stoll et al (2008), who state that neuromarketing and consumer neuroscience have as their goal to use neuroscientific methods to gain insights into consumer behavior. As an extension of such approaches, Garcia and Saad (2008) argue that neuromarketing represents a field of study that can be positioned at the intersection of consumer behavior and cognitive neuroscience. This is in contrast with how Plassmann, Ramsøy & Milosavljević (2011) see consumer neuroscience as it refers to academic research at the intersection of neuroscience and consumer psychology, and neuromarketing as a practitioner and commercial user of such knowledge.

Another important point that surfaces in the discussion about a marketing era is the fact that an era is often associated with a worldview, in marketing context, at least. Gummesson (1997) has considered relationship marketing as a separate paradigm in marketing development. Gamez-Suarez, Martínez-Ruiz & Martínez-Caraballo (2017) have used the words era and paradigm interchangeably when discussing when describing particular consumer behavior. And Quinton (2013), has similarly discussed the changes in marketing activities as defined by a paradigm, and as such as a revolutionary science, but also as defined by an era. With that in mind, it is necessary to review the actual contributions that neuromarketing is offering to the field of marketing to understand how neuromarketing fits within this discourse.

3.2.3 Scientific Foundations of Neuromarketing

The integration of brain function and behavioral data as studied by the field of neuropsychology opened up the doors for the application of neuroscience across multiple areas, including neuromarketing (Roalf & Gur, 2017). Neuropsychology emerged in the second half of the 19th century as one of the first disciplines to study the relationship between the neurological mechanisms and cognition and behavior (Vallar & Caputi, 2020; Berlucchi, 2010). Its contribution to the interdisciplinary study of behavior has been so fundamental that Cherubino et al (2019) even used it as a reference to describe neuromarketing, saying that “*neuromarketing is related to marketing as neuropsychology is related to psychology*” (p. 3).

Even though there is the lack of consensus on the definition of neuromarketing, there is consensus that neuromarketing is an interdisciplinary field (de Oliveira & Giraldi, 2017; Fortunato, Giraldi & Oliveira, 2014; Javor, Koller, Lee, Chamberlain & Ransmayr, 2013). This is a starting point towards uncovering the scope of neuromarketing. In this section, we will consider the fields that can be considered to constitute and contribute to the neuromarketing body of knowledge.

From an etymological perspective, the division of neuromarketing into neuroscience and marketing is an obvious starting point for determining disciplinary scope. More precisely, some academics believe neuromarketing is leveraging the knowledge that belongs to cognitive neuroscience, or even social cognitive neuroscience, in its exploration of consumer behavior (Olteanu, 2015; Ariely & Berns, 2010; Fugate, 2007). More so, many believe that neuromarketing belongs to the field of consumer neuroscience, while others believe that these two terms can be used interchangeably (Plassmann, Ramsoy & Milosavljevic, 2011; Eser et al, 2011). Similarly, a number of authors claim that neuromarketing is a subarea of neuroeconomics, a field that uses neuroscientific methods to analyze and understand economic decisions and behavior (Vlasceanu, 2014; Foxall, 2008; Hubert and Kenning, 2008; Rangel et al, 2008; Braeutigam, 2005; Kenning and Plassmann, 2005; Glimcher, 2004). With a similar notion, Genco, Pohlmann, & Steidl (2013) see it as an intersection of neuroscience, behavioral economics and social psychology. While all of the fields identified here represent established scientific disciplines, many are themselves interdisciplinary in nature (Figure 7).

Figure 7. Fields of study associated with neuromarketing

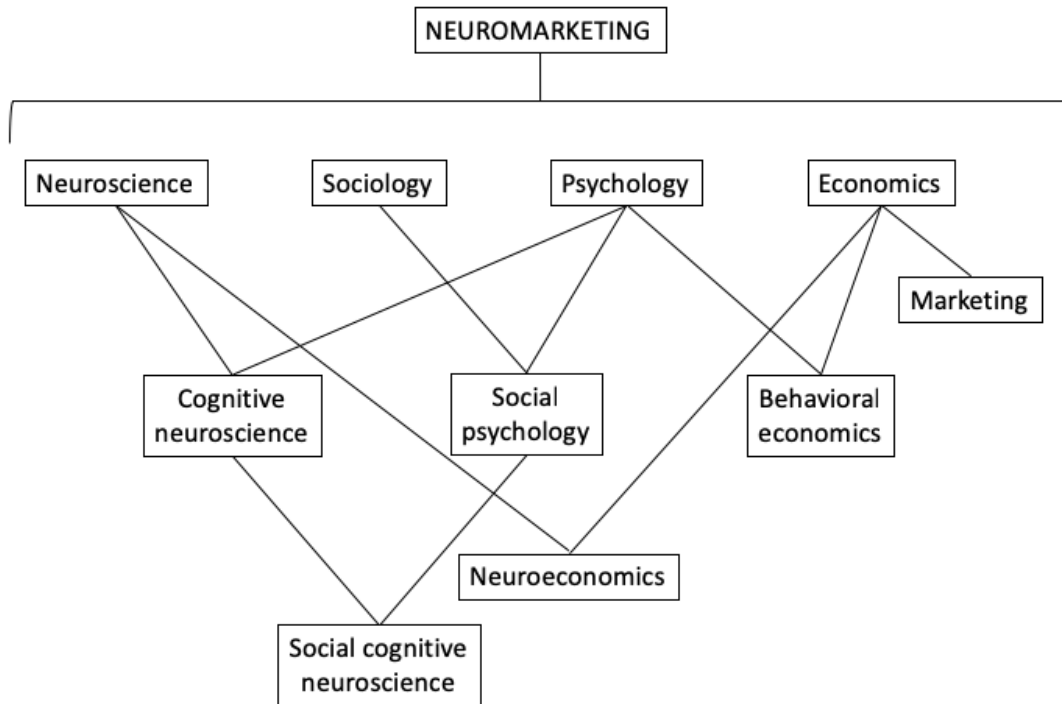


Figure 7. outlines the network of all fields of study associated with neuromarketing, as well as their interconnections.

3.2.4 Neuromarketing Tools

A number of marketing professionals believe that neuromarketing represents an application of methods from neuroscience to investigate marketing phenomena (Gorgiev & Dimitriadis, 2015). Specifically, this comes from the growing utilization of a number of methods that have been traditionally reserved for neuroscience and psychology experimental settings:

- fMRI - Magnetic Resonance Imaging (MRI) scanners have been used in medical practice to measure the flow of oxygenated blood to specific areas of the brain (Parens & Johnston, 2014). The MRI scanner can detect increased amounts of oxygen due to neural activity to specific areas of the brain and produces a structural image of the brain that highlights these specific areas. Functional Magnetic Resonance Imaging (fMRI) is based on the same principle, where it monitors the increase in the blood flow during the exposure to a specific stimulus (Harrell, 2019). As a result, marketers can examine the activation of specific brain

areas as a consequence of that exposure and draw inferences about the cognitive processing that is taking place under such circumstances (Ariely & Berns, 2010).

- EEG - Electroencephalography (EEG) is a tool used to measure electrical activity in the brain (Morin, 2011). More specifically, it measures the change in the electrical potential on the cortex of the brain that happens as a result of a group of neurons transmitting information (Ohme, Reykowska, Wiener & Choromanska, 2019). EEG works by placing the electrodes on the surface of the head and can measure the changes in brain activity second by second, but it can not provide information as to where these changes happen (Sebastian, 2014). The recent developments of this technology have allowed for the usage of wireless EEG caps, so that marketers can observe the brain activity of consumers in their natural environments and generate insights about their attentional and emotional responses as they engage with the brands outside of the lab (Harris, Ciorciari & Gountas, 2018).
- Steady State Topography (SST) - SST is a neuroscience tool that measures changes in the electrical activity of the brain based on the Steady State Visually Evoked Potential (Bercea, 2012). This tool is usually used during a dynamic stimulus, like a video, as it can measure the oscillation in the brain activity (Belden, 2008). This technique was developed by Richard Silberstein and colleagues in the 1990s and today represents one of the main tools used for neuromarketing research by the neuromarketing company Neuro-Insight. Unlike fMRI, SST can measure the temporal changes in the brain activity (Silberstein, 1995; Silberstein et al, 1990).
- Functional near-infrared spectroscopy (fNIRS) - the more recent tool that has been leveraged for neuromarketing studies represents fNIRS. fNIRS measures the flow of oxygenated blood throughout the brain as a result of an increased activity in certain parts by using wavelengths of light to measure oxygen levels in hemoglobin (Krampe, Gier, & Kenning, 2018). Due to its dependency on light, the results largely depend on the distance from the light source. In its mechanism of action, it is very similar to fMRI; however, unlike fMRI, it is mobile and with lower cost, which allows for research to be conducted outside of the lab setting (Meyerding, S. G., & Mehlhose, 2020). Nevertheless, according to Fishburn, Norr, Medvedev & Vaidya (2014), results from fNIRS significantly correlated to the results from fMRI.

- Eye tracking - Eye tracking research in neuromarketing incorporates tracking the involuntary movement of the eyes (Sebastian, 2014). It is a measure of visual attention that can map the person's gaze and the arousal levels as a reaction to a stimulus (dos Santos, de Oliveira, Rocha & Giraldo, 2015). Eye tracking research is conducted by either using specialized glasses that can monitor the gaze and the pupil dilation or with a specialized camera placed on the screen that can track these movements. Today, there are software powered by artificial intelligence (AI) and machine learning and based on thousands of eye tracking study results that can predict with high accuracy where a person will look when presented with a specific visual content (NeuroVision, 2014). Even more so, eye tracking has been incorporated with the virtual reality (VR) research and can be used to measure attention in virtual environments (Bigne, Llinares & Torrecilla, 2016).
- Facial coding - Facial coding is a method for interpreting the micro-movements in the facial expressions as a reaction to a given stimuli by identifying a specific pattern in the facial expressions that is tied to an emotion (Gorgiev & Dimitriadis, 2015). Facial expressions are beyond a person's conscious control and represent an autonomic reaction (Lewinski, Fransen & Tan, 2014). Dr. Paul Ekman has studied the micro-movements of the facial muscles when a person experiences a different emotion, and he has identified a distinct pattern in those movements that are specific for each of the eight basic emotions under Facial Action Coding System (FACS) (Ekman & Friesen, 1978). It is conducted by having a specialized camera that can detect the movements of the facial muscles.
- Galvanic skin response - Galvanic skin response (GSR) represents a physiological reaction of arousal levels to any given stimuli (Orzan, Zara & Purcarea, 2012). Electrodermal activity is an autonomic reaction of the brain stimulating the sweat glands and can not be controlled through conscious processing (Lajante, Droulers, Dondaine & Amarantini, 2012). It is considered a proxy for emotional engagement with the stimuli that is being presented. GSR is often used in combination with other neuromarketing methods in order to provide more contextualized interpretation of the study results.
- Heart Rate and Respiration - Heart rate and respiration measures have been used for decades in measuring emotional responses with a lie detector. Both heart rate and respiration are controlled by the autonomic nervous system and are out of conscious control of a person. As such, they represent a reliable measure of the change in a person's emotional

reaction to a stimuli (Baumgartner, Esslen & Jancke, 2006). Specific patterns in these physiological responses have been associated with different arousal states, such as excitement, anxiety, fear, etc. (De Melo, Kenny & Gratch (2010).

- IAT - Implicit Association Test (IAT) measures the automatic evaluation of the implicit attitudes relative to the specific attributes (Greenwald, McGhee & Schwartz, 1998). The main theoretical principle of the IAT is based on the notion that people behave in a way that is congruent with their attitudes towards that behavior (Ajzen & Fishbein, 1977). And while explicit attitudes can be learned from self-reporting measures, a considerable amount of research findings have demonstrated that those can be misleading (Hsu, 2017). On the other hand, IAT measures implicit attitudes in a way that allows for very little cognitive processing and relies on the automatic responses by asking participants in the research to evaluate the attribute in a matter of a few seconds (Project Implicit, 2011). This approach provides marketers with the understanding of the strength of tested associations that the consumers have towards the target stimuli and enables them to predict future behavior on the basis of consistency between attitudes and behavior.
- Emotional Voice Analysis - Emotional voice analysis represents a tool that is designed to perform analysis of the human voice in an effort to identify human emotional speech (Mitsuyoshi et al, 2007). This method allows for a voice to be detected and associated with a particular primary emotion (Pertrushin, 2000). The system used measures the change in respondent's voice that indicates the psychophysiological stress response present in respondent's voice, which is then associated with the corresponding emotional state (Hafez, 2019; Alonso-Martin, Malfaz, Sequeira, Gorostiza & Salichs, 2013; Orzan, Zara & Purcarea, 2012). While this method has been used in psychology research for detecting a number of mood disorders, it has found its application in advertising research for richer emotional analysis (Wang, Pestana & Moutinho, 2018; Tokuno et al, 2011).

As it can be seen from the overview of the tools used in neuromarketing research, there is a long list of opportunities for marketers to leverage in conducting marketing research. However, all these tools can be further grouped based on the type of measure they provide - physiological, brain activity and response time measures (Gorgiev & Dimitriadis, 2015). First of all, there are tools that are measuring physiological changes in the body as a result of stimuli. These tools include GSR,

heart rate, facial coding, and even eye tracking. The second group of tools includes brain activity measures, such as EEG, fMRI, fNRIS, and SST. While some of these methods measure electrical activity, others explore structural activity in the brain using the blood flow. And finally, there are response time measures, such as IAT, that provide an opportunity to measure the reaction time to given stimuli. Based on the research conducted by Neuromarketing Science and Business Association (NMSBA) in 2018, response time studies have generated the greatest interest over a four-year period. What they all have in common, however, is that since the reactions measured by these tools are automatic and involuntary, there is low likelihood that participants can deliberately influence those responses (Nighswonger & Martin, 1981).

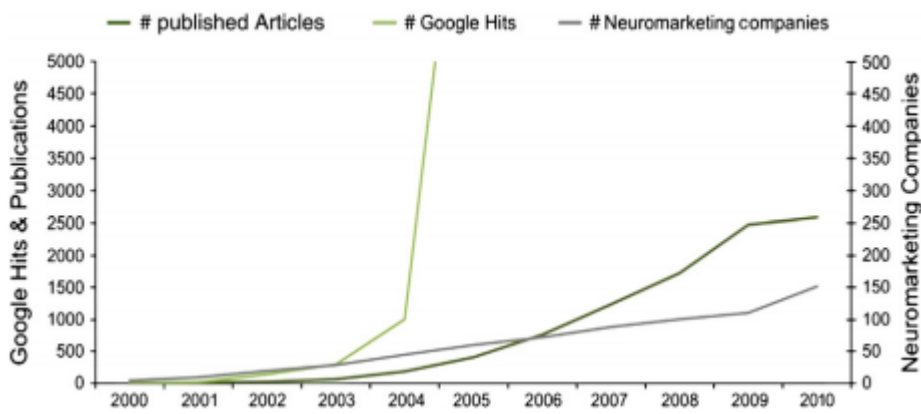
3.2.5 Neuromarketing Studies

One of the indicators for the adoption of an idea is the extent to which this idea is being discussed among the members of a relevant community. According to Bornmann & Mutz (2015), analyses of publications represent a suitable indicator for the growth of science. In particular, bibliometric analyses are a quantitative analysis of the publications that study knowledge generation that is happening within a given field and is used to quantify the research performed. (Ellegaard & Wallin, 2015; van Raan, 2005). Bibliometric method often involves analysis of the content and/or citation of the work published (Wallin, 2005). Content analysis provides qualitative measure of the frequency of occurrence of a specific keyword, while the citation analysis is used as an indicator of the quality of work published (Barth, Haustein & Scheidt, 2014; Waltman et al, 2012). The bibliometric analyses of neuromarketing publications over a period of time provides an insightful observation regarding the growth of a field, as well as the relevancy and the interest for the topic of neuromarketing among the marketing professionals.

Plassmann, Ramsay & Milosavljevic (2012) conducted a study to demonstrate a growing body of research in neuromarketing by looking at the number of published articles, Google search results and neuromarketing companies from 2000 to 2010 (Figure 8). On all accounts, there has been an upward trajectory in the number of search results, one that can be characterized as steady in the area of published results and neuromarketing companies, but with a significant spike in 2004 for Google hits. Similar results have been shown in the work of Cherubino et al (2019) showing the growth in neuromarketing publications on Google Scholar from 2002 to 2018, with a total number

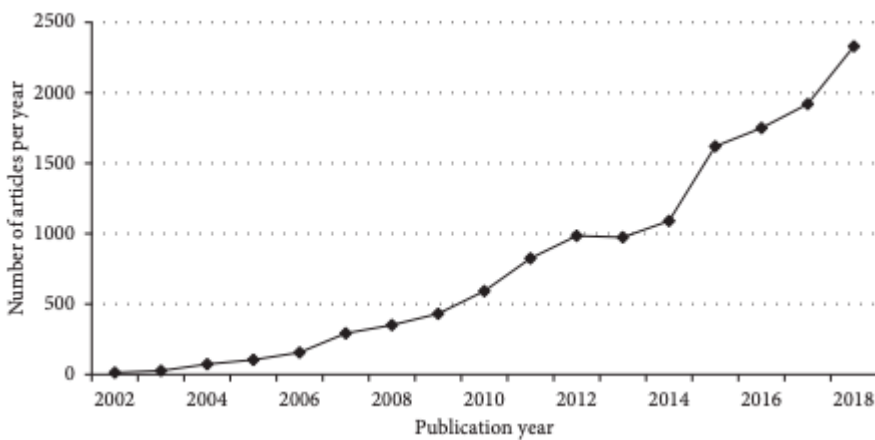
of articles reaching 165,000 (Figure 9). And Hubert and Kenning (2008) reported on a growth in Google search results for neuromarketing from 2003 to 2007 (Figure 10). These are not the only studies that looked at the overall number of neuromarketing papers, however; other researchers have conducted similar analysis, demonstrating similar upward trend (see Lee, Chamberlain & Brandes, 2018; de Oliveira & de Moura Engracia Giraldo, 2017; Lee, Brandes, Chamberlain & Senior, 2017; Gang, Lin, Qi & Yan, 2012).

Figure 8. Growth of Research Applying Neuromarketing Over Time



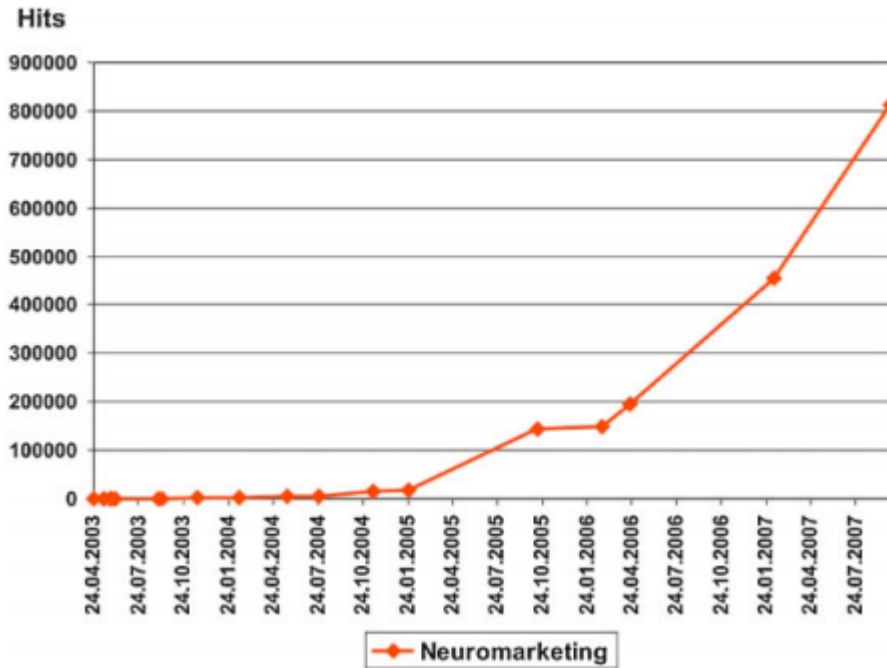
(source: Plassmann, Ramsoy & Milosavljevic, 2002)

Figure 9. Interest in Neuromarketing



(source: Cherubino et al, 2019)

Figure 10. Google Hits on Neuromarketing



(source: Hubert & Kenning, 2008)

In the Web of Science database, there are a total of 574 results for the keyword “neuromarketing”. This number includes all the publications, with the first one recorded back in 2004 (Figure 11). There is visible fluctuation in the number of new publications within the topic of neuromarketing. In 2019, there seems to be 100 new publications in the neuromarketing field, which is the highest number of all years in this timeframe. This is around 17% of all publications being published in this one year. In addition, there is a growing number of citations of neuromarketing articles, indicating the growing recognition of the work produced within this field (Figure 12).

Figure 11. Web of Science Publications for Neuromarketing

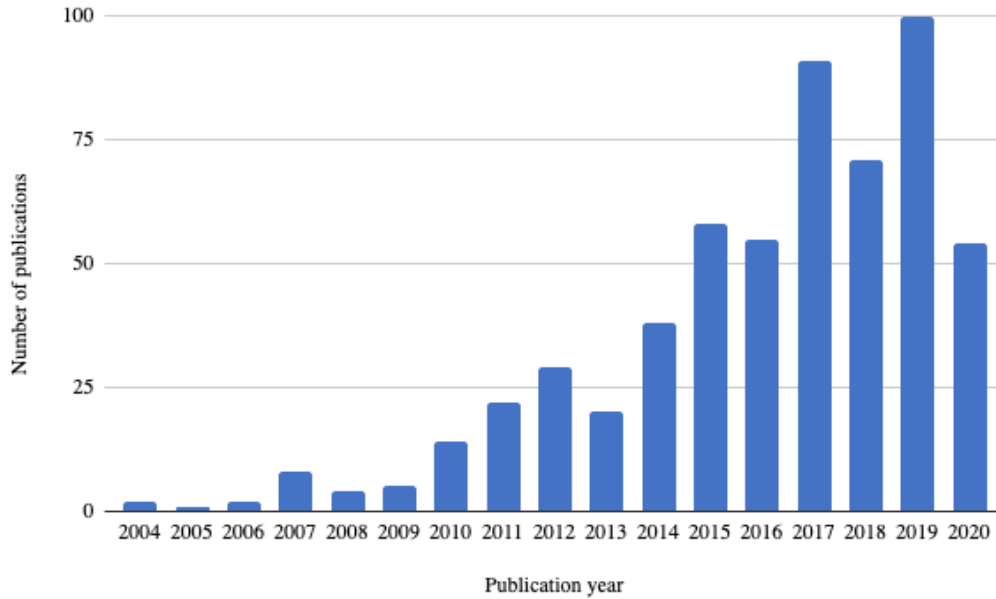


Figure 11. shows the number of results for the search term “neuromarketing” on the Web of Science.

Figure 12. Citations for Neuromarketing

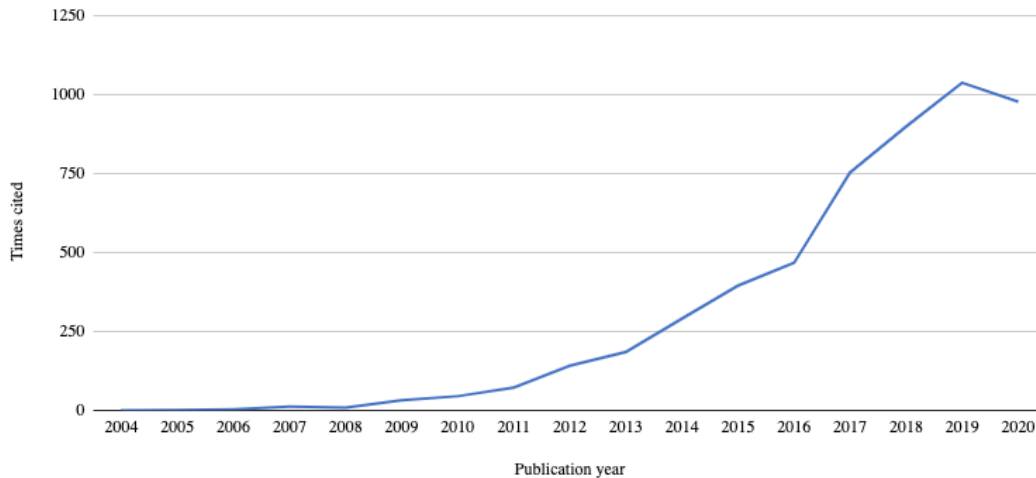


Figure 12. shows the total number of citations of the neuromarketing articles.

However, in order to better understand the trend for neuromarketing publications and have a reference point, the same analyses were conducted for marketing topic. During the same time period, there have been 657,888 published assets with the keyword “marketing”. Figure 13 shows the distribution of these records per year. There is a notable, steady increase year over year for marketing publications, which can be expected for a field that is well established and researched. This is, however, opposite from the neuromarketing trend, where there are visible fluctuations. Similar to neuromarketing, in 2019 there was the highest number of marketing publications recorded, with a total of 63,310, which is close to 10% of all publications during the same timeframe.

Figure 13. Web of Science Publications for Marketing

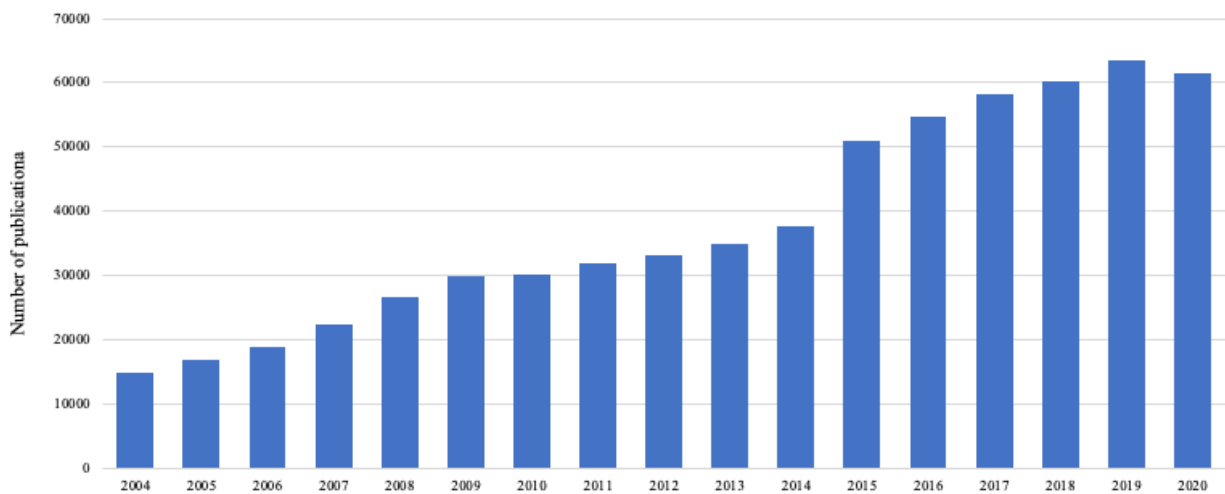


Figure 13. shows the number of results for the search term “marketing” on the Web of Science.

In addition to search results reported by previous studies and the Web of Science records, there are other indicators for the awareness of a topic. Google has a service called Google Trends that offers indication how often people were searching for a specific term at a given time and a preselected location (Gebel, 2019). Figure 14 shows the overall popularity of the topic of neuromarketing worldwide which, despite its also variability over time, shows an upward trend. As a matter of comparison and a reference point to interpret these results, Google Trends were analyzed for marketing worldwide for the same time period (Figure 15). While there seems to be

a similar variability, popularity of marketing as a search term seems to be trending downwards comparatively.

Figure 14. Google trends for neuromarketing worldwide 2004 - 2020

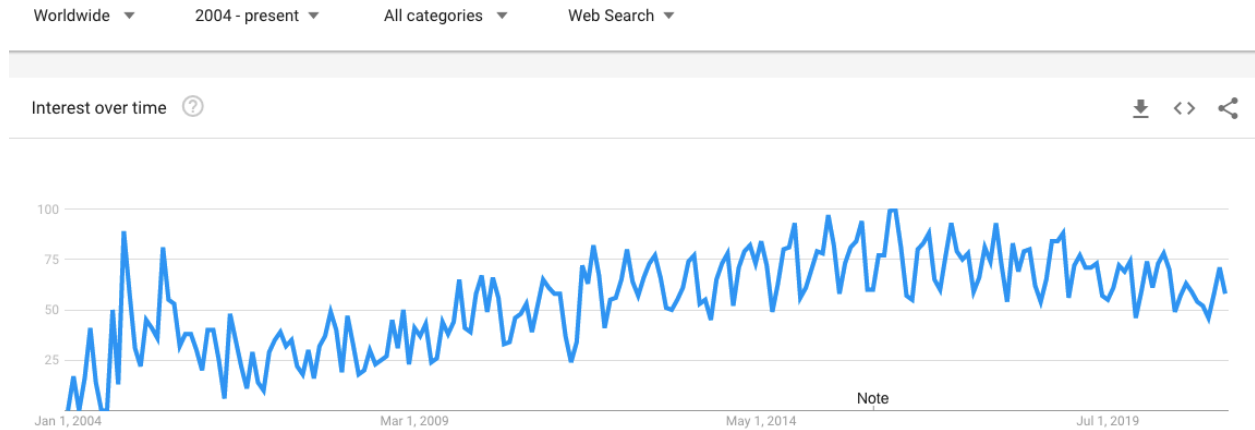


Figure 14. shows the trend in Google search results for neuromarketing during the period of 2004-2020.

Figure 15. Google trends for marketing worldwide 2004 - 2020

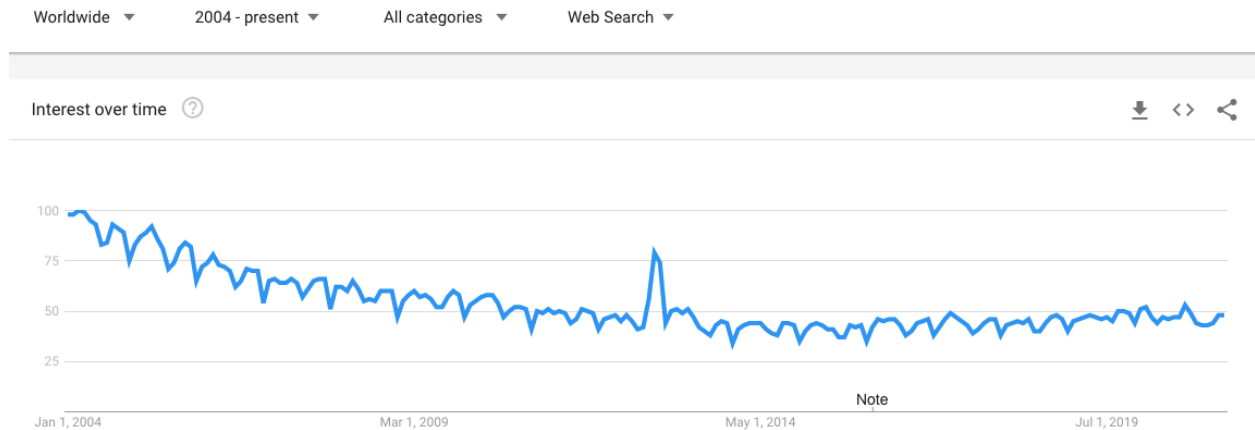


Figure 15. shows the trend in Google search results for marketing during the period of 2004-2020.

According to Yagci, Kuhzady, Balik & Ozturk (2018), the cumulative nature of knowledge suggests that previous publications represent the basis of new knowledge that is being produced. However, Levallois, Smidts & Wouters (2019) argue that scientific knowledge about

neuromarketing is being produced outside of the academic institutions and not primarily by the traditional scientific community. This needs to be acknowledged because the effects on the beliefs and attitudes towards neuromarketing are not only formed based on purely academic pursuits.

Looking at the specific studies within the neuromarketing body of literature, many believe that the first scientific neuromarketing study was performed by Montague and his colleagues (Morin, 2011). McClure, Tomlin, Cypert, Montague & Montague (2004) studied the preference for Coca-Cola and Pepsi using fMRI under two conditions - when the participants knew which brand, they were consuming and when the brand name was not disclosed. The results of the study demonstrated that the actual preference for the drink as indicated by the brain activity depends on whether they knew which brand they are consuming. These findings have led to the growth in application of fMRI and other methods that promise a window into the unconscious processing that has demonstrated a promising predictability of consumer behavior (Venkatraman et al, 2015).

In a similar fashion, many of the studies that are classified as neuromarketing studies, entail usage of fMRI and other neuromarketing tools as a method for marketing inquiry. The review of studies conducted by Fortunato, Giraldo & de Oliveira (2014) demonstrates that neuromarketing has been used to study consumer preferences, their responses to products or services, engagement levels when exposed to advertising as stimuli, as well as pricing decisions. According to Cherubino et al (2019), neuromarketing studies have been conducted to gain more insight across multiple areas of marketing, including the promotional effectiveness of messaging, product choice, package design, service and experience, product pricing, brand value and selection, websites and apps usability, retail shopping and experience, product taste, and product design. In addition, Daugherty & Hoffman (2017) also demonstrated the examples of neuromarketing application, which included celebrity endorsement, media selection and distribution policy. They proposed a taxonomy for existing literature in terms of “*desired marketing outcomes*” which includes consumer attention/arousal, product/brand appraisal, product/brand preference, purchase behavior, memory, and brand extension.

Regardless of what might be accepted as the right taxonomy for reviewing the existing neuromarketing research, it is evident that neuromarketing tools and methodologies are being

implemented across various areas of interest in marketing and are providing added value in the novel insights they uncover. While the test of its applicability is expected to increase as the field begins to mature, it should be expected that these areas of interest will only grow in number and eventually match the areas where marketing research is being conducted.

3.2.6 Criticism of Neuromarketing

While neuromarketing has generated interest among both the academic and the practitioner communities, it has also attracted some criticism (Sebastian, 2014). The first wave of criticism was centered around the ethics of the field. As Senior & Lee (2008) describe in their study, many people were concerned that neuromarketing has the ability to activate the so called “buy button” in consumers’ minds and manipulate their behavior beyond the levels of consciousness. While these concerns have been discredited on the basis of lack of academic evidence, the discourse in the academic community mainly focused on ensuring the protection of individual’s autonomy in decision making and protection from harm as a result in neuromarketing research (Murphy, Illes & Reiner, 2008). As a result, Neuromarketing Science and Business Association (NMSBA) has issued the Neuromarketing Code of Ethics that preserves the ICC/ESOMAR code and ensures the highest ethical standards of the neuromarketing community (NMSBA, 2020). In addition, many scientists from both neuroscience and marketing fields have disputed this criticism on the basis that neuromarketing tools can not read people’s brains, but rather make predictions based on past empirical evidence (Wieckowski, 2019).

The second biggest area of criticism was generated around the topic of validity of neuromarketing research (Ulman, Cakar, & Yildiz, 2015). With the proliferation of neuromarketing, there was an increasing number of neuromarketing service providers with questionable business practices and insufficient scientific rigor in conducting the studies, especially when it comes to controlling for confounding variables and inferring findings that are inconclusive (Ramsay, 2019; Hsu, 2017). This culminated with neuromarketing being labeled a “snake oil” (Devlin, 2017). However, these accusations didn’t stand for long; AdAge has published an article in 2019 representing the scientific basis for neuromarketing and how it can help marketers (Neff, 2019). Indeed, the Advertising Research Foundation (ARF) designed two initiatives, Neuro 1 and Neuro 2, to help marketers evaluate neuromarketing vendors (Stipp, 2015). With these efforts, marketers are

advised to be more careful about assessing the possibilities of neuromarketing and use it in conjunction with traditional approaches for most optimal insights (Fortunato, Giraldo & de Oliveira, 2014).

3.3 How Neuromarketing Addresses Current Marketing Problems

One of the major contributions of neuromarketing is certainly the introduction of new tools that allow marketers to go beyond the self-reporting measures and understand the automatic responses that consumers have towards the specific stimuli (Bell et al, 2018). In addition, neuromarketing is acknowledging that consumer behavior is not always rational and offers insights into the existing patterns into such irrational behaviors by enabling marketers to measure them using these new tools (Chavaglia, Filipe & Ramalheiro, 2011). And even more broadly, neuromarketing offers marketers frameworks that have empirical bases which have in predicting consumer behaviors, not just explaining them (Alvino, Constantinides & Franco, 2018; Morin, 2011). And more importantly, it offers marketers the necessary reliability, validity, and generalizability of these approaches (Iloka & Onyeke, 2020). These frameworks also offer the opportunity for marketers to integrate multiple sources and forms of data in a meaningful way that eventually produce novel and purposeful insights (Breiter et al, 2015).

3.4 Summary of Neuromarketing

Neuromarketing represents one of the latest trends that has been present in marketing for almost two decades now. While there is no one definition that the entire marketing community agrees on, its contributions are recognized and appreciated. Neuromarketing is being seen either as a collection of novel research tools, or as a new research area that enables the generation of new marketing questions to be answered with those tools. Some academics even see it as a new approach that is enriching or changing the very fundamental assumptions about marketing conduct. And the reason behind it is simply because the scientific basis for neuromarketing consists of knowledge from social psychology, behavioral economics and neuroscience. Nevertheless, it is of strategic importance to understand whether neuromarketing is going to be perceived as a new marketing era or a new revolution in marketing, or just another trend that is grounded in contemporary developments.

3.5 Scientific Revolutions

In examining a potentially revolutionary contribution of neuromarketing in the study and practice of marketing, it is important to examine the notion of revolutionary science. The main source of the information for the understanding and articulation of the notion of scientific revolutions can be found in the writings of Thomas Kuhn and his book “*The Structure of Scientific Revolutions*” (Kuhn, 1962). And while his work focuses on the concept of paradigm and paradigm shift, it also provides an account for the process and conditions under which scientific revolution emerges. In addition to Kuhn, there are other philosophers of science that have focused their work on conceptualizing the progress of science. And while there are certain philosophical differences in their views, their account for the structure of scientific progress is very similar (Lakatos, 1978; Laudan, 1978).

According to Kuhn (1962), paradigm represents a set of habits that is well accepted by the scientific community of its time, which outlines the pattern by which all scientific problems are being solved. More precisely, he argues that a paradigm is defined by the scientific community in terms of the commitment its members make to the common problems and methods used to solve these problems. His personal view of science is that of problem-solving nature; Kuhn believed that theory and science should exist in order to provide the tools, such as methodology and conceptual framework that will aid the identification of the solutions for contemporary problems (Kuhn, 1962).

According to Kuhn, scientific development is defined by periods of ‘normal’ and ‘revolutionary’ science: normal science represents a period of adherence to the established scientific paradigm, while revolutionary science represents a period when the current paradigm is being challenged by a competing set of theories (Kuhn, 1962). During the time of normal science, scientists and the academic community are preoccupied with finding solutions to contemporary problems by applying the well accepted and widely shared patterns and exemplars (Kuhn, 1962). By accumulating their achievements, the scientists basically collect empirical evidence for the given theory, further establishing its dominance. However, a time comes, or rather problems emerge, when established theories cannot provide predictive outcomes. Such rare instances are usually considered anomalous and often neglected by the scientists at first, but continuous emergence of

anomalies creates crisis and gathers the interest of few members of the community who try to find the solution to the problems by implementing new theories. Gleick (1996) uses an appropriate metaphor to describe this:

“Its practitioners undergo a transformation of vision, like people who stare at that optical-illusion silhouette of a candlestick until they suddenly see it flip into a pair of human faces. The paradigm shift, in contrast to “normal science,” means crisis. It means tearing down an established framework and reassembling the pieces into something quite new.”

According to Kuhn's perception of the scientific revolution, there are three phases that occur. First of all, a pre-paradigm period takes place, which is characterized by continuous debates over the validity of scientific problems, methods used and standards for their solution. This phase represents the period of crisis during which new schools of thought emerge and competing alternative paradigms are brought to light. However, sometimes during these activities more anomalies are identified and isolated and, as the existing theory is not able to provide solutions for pending problems, new theories are brought to test. With finding promising contestants for the new ruling paradigm, the science enters the second phase of the revolutionary science. At this stage, new problems are being identified, new methodologies are being tested, interest of the scientific community is rising to the point of achieving critical mass, the previous anomaly has gathered sufficient empirical evidence to be perceived as the new law, and a new paradigm is being established (Kuhn, 1962). After the debates are resolved and a new theory is accepted, the normal science period takes place as the final stage of the scientific revolution.

It is reasonable to expect from new theories to be better than their predecessors, or rather to have better predictive power, in order to be accepted by the scientific community; this is the point on which everybody agreed, from Kuhnian era onwards (Shapin, 1996; Feyerabend, 1993; Barker, 1992; Lakatos, 1980; Laudan, 1978; Popper, 1972; Hempel, 1966; Kuhn, 1962). However, this type of change is not always easily accepted. Apart from empirical validation and cognitive rationalization, there are a number of factors that play an important role in accepting a new worldview. That is why it is necessary to take into consideration more than just interest in and scientific contributions of a topic when examining the extent of its adoption.

3.6 Chapter Summary

The current marketing era has numerous problems that can not necessarily be addressed from within the field. As a matter of fact, exploration into the history of science suggests that interdisciplinary approaches have been important to overcome impasses similar to the one that the marketing field is currently experiencing. Neuromarketing is a new area that leverages knowledge from multiple disciplines, including social psychology, behavioral economics and neuroscience, and it has the capability to address the challenges that the marketing field is currently experiencing. Nevertheless, it is still unknown what the future of neuromarketing will turn out to be, whether it will be treated just as the latest trend in science and practice of marketing or if it will be accepted as a revolutionary new direction for marketing.

Previous discussion indicated there has been a continued interest in neuromarketing over the years with significant number of assets published, especially in recent years. The awareness of neuromarketing generated by these publications represents the basis for the formulation of beliefs and attitudes towards neuromarketing that marketing professionals hold. However, further research is needed in order to understand the content of those attitudes and beliefs. For that reason, the cumulative influence of the existing knowledge is further explored within the scope of this research.

The main motivation behind this research is to understand and answer whether neuromarketing represents a revolutionary era as a result of the influences for a number of fields that are providing novel insights into consumer behavior. In order to answer this question, the current beliefs, attitudes and intentions that marketing professionals hold towards neuromarketing need to be analyzed. The next few chapters focus on exploring these areas of neuromarketing adoption.

Chapter 4. Identification of Gaps and Theoretical Approach to Address Them

“What worries me is the acceptance of the importance of feelings without any effort to understand their complex biological and sociocultural machinery.”

- Antonio Damasio (2005)

4.1 Introduction

Scientific revolutions represent an important concept for overall scientific development, as they initiate the change in the assumptions, the rules and the methodologies of scientific inquiry (Kuhn, 1962). More so, their role is crucial if science is perceived as a problem-solving activity (Laudan, 1977; Kuhn, 1962). Each time scientific revolution is observed, it brings its own set of problems to be solved, together with the cognitive and methodological tools to solve them; however, when the problems arise that can not be solved with what the current dogma that the field uses, a search for the direction in which the science will evolve starts (Barker, 1992; Kuhn, 1962). This newly found idea, or theory, or framework can further represent a catalyst for a necessary revolution (Henriksen, 2013). The superiority of the new idea is advocated among other members of the community up to the point when a critical mass is reached, from which point on the diffusion process continues itself, reaching the necessary social structures for its acceptance (Faria, Besancenot & Novak, 2011; Rogers, 2003; Gladwell, 2002). This is the process that Kuhn (1962) describes as a scientific revolution.

Similar patterns have been seen in marketing and management science, but there doesn't seem to be a consensus with regards to actual acknowledgement of distinct revolutions in marketing progress. So far, the author has identified eight different eras in marketing science throughout its history that seem to have marker of a revolutionary changes. Furthermore, the discussion is being initiated about the ending cycle of the last presumed era, the digital era, while on the other side of the spectrum a new theory has been rising (Mehta, Saxena & Purohit, 2020; Vitorino, Lisboa & Antunes, 2020; Shukla, 2019; O'Reilly, 2013; Cooperstein, 2012).

Recently, there has been an increased interest in neuroscience from a number of different fields, and new approaches or even fields of inquiry labeled with the prefix “neuro” have emerged as a

result. This overall interest also included neuromarketing. However, neuromarketing as an interdisciplinary field has shown the potential to solve some of the important problems marketing has been facing for years, by applying the knowledge from its underlying fields, as well as to address some new and rising problems (Genco, Pohlmann & Steidl, 2013).

The aim of this chapter is to describe the theoretical framework that guided the inquiry about the level of adoption of neuromarketing and its perceived viability for a new revolution in marketing, as outlined by the research objectives. The theoretical framework was based on the Theory of Planned Behavior, Prototype Willingness Model, and Technology Acceptance Model, as the primary models that could explain the specifics of neuromarketing adoption behavior. To collect evidence based on this framework, three studies were designed - a bibliometric exploration of the awareness level of neuromarketing, a qualitative elicitation of the beliefs towards neuromarketing, and a quantitative study combining survey and implicit association test to build a predictive model of neuromarketing adoption. The following section explains in detail the reasoning behind these research design choices.

4.2 Identification of the Knowledge Gap in Literature

The previous literature review revealed the following conclusions about the nature of evolving marketing field:

- Marketing is a very dynamic field, with possibly many eras that have dominated over its hundred years of existence (Jones & Richardson, 2005).
- There are indications that the current marketing era is running its course, with specific problems still unresolved (O'Reilly, 2013).
- Literature also suggests there are some indications for the emergence of the new revolution in marketing (Cooperstein, 2012).
- Records from the history of science regarding the sequence of events that take place before a scientific revolution takes place suggest the same. This sequence includes the acknowledgement that there are still unresolved problems in the field and demonstrates the evidence that the answers are being searched in the fields other than marketing. This provides the basis for the new schools of thought being formed and scientific papers being published (Barker, 1992; Kuhn, 1962).

- At the same time, neuromarketing is receiving a lot of attention and is believed to have the theoretical foundation and methodologies to solve these problems (Hsu & Cheng, 2018; Breiter et al, 2015; Achrol & Kotler, 2012; Moore, 2005). Nevertheless, even with the growing rate of application of neuromarketing, there hasn't been any consensus reached about neuromarketing representing the new revolution in marketing.

With all this evidence taken into consideration, the question arose regarding neuromarketing being the next era in marketing science and practice. As was indicated in the previous discussion on the history of marketing, there are many indicators necessary to suggest for an idea to reach the level of an era. And while neuromarketing literature seems to include those factors, the academic community is still divided (Lee, Chamberlain & Brandes, 2018; Lim, 2018; Daugherty & Hoffman, 2017). To this day, there are no known efforts to scientifically and empirically explore where neuromarketing, and marketing by its proxy, is headed. Most of the neuromarketing papers do suggest the future potential of the field and provide recommendations how to explore it further, but not to the extent where it suggests a clear path forward for marketing professionals (Shahriari, Feiz, Zarei & Kashi, 2020; Cortés & García, 2017).

Plassmann, Venkatraman, Huettel & Yoon (2015) argue that the field of neuromarketing will grow by introducing methodological developments and innovations. In addition, they believe that the growing community of consumer neuroscience academics and practitioners will be available to train new experts, which will further advance the field itself. This will allow for a much broader application that will impact the entire area of marketing. In the paper where they proposed a new definition of neuromarketing, de Oliveira & Giraldo (2017) stated that neuromarketing goes “*beyond the consumer behavior field*” (p. 25). They believe that the implications of neuromarketing affect areas of strategic and internal marketing, brand equity, and innovation, among others, because it offers greater differentiation from the other fields. Similarly, Agarwal & Dutta (2015) see neuromarketing as a solution that will allow marketers to develop new theories based on the evidence from multiple modalities that leads to better understanding of markets and consumers, while Daugherty & Hoffman (2017) believe that these new theories can help provide a more targeted marketing outcome. And on top of that, Lee, Broderick & Chamberlain (2007)

believe that neuromarketing can help “*with developing a greater understanding of a critical area of contemporary human society*” (p. 203).

Needless to say, this view of the future of neuromarketing is based on the vision that a selected number of academics hold. As the previous discussion on the neuromarketing definitions showed, it does not reflect where the field is today. In order to better comprehend whether marketing progress is headed that way, it first needs to be assessed what the current status of neuromarketing is and how far from that vision the industry is. The evidence in that respect will be able to answer a very basic question of whether marketing is experiencing revolution as a result of the influences from neuroscience, behavioral economics and social psychology, which will shape the future of neuromarketing.

The information, or even scientific indication, whether neuromarketing is the future of marketing science and practice is highly required because of the investment and trust being given, or maybe not being given, to neuromarketing. Neuromarketing still represents a more expensive approach compared to the traditional methods to answering the questions that marketing professionals have about the marketing strategy. Nevertheless, marketing professionals are sometimes reluctant to make the investment that has long-term return without having any certainty that those returns will still be relevant in the future (Levallois, Smidts & Wouters, 2019; Lahmiri, 2017). That is why it is important to provide scientific evidence that can facilitate decision-making and allow for a more progressive thinking that helps mitigate against ad hoc approaches to marketing inquiry. The author believes that a key contribution of this study is to shed light on any empirical information, regardless of the results, that could facilitate the decision in strategy development and focus resource allocation, especially in regions such as South East Europe where neuromarketing is marginally present.

4.3 Research Problem

Each of the gaps revealed from the literature provide an opportunity for a new research study. However, all those gaps combined raised one very important question to which all marketing professionals would like to have an answer to. Therefore, the research efforts made with this thesis were all focused on answering the following:

Is marketing experiencing a revolution emerging as a result of the influences from neuroscience, behavioral economics and social psychology?

4.4 Research Approach

Based on the gaps that have been identified in the academic literature regarding the current turbulences in marketing and its uncertain future, there seems to be the need to establish a way to empirically support the predictions of the future. The following section is focused on identifying the appropriate theoretical framework within which this exploration can be conducted. As a result of extensive analyses, the theory of planned behavior is being proposed, combined with the elements of prototype willingness model and technology acceptance model, as the guiding principles in predicting future developments of marketing science and practice, with detailed methodology outlining the study of explicit and implicit attitudes towards neuromarketing among marketing professionals and their behavioral intentions and willingness to adapt neuromarketing practices and principles (Gerrard, Gibbons, Houlihan, Stock & Pomery, 2008; Ajzen, 1991; Bagozzi, Davis & Warshaw, 1992). By applying this research approach, it was possible to understand the current status of neuromarketing and contribute towards providing the answer to the previously stated problem. However, absence of similar studies pointed to a major gap and this research had the opportunity to solve the problem by applying the theoretical framework.

4.4.1 Ontological and Epistemological Background

Regardless of the nature and goals of different studies, every research has the goal of expanding the knowledge. However, what differs from study to study is the strategy for acquiring this knowledge. Research approach represents a detailed plan for conducting the research, from its philosophical assumptions to the detailed procedures for data collection and analysis (Crewell, 2013). Primarily, the research is being defined by the principles of epistemology, the theory of knowledge; epistemology helps researchers define what knowledge is and how it can be created (Burrell & Morgan, 1979). While some philosophers believe that knowledge is objective and needs to be empirically proven, as claimed by positivism, others believe that knowledge represents a subjective meaning, as claimed by interpretivism (Savall & Zardet, 2011). This debate further leads into the ontological issues of research, which denotes the nature of the reality of that

knowledge and its categories (Almeida, 2013). Philosophers following objectivism argue that there can be only one reality and one truth; on the other hand, believers of constructivism claim that the truth is internally created, which implies the plurality of truth (Jonassen, 1991). The affiliation with one school of thought in this respect, ultimately, leads the researcher to accept the orientation of the research conduct, which can be either deductive, which implies that researcher starts with a broad theory s/he wishes to test and goes further into the particularities of the issue, or it can be inductive, which requires the researcher to start with the issue and take it further to the formulation of a new theory (Shye, 1988). The decisions made at this level of research process later define whether the research employs qualitative or quantitative strategy (Bryman, 2001).

Going back to the research question previously defined, the resolution of the problem that is expected requires empirical evidence for intentions and willingness of marketing professionals to adopt neuromarketing, which will lead to the prediction towards the likelihood for either existence or absence of a revolutionary shift. However, the validity of such prediction depends on the number of factors that describe and predict behavioral willingness and intentions, which include positive attitudes towards neuromarketing, both implicit and explicit, positive social norms towards neuromarketing, low perceived barriers, positive perceptions towards a prototype neuromarketers, as well as perceived usefulness and ease of use of neuromarketing principles and practices.

Therefore, the knowledge that was created by this research affiliates more with the positivist philosophy, where the objectivism of ontological assessment is pursued. In order to achieve that, a deductive approach to research has been employed, which leads to quantitative data collection strategies. By applying this research approach, the findings contributed towards providing the answer to the previously stated problem. However, as there is no knowledge of similar research on predicting revolutionary shifts, per se. That is why applying the theoretical framework is believed to be the most appropriate approach to solve the problem, especially using the frameworks that have been previously applied to studying acceptance of new ideas or behaviors.

4.4.2 Theoretical Framework

In order to understand a novel behavior, theoretical framework as a research approach is being used to guide the inquiry and provide understanding of the relationships between all the relevant

parameters (Evans, Coon & Ume, 2011; Malhotra & Birks, 2007; Glasman & Albarracin, 2006; Armitage & Conner, 2001). And, specifically, in order to understand the concept of predicting neuromarketing behavior, the author applied the theory of planned behavior (TPB) as the main guide through the research inquiry. This theory has been often used to guide research on different sorts of behavior, all having significant societal scope and influence (Marthadiansyah, Meutia, Mukhtaruddin, & Saputra, 2013; Robin, R., McEachanab, Connerb, Taylorb & Lawton, 2011; Glasman, & Albarracin, 2006; Albarracin, Fishbein, Johson & Muellerleile, 2001; Armitage & Conner, 2001; Ajzen, 1991).

The theory is considered as “one of the most popular social-psychological models for the prediction of behavior” (Ajzen & Cote, 2008, p. 301). Even with all the praises and critique, one of the meta-analyses “*provides evidence supporting the use of TPB for predicting intentions and behavior*” (Armitage & Conner, 2011, p. 485). Apart from its high acknowledgement within the academic community, the reason for choosing this theory came from the fact that the theory of planned behavior has been used in the marketing literature, as well. Some of the studies that applied this theory to predicting consumer behavior include research directed at predicting behavioral intentions to buy environmentally friendly products and adoption of e-commerce (Pavlou & Fygenson, 2006; Kalafatis, Pollard, East & Tsogas, 1999).

Nevertheless, TPB by itself did not cover all the bases in providing the necessary evidence for predictability of neuromarketing adoption level. As it was discussed in the previous chapter, neuromarketing also entails the usage of technologies that are considered to be new to marketers, such as fMRI, EEG, eye tracking, etc. Therefore, it was necessary to take into consideration the theoretical framework that has shown significant evidence in predicting future behaviors which are specifically related to the adoption of new technologies (Tung-Liang, Hsu-Kuan & Shu A-Mei, 2014). The Technology Acceptance Model (TAM) explained the relevant factors that determine the adoption of novel technologies by focusing on the nature of the characteristics of these technologies (Ashraf, Narongsak & Seigyoung, 2014).

It is also being acknowledged that not all behavioral intentions are necessarily planned, or even rational, for that matter. Many of the behaviors observed in the scientific literature emerge as a

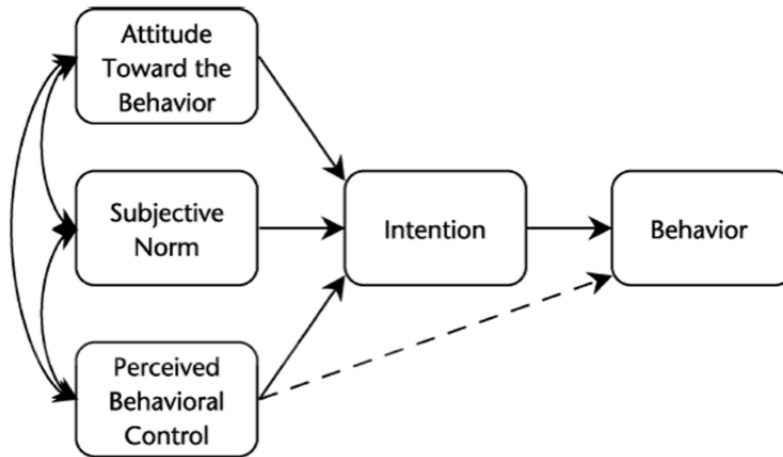
result of a desire to be affiliated with a specific group. The Prototype Willingness Model (PWM) is a theoretical framework that describes the intentions to engage in such behavior that have strong social components to adopt behaviors in order to be accepted by a specific group that is perceived as favorable (Gibbons, Gerrard, Blanton & Russell, 1998). In the context of neuromarketing, it was important to study to what extent the attractiveness of affiliation with the neuromarketing community is influencing the decisions of marketing professionals to adopt neuromarketing principles and practices.

The following section examines in detail the principles and empirical evidence of the three theoretical frameworks, namely TPB, TAM and PWM, to better understand the applicability of each in predicting the level of adoption of neuromarketing.

4.4.3 Theory of Planned Behavior

According to Ajzen (1991), human behavior represents a function of behavioral intentions to perform the behavior and perceived behavioral control towards the behavior; higher the motivation to perform the behavior and higher the perceived control over that behavior, the higher the likelihood for performing the behavior. Therefore, in order to predict certain behavior, one needs to be able to predict the behavioral intentions and perceived behavioral control, which is what the theory of planned behavior suggests (Ajzen, 1991). According to the theory of planned behavior proposed by Ajzen (1985), intentions to perform the behavior are defined by the attitudes towards that behavior and the subjective norms regarding the perceived social pressure towards performing that behavior, and also perceived behavioral control to perform behavior (Figure 16). All the three factors that predetermine behavioral intentions are believed to be rooted in beliefs, aggregated for the specific behavior (Ajzen, 2005). Nevertheless, its relative importance in predicting behavior can vary from situation to situation; it has been found that some behaviors can be predicted only from the attitudes towards the behavior, while some also require subjective norms or even all three factors for prediction validity (Ajzen, 2005; Ajzen, 1991). Nevertheless, several meta-analyses of empirical results found stronger correlation between attitudes and behavioral intentions than correlation between intentions and either subjective norms or perceived behavioral control (Ajzen & Cote, 2008).

Figure 16. The Theory of Planned Behavior



(Source: Ajzen, 2005)

4.4.3.1 Attitudes

Attitudes represent one of the first factors considered in the study of predicting behavior; more so, the study of attitudes was the initial focus of social psychology as an independent field (Ajzen & Fishbein, 2005). Simply put by Bohner & Dickel (2011), attitudes represent an evaluation of an object. More precisely, Ajzen (2005) defines attitudes in the following manner:

“The actual or symbolic presence of an object elicits a generally favorable or unfavorable evaluative reaction, the attitude toward the object. This attitude, in turn, predisposes cognitive, affective, and conative responses to the object, responses whose evaluative tone is consistent with the overall attitude” (p. 22).

According to Myers (2010), attitudes have dual nature and can be either explicit or implicit; while explicit attitudes represent cognitively reached evaluation, implicit attitudes are believed to be automatic evaluations easily accessible in memory. Although both have predictive tendencies, sometimes there can be discrepancies, which led researchers to conclude that the highest predictability of intentions is found when explicit and implicit attitudes are consistent (Bohner & Dickel, 2011; Greenwald, Poehiman, Uhlmann & Banaji, 2009; Myers, 2010).

In the discussion about attitudes' ability to predict behavior, social psychologists have revealed important consideration, though. In pursuing predictive validity of attitudes, distinction needs to be made between general attitudes and behavior-specific attitudes (Ajzen & Fishbein, 2005). While global attitudes can be predictors of behavioral patterns, attitudes towards specific behavior represent reliable indication of specific behavioral intentions (Ajzen & Fishbein, 2005; Armitage & Christian, 2003; Ajzen, 1991). More so, as Ajzen & Fishbein (2005) state, empirical evidence shows that "specific behaviors can be predicted quite well from compatible measures of attitude toward the behavior in question" (p. 183). The more stable and easier to recall attitudes are, more strongly they can predict behavior (Glasman & Albarracin, 2006).

4.4.3.2 Subjective Norms

People as social beings experience to certain extent pressure from their social environment to behave in a particular matter (Manning, 2009). One of the examples of such social influence has been discussed in response biases. Nevertheless, the individual's perception of social pressure towards performing or not performing particular behavior represents his/her subjective norm (Ajzen, 1991). Normative beliefs or beliefs that a relevant social group approves or disapproves particular behavior are the ones that predetermine social norms; according to expectancy-value model, social norms represent summation of normative beliefs and motivation to comply with those beliefs (Ajzen & Cote, 2008; Ajzen, 1991).

Even though social norms represent a significant contributor to human behavior, its ability to predict behavioral intentions rates lower than any of the other two elements of the theory of planned behavior (Armitage & Conner, 2001; Ajzen, 1991). According to Manning (2009), when put in context of predicting intentions and behavior, distinction needs to be made between descriptive norms, that underlie beliefs about what behaviors others engage in, and injunctive norms, representing beliefs about behaviors others approve or not. Since the majority of the studies using the theory of planned behavior take into consideration only injunctive norms, the inclusion of descriptive norms might provide more promising predictive results of subjective norms (Manning, 2011).

4.4.3.3 Perceived Behavioral Control

As it can be seen from Figure 16, perceived behavioral control is the only element of the framework that influences behavior both directly and via mediation, through intentions. The reason for such a conclusion comes from the fact that the performance of some behaviors is not under willing control (Armitage & Conner, 2001). Perceived behavioral control defines a person's perception of how much capacity and opportunity she/he has towards performing particular behavior, and it represents a function of control beliefs about existence of factors that facilitate or obstruct the performance of a particular behavior (Ajzen, 2005; Ajzen, 1991; Ajzen, 1985). According to Zolait (2014), elements that define perceived behavioral control can be both internal, such as self-efficacy, and external, such as resources and opportunities.

Perceived behavioral control represents a very important element of the theory of planned behavior as it is the only one believed to be able to predict behavior directly; however, its predictive abilities greatly depend on the actual control (Armitage & Conner, 2001). In addition, Ajzen & Cote (2008) based their argument that attitudes have higher predictive abilities than perceived behavioral control on the following findings:

“For a wide range of behaviors, attitudes are found to correlate well with intentions; across the different meta-analyses, the mean correlations ranged from .45 to .60. For the prediction of intentions from subjective norms, these correlations ranged from .34 to .42, and for the prediction of intention from perceived behavioral control, the range was .35 to .46” (p. 304).

4.4.4 Prototype Willingness Model

As the previous discussion shows, behavioral intentions represent reliable predictors of human behavior, at least to a certain point. The reason for this, according to Gibbons, Gerrard, Blanton & Russell (1998), lies in the relationship between attitudes and behavior, which represents logical and rational sequence. However, as one of the previous discussions has shown, not all behaviors are reasoned and planned. According to Ravis, Abraham & Snook (2011), behavioral willingness can provide better measure for predicting certain behaviors than behavioral intentions, as it represents a motivation to engage in certain behaviors without any direct premeditation.

There is evidence that suggests that behavior can happen without the previous intentions to perform such behavior (Bargh, 2013; D'ostilio & Garraux, 2012). Specifically, research studies that investigated specific risk behaviors among adolescents have reported that young people engage in smoking and drinking even though they do not show behavioral intentions that would suggest it (Jessor, Donovan, & Costa, 1991; Leventhal & Cleary, 1980). The results of these studies indicated that by identifying themselves with the group of people that smokes or drinks and by pursuing that image, adolescents engaged in this specific behavior. This aspect of identification with a social image of a desired group of people is explored through behavioral willingness to engage in specific behavior. Apart from health risk behaviors, the prototype willingness model has been used in predicting job and career selection, where the results suggest that the prototype model “*did significantly predict job preferences*” (Moss & Frieze, 1993, p. 293).

4.4.4.1 Prototype

It is believed that behavioral willingness represents a function of attitudes towards certain behavior, subjective norms to engage, past behavior and prototype that is associated with that behavior (Gibbons, Gerrard, Blanton & Russell, 1998). The reason behind this, as explained by Gibbons & Gerrard (1995), can be the following:

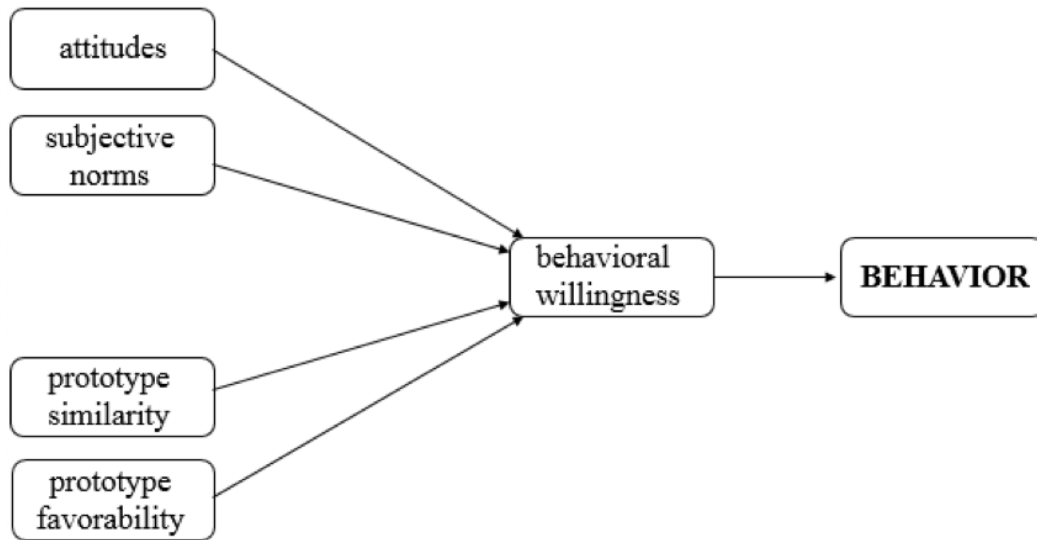
“...when people are considering joining a particular group they will often compare themselves with the prototype that they associate with that group. The closer the match between the self (concept) and the prototype, the greater the interest in joining the group” (p. 505).

In this context, the prototype is believed to be a representative of a specific group of people, a group that can be easily identified and distinguished, that performs a specific behavior (Rivis, Abraham & Snook, 2011; Gibbons & Gerrard, 1995). A prototype is correlated to the clear social image of a specific group that shares particular characteristics and takes part in particular behavior (Gibbons, Gerrard, Blanton & Russell, 1998). In social psychology, researchers use the prototype to investigate behavioral willingness of individuals to engage in studies behavior (Figure 17). As

explained by the prototype willingness model, behavioral willingness is influenced by prototype similarity and prototype favorability (Rivis, Abraham & Snook, 2011).

Prototype similarity refers to the level a person identifies with the prototype, where higher level of identification indicates higher willingness to engage in behavior; on the other hand, prototype favorability refers to the evaluation of the prototype, where higher favorability seems to indicate higher likelihood to engage in behavior (Gibbons & Gerrard, 1995). In general, prototype preference stems from the cognitive mechanism that suggests that prototypes are more salient and, thus, easier to process (Winkielman, Halberstadt, Fazendeiro & Catty, 2006). Rivis, Abraham & Snook (2011) have noticed a significant relationship between the similarity and favorability; as they argue, the power of prototype favorability to predict behavior increases as the person's identification with the prototype increases. In other words, greater perceived similarity between the individual and the prototype has resulted in higher reliability of prediction one's behavior by observing his or her favorability of the prototype.

Figure 17. Prototype Willingness Model

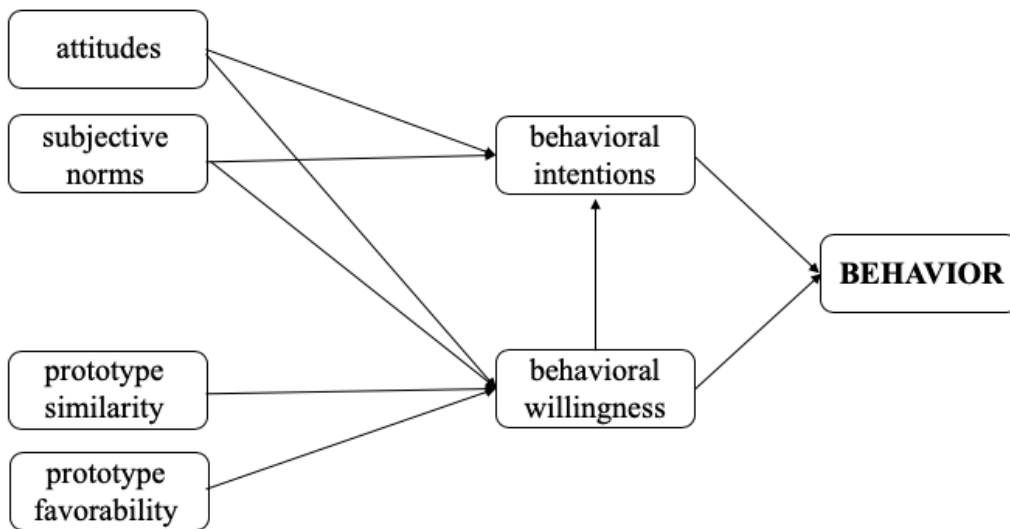


(Source: composed by author based on Gibbons & Gerrard, 1995)

4.4.4.2. Theory of Planned Behavior and Prototype Willingness Model

The use of a research approach that combines the theory of planned behavior and the prototype willingness model is not new among academics. According to Hyde & White (2010), while the theory of planned behavior investigates reasoned decision-making, the prototype willingness model unveils the reactive or spontaneous decision process. The relationship between willingness and intentions has been found in previous research studies, but it is believed they are independent constructs (Gibbons, Gerrard, Blanton & Russell, 1998). However, Abedini, MorowatiSharifabad, Kordasiabi & Ghanbarnejad (2014) argue that when the opportunity presents itself, especially for risky behaviors, the prototype can influence behavioral intention (Figure 18). Having this in mind, the existing literature suggests a combination of the two models in order to enhance the predictive validity of the theory of planned behavior, especially when it is unclear which path dominates the decision-making process (Frater, Kuijer, & Kingham, 2017; Ravis, Abraham & Snook, 2011; Hyde & White, 2010; Zimmermann & Sieverding, 2010; Ravis, Sheeran & Armitage, 2006).

Figure 18. Prototype Willingness Model and Theory of Planned Behavior



(Source: composed by author based on Abedini, MorowatiSharifabad, Kordasiabi & Ghanbarnejad, 2014)

4.4.5 Technology Acceptance Model

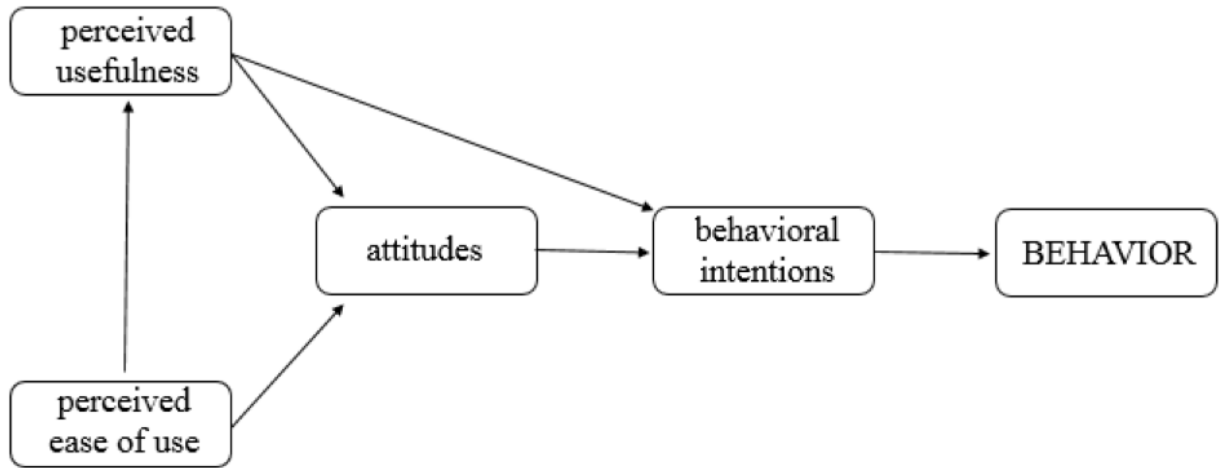
In studies where behavioral intentions are measured towards usage or adoption of technology-based products or habits, the theory of planned behavior seems to be considered alongside with

the technology acceptance model (Ashraf, Narongsak & Seigyoung, 2014; Tung-Liang, Hsu-Kuan & Shu A-Mei, 2014). The reason behind such pairing comes from the assumption that elements defining technology acceptance have influence on forming attitudes towards adoption of this technology, which is, as it has been discussed previously, one of the elements determining the behavioral intentions (Zhu, Lin & Hsu, 2012). In addition, perceived behavioral control is often considered as one of the main parameters determining the presence or absence of obstacles for technology adoption (Ashraf, Narongsak & Seigyoung, 2014). However, in comparison to the theory of planned behavior, this model is more concentrated on the characteristics of the technology itself and how this technology is perceived with potential users (Figure 19).

4.4.5.1 Perceived Usefulness and Perceived Ease of Use

As this model suggests, there are two elements that determine behavioral intentions to adopt technology, defined as perceived usefulness and perceived ease of use (Davis, 1989). Perceived usefulness represents the level to which the particular technology is believed to help individuals perform certain tasks better; perceived ease of use, on the other hand, can be considered as the level of effort individual believes will need to be invested in using this technology (Hess, McNab & Basoglu, 2014; Davis, 1989). Perceived usefulness and perceived ease of use, as behavioral beliefs, are believed to be the most influential beliefs that influence technology usage (Tung-Liang, Hsu-Kuan & Shu A-Mei, 2014). A study conducted by de Guinea, Titah & Leger, (2014) has shown both implicit and explicit determinants of these beliefs; while perceived usefulness seems to be influenced by engagement and distraction, perceived ease of use is influenced by frustration and memory load. In addition, recent studies have revealed that even though both elements have direct influence on attitudes, perceived ease of use has also direct effect on perceived usefulness (de Guinea, Titah & Leger, 2014; Zhu, Lin & Hsu, 2012). This is especially the case in early adoption stages of information systems (Ashraf, Narongsak & Seigyoung, 2014). Nevertheless, combined together, these two elements of the technology acceptance model help researchers determine an individual's intentions to use technology based on how easy and helpful it is, through the mediating effect of attitudes.

Figure 19. Technology Acceptance Model



(Source: compiled by author based on Davis, 1989)

4.4.5.1 Neuromarketing and Technology Acceptance Model

Up to this point, technology acceptance model (TAM) has been used in research to evaluate acceptance of a wide variety of technology-dependent behaviors, such as online shopping, enterprise systems usage, online video gaming and Internet use (Hess, McNab & Basoglu, 2014). Having in mind that one of the benefits that neuromarketing provides relies significantly on the new technology usage, this theoretical framework is believed to be relevant in exploration of behavioral intentions and willingness of marketing professionals to engage in neuromarketing behavior.

Important consideration, though, is the fact that not all marketing professionals engaging in neuromarketing behavior have direct contact with the technology itself; when research requires sophisticated neuroscientific tools, very often these studies are conducted in collaboration with neuroscientists experienced with these tools (Dimoka et al, 2009). This fact might interfere in the measurement of perceived ease of use, as marketing professionals with no prior neuromarketing experience might perceive it as a significant obstacle to technology use, without considering the above-mentioned collaboration.

In addition to TAM, there are other frameworks that have been developed with the goal to explain the intentions to engage in behaviors that involve the use of technology. One such model includes

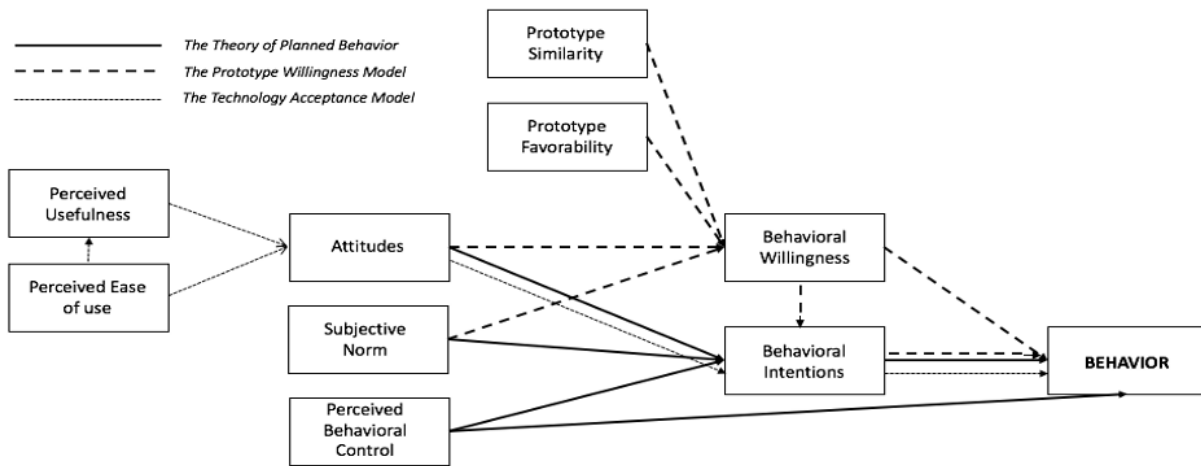
Unified Theory of Acceptance and Use of Technology (UTAUT), which is based on a premise that technology adoption depends on the “*performance expectancy, effort expectancy, social influence, and facilitating conditions*” (Venkatesh, Thong & Xu, 2012, p. 159). In its foundation, UTAUT is based on the Theory of Reasoned Action, Theory of Planned Behavior, Technology Acceptance Model, as well as a number of other theories of motivation, innovation and social cognition (Venkatesh, Morris, Davis & Davis, 2003). While this model represents a more encompassing and comprehensive framework to study technology acceptance and use from a behavioral perspective than TAM, elements of it are already captured in the TPB and using it in conjunction with TPB would unnecessarily duplicate the measures. In addition, the use of technology in what is defined as neuromarketing behavior represents only one aspect of the adoption; rather, the adoption of neuromarketing is predicated on more than just the technology. For that reason, TAM is considered a better suited framework to be used in this research, where behavioral intentions due to attitudes and barriers towards the assumptions established by neuromarketing approach can be distinguished from the attitudes towards the technology itself. As such, it is believed that TAM forces researchers to take a narrower perspective on the role of technology in neuromarketing adoption (Shachak, Kuziemyky & Petersen, 2019). While this has been often cited as its disadvantage, it is believed that in this study the narrow perspective represents a particular advantage, allowing for a more examination of individual factors and its effect on neuromarketing adoption.

4.4.6 Theoretical Framework for Predicting Neuromarketing Adoption

Both behavioral willingness and the behavioral intentions have demonstrated a very strong ability to predict behavior (Rivis, Abraham & Snook, 2011; Gibbons & Gerrard, 1995). Taken together, these two measures explain both planned and behaviors that demonstrate strong motivation. Therefore, using a theoretical framework that incorporates both aspects of human behavior was considered to have strong predictability. The three theoretical frameworks were all targeted towards the one or both of the behavioral measures. In addition, there seemed to be a significant level of overlap among the three constructs coming from the fact that all three are based on the premise of consistency between attitudes and behaviors (Ajzen, 2005). With that in mind, the author developed a single framework that was based on the theory of planned behavior, the prototype willingness model, and the technology acceptance model to guide the inquiry into the

likelihood of accepting neuromarketing (Gorgiev, Martin, Dimitriadis & Nikolaidis, 2018). This framework is presented in Figure 20.

Figure 20. Theoretical Framework for Predicting Neuromarketing Adoption



(Source: updated by author based on Gorgiev, Martin, Dimitriadis & Nikolaidis, 2018)

While the three of the frameworks explored previously are all well-researched and well-supported by the literature, there is no evidence that these three have been combined together in a single framework. As such, there is yet no empirical evidence to confirm the relationships in its totality. However, as discussed above, there is consistency between these three models, which is used as a basis for combining the frameworks. Due to the fact that both the intentions and the willingness seem to play an important role in predicting behavior, the variables have been integrated into one single model according to the empirical evidence that exists for the relationship among the variables. By combining the frameworks, the present research explored neuromarketing adoption from both perspectives of intentions and willingness and tested the viability of the framework itself to describe such behavior.

4.5 Research Aim and Objectives

The main aim of this thesis was to provide the answer to the previously formulated question; that is, the main goal was to collect sufficient evidence in order to be in a position to claim with

confidence and empirical support the future adoption of neuromarketing. The literature review suggests that the interest in neuromarketing is growing as the number of assets published within the area have been trending upwards over the last years. However, the validity of evaluation, and predicting, neuromarketing adoption depended on the number of factors that describe and predict behavioral willingness and intentions, which include positive attitudes towards neuromarketing, both implicit and explicit, positive social norms towards neuromarketing, low perceived barriers, positive perceptions towards a prototype neuromarketers, as well as perceived usefulness and ease of use of neuromarketing principles and practices. In order to satisfy this, several objectives needed to be met.

RO1: Understand the current awareness of and experience using neuromarketing:

- a. What is the awareness level of neuromarketing?
- b. What is the level of understanding of neuromarketing?
- c. What is the level of experience using neuromarketing?

RO2: Discover the beliefs marketing professionals hold towards neuromarketing:

- d. What do professionals believe are the advantages and disadvantages of adopting neuromarketing?
- e. How are neuromarketing practices useful to marketing professionals?
- f. Do marketing professionals see neuromarketing as acceptable behavior?
- g. What do marketing professionals believe are the barriers to neuromarketing adoption?
- h. What do marketing professionals believe is the prototype neuromarketing behavior?
- i. Do marketing professionals see value in adopting neuromarketing?

RO3: Understand the attitudes of marketing professionals towards neuromarketing:

- j. Do marketing professionals have positive explicit attitudes towards neuromarketing?
- k. Do marketing professionals have positive implicit attitudes towards neuromarketing?
- l. What is the difference in the valence of attitudes towards neuromarketing between professionals who have experience in using it vs. those who do not?
- m. What is the difference in valence of attitudes towards neuromarketing between USA and SEE marketing professionals?

RO4: Uncover intentions and willingness of marketing professionals to adopt neuromarketing:

- n. Do marketing professionals have intentions to adopt neuromarketing?

- o. Are marketing professionals willing to adopt neuromarketing practices?

RO5: Investigate indicators for the neuromarketing adoption:

- p. What factors explain the intention and willingness of marketing professionals to adopt neuromarketing practices?
- q. What is the best predictor of neuromarketing adoption?

The resolution of the problem required empirical evidence for intentions and willingness of marketing professionals to adopt neuromarketing, which was expected to lead to the prediction towards the likelihood for the extent of adoption of neuromarketing.

4.6 Research Design

Numerous authors suggest that intentions to perform behaviors are strong predictors of that behavior. This assumption represents a premise for both the theory of reasoned action and the theory of planned behavior (Myers, 2010). However, the literature review showed that for certain behaviors willingness to engage is a stronger predictor than the intention (Hyde, 2010). Therefore, the goal of this study was to investigate behavioral intentions and behavioral willingness of marketing professionals to engage in neuromarketing behavior. In this context, the engagement in neuromarketing behavior was defined as the tendency to apply neuromarketing assumptions and tools in everyday marketing practices.

With no similar behavioral intentions or behavioral willingness towards neuromarketing adoption being investigated so far to the author's knowledge, the author conducted two studies to investigate this phenomenon:

- The Study 1 represents behavioral-elicitation study, where behavioral beliefs about neuromarketing are generated, together with the appropriate wording and generally recognizable prototype of this kind of behavior
- The Study 2 investigates behavioral intentions and behavioral willingness towards neuromarketing behavior, using the theory of planned behavior, prototype willingness model and technology acceptance model

4.7 Research Ethics

Both Study 1 and Study 2 as the studies with primary data collection were subject to The University of Sheffield's ethics evaluation and received approval by the ethics committee for the application 003376. An additional written approval was obtained from the Ethics Committee for the use of the iatgen tool. The ethics approval was granted under the following approach:

- All participants have read and signed the consent form prior to the research. The consent forms for both studies are presented in Appendix A and C.
- The data collected has been disassociated from the personal information of the participants. Personal information, such as names of the participants, have only been kept in a form of the file names for the audio recording of the interviews for Study 1. The recordings have been stored on the Google Drive of the University of Sheffield. The signed consent forms only contain the signature of the participants and not their full names. No relation between the data collected and the personal information has been stored.
- The primary data collected and stored for the purposes of this research has been kept securely on the University of Sheffield Google Drive. No hard copies of the primary data have been kept. The only hard copies stored represent the consent forms that the participants signed in instances when the interviews were conducted in-person. These copies are stored securely at the author's home, in a drawer that is locked. The only person with access to the keys to this drawer is the author herself.
- No financial incentives have been offered to participants in exchange for their participation in Study 1 or Study 2.
- The research does not involve sensitive topics or vulnerable participants.
- Upon request, debrief form was available for all participants, presented in Appendix D.

4.8 Chapter Summary

This research consists of two studies that are conducted over a multiple-year period. The Study 1 represents a belief elicitation study that was conducted with 19 marketing professionals in SEE and the US regions. The semi-structured interviews were qualitative in nature and were designed to assess the beliefs about neuromarketing using the theoretical framework based on the theory of planned behavior, prototype willingness model, and the technology acceptance model. The results

from this study have been later used to design Study 2. The Study 2 represents a study of explicit and implicit attitudes towards neuromarketing among the marketing professionals in the same regions. This web-based quantitative study consists of a survey-based Implicit Association Test that was incorporated into the Qualtrics platform by using the iatgen tool, as well as the scale-based survey questions modeled after the previously discussed theoretical framework. The methodology for this research is summarized in Table 9. The ethics approval was obtained for Study 1 and Study 2 by the University of Sheffield Ethics Committee. The following chapters discuss the results of each study in detail.

Table 9. Summary of the Methodology

Research Objectives	Research Questions	Study	Methodology
RO1: Understand the current awareness of and experience using neuromarketing	a. What is the level of interest in neuromarketing?	Study 1	Qualitative semi-structured interviews: thematic analysis
	b. What is the awareness level of neuromarketing?		
	c. What is the level of understanding of neuromarketing?		
	d. What do professionals believe are the advantages and disadvantages of adopting neuromarketing?		
	e. How are neuromarketing practices useful to marketing professionals?		
	f. Do marketing professionals see neuromarketing as acceptable behavior?		
	g. What do marketing professionals believe are the barriers to neuromarketing adoption?		
	h. What do marketing professionals believe is the prototype neuromarketing behavior?		
	i. Do marketing professionals see value in adopting neuromarketing?		
RO3: Understand the attitudes of marketing professionals towards neuromarketing	j. Do marketing professionals have positive explicit attitudes towards neuromarketing?	Study 2	Survey and Implicit Associations Test; Multiple Regression Analysis
	k. Do marketing professionals have positive implicit attitudes towards neuromarketing?		
	l. What is the difference in the valence of attitudes towards neuromarketing between professionals who have experience in using it vs. those who do not?		
RO4: Uncover intentions and willingness of marketing professionals to adopt neuromarketing	m. What is the difference in valence of attitudes towards neuromarketing between USA and SEE marketing professionals?	Study 2	Survey and Implicit Associations Test; Multiple Regression Analysis
	n. Do marketing professionals have intentions to adopt neuromarketing?		
RO5: Investigate indicators for the neuromarketing adoption	o. Are marketing professionals willing to adopt neuromarketing practices?	Study 2	Survey and Implicit Associations Test; Multiple Regression Analysis
	p. What factors explain the intention and willingness of marketing professionals to adopt neuromarketing practices?		
	q. What is the best predictor of neuromarketing adoption?		

Table 9. Represents the summary of the research questions this study was set to answer, as well as the methodology used to answer them

Chapter 5. Study 1: Elicitation of Beliefs Towards Neuromarketing Adoption

“People are usually afraid of change because they fear the unknown. But the single greatest constant of history is that everything changes.”

- Yuval Noah Harari (2015)

5.1 Introduction

Upon understanding of the current awareness that is shaping the attitudes towards neuromarketing from the literature review (chapters 2 and 3), Study 1 was designed to uncover the qualitative nature of the familiarity with the topic. Moreover, the study aims to explain the level of awareness and understanding of neuromarketing, as well as the beliefs that marketing professionals hold towards neuromarketing, including what they consider to be the advantages and disadvantages of its adoption, the level of its usefulness to current marketing practices, its acceptance, and its barriers. In addition, this study aims to understand what is the prototype neuromarketing activity and what is the value that marketing professionals see in adopting it. This chapter looks to answer the questions under RQ1 and RQ2:

RO1: Understand the current awareness of and experience using neuromarketing:

- a. What is the awareness level of neuromarketing?
- b. What is the level of understanding of neuromarketing?
- c. What is the level of experience using neuromarketing?

RO2: Discover the beliefs marketing professionals hold towards neuromarketing:

- d. What do professionals believe are the advantages and disadvantages of adopting neuromarketing?
- e. How are neuromarketing practices useful to marketing professionals?
- f. Do marketing professionals see neuromarketing as acceptable behavior?
- g. What do marketing professionals believe are the barriers to neuromarketing adoption?
- h. What do marketing professionals believe is the prototype neuromarketing behavior?
- i. Do marketing professionals see value in adopting neuromarketing?

The following section provides the thematic analyses for each variable defined by the theoretical framework. The thematic analysis of the interviews were conducted to understand the current beliefs about neuromarketing and identify the specific beliefs that are later explored further in Study 2. Semi-structured interviews were conducted with 20 participants. The questions used during the study have been adapted from previous elicitation studies based on the three theoretical models adopted here. The data collected was analyzed using the thematic analysis via NVivo software, where the specific themes were determined by the theoretical framework. Prior to proceeding with the data collection, pilot study was conducted with 5 participants to test the validity of the research instrument.

As has been discussed previously, the theory of planned behavior is based on three elements that are a product of underlying beliefs. Salient beliefs represent those beliefs that are the most accessible to an individual and they determine his or her attitudes, subjective norms and perceived behavioral control; however, these beliefs do not determine the measure of the three elements (Sutton et al, 2003; Ajzen, 2002). For this reason, it is recommended to researchers who use the theory of planned behavior to perform a behavioral elicitation study before it (Darker, French, Longdon, Morris & Eves, 2007; Ajzen & Fishbein, 1980). In that way, the beliefs that are elicited during a qualitative study are the ones that should be used for quantitative measures within a theory of planned behavior survey (Sutton et al, 2003). In addition, an elicitation study provides the appropriate wording that is used by the population, which should be reflected in the further research (Sutton et al, 2003).

5.2 Methodology

All the reasons emphasized above represent the argumentation for Study 1. As the only way to identify salient beliefs is through the open-ended questions, semi-structured interviews were conducted with participants. Based on Ajzen's (2002) guide for structuring the elicitation study, the list of probes that were used during the study are presented within Table 10 and the discussion guide is available in Appendix B. In addition to these questions, participants also provided some background information, such as demographics, career level, industry segment and location. As previous research has shown that elicitation studies are not biased by the order of questions asked regarding the theory of planned behavior elements, questions were asked in a previously suggested

order (Darker, French, Longdon, Morris & Eves, 2007). Apart from uncovering salient beliefs and gaining insight into the appropriate wording for the study, the elicitation study generated the prototype for neuromarketing behavior and uncover the objects and attributes that were be used to develop stimuli for implicit attitude measurement (Mitchell, Nosek & Banaji, 2003). Nevertheless, in an effort to avoid omitting any other issues relevant to participants, the author also engaged in unstructured discussion with participants regarding neuromarketing and neuromarketing behavior towards the end of the interview, by asking them whether there is something else they would like to add or whether there are any other issues related to neuromarketing they believe should be mentioned.

Data was coded and analyzed using a content analysis approach (Sutton et al, 2003). The themes analyzed were predetermined by the theoretical framework and analyzed using NVivo software. These analyses uncover the behavioral outcomes, normative referents, self-efficacy and barriers for neuromarketing behavior, as well as the prototype for such behavior and basis for IAT stimuli development (Montano & Kasprzyk, 2008). This information was later incorporated into the design of Study 2, an investigation of implicit and explicit attitudes, behavioral intentions, and willingness to adopt neuromarketing.

Table 10. Study 1 Probing Questions

No.	Segments	Questions
1	Introduction	What is the industry you work in?
2		How many years of experience do you have?
3		How would you describe the scope of your work?
4	General information	Do you know what neuromarketing is?
5		How would you define neuromarketing?
6		Do you have past experience with neuromarketing practices?
7	Attitudes (behavioral beliefs and technology acceptance)	What do you believe to be the advantages of adopting neuromarketing ?
8		What do you believe to be the disadvantages of adopting neuromarketing ?
9		Do you have any other beliefs about neuromarketing?
10		How do you feel about neuromarketing adoption?
11		How would neuromarketing make your job easier?
12		How would neuromarketing make your job more difficult?
13		Do you find neuromarketing practices useful to your work?
14		Do you believe it is easy or difficult to use neuromarketing?
15		What elements of neuromarketing would be easy to use?
16		What elements of neuromarketing would be difficult to use?
17	What do you associate neuromarketing with?	
18	Subjective norms (normative beliefs)	Would others approve your use of neuromarketing?
19		Would others disapprove your use of neuromarketing?
20		What do you believe others think about neuromarketing?
21		Do any ethical or moral issues come to mind when you think about neuromarketing?
22		How do you think others would feel if you adopted neuromarketing?
23		Whose opinion is the most relevant to you?
24	Perceived behavioral control (control beliefs)	What (factors, circumstances) would facilitate your use of neuromarketing practices?
25		What difficulties would you encounter in adopting neuromarketing practices?
26		What criteria would you need satisfied in order to start using neuromarketing?
27		Do you see any opportunities in adopting neuromarketing? If yes, what would they be? If no, why so?
28		To what extent is the decision to use neuromarketing practices your own?
29		How confident are you that you could adapt neuromarketing in your practice of marketing?
30		To what extend would you be able to adapt neuromarketing in your practice of marketing?
31	What do you feel is the biggest issue with adopting neuromarketing?	
32	Prototype	How would you describe a person or institution using neuromarketing?
33		What do you think of people using neuromarketing?
34		What characteristics do these individuals or institutions have?
35		What would these people use neuromarketing for?
36		Which individual or group participants do you look up to regarding neuromarketing practices?
37	How do you feel about people using neuromarketing?	
38	IAT stimuli	What positive attributes do you associate with neuromarketing?
39		Which words with positive meaning would you associate with neuromarketing?
40		What negative attributes do you associate with neuromarketing?
41		Which words with negative meaning would you associate with neuromarketing?
42		What do you consider to be the completely oposite concept from neuromarketing?
43		Which objects would you associate with neuromarketing? (5 answers)
44		What is the first thing that comes to your mind when you hear neuromarketing?
45		What other terms would you use for neuromarketing?
46	What characteristics do you associate with neuromarketing?	
47	Closing	Do you believe neuromarketing can contribute to business practices?
48		Do you believe neuromarkeing can contribute in positive or negative way?

(Source: compiled by the author based on Holden, 2010; Mitchell, Nosek & Banaji, 2003; Sutton et al, 2003; Ajzen, 2002; Davis, 1989)

5.3 Sample

Stratified sampling technique was employed to define the sample for this research. Stratified sampling methods represent a sampling strategy where members of each of the units, or strata, have at least one common characteristic; once the strata have been defined based on this characteristic, the selection of participants in the sample is random (Levy & Lemeshow, 2008). The screening criteria for participation in the research included location and involvement in the marketing community, which was a prerequisite for participation in research. Specifically, participants were recruited from the regions of the United States and South East Europe. The involvement in the marketing activity was determined based on the role a participant was holding, where six strata were defined based on the different facets of the involvement in marketing field, defined as following:

- Marketing academics - individuals who are members of academic institution, currently with a teaching position
- Marketing practitioners - individuals who are involved in performing marketing activity daily, either within an agency setting or for a company or a brand
- Marketing researchers - individuals who perform market or marketing research activities, either within an agency setting or for a company or a brand
- Marketing experts - individuals who are perceived by the public as thought leaders in marketing, marketing keynote speakers, or individuals with strong following
- Final year marketing students - individuals who are third year or postgraduate students at university, with marketing as a main specialization
- Editors in academic journals in the field of marketing - individuals who currently hold or held in the last few years an editorial position at an academic journal that publishes marketing research

The extent of an adoption of an idea depends on the individuals who are currently active members of the community, the editors of academic journals who represent the gatekeepers for dissemination of ideas, as well as the students who are being trained on the current tools, methods and assumptions of the dominating theories. All of these different stakeholders can influence the extent to which an idea is present in the current and future course of the field. For this reason, the structure of the sample used in this research was designed to include all six strata. By studying

their beliefs, attitudes and behavioral predispositions, the result of this research can be generalized in a broader sense. In addition, participants from the US region were included because it is believed that marketing is more developed there and comparison with the SEE region can offer directional recommendations for future progress.

In determining the appropriate sample size for Study 1, the author has taken two elements into consideration. First of all, Study 1 represents a qualitative study that employs semi-structured interviews as a data collection method. A comprehensive analysis of the sample size used in qualitative studies, conducted by Marshall, Cardon, Poddar & Fontenot (2013), reveals that up to 30 interviews can help a researcher reach data saturation. And second of all, by analyzing various elicitation studies available in the literature, the author has noticed that the number of participants can vary from 20 up to 180 (Araujo-Soares, Rodrigues, Pesseau, & Sniehotta, 2013; Simpson & Radford, 2012; Holden, 2010; Sutton et al, 2003).

Having all this in mind, the author initially decided to conduct the study with minimum 50 participants, with possibility to increase this number until the studied beliefs are considered to be elicited. Nevertheless, after conducting 15 interviews with marketing professionals in the South East Europe and the United States regions, the author believes to have achieved data saturation and the results from the remaining 5 interviews have further confirmed the existing findings. Data saturation was observed in terms of similar answers provided to questions around advantages and disadvantages of neuromarketing, major barriers to implement marketing, as well as the impact of neuromarketing on overall business outcomes. Once the redundancy of data was observed, the author discontinued the data collections (Saunders et al, 2018; Ness, 2015). Nevertheless, during the process of transcribing the interviews, it was clear that the voice recording of one of the interviews was not viable, so the final sample size used for the elicitation study was concluded at 19 participants.

During the discussion with the participants, it was realized that rarely participants belong only to one stratum, as defined by this research. For example, a participant that was working in academia was usually both teaching and conducting research, while a participant that was considered an expert in the field was likely still practicing marketing and holding a title of a Chief Marketing

Officer or similar (Gorgiev, Martin, Dimitriadis & Nikolaidis, 2018). During the recruitment, there was a strong representation across the practitioner, academic, student, researcher and expert strata. The only stratum that has low representation is the editors of academic journals for marketing science. Even though the author has reached out to multiple editors of scientific journals, the interest in participation was nonexistent. The author then extended the invitation to the editors of marketing journals that are considered to be targeting practitioners, and the outcome of those efforts were the same. The only editor that agreed to participate in the research is from the South East European region and is primarily involved with teaching at the university level and conducting both academic and industry research.

5.4 Pilot

A pilot study was conducted to test the validity and reliability of the research instrument. The initial list of questions has been developed as recommended by Holden (2010), Mitchell, Nosek & Banaji (2003), Sutton et al (2003) Ajzen (2002), and Davis (1989). The questions were developed in English and translated to Serbian. To ensure the reliability of the translated interview questions, back-translation has been used. The pilot study was conducted with a total of 5 participants, 3 from the United States and 2 from South East Europe. The results from these 5 interviews were later included in the overall data analyses.

The primary learning from the pilot study consisted of the exact terminology to be used for the interviews that are conducted in Serbian. As a matter of fact, marketing professionals in Serbia seem to have preference for the English terms over its translated meanings. This learning was then incorporated into the following interviews. In addition, the author noticed that certain questions seemed repetitive in the initially designed order. For example, there were a number of questions targeting attitudes towards neuromarketing; answers to a number of these questions were covered under just one question, which eliminated the need to ask those questions again. Following the pilot, the author reserved the right to change the order of the questions if the interview flow dictated it.

5.5 Data Collection and Analysis

Study 1 represents a qualitative study that was conducted using semi-structured interviews with marketing professionals (Gorgiev, Martin, Dimitriadis & Nikolaidis, 2018). The research instrument consists of open-ended questions that provide representation for all three theoretical frameworks; in addition to these questions, the participants also provided some background information, such as career level, industry segment and location (Gorgiev, Martin, Dimitriadis & Nikolaidis, 2018).

The author obtained a written consent from all the participants and the signed form has been kept in a locked drawer to which only the author has the key to. Due to the virtual nature of the interviews conducted, most of the participants decided to send an electronic copy of the signed consent forms. The copy of these forms has been kept on the University of Sheffield Google Drive to which only the author has access to. A debrief form has been offered to the participants after the completion of the interviews. Some participants preferred to discuss the contents of the debrief verbally immediately after the completion of the interview, while others chose to receive the debrief form via email.

All the interviews have been conducted either via phone, Skype or Viber, depending on the participants' preferences or access. The audio of each interview has been recorded using the VoiceMemo app on the author's iPhone. The copy of the recordings was stored on the University of Sheffield Google Drive to which only the author has access to. The interviews were conducted in English or in Serbian, depending on the participants' confidence level with each of the languages. The interviews with the participants from Serbia and North Macedonia (formerly known as FYROM) were conducted in Serbian language, while all other interviews were conducted in English. A number of interviews with the participants from the SEE region has been conducted in English even though it is not their mother tongue.

The transcription of all interviews was done manually by the author. For the interviews conducted in Serbian, back-translation was used to ensure accuracy of the data obtained from non-english speaking participants. NVivo software was used to code and analyze the qualitative data collected throughout the study. The license from the software has been obtained through the University of

Sheffield. Similar approach to data analysis was used to the one described by Zoellner et al (2012). The codes were generated prior to the analysis based on the variables defined in the theoretical framework (for example - attitudes, subjective norms, perceived behavioral control, acceptance, prototype, etc.). These codes were created in NVivo software as nodes (Figure 21). Each question in the discussion guide corresponded to the specific code or node, which allowed for the answers to be tagged accordingly. All the transcripts were read multiple times to identify indicative statements that relate to a specific meaning. Then a more specific sub-nodes were identified and added (for example - advantages, disadvantages, disadvantages, approval, ethics, etc.) (Carr, Shin, Severt & Lewis, 2017). Each indicative statement was individually analyzed at first to generate a theme, which was further abstracted and condensed after considering the whole context within a variable (Graneheim & Lundman, 2004). The output of the entire process is presented in Appendix F. For the analyses of the data, each theme was reviewed with all corresponding indicative statements. All the discussion in the following section is based on the indicative statements coded under each theme.

Work background theme was used to capture all the relevant demographic information about participants, specifically their industry, years of experience, and the type of marketing practices they are engaging in. Associations were used to capture all top-of-mind associations participants have with neuromarketing, as well as similar terms and attributes they assign to neuromarketing, all with the intent to use these inputs for the Implicit Association Test. All the variables from the theoretical framework were assigned a separate node in NVivo. All the sub-questions for each variable were assigned a sub-node for coding purposes. Number of indicative statements that were coded under each node/sub-node is presented in Table 11. In addition to these themes, a separate node was created for miscellaneous topics captured indeed LOL (laugh out loud). In addition, a separate node was created to capture quotes that were considered interesting to include in the discussion as verbatims.

Figure 21. Themes Coded in NVivo Software

Name	Files	Referen...
Associations	0	0
Associations (objects)	18	35
Characteristics	8	9
Negative attributes	12	13
Words with Negativ...	10	10
Oposite Concept	18	19
Other terms	17	22
Positive attributes	13	16
Words with Positive...	11	11
Top of Mind	17	21
Attitudes	0	0
Beliefs	0	0
Advantages	19	25
Associations	15	16
Disadvantages	18	26
Feelings	15	23
Other beliefs	9	13
Technology Acceptance	2	3
Difficult Elements	12	19
Easy Elements	8	10
Easy or difficult	12	15
Makes job difficult	10	13
Makes job easier	12	13
Contributions	0	0
PositiveNegative Contr...	16	16
Thoughts on Contributi...	18	18
Knowledge	0	0
Definition	17	21
Experience	14	15
What is neuromarketing	13	14
LOLs	17	72
Knowledge	0	0
Definition	17	21
Experience	14	15
What is neuromarketing	13	14
LOLs	17	72
Perceived Behavioral Con...	1	1
Biggest Issue	9	10
Confidence	5	5
Criteria to Start	6	6
Decision to Use	11	12
Difficulties	9	12
Extent of Adoption	6	6
Facilitated Use	13	14
Opportunities	10	13
Prototype	0	0
Characteristics	17	26
Description of prototype	18	20
Feelings on others using	10	11
Role Models	12	12
Thoughts on people us...	12	18
Use of Neuromarketing	12	13
QUOTE	3	5
Subjective Norms	0	0
Approval	17	19
Disapproval	11	12
Ethics	14	17
How Others Feel	4	8
Relevant Opinion	18	19
What Others Think	16	26
Work Background	0	0
Industry	14	22
Scope of work	13	16
Years of experience	17	18

Figure 21. is a screenshot from the NVivo software, showing the themes, or nodes, that were defined to code and analyze the data from the interviews.

5.6 Results

As it was previously described in the methodology section, the participants in the interviews are marketing professionals from various backgrounds, including practitioners, academics, experts, students, researchers and editors of journals. Based on their scope of work and current roles, most of the participants actually fall within more than one stratum. For example, a marketing academic is also acting as an editor of a scientific journal, while another academic is also conducting research. This is not the only combination, though. It was observed that a participant can have anywhere between one and four roles that he or she is actively performing. Despite assuming

multiple roles in their careers, when asked to explain what they do and the industry they work in, some participants reported only one role. This is particularly true for members of the academic community who typically teach, do research, and consult with the private sector, and sometimes even act as editors of journals. It can be assumed that the participants reported what they consider to be their primary role and the one that aligned with their identity as professionals. The participants in this research reported to work in the marketing research, advertising, digital marketing, communications and business consulting industry (Figure 22). The participants who work in academia, primarily reported to teach various fields. Even though there are a number of participants who practice neuromarketing, only one reported to work in neuromarketing, the others either reported market research or cognitive psychology.

Table 11. Number of Mentions for Each Code

Variable	Code	Number of mentions
Attitudes	Advantages	23
	Disadvantages	28
	Feelings (positive)	14
	Feelings (mixed)	3
	Feelings (negative)	2
Subjective Norms	Approval	16
	Disproval	5
	Approval/Disproval	2
	What others think	25
	Relevant opinions	17
	How others feel	7
Perceived Behavioral Control	Ethics	19
	Biggest issue	11
	Confidence	5
	Criteria to start	6
	Decision to use	11
	Difficulties	13
	Extent of adoption	6
Prototype	Facilitated Use	12
	Opportunities	13
	Description	19
Acceptance	Use of neuromarketing	12
	Easy	12
	Difficult	26
	Easy/difficult	4
	Makes job easier	13
	Makes job difficult	12
	Makes job easy/difficult	2

Table 11. shows the number of indicative statements that were analyzed under each code.

The participants in this research are at different stages of their careers. A number of participants are at the start of their careers with only a few years of experience (Figure 23). A similar number of participants can be considered as highly experienced professionals with over 20 years of experience and going to over 30 years in the industry. The majority is at the mid-career stage, with anywhere from eight to fifteen years of experience in the industry. Due to this, a similar range can be found in the scopes of work that participants are responsible for. On the lower end of experience, participants are responsible for more operational tasks related to marketing and sales, brand management, managing the internal processes, ad hoc research. On the higher end of experience, the participants are engaged in strategic consulting and customer insights, mentoring doctoral students.

Figure 22. Participant's Current Role

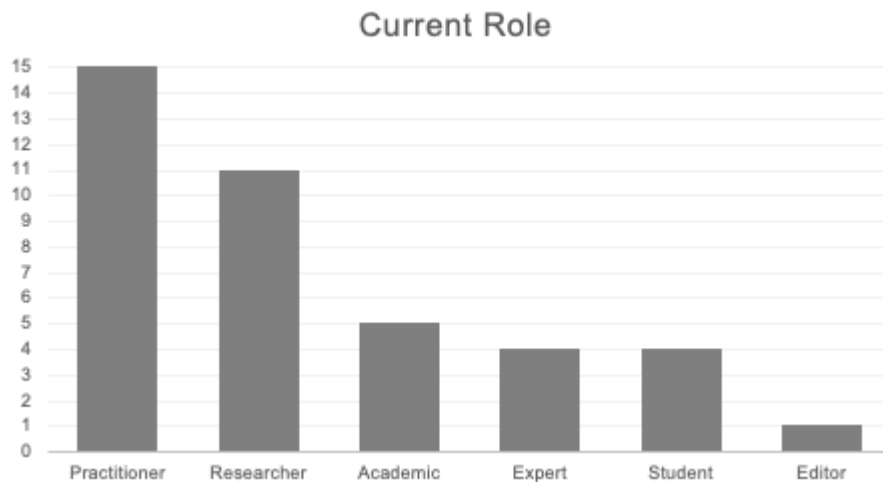


Figure 22. Shows a number of participants per each strata.

Figure 23. Participants' Years of Experience

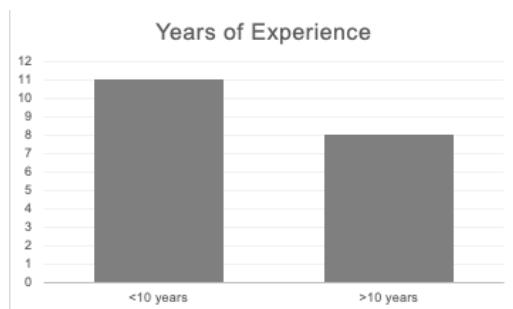


Figure 23. shows the number of participants with less than and more than 10 years of experience.

The majority of participants report that they know what neuromarketing is, with only two stating that they don't have any prior knowledge. In addition, two participants state that they have heard of the term neuromarketing but do not have an understanding or knowledge about it. The breakdown of participants with different levels of experience with neuromarketing is shown in Figure 24. Of those who claim to know what neuromarketing is, the majority views it through the tools and techniques that it offers to marketing as a way to design better ads and convey the message better. However, a large number of participants define it as a use of insights of how the brain works, referring to the insights that people cannot report and that are not rational, to better understand the consumer and in service of making marketing decisions. They also see neuromarketing as a "neurologically based evaluation of marketing stimuli", "research of the cognitive and perceptive reactions that people have on...stimuli of any kind" that enables "understanding, seeing, and predicting messaging or persuasion from the perspective of the brain" to "get your message across in a deeper way". One participant even described it as "a list of tips and tricks that are rooted in findings of people who have been doing neuropsychology". The broadest definition provided by one of the participants characterizes neuromarketing as a "marketing concept that is based on research, new technologies", "deeper research around scientific influence on consumer behavior". Figure 25 shows the word cloud extracted from answers participants provided when asked about what neuromarketing is. Only approximately 8 participants reported they have had previous experience with neuromarketing.

Figure 24. Experience with Neuromarketing

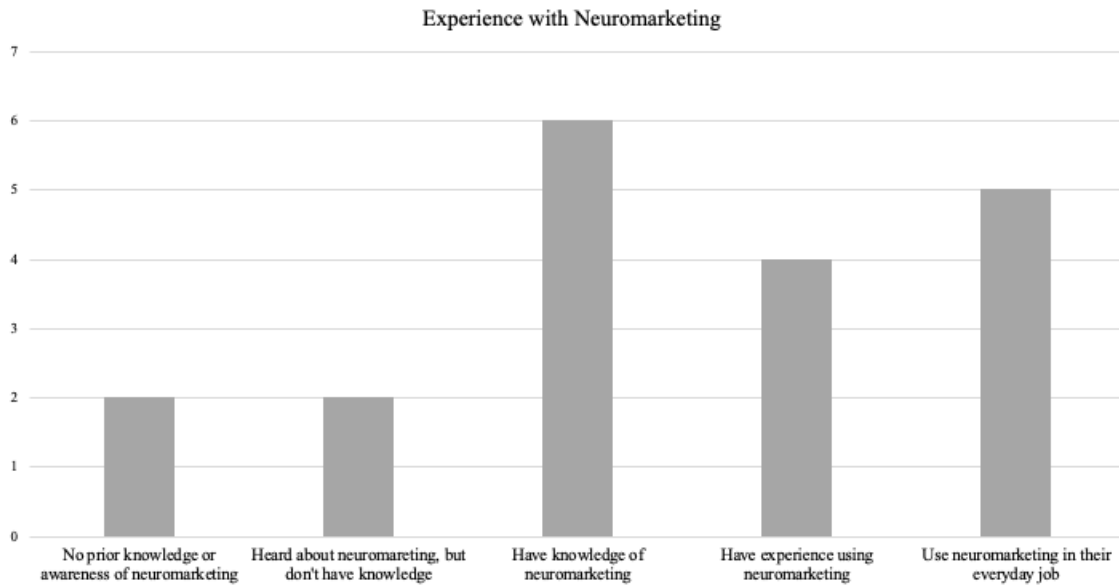


Figure 24. shows the number of participants at different levels of neuromarketing experience.

Figure 25. Word Cloud About Neuromarketing Knowledge



Figure 25. shows the most common words used to demonstrate the knowledge of neuromarketing.

A number of participants already daily engage with neuromarketing, and typically it is in two areas - they use neuromarketing in the research that they conduct for their own products or for their

clients, and they apply it to then design assets such as websites, packaging, ads. In the everyday scope of work, they report applying emotional measurements, designing experimental protocols and collecting and analyzing data, conducting voice analysis and using brain imaging and eye-tracking studies, as well as teaching neural basis of behavior to students and training other marketing professionals in neuromarketing. Not coincidentally, these participants seem to be more experienced and active in the industry for a longer period of time.

5.6.1 Associations with Neuromarketing

To better understand how participants look at neuromarketing, everybody was asked to name associations they have towards neuromarketing. Apart from top-of-mind associations, participants were asked to report on any positive or negative associations in a form of words or adjectives. In addition to that, participants were asked to assign characteristics to neuromarketing based on their current knowledge of it, name what they believe to be the opposite concepts to it, as well as state what other terms would correctly describe neuromarketing.

5.6.1.1 Top of Mind Associations

Although not surprising, the most common top of mind association for neuromarketing was the brain. The participants associate neuromarketing to the various aspects of the brain. Some specifically call out the organ itself, while others refer to it in the context of the mind. One of the participants explained that the association with the brain comes from the inherent name of neuromarketing, with “neuro” clearly signifying that connection. To a similar extent, participants associate neuromarketing with technology - specifically, technology that is used in neuromarketing research, such as fMRI, EEG and eye-tracking. Most of the participants specifically noted that the first association in their mind is with EEG and the image of people with electrodes on their head during an EEG measurement. One participant did mention fMRI and one mentioned eye-tracking. What is interesting about this group's answers, however, is that it is not just any neuromarketing research method that created these associations but very specific three that are all limited to the methods adjacent to the head. That implies that other neuromarketing methods, such as galvanic skin response, are not top of mind for participants. There were a few additional mentions of the data and research in general as associations to neuromarketing, as well as results and effectiveness. However, the most prevalent associations among all research-related ones were the specific methods mentioned previously. While brain and neuromarketing-specific technologies were the

methodologies. In addition to this, there were still a number of participants who reported an image of the brain coming to their mind with the mention of neuromarketing.

Among the least expected answers regarding the associations to neuromarketing are the ones that come from popular culture and are references to movies or TV series. One participant mentioned Star Trek movies as a tangible association to neuromarketing, while a different participant referred to the movie Matrix. In both instances, the references were interpreted as the high-tech and robot-like depictions in both of these films, which is what these participants associate with neuromarketing. On the other hand, one participant referenced another creation from the popular culture, but this time it was Pinky & the Brain - an animated television series that was popular in the late 1990s (Weiner, November 2016). While this reference does not have the high-tech components associated with it, one of the main characters is considered smart and “brainy”, which is the main link in this case.

In addition to all these tangible associations, the respondents had a few mentions of specific objects, such as a magnifying lens, microscope, and headphones. In all three cases, the participants see neuromarketing as a tool that can discover and shed light on aspects of human behavior that are typically hidden or not accessible otherwise. Another example of such mentions also includes chess pieces, in the context of a strategic role of neuromarketing.

5.6.1.3 Positive Word Associations

The participants were asked to share positive words or positive adjectives that they associate with neuromarketing. The most common positive word that participants shared was emotions. Participants believe that neuromarketing offers an opportunity to understand the emotions and to measure them. At the same time, they believe that emotions are an extremely important part of marketing and neuromarketing offers a way to understand them better.

Looking at adjectives that participants associate with neuromarketing, the ones that were mentioned by more than one participant include new, exciting, interesting, revolutionary, all of which likely come from the novelty of neuromarketing. Similar adjectives that came up with individual participants also include bold, adventurous, optimism, innovation, creativity,

leadership. In addition to these, a number of participants mentioned the word scientific. More specifically, this adjective was used to describe the nature of neuromarketing inquiry in comparison to the current marketing approach. Other similar adjectives were reported by individual participants, which include effective, inquisitive, useful, valid, specific, accurate, behavioral, inquisitive, real, precise.

5.6.1.4 Negative Word Associations

The most frequent negative association reported by the participants is specifically tied to the process of conducting neuromarketing studies. A number of participants said that the negative associations regarding neuromarketing that come to mind include how complex and time consuming it is, the long process that goes with it, as well as the amount of work that it requires. In addition, there was another way in which the group of participants who denoted having previous experience with neuromarketing has seen negative association to neuromarketing. Even though mentioned sporadically and only by one individual each, the following associations were mentioned: overconfidence, misinformation, arrogance, ignorance. These were likely to come up as they spoke of the misuse of neuromarketing methods by unqualified professionals.

Obviously, these associations come from participants that have previous experience with neuromarketing and have themselves implemented neuromarketing, either at the research or consulting level. Beyond these associations, which are all very logistical, the most common negative associations are tied to the ethics of neuromarketing. A few participants have specifically mentioned ethics verbatim, but others have used different words to describe what they believe are concerning aspects of neuromarketing, all of which can be considered to be within the realm of ethics. These mentions specifically include the intrusive and invasive nature of neuromarketing, as well as the belief that neuromarketing can be seen as controlling, manipulative and an abuse of power. In addition, participants who do not have previous neuromarketing experience were more likely to associate neuromarketing with fear, risky, and expensive. One participant even characterized it as neophobia, or the fear of something new, as a way to describe the inherent drawback of neuromarketing as a new phenomenon.

5.6.1.5 Characteristics of Neuromarketing

Marketing professionals assign various characteristics to neuromarketing. Some of these characteristics are comparative in their nature, specifically derived from the contrast with the traditional marketing. These include the fact that it is faster and cheaper, complicated, useful, demanding, sensitive. But speaking about characteristics they assign to neuromarketing, participants mentioned novel, useful, future, multifaceted. In addition, a few participants acknowledge the very nature of neuromarketing, mentioning that it measures the non-conscious and subliminal, as well as the fact that it gets to what people are thinking and feeling.

5.6.1.6 Concepts that are Opposite of Neuromarketing

When asked what concept they believe is the opposite of neuromarketing, on the other side of the spectrum, the majority of participants were quick to refer to the traditional marketing research methods. Some participants referred to it as the outdated methodology, some called it primitive market research. A number of participants were very specific to call out what elements of the traditional marketing they see in contrast to neuromarketing, and these included focus groups, simple interviews, and cold calling. These represent the research methods that are opposite from neuromarketing as they see neuromarketing as a novel research method. But other participants called out some principles or ways of engagements that are considered part of traditional marketing, such as mass blasts on non-targeted messages, relationship marketing and guerilla marketing. One interesting contrast was drawn by a neuromarketing professional who noted that behaviorism is the opposite of neuromarketing. While the participant acknowledged that both share some level of scientific rigor, s/he believed that behaviorism is about observing how the object acts in the environment and is interested to learn the “how, while neuromarketing is about learning the “why””.

5.6.1.7 Other Terms to Describe Neuromarketing

When asked what other terms they would use to refer to neuromarketing, the participants were very likely to say either applied neuroscience, consumer neuroscience, or neuroscientific marketing. One participant even said, “brain hack marketing”. This provides a very important insight into the strength of association between neuroscience and marketing. In addition, a number of participants did imply a similar connection between marketing and emotions by suggesting an alternative term could be emotional marketing or emotional research. A few also made the

connection with psychology by suggesting behavioral economics, psychology of emotion and consumer psychology. All together, these responses give a clear understanding of the main ties that neuromarketing has with other scientific concepts, which include neuroscience, psychology and emotion specifically.

5.6.2 Attitudes Towards Neuromarketing

This section focuses on reporting findings on various aspects of participants' attitudes towards adopting neuromarketing. The data includes analyses of advantages, disadvantages and associations, as well as feelings that participants have towards neuromarketing. While the next section focuses on specific attitudes towards the adoption of novel technology in neuromarketing, this section focuses on the general attitudes towards neuromarketing based on perceived advantages and disadvantages associated with it.

5.6.2.1 Advantage-Based Attitudes of Neuromarketing

When talking about the advantages of neuromarketing, respondents focus on different aspects of the field in comparison to the current, traditional approaches. Some focus on the marginal differences with the traditional methods, some emphasize the novel qualities that neuromarketing brings to marketing activity overall, while a number of participants focus on what these improvements mean specifically to them and the ways in which neuromarketing enables them to be better at what they do. The overall sentiment is that neuromarketing is providing new kinds of insights that go beyond what we can learn from self-reports, and this sentiment is nicely summarized by one of the respondents:

“I think we are entering a realm of consumer insights in marketing science in which increasingly clients and the people in industry, marketing and consumer scientists, are trying to get what I would call answers without questions. And we are becoming increasingly skeptical of the process of explicit question and answer in which the respondent reflects on and processes the content and the question at about seven levels, including why they are asking this question in this way, what’s it going to mean if I give this answer that way. It’s just a lot of meta-processing going on, which isn’t just an open candid answer to the question. And I think moreover that a question and answer sort of interaction, relying on ones’ frontal lobes only allows you to take the information about

those things of which the respondent is conscious of and there are ways we now know that a lot of processes that determine behavior include neurological phenomenon of which respondent is not necessarily aware.”

A number of respondents did point out the benefits that they see neuromarketing providing them in comparison to the traditional methods. They acknowledge the limitations of the current methods by emphasizing that people don't always say what they think, as well as the fact that marketers tend to assume that everyone's brains work the same. At the same time, they say that neuromarketing gives them more - it gives them a deeper sense to what consumers say, provides the opportunity to go beyond just the questions and answers, and allows them to measure other things that we not possible before, such as feelings, degrees of attention, and levels of memorability.

In describing the advantages of neuromarketing, the most common ones are related to its scientific nature. The respondents believe neuromarketing to be more accurate and more optimized market research that is most scientific and provides objective and transparent information. This, again, comes from the comparison to the traditional methods “...because the process is opinion-based, rather than scientifically-based”. As a result, they see neuromarketing to provide higher chances that the results are correlated to reality and identify what consumers really want because some questions can only be answered by using neuromarketing tools. These tools can assess how people react to different stimuli and ensure that messages are not misleading the audience, thus removing the filters that people commonly use when providing self-reports and producing better knowledge of what people like.

Exploring advantages as they relate to attitudes provides an insight into an evaluatory aspect of attitudes, where an individual is able to assess the outcome of a specific behavior as positive or negative. While these findings are mainly focused on the benefits of neuromarketing, the most surprising finding is related to what these benefits mean to the participants. They believe that neuromarketing gives them clarity that you don't always have, which can mean a lot to people who do marketing, as stated by one participant. But most of all, participants say that neuromarketing

can increase the quality of their departments and makes it easier for marketers to stand by their results, thus making them believe that like *“I can make a difference”*.

5.6.2.2 Disadvantage-Based Attitudes of Neuromarketing

The participants do raise concerns that neuromarketing might not be ethical and some of the practices can be used for manipulations and *“evil ways”*. However, the most prominent disadvantage identified by the participants of this research is the issue of cost. Many marketing professionals believe that using neuromarketing is very costly and, as such, reserved only for the big companies.

In addition to cost and ethics, participants also acknowledge the fact that neuromarketing requires a special set of skills to be effectively implemented, skills that the majority of marketers do not necessarily have. As a result, participants believe that due to the lack of these skills, sometimes marketers overpromise the benefits of neuromarketing, which they associate to be a significant disadvantage of neuromarketing. In addition, they believe that neuromarketing is not easy to use, rather it is complicated, which can result in technical difficulties in implementing it.

Another set of disadvantages is associated with the nature of neuromarketing research methods, which typically involve laboratory settings. Participants believe that these settings lead to a limited sample size, which in turn can produce biased findings. As explained, it is believed that the mere agreement to participation in neuromarketing studies comes from a common predisposition that may skew the results of such studies. Moreover, respondents are concerned over the comfort levels of participants in neuromarketing studies and believe it to be invasive in nature due to its inputs, which is tied to the evaluation of outcomes of adopting neuromarketing as a behavior studied.

5.6.2.3 Fields Associated with of Neuromarketing

Studying associations is an important component of what constitutes one’s attitudes towards neuromarketing behavior. In terms of the scientific fields that participants associate with neuromarketing, there are no major surprises. Most of the participants have the associations that have been already established in the literature and confirm the interdisciplinary nature of neuromarketing, which was mentioned by one participant specifically (Burgos-Campero & Vargas-Hernández, 2013; Madan, 2010).

Regardless of the level of familiarity with neuromarketing, participants are making the connection between neuroscience and marketing. Those associations with neuroscience are either made with the actual neuroscience field or simply with the tools that are traditionally used in neuroscience or neurology, such as EEG. Interestingly, the most common association is with the actual EEG gear itself. In terms of marketing, participants make associations with integrated marketing channels or even merchandising. These represent a sub-area of marketing where they see the highest applicability of neuromarketing based on their current scope of work. In addition, one participant did mention neuroeconomics, which is likely a result of his/her deeper knowledge of literature in and experience with neuromarketing. On the other side of the spectrum, the most surprising finding, however, is one participant's association with virtual programming. As explained by the participant, even though s/he believes that neuromarketing is far from it, the idea of programming the consciousness comes to mind when somebody mentions neuromarketing.

The most common field that is associated with neuromarketing in this study, however, is psychology. The participants make this association based on the deeper level of insights that neuromarketing can produce, which commonly reminds them of psychology. More specifically, they mention a number of sub-areas of psychology, such as consumer psychology, psychology of emotion, and perceptual psychology. One participant also mentions the study of senses as the basis for this kind of association.

5.6.2.4 Feelings Associated with of Neuromarketing

While this study was not designed to primarily measure and evaluate participants' emotional response towards neuromarketing, they were asked to name emotions they experienced in relation to neuromarketing. This question was asked primarily to establish the valence of the attitudes, as an indication of overall positive or negative evaluation of neuromarketing, and not necessarily to identify the specific emotions. It was important to identify with different questions the valence of attitudes knowing that positive attitudes towards a behavior increase the likelihood of having an intention to engage in such behavior. With that in mind, the vast majority of emotions expressed are positive and come up more frequently than the negative ones. The most common emotions reported by the participants is excitement, simply coming from the fact that neuromarketing is

something new and interesting. Many participants also describe it as happiness and optimism in describing the positive emotions they have towards neuromarketing. Some participants see it more as a fascination and curiosity, while one participant took it a bit further to describe it as “*intellectual happiness*”. These positive emotions are reported by both marketing professionals who have experience and the ones who do not. In contrast with these intense emotions, there are participants who feel comfortable when thinking about neuromarketing and experience the feelings of trust and safety. Needless to say, these emotions have been reported by the participants who have been using neuromarketing and are a product of their experience with the field.

Negative emotions, however, are also reported by participants regardless of their experience level with neuromarketing. All the participants who reported a negative feeling had a unique word to describe that experience. Participants with no previous experience think that neuromarketing is scary and carries great responsibility, both of which are very much connected to the potential impact of neuromarketing. Neuromarketing practitioners, however, report being frustrated and tired as the key emotions when they are thinking about neuromarketing, both of which primarily come from the nature of neuromarketing research and all it involves.

5.6.2.5 Technology Acceptance for Neuromarketing

As it was described in the theoretical framework that was used to guide this research, the technology acceptance model can contribute to our understanding of attitudes towards neuromarketing by examining its perceived usefulness and the ease of use (Klinckova, 2016; Javor, Koller, Lee, Chamberlain & Ransmayr, 2013). Overall, participants in this research are divided with regards to whether it is difficult or easy to adopt it, but there is overall agreement that it is justifiable because it is important to use it. There is also acknowledgement that there is a learning curve involved with neuromarketing and that it does become easier with time. One participant summarized it in saying:

“If we see it backwards in time, I’d say it was much more difficult. As time goes by, I believe it’s more and more easy to use.”

Looking closely at what participants believe makes neuromarketing adoption difficult, the two most prominent reasons that become evident are concerned with the skills needed to effectively use it and the novel technology that it involves. Participants believe that some of the technology that is an integral part of implementing neuromarketing is not easily accessible. For example, one participant said that in his/her country you need to rent the fMRI from the clinic based on its schedule, and with that ensure that the right people are available to analyze and interpret the data. Additionally, many marketing professionals believe that they do not have the skills needed to conduct this type of research by themselves. They claim adopting neuromarketing would entail hiring people who have the appropriate skills, software and technology to conduct this type of research, which brings up the cost and time as additional difficulties that participants identify with implementing neuromarketing. Finally, participants mention that getting clients' approval for this novel approach is another barrier they encounter, as the successful adoption requires the clients' understanding of the benefits of neuromarketing and willingness to use it.

Consequently, the participants see neuromarketing to be making their job difficult in multiple ways. Primarily, they see the fact that getting clients acceptance is not something that's easy to do and would require significant educational efforts, with one participant stating:

“That’s a little surprising to me because I would expect marketing people to be very welcoming to a neuroscientist or a psychologist, somebody who understands not just the brain but the mechanisms behind it”.

It is still very common that clients do not accept a marketing study only using neuromarketing tools; there is still the need to prove these results using additional methods. In addition, they also see the need to invest more effort in conducting this type of research. One participant explained that doing an EEG study requires the researcher to also be a “*hairdresser*”, standing for hours and spending a lot of time setting up the experiment. It also requires marketers to get additional knowledge to be able to implement it correctly and successfully, as well as to invest in additional resources, such as time and money in acquiring adequate sample sizes to conduct the research.

When speaking about what makes neuromarketing adoption easy, many participants mention its methodology. They believe that neuromarketing provides a really clear scientific method that outlines the exact steps that need to be followed, and if followed through, it is very easy to implement. Those with prior experience with neuromarketing technology think that it is user-friendly and easy to use. In addition, many participants believe that there is a learning curve involved with neuromarketing adoption, and once used a number of times, it is very easy to keep using it. What is interesting, however, is that a large number of participants do find neuromarketing useful in their current scope of work. One of the major contributors to that is the ability to attract new customers. Many state that neuromarketing gives them something new to offer to their business clients and can facilitate that conversion much easier due to its scientific nature. More specifically, they say neuromarketing allows them to provide a more visible results and ability to describe better and more precise human behavior. It is also considered useful because it can reduce the time needed to justify marketing results and investments. And this provides the feeling of safety:

“I feel safe because everything has been conducted correctly and as it should be, and every time that every step has been followed, we were successful. When you don’t follow the steps for whatever reason, then you decrease your chances of being successful, and that makes me anxious”.

5.6.2.6 Summary of Attitudes Towards Neuromarketing

There are a variety of beliefs that are examined here, ranging from what participants consider to be both advantages and disadvantages of neuromarketing. However, there seems to be a common thread that implies neuromarketing to be offering something different to marketing professionals than the traditional marketing methods. Participants recognize that neuromarketing provides an opportunity for generating new insights that reach a much deeper level of consumer psychology that can allow for better understanding of consumer needs and design of marketing stimuli that can resonate better. These advantages stem from the scientific nature of neuromarketing and its opportunity to enable objective and more accurate measures of marketing variables. At the same time, participants are aware of the potential disadvantages of such an approach, the potential for overpromising the capabilities of neuromarketing, as well as ethical concerns that come with it. At

the same time, there is the overwhelmingly positive sentiment arising from the excitement and enthusiasm that marketing professionals have with regard to neuromarketing.

What is interesting, however, is how participants evaluate the usefulness and the ease of use of neuromarketing as pertaining to its scope. When looking at the difficulties and lack of usefulness of neuromarketing, most of the participants focus on the technological aspects of neuromarketing and confine their beliefs to the research capability of neuromarketing. While this is not unexpected when it comes to the purpose of the technology acceptance model - after all, it is all about the technology itself - most of the participants seem to perceive it as a research tool or research area. However, when looking at its usefulness and ease of use, there is a tendency to focus on the broader scope of neuromarketing and its applicability beyond just the research aspect and more towards strategy. The same difference exists depending on the prior level of experience with neuromarketing, where those who are actively using it report beliefs that are not just tied to the research aspect of it, but the marketing professionals who have limited exposure to it perceive its difficulties and ease mainly in the realm of research approach. This is important to note because these beliefs still contribute to the overall attitudes towards neuromarketing and play a major role in the willingness and intentions of marketing professionals to adopt neuromarketing.

5.6.3 Subjective Norms Related to Neuromarketing

Subjective norms represent the beliefs that participants hold about what their social environment thinks about specific behavior (Schifter & Ajzen, 1985). The subjective norms are the source of peer pressure, which is believed to be linked to stronger intentions to engage in those behaviors (Ajzen, 1991). The more favorable they believe their peers think of neuromarketing, more likely they are to engage in this behavior themselves.

In examining the subjective norms that participants of this research perceive towards neuromarketing, the focus has been on a few specific areas. First, they were asked to share what they believe others think and feel about neuromarketing, as well as whose opinion they find the most relevant and influential. And secondly, the study examined the reasons they believe others would approve or disprove their use of neuromarketing.

5.6.3.1 Thoughts and Feelings of Other People About Neuromarketing

Many participants believe that others do not know about neuromarketing. In fact, it is the most common belief among the participants of the study. One participant explained that neuromarketing and the methods used are very abstract notions for non-marketers to understand, especially when trying to describe what it is trying to achieve. However, once they learn about neuromarketing, participants are divided in believing whether others would have positive or negative thoughts. One participant described it as:

“Some think it’s good, some think it’s bad, some have no idea whether it’s good or bad”

Those who believe others would have positive beliefs think they would be excited and interested once they learn about the opportunities these new methods and approaches provide. Those who believe others will have negative beliefs think that’s due to the novel nature of neuromarketing, which induces the basic human resistance to novelty and the unknown.

“I think people are frankly, justifiably, nervous. I think it’s an area of research and an area of technology that the average client, average marketer understands in only rudimentary or incomplete ways. I think they hear a lot of things from a lot of people what it can do, and, again, not all of those are true, so there are ample reasons. [...] So, nervous I guess is one word. But I think also, though, they are excited because I think they rightfully see this as a new set of tools, a new technology that will open new possibilities for understanding people in a way that they haven’t previously and new opportunities for learning what people think about their efforts, and therefore enhance capability to identify the business opportunities, understand if things they are doing conform to those opportunities, and predict how well their performance is going to turn for them in terms of the impact of the market...”

A number of participants who already use neuromarketing and are active in the field brought up an interesting point about the perception that neuromarketing has had among the public. There is a belief among a number of participants that some experts in the field have been promoting distorted scientific evidence that is driving a bad reputation for the entire field. They express that

this type of phenomenon is misrepresenting the science and projecting an image that neuromarketing is easy to do, which is preventing it from having a positive impact on the business.

5.6.3.2 Opinions of Peers and Family About Neuromarketing

When it comes to specific people or groups of people that the participants look to for opinions about neuromarketing, most of the participants mention their immediate peers in the field, including managers and colleagues. In addition to that, participants have mentioned official institutions, scientists, students, and neuromarketing experts as the source of the opinions around neuromarketing. Some have even gone to the extent to name specific experts, both at the global and local scale.

A number of participants also mention their clients or final consumers as the source of the most relevant and influential beliefs about neuromarketing. They believe that these groups are what provides them the pulse about neuromarketing and drives their need to tailor their knowledge or beliefs about neuromarketing. These participants believe that clients and customers are the ones they need to make most comfortable with neuromarketing, so their opinion is what matters most to them. This comes as a result of a customer-centric approach that the entire industry is shifting towards.

A small number of participants did mention their closest friends or family as the barometer for neuromarketing perceptions. While they might not be part of the marketing industry, their perception on whether neuromarketing is good or bad, ethical or not, significantly influences the overall beliefs that marketing professionals have towards neuromarketing and their likelihood to implement it in their practices.

5.6.3.3 Approval of Neuromarketing Use

When talking about their perceptions of what others think of neuromarketing, participants also provided input on whether they think others (would) approve their use of neuromarketing in everyday practices. For the most part, participants believe that other marketers would approve the use of neuromarketing as they are the ones who recognize the benefits of the approach and the added value it provides. However, the majority agrees that the wider public, which includes the end customers, family and friends outside of the field, still might be uncomfortable with it. While

it might have been expected that practitioners currently using neuromarketing would believe that there is a wider approval among people in their environment, the study shows that that is not necessarily the case. The same conclusion was communicated by both groups regarding their experience with neuromarketing.

Primarily, this difference is believed to be dependent on the level of understanding they have about neuromarketing and their perception of how it is being used. One participant brought up a good point, saying that:

“I don’t think you can have a positive or negative opinion of something until you actually understand it. If you are making some sort of preemptive connotations about something before you actually understand it, then you are not giving yourself the information you need to make an informed decision. That said, I think that once people understood, they would understand that it’s of more service to them”.

Participants also expressed the perceived difference in the approval of neuromarketing to depend whether receivers of this information believed neuromarketing was used with positive or negative intentions. There still seems to be a belief that a wider public might be seeing neuromarketing as a tool used to manipulate choices, which is considered to be a negative intention. Under such circumstances, the participants believe that their social environment would disapprove of their use of neuromarketing. However, with greater understanding of neuromarketing and its applicability in improving outcomes for the end consumer, that approval has potential to shift to a positive one.

5.6.3.4 Summary of Subjective Norms Related to Neuromarketing

In general, participants are not sure how much understanding and knowledge there is about neuromarketing, which is an important factor for how others perceive it and whether they would approve of it. While they believe that their peers in the marketing industry have at least basic understanding and approve of its use, they don’t think this applies to the wider public. And this is where the discussion of ethics emerged, where the participants believe the increased knowledge about neuromarketing can mitigate the ethical concerns that would facilitate adoption of

neuromarketing. Nevertheless, they believe these concerns are not present among the marketing community, and as such, see positive perceptions by their peers.

5.6.4 Perceived Behavioral Control

In studying perceived behavioral control, this research looked into what participants believe to be the barriers to adopting neuromarketing practices into their scope of work. More specifically, this research studied the barriers for neuromarketing adoption by looking at what the biggest issues are with neuromarketing adoption, which difficulties they see, and whose decision it is to start using it. In addition, the study examined what it would take for participants to start using neuromarketing by investigating what would facilitate their adoption, the opportunities they see to start applying it now, the level of confidence that participants have to start applying it, what the criteria they need satisfied in order to start using it, as well as what their extent of adoption would be.

5.6.4.1 Barriers to Use Neuromarketing

When thinking about the barriers to neuromarketing adoption, participants select a few that are consistent across all strata. The most common barriers include time and money, as well as knowledge of neuromarketing. Participants believe that they themselves do not have sufficient knowledge to apply neuromarketing in their conduct. These barriers mainly represent the physical barriers that most commonly are reported by the practitioner that do not have prior experience with this approach to marketing. Another barrier that is highlighted during the research is trust in the methods, as they believe there is lack of endorsement for neuromarketing from the trusted sources and no word of mouth. These findings are consistent with the difficulties that participants see in applying neuromarketing themselves, where they cite budget as the primary difficulty.

“Lack of knowledge about it, lack of endorsement from trusted sources, lack of word of mouth, it’s just not talked about and you don’t really hear successes or revolutionary changes because of neuromarketing stories.”

On the topic of neuromarketing being expensive, one participant explains this implication on neuromarketing adoption in the following way:

“[...] I think it’s expensive, That’s the problem because everything that’s new and not mainstream costs a lot of money. So, part of the resistance comes because you need to invest a lot in something that’s new, you don’t know if it works, you don’t have specific examples that are close to you, who did it and how they used it, and you need to dive in. I think that’s far from the practice right now.”

On the other hand, experienced practitioners focus more on the cognitive barriers. These include ignorance towards the new methods, as well as stereotypes or prejudice that exist as a result of associations people have with neuromarketing. As one participant stated:

“Stereotypes that exist because I believe there isn’t enough exact research that shows the consequences are this or that. As much as research there is, I don’t think there’s enough to show some rules or to overrule some theories that exist. I think that once that scare is overruled and there is no prejudice, and on the other hand where there are tools that can simplify the application that doesn’t include MRI.”

In addition, a number of participants mention the lack of process for application of neuromarketing as a major difficulty. They either say that there is no clear or simple process they can follow, or no guidance on how to determine which technique is worth exploring in which situation. Some more experienced with neuromarketing practice say that the research conduct of neuromarketing is not the easiest, knowing what it takes to get a good reading from these methods, as well as how to interpret those readings given that there is so much we still don’t know about the brain.

When it comes to whose decision it is to use neuromarketing, the answers are different across different strata. Participants from the research industry believe that it is up on the researcher himself/herself to recommend the most appropriate method for reaching the research objective. This is similar to those working in marketing agencies or brand management, who believe it is their responsibility to recommend it, but the ultimate decision is with the budget holder, whether it is the owner of the company or the client to approve use of resources for neuromarketing purposes. When it comes to academics, they believe the decision lies with the institution who sets

up the syllabus, and if neuromarketing is not part of the syllabus, there is not a lot they can do to include it.

5.6.4.2 Facilitators for the Use of Neuromarketing

When it comes to the factors that would facilitate their use of neuromarketing, some participants still believe it is the lower cost of neuromarketing implementation that would help. Others, on the other hand, believe that they need to identify ways to apply neuromarketing to the existing practices and plans in order to be successful. Acknowledging the existing path the brand is taking, participants believe they need to identify how neuromarketing can help them solve the problems their clients are facing and what they want to accomplish. That is what would spark the interest for neuromarketing applications. Some participants believe that by having a process to follow for successful implementation it would make it easier for them to apply neuromarketing. Knowing the process and knowing the outcomes of such a process seems to be important for participants to be able to make neuromarketing more applicable and more attractive to use. In addition, overall knowledge of neuromarketing would be useful for participants who need other to approve it because the discussion can then focus on the value of it rather than what it is and why it is important. And finally, the return on investment is considered important where participants can help the decision-makers justify the cost of doing neuromarketing by providing the payoff of it at the end of the process. To summarize, one participant put it all in perspective, saying:

“I would need to understand the process exactly, I would have to understand what result I’m getting, I would have to understand the resources that would be needed on my end to implement.”

In terms of the opportunities the participants see for neuromarketing application, they either see it in the context of research, allowing them to supplement the traditional research methods, or as part of the everyday work, to reach effectiveness in everything they do. In the second group of applications, participants see opportunities to use neuromarketing in all areas of marketing, including product development, pricing, media, new connections, as it can help them get the attention and elicit emotions from the final consumer easier. These answers are consistent with the current state of neuromarketing definition as discussed in Chapter 3, where some see

neuromarketing application in the realm of research, while others see it more broadly to all things marketing.

In terms of their self-efficacy and the confidence to start applying neuromarketing themselves now, many question their current knowledge believing they need more training to be able to do it properly. This is not surprising considering the percentage of the sample that doesn't have experience using neuromarketing in the past. At the same time, the answers are consistent with the nature of difficulties they see in the application of neuromarketing. So, when asked what criteria they need to be satisfied to start using neuromarketing, in addition to time and money, many participants cite the need to understand the methodology or the process better, what it does and how, and how it contributes to the work and the overall scientific progress. Once those criteria are satisfied, the participants predict to use neuromarketing in designing campaigns, conducting research, having stimulating discussions with their students, designing events, and overall application of the scientific findings to the practice of marketing.

5.6.4.3 Summary of Perceived Behavioral Control

The most common barriers to neuromarketing adoption represent time, money and knowledge. However, while there are both physical and cognitive barriers to neuromarketing adoption, participants believe that by having a better understanding of neuromarketing and what it offers would facilitate their application in research and everyday conduct of marketing. Once they have that broader understanding of the field, they intend to use neuromarketing in research, as well as in a way that has a much broader implication to marketing practices.

5.6.5 Prototype Neuromarketing Behavior

In addition to behavioral intentions, this research also investigated the willingness to adopt neuromarketing as a motivational factor underlying such behavior. It is believed that positive attitudes, positive social norms and prototype favorability and similarity increase the behavioral willingness to engage in such behavior, which represents a strong predictor of behavior itself. Within the scope of this research, it is analyzed how marketing professionals look at the prototype neuromarketing behavior, how they see the prototype neuromarketer, and the level of motivation to be part of that group (Gibbons, Gerrard, Blanton & Russell, 1998).

5.6.5.1 Favorability of Prototype Neuromarketing Behavior

Looking at the characteristics that participants associate with neuromarketers, all of the answers represent positive ones. While it is a long list of positive characteristics, the most common answer the participants provided is knowledgeable. Marketing professionals see someone implementing neuromarketing as a person who has extensive knowledge about multiple fields, specifically, marketing and neuroscience, someone who reads a lot and keeps increasing his/her knowledge base for the purposes of the profession. In addition, they see neuromarketers as creative and innovative, which is a result of searching for answers outside of their field to solve the problems. Neuromarketer is also believed to be open-minded and contemporary because he/she follows the latest trends and is up to date with the latest developments and technology. A number of participants also mention that a marketer using neuromarketing is visionary and pioneer due to his/her abilities to look beyond the current scope of the field and drive progress. Additional characteristics that were mentioned by individual participants also include decisive, advanced, risk-taker, curious, proactive caring and different. As one participant summarized it:

“Honestly, they are professional to me, people that go so deep to the core of their business and are so dedicated that a simple strategy is not enough to be on the paper, but they have to go deeper after the truth that exists at the core of a person or consumer or whatever. I find that very respectful, honestly. I really think that of everyone that went that far in marketing I really feel the respect.”

As all the characteristics that the participants outlined are positive ones, it is not surprising that there is a sense of favorability towards practitioners using neuromarketing (Figure 27). Especially the participants who do not have experience with neuromarketing: they want to be part of this group of professionals, envy them, they respect their approach, they see them as leaders because they are not happy with the status quo and want to offer new options. When asked who they look up to with respect to neuromarketing practices, a number of participants mention scientists, specifically neuroscientists, consumer neuroscientists and behavioral economics. From the companies that apply neuromarketing that they look up to, they mention big international companies such as Coca-Cola and P&G, but also neuromarketing research companies such as Tobii. They see these neuromarketing professionals using neuromarketing in sales, research,

promotion and advertising, but also with a goal of improving communication, offerings to consumers, and consumer satisfaction.

Figure 27. Word Cloud of Characteristics of People Using Neuromarketing



Figure 27. shows the most common words used to describe people who are using neuromarketing.

5.6.5.2 Summary of Prototype Neuromarketing Behavior

Despite the previous discussion about negative associations towards neuromarketing, all of the participants perceive neuromarketers positively and in a positive way. This discussion highlights the high favorability towards professionals already using neuromarketing and their desire to be part of that group that they think of so highly. The primary reason for such perception is the inherent pursuit of knowledge that this group of marketing professionals project that makes them forward-thinking and visionary that resonates so well with the participants in this research.

5.7 Discussion

This study is designed to elicit beliefs and attitudes about neuromarketing based on a previously developed framework that takes in consideration The Theory of Planned Behavior, Technology Acceptance Model, and Prototype Willingness Model. The data suggest that, based on the Theory of Planned Behavior and Technology Acceptance Model criteria, marketing professionals in this study have positive attitudes towards neuromarketing. This is evident from the number advantages

they perceive, which outweigh the disadvantages. Specifically, Table 11 shows that there are 37 mentions of advantages and positive feelings under the context of attitudes, while there are 30 mentions of disadvantages and negative feelings. They also have positive subjective norms towards neuromarketing, where number of mentions for approval outnumbers the number of mentions for disapproval, suggesting that it is important to them how their environment perceives them when using neuromarketing. Looking at the number of mentions for ethical considerations, however, there are more mentions for negative (8) than positive (6) implications, with some (5) presence of mixed thoughts (Appendix F). In addition, the participants are able to identify the perceived barriers to engage in neuromarketing behavior. While skills, budget and time represent the most common ones cited by the participants, this does not interfere with their willingness and intention to implement it. They see the adoption of neuromarketing practices as useful to their work and one that provides significant value to overall business practices. And finally, the participants have a very favorable prototype of neuromarketing behavior, which is described as a forward-looking, innovative, educated, scientific approach to marketing.

These all lead to the conclusion that participants have high behavioral intentions and willingness to adopt neuromarketing. The most prominent factor in studying future human behavior are attitudes, as there is an internal tendency to sustain consistency between one's attitudes and behavior (Fazio, Chen, McDonel & Sherman, 1982). Attitudes are believed to be a good predictor of specific behavior because they shape the behavioral intentions to engage in specific behavior, which is a single strongest predictor of behavior (Ajzen, 2005). Positive attitudes towards neuromarketing would indicate higher likelihood to adopt neuromarketing into everyday marketing practices. In addition, based on the current marketing literature and reports in practitioner publications, it was expected that the question of ethics will come up when discussing subjective norms (Stanton, Sinnott-Armstrong, & Huettel, 2017; Fisher, Chin & Klitzman, 2010).

These positive attitudes and subjective norms coupled with favorable prototype perception led to a conclusion of strong behavioral willingness to engage in neuromarketing behavior. With high intentions and high willingness to adopt neuromarketing, it can be argued that there is a high likelihood among this group of neuromarketing adoption.

These findings are very much in line with similar studies that have been conducted over the years to explore the future of neuromarketing adoption. According to Lim (2018), neurologists and marketing practitioners have a more favorable attitude towards neuromarketing than marketing academics have. A report published by the Association of National Advertisers in 2018 cited that the number one barrier for adoption of neuromarketing is cost, while a report from NMSBA cited that lack of knowledge as one of the major challenges for growth of neuromarketing (ANA, 2018; NMSBA, 2018). In addition, the mentions of neuromarketing as an intrusive and invasive, as well as the belief that neuromarketing can be seen as controlling, manipulative and an abuse of power are aligned to the negative perception that neuromarketing used to have in the early days of its adoption and use (Murphy, Illes & Reiner, 2008). Nevertheless, multiple sources still report positive beliefs towards neuromarketing adoption - the GRIT report suggested that there is 80% interest in neuromarketing research methods and ANA survey of marketers reports 90% of respondents believe that neuromarketing will replace or complement existing marketing research practices (ANA, 2018; GRIT, 2017).

While the findings from Study 1 confirmed some of the previous evidence collected in order to forecast the growth of neuromarketing, it also provided additional insights. These additions are primarily of qualitative nature and explain why there is an expectation of neuromarketing adoption. Specifically, these expectations can be traced back to variables within the theoretical model. In addition, the method used in Study 1 can be further replicated for other countries and used to identify specific action that needs to be taken to increase the likelihood of neuromarketing adoption.

5.8 Limitations

As this study represents a qualitative exploration of beliefs and attitudes of marketing professionals towards neuromarketing, it is important to identify the limitations that such an approach may have. First of all, the study was conducted with marketing professionals in the US and SEE regions, which should be taken into consideration when trying to generalize its findings. Some of the attitudes and beliefs towards neuromarketing might be different in different regions, especially in the cultural domain. Nevertheless, there is no evidence in this research to suggest that to be the case in the two regions studied. Second of all, this qualitative study is based on the self-reporting

measures of neuromarketing beliefs (Gorgiev, Martin, Dimitriadis & Nikolaidis, 2018). It is well recognized in the literature that both implicit and explicit factors contribute to the formulation of attitudes (Gorgiev & Dimitriadis, 2018). And finally, this study represents qualitative exploration of the attitudes, which inhibits its ability for further generalization and quantitative support, even within these regions. Due to its qualitative nature, this research provided a binary evaluation of attitudes, as positive or negative, rather than the specific strength of the attitudes. In an effort to address these limitations, Study 2 was conducted as part of this research project to further measure the attitudes, as well as other variables, that determine the adoption of neuromarketing. On one hand, Study 2 measured the strength of attitudes towards neuromarketing using a survey approach with Likert scale. On the other hand, it studied the implicit attitudes using an implicit associations test (IAT). In doing so, Study 2 provided an account for attitude measures in both explicit and implicit domains.

5.9 Chapter Summary

The Study 1 was a qualitative study aimed to elicit beliefs about neuromarketing and the willingness and intentions to adopt it among marketing professionals in SEE and USA regions. The study includes 19 semi-structured interviews that were conducted with marketing professionals within six strata: practitioners, academics, researchers, experts, students and editors of scientific journals. The interviews were transcribed and analyzed using NVivo based on the theoretical framework used in this research. The results suggest marketing professionals see a lot of opportunities and business value in applying neuromarketing to their current marketing practices, which indicates initial likelihood for its adoption in the future.

Chapter 6. Study 2: Defining a Model for Neuromarketing Adoption

“As cognitive scientists have emphasized in recent years, cognition is embodied; you think with your body, not only with your brain.”

- Daniel Kahneman (2011)

6.1 Introduction

Study 1 provided the insight into the beliefs that marketing professionals hold towards neuromarketing. Study 2 is a continuation of that exploration, looking to quantitatively measure those beliefs in an effort to predict the adoption of neuromarketing in USA and SEE regions. The learnings from Study 1 around the language used, associations they hold and behaviors they engaged in, have been implemented to develop Study 2. Specifically, the survey questions used to measure all the variables were adapted from previous studies using the language and specific elements that were called out in Study 1. In addition, specific associations towards neuromarketing were uncovered in Study 1 and leveraged in Study 2 when developing the Implicit Association Test (IAT). With that in mind, Study 2 was designed to measure predictive abilities of the theory of planned behavior, prototype willingness model, and technology acceptance model towards the use of neuromarketing.

As literature suggests, all elements defining subjective norms and perceived behavioral control are measured through survey with Likert scale-type questions (Jiang, Lu, Hou, & Yue, 2013; Linden, 2011; Skar, Sniehotta, Araújo-Soares, & Molloy, 2008; Tonglet, Phillips & Read, 2004; Cheung, Chan & Wong, 1999). The same case is with explicit attitudes (Jiang, Lu, Hou, & Yue, 2013; Linden, 2011; Skar, Sniehotta, Araújo-Soares, & Molloy, 2008). In addition, there are studies assessing the perceived usefulness and perceived ease of use, as well as the prototype similarity and prototype favorability, through the use of a scale (Rivis, Sheeran & Armitage, 2011; Davis, 1989).

Most of the studies reviewed that use the theory of planned behavior as a guide for inquiry have used questionnaires as the main instrument for measuring attitudes. In addition, the author proposed to use the Implicit Associations Test (IAT) for measuring implicit attitudes, as the author

believes that the application of IAT minimizes the effects of response biases, as discussed previously in Chapter 3. Moreover, even though the IAT has not been used to the author's knowledge to investigate neuromarketing behavior, the literature suggests this method can be used to assess a wide range of attitudes (Greenwald, Nosek & Banaji, 2003). As implicit attitudes represent automatic evaluations which are quickly accessible in a person's memory, the suggested way for uncovering them is by using an experimental design that demands rapid responses from participants, such as Implicit Association Tests (Genco, Pohlmann & Steidl, 2013). IAT represents a computerized method used for measuring the strength of association between an object and an attribute (Perugini, 2005). The effect of IAT relies on the premise that when there is a strong connection between an object and an attribute, respondents need less time to associate them (Maison, Greenwald & Bruin, 2004). IAT is a methodology that has been used in research for decades (Oswald, Mitchell, Blanton, Jaccard & Tetlock, 2013; Greenwald, Poehlman, Uhlmann & Banaji, 2009).

With that in mind, this chapter looks to answer all the questions within RQ3, RQ4 and RQ5:

RO3: Understand the attitudes of marketing professionals towards neuromarketing:

- j. Do marketing professionals have positive explicit attitudes towards neuromarketing?
- k. Do marketing professionals have positive implicit attitudes towards neuromarketing?
- l. What is the difference in the valence of attitudes towards neuromarketing between professionals who have experience in using it vs. those who do not?
- m. What is the difference in valence of attitudes towards neuromarketing between USA and SEE marketing professionals?

RO4: Uncover intentions and willingness of marketing professionals to adopt neuromarketing:

- n. Do marketing professionals have intentions to adopt neuromarketing?
- o. Are marketing professionals willing to adopt neuromarketing practices?

RO5: Investigate indicators of neuromarketing adoption:

- p. What factors explain the intention and willingness of marketing professionals to adopt neuromarketing practices?
- q. What is the best predictor of neuromarketing adoption?

6.2 Methodology

All the elements of the three theoretical models can be measured through standard rating scales and IAT. The questions used in the survey used in Study 2 have been adapted from the literature (Chapter 4) to ensure validity of the instrument used. For this reason, the author used one instrument to investigate all of the parameters (Figure 28).

Figure 28. Study 2 Survey Questions

Theoretical Framework	Questions
Demographic information	Geography (USA;SEE;other) What best describes your current role? (select all that apply - strata) How many years of marketing experience do you have? (less than 1;1-10;10+)
To what extent do you agree with the following statements? (1- not at all, 7- absolutely agree)	
Awareness and knowledge	I am aware of the neuromarketing concept I have knowledge about neuromarketing I have experience implementing neuromarketing practices in my current job Neuromarketing is a new area of research in marketing Neuromarketing is a new way of thinking about consumer behavior
Advantages	Neuromarketing offers a lot of opportunities to marketers Using data from neuromarketing research will give me more insights into the topic I am investigating Neuromarketing research can provide more accurate data about people's opinions than traditional marketing research Neuromarketing tools provides a scientific way to reach desired results Using neuromarketing allows me to give the consumers exactly what they want Neuromarketing can help me better understand what my customers need Neuromarketing can help me make better decisions Neuromarketing can help me increase profits and sales of my (clients') products Neuromarketing can help me increase visibility and exposure of my (clients') products
Attitudes (behavioral beliefs)	Implementing neuromarketing requires large budgets Using neuromarketing tools in research is uncomfortable for the participants
Disadvantages	Most marketers lack skills to implement neuromarketing Neuromarketing research takes a lot of time to collect data Neuromarketing can be used to manipulate people There are a lot of providers of neuromarketing research that I know of
Technology Acceptance Model	Neuromarketing is useful to my work Neuromarketing would make my job easier Neuromarketing researchers use the latest technology Neuromarketing is easy to use You need proper equipment in order to be able to implement neuromarketing principles I like to experiment with new technologies
Social Norms (normative beliefs)	My colleagues already use neuromarketing My friends would be impressed with me using neuromarketing My family would think favorably of me if I told them I am using neuromarketing in my job Neuromarketing research and practice follows ethical guidelines
Perceived Behavioral Control	With my current knowledge and skills, I can implement neuromarketing With enough money in the budget and access to neuromarketing tools, I can start a neuromarketing project within a month I need more training in neuromarketing Neuromarketing should be taught at every business school
Behavioral intentions	I intend to implement neuromarketing in my work I would encourage others to use neuromarketing If I had enough budget and access to neuromarketing tools, I would start a neuromarketing project the next month
Prototype Willingness Model	Neuromarketing is only used in research Only big companies use neuromarketing Neuromarketing represents the latest trend in marketing In 10 years, neuromarketing will become the industry standard

(Source: compiled by the author based on Hankins, French & Horne, 2000)

The procedure used in IAT has been adapted from the previous studies, as well. Typically, IAT is performed in a lab setting, where the participants perform the task on a designated computer that has a specific IAT software installed. Nevertheless, this approach was not sufficient for the present

research given the geographic disparity of the sample. The only viable alternative was to conduct the study using a web-based software so participants from multiple countries in the South East Europe, as well as the participants from multiple areas in the United States, could participate in the research. A group of researchers from the Seattle Pacific University have developed a tool called *iatgen* that allows for IAT to be embedded into Qualtrics platform to run a survey-based IAT (Carpenter et al, 2018). The tool is designed for noncommercial use only and can be leveraged for academic purposes (Creative Commons, 2013). The tool incorporates access to the Shiny App, an interface where the study design is being customized and converted into the code which can be directly implemented into the Qualtrics platform. Once the data collection is completed, the data can be exported and uploaded to the Shiny App to perform data cleaning and scoring and generate the D-Score values (Carpenter et al, 2018). The *iatgen* tool represents the most viable option to use for this research based on several reasons: 1) the authors have conducted empirical validation of the tool across multiple studies that confirmed data accuracy, 2) it provides the only readily available option to conduct survey-based IAT and measure both explicit and implicit attitudes within a single interface, 3) it is an inexpensive solution that does not dictate acquiring additional licenses, and 4) the tool mitigates the need to learn a programming language and program the IAT (Carpenter et al, 2018).

As discussed, the Study 2 instrument consists of an IAT experimental task and the scale questions designed to understand participants' attitudes towards neuromarketing. The survey platform used to assess these attitudes is Qualtrics. Qualtrics represents a web-based platform that allows researchers to design surveys, distribute them to participants, as well as to export the data and the results for future analysis. The author selected Qualtrics for multiple reasons: 1) Qualtrics represents a web-based platform that allows participation in the research from multiple geographies, such as the United States and the South East European region, 2) Qualtrics has been used across scientific studies in psychology, specifically the ones assessing attitudes of participants, 3) to the author's knowledge, Qualtrics is the only web-based platform that has the capabilities to support the IAT, and 4) the user-friendly interface of the platform allowed the author to design the survey without any additional training, (Carpenter et al, 2018; Zakharov, Nikulchev, Ilin, Ismatullina & Fenin, 2017).

The design of Study 2 is based on the protocol suggested by Greenwald, Nosek & Banaji (2003). During the experimental task, participants are presented with two different target stimuli, one group associated with neuromarketing and one group associated with marketing (Figure 29). Participants are presented with one stimulus in the middle of the screen and two attribute stimuli, one on each side of the screen (see Figure 30). The exact concepts for both target stimuli have been elicited during the interview conducted in Study 1. In addition, these target stimuli are paired with attribute stimuli of different valence, one group of positive and one group of negative attributes. The participants are presented with stimuli in a sequence of seven blocks during which time it is expected of the participant to click E or I key on keyboard, corresponding to the left or right position of attribute on screen that the participant associates the target stimuli with (Maison, Greenwald & Bruin, 2004). The procedure is explained by Carpenter et al (2018) as the following and shown in Figure 31:

“Block 1 is a practice block (20 trials) of only targets (e.g., insects; flowers); Block 2 is a practice block (20 trials) of only categories (e.g., pleasant; unpleasant). Next is a combined block (e.g., “incompatible” block: insects + pleasant; flowers + unpleasant) using both targets and categories; the hand pairings are determined by the initial left/right assignments in the previous blocks (randomized). This is subdivided into 20 practice trials (Block 3) and 40 critical trials (Block 4; scoring uses data from B3 and B4). Following this is another practice block (Block 5) consisting of the categories with the sides reversed (e.g., unpleasant; pleasant). This helps wash out left/right associations learned in the early blocks; on the basis of empirical analysis, Nosek et al. (2005) recommended 40 trials. Finally, participants repeat the combined block with the categories in their reversed positions (e.g., “compatible” block: insects + unpleasant; flowers + pleasant). As before, this is divided into 20 practice trials (Block 6) and 40 critical trials (Block 7).”

Figure 29. Example of IAT Screen

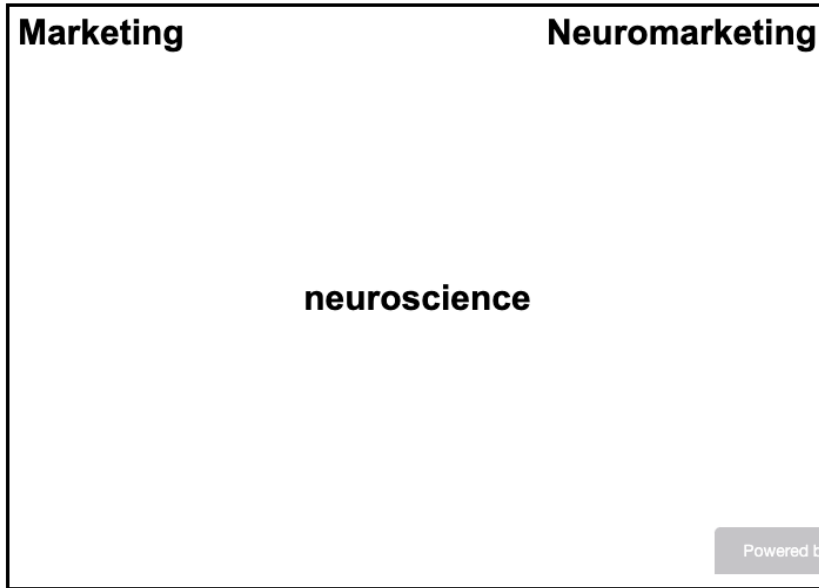


Figure 29. Represents a sample of the IAT screen from the study.

Figure 30. IAT stimuli categorization

	Category	Items 1
Target A	Neuromarketing	neuromarketing, neuroscience, consumer neuroscience, behavioral economics, psychology, fMRI, EEG
Target B	Marketing	marketing, advertising, promotion, consumer behavior, digital marketing, focus group, survey
Positive category	Positive attributes	good, right, hot, strong, new, true, high
Negative category	Negative attributes	bad, wrong, cold, weak, old, false, low
		FROM QUALTRICS
		(1) Compatible first - Target A on right initially paired with positive (RP)
		(2) Incompatible first - Target A on right initially paired with negative (RN)
		(3) Compatible first - Target A on left initially paired with positive (LP)
		(4) Incompatible first - Target A on left initially paired with negative (LN)
		By keeping these in the randomizer, the order of blocks and sides is fully counterbalanced between subjects.
		Attribute pairs
		good-bad
		right-wrong
		hot-cold
		strong-weak
		new-old
		true-false
		high-low

(source: compiled by the author based on Greenwald, McGhee & Schwartz, 1998)

Figure 31. IAT study design

The screenshot shows the 'Advanced Settings' window for an IAT study design. It includes the following settings:

- Attribute Stimuli Color:** Green
- Target Stimuli Color:** Black
- Number of trials in each block:**

Block 1 - Initial Target	Block 2 - Initial Category	Block 3 - Combined (Practice)	Block 4 - Combined (Critical)
20	20	20	40

Block 5 - Reverse Target	Block 6 - Combined (Practice)	Block 7 - Combined (Critical)
40	20	40
- Pause between trials (ms):** 250

Figure 31. shows the setup of the study in iatgen.

Study 2 has been designed only in English language since it is common across all participants. When the iatgen code is inserted in the Qualtrics platform, it runs the test with the instructions provided in English. In addition, participants in the study from the South East European region come from multiple countries where different languages are spoken. At this moment, the author only has proficiency in English and Serbian, which would mean that a number of participants would still need to complete the study in their non-primary language. For example, participants from Greece would not have English or Serbian as their mother tongue, which would mean that completing the study in any of the two available languages would involve the use of non-primary language.

The consideration for using only English as the main language for Study 2 also involved establishing the validity and reliability of the study. Additional testing would have been needed to ensure the concepts used in the study are consistent and bare the same or similar associations in multiple languages. This conclusion comes from the belief that the language and its characteristics influence cognitive processing and with different languages having different characteristics, the

author believes that offering the study in multiple languages would represent a confounding variable that would be difficult to control for, as already supported by Danziger & Ward (2010).

In addition, previous studies conducted with bilingual participants using stable attitudes demonstrated that the participants show preference towards the categories that are associated with the specific test language (Ogunnaike, Dunham, & Banaji, 2010; Bluemke & Friese, 2006). However, the existing evidence for the language effect is available only for culturally dependent stimuli, but not for the culturally neutral ones (Danziger & Ward, 2010; Ogunnaike, Dunham, & Banaji, 2010). The stimuli used in Study 2 is culturally neutral and the language used to test the attitudes should not have any effect on the associations. Nevertheless, the author acknowledges that participants that do not have English as a mother tongue undergo a different information processing path that may impose a cognitive load on the participant and delay the response time in the IAT (Kern, 1989). This phenomenon is not only limited to participants living and working in the South East European region; as a matter of fact, there are marketing professionals who live and work in the United States that are immigrants and have a language other than English as a mother tongue. Therefore, the region selection does not mitigate the potential language barrier. For this reason, the participants in the study that do not have English as their first language are required to be fluent speakers (as recommended by Schmidt, 1992).

The iatgen tool is designed to track response latency in the discrimination task relative to the practice tasks, which means that response latency is compared per participant and is not an absolute value. Therefore, even if the participants with English as a secondary language have an overall slower response rate, this will not influence the results because the slower or faster response will be determined based on their individual base rate. Their fluency in English is determined based on a self-report of the English proficiency using a 7-point scale. Only the responses from the participants that score 5 or above on the English proficiency questions are included in the data analysis. In addition to this, the author has selected the attribute stimuli to be the words that require minimal cognitive processing and are very likely to be familiar to the participants and even used in multiple foreign languages as part of the slang. These words include hot/cold, good/bad, old/new, right/wrong, high/low, true/false, strong/weak.

Another consideration for Study 2 is certainly the order of data collection methods that will be presented to participants. Even though the order of administering IAT and self-reporting tools seems not to have conflicting properties, the author decided to present the participants first with the IAT and then with the survey in order to control for any priming effects of the explicit attitude measurement on the implicit associations test (as used in previous studies such as Nosek, Greenwald & Banaji, 2005). In this way, there is a higher likelihood that self-reporting on the explicit attitudes has not influenced the results gathered with the IAT.

6.3 Sample

In the process of determining the appropriate sample size for Study 2, the author used G*Power software to conduct power analysis, based on an a priori power analysis for a multiple regression model (Faul, Erdfelder, Buchner, & Lang, 2009). In terms of the input data, the following assumptions have been made:

- Statistical test: linear multiple regression, fixed model, single regression coefficient (Faul, Erdfelder, Buchner & Lang, 2009)
- Effect size: the author selected medium (0.15) effect size (Bosco, Aguinis, Singh, Field & Pierce, 2014)
- Significance test - T-test has been selected
- Number of tested predictors: the overall number of predictors that is being tested within this multiple regression model is five (implicit attitudes, explicit attitudes, subjective norms, perceived behavioral control, perceived usefulness and prototype); nevertheless, if the number of factors needs to be increased due to the results of the analysis, there is no effect on the sample size

Based on the output data provided by the G*Power software, the number of participants that should be used in this research is 74 in order to achieve statistical significance.

A stratified sampling method was used consisting of marketing academics, practitioners, researchers, experts, editors of academic journals and students, who operate in the regions of South East Europe and the United States of America. The 179 professionals were invited to participate in Study 2. In total, 80 professionals participated in Study 2; as part of this number, however,

around 10 participants were invited in the pilot phase, as this number appears to be within the range for recommended size (Hertzog, 2008; van Belle, 2002; Kalafatis & Polland, 1999; Hill, 1998). Out of the 10 participants invited to the pilot, only 6 participants actually completed the study. As one of the research goals is to assess the current position on neuromarketing in South East Europe compared to the United States, participants were recruited from both regions.

6.4 Pilot

As it is the case with elicitation study, to the author's knowledge there are no studies that have investigated behavioral intentions and behavioral willingness to adopt neuromarketing. For this reason, a pilot study was conducted to test the reliability and validity of the research instrument. After the results of the elicitation study became available and the survey and IAT have been prepared, the author has distributed them to 6 participants, 3 of which are marketing professionals in the United States and the remaining 3 are marketing professionals in South East Europe. Based on the results from this pilot study and the feedback from the participants, the final instrument has been adjusted. The adjustments included minor language edits, but nothing that influenced the design of the study and required additional piloting.

The main goal of the pilot study was to assess the research instrument in its ability to measure the response latency as a proxy for the availability of associations with neuromarketing and marketing-specific concepts. To achieve that, the author was looking at the D-Score values as the indicators for positive or negative attitudes towards neuromarketing. The initial results demonstrated the existence of different valance across the answers, which implied that the instrument itself was providing a reliable measure of different attitudes among the participants (Table 12).

Table 12. Pilot Study Results

Pilot Results	
Participants	D-Score
1	-0.149401885
2	0.458515878
3	0.101721887
4	-0.451782079
5	0.956867756
6	-0.447754421

Table 12. shows the results of the IAT pilot study

6.5 Data Collection and Analysis

Study 2 explored behavioral intentions and behavioral willingness towards neuromarketing by assessing the explicit and implicit attitude using a survey and an implicit associations test. The study was conducted via web-based platform Qualtrics and all data collection was obtained using a single survey-based platform. All participants in the study received a link to take part in the study. Consent was obtained through this link and represents the first page that the participants saw when accessing the study. The consent was obtained by selecting the field that signifies that they consent to participate. Only participants that consent are allowed to proceed further to the study.

The participants received the link for the study, together with a brief explanation of the goal of the study via email or via direct message online that was designed for direct communication, such as Facebook Messenger, LinkedIn message or similar. Most of the participants were directly invited by the author to participate in the study. In some instances, the participants forwarded the initial invitation email to their colleagues within the same field. All participants would still be subject to the inclusion criteria previously determined for the study.

The inclusion criteria for participating in the study were: 1) participants are marketing professionals, regardless of the number of years in the marketing industry, 2) they were located and worked in the SEE or the US region, 3) have proficient command of English or English is their first language, and 4) have consented to participate in the study. All other responses that deviate from these criteria are excluded from the analysis. As per the iatgen tool requirements, the participants were only able to participate in the study from their computers. All attempts to access

the study from different devices, such as phones or tablets, were restricted and the participants were invited to access the study from their computers. All the participants could participate only once in the study, as the system could recognize whether the link to the study has already been accessed from the participant's unique device. This approach ensured that all the responses were unique and represent each individual's attitude towards neuromarketing. Before the study was initiated, ethical approval was granted by the University of Sheffield Ethics Committee.

After the completion of the study, all participants were presented with a screen that included contact information of the author. The participants were encouraged to reach out to the author or the supervisor if they had any questions about the study, the ethics application, or how the data is being handled. To the author's knowledge, none of the participants have requested additional information or requested to be excluded from the analysis.

Data collection for Study 2 took over one year, from April 2019 until April 2020. Before conducting the analysis and reporting on the results, the data collected has been cleaned. The following steps were taken:

- File exported from Qualtrics in legacy format CVS on 5/17/2020
- There answers were recorded from 145 participants in total
- Entries from countries not corresponding to the sample - UK, Portugal, Germany, Italy - were removed from the file (7)
- All incomplete answers were removed (54)
- All entries from participants that indicated English as second language scored 4 or less were removed (2)
- This brought the total sample size for data analysis to 82, which were then uploaded to iatgen platform for computation of D-Score (a measure of implicit attitudes).
- Only IAT fields with Response ID were uploaded to protect data anonymity
- Instructions by Carpenter et al (2019) were followed, including the steps outlines from iatgen Tutorial 4
- After the iatgen scoring, additional answers were removed due to the speed of responses (2)

- The remaining D-Scores were imported back into CVS file by matching them to Response ID
- Total number of responses used in data analysis was 80

These steps help to ensure the data used in the analysis is complete and represents an accurate description of the current beliefs of marketing professionals towards neuromarketing.

After removing all the incomplete data or data that doesn't match the sampling assumptions established previously, the analysis was conducted with a total sample size of 80 participants. Data analysis is conducted using SPSS. The primary analysis used include descriptive and frequency statistics to better understand the aggregate beliefs and attitudes that marketing professionals hold towards neuromarketing. To look at the predictive power of each of the variables, multiple regression has been selected as the analysis method.

6.6 Results

The study consists of a survey and an Implicit Associations Test (IAT), both conducted using the Qualtrics platform. The measurement tool has been designed using the Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), and Prototype Willingness Model (PWM). The following section outlines the results from Study 2.

First, the results are shown for sample descriptive statistics (6.6.1). This is followed by the results from the survey questions measuring the variables in the theoretical framework (6.6.2). Considering the sample consists of both professionals with and without prior neuromarketing experience, there is a separate section discussing the result from a sub-group of participants that reported having previous experience implementing neuromarketing (6.6.3). A separate section was dedicated to report on the results from implicit analysis (6.6.4). The internal validity results and the outcome from the multiple regression analysis was included are presented in separate sections (6.6.5 and 6.6.6). And finally, discussion of the results is presented in 6.7.

6.6.1 Descriptive Statistics

Table 13 shows the overall characteristics of the participants. In total, 67.5 % of participants are currently located in the US, while the remaining 32.5% or 26 participants are from the SEE region. Most of the participants, 75%, use English as their primary language, while only 25% have language other than English as their mother tongue. Among those 20 non-native English speakers, almost half (a total of 9 participants) report expert command of the language, with the skill level of 7 on a 7-point scale. The remaining 11 participants self-evaluated their language skill level at 5 or 6. In total, this represents a reasonable level of English for the purposes of the study, without compromising the integrity of participation or results.

In defining their current role and the profession in the marketing industry, the participants were allowed to select multiple options for their current role, acknowledging that one's job description might include responsibilities defined by the various strata definitions. The majority of the participants consider themselves to be marketing practitioners, with 42 out of 80 participants identifying as such. The second largest strata in the sample includes marketing experts, followed by researchers and students, and finally marketing academics. Only 3 participants identify as "other", which includes specialized recruiters for the marketing profession. These participants are still included in the analysis as their role requires advanced knowledge of marketing practice and are aware of requirements for success in this field. Despite multiple efforts to recruit editors of marketing journals to participate in this study, there were no participants who identify as editors.

Most of the participants in the study are mid-career marketing professionals with 1-9 years of experience in the field, a total of approximately 44%. Nevertheless, the majority of the participants, specifically 65%, have less than 10 years of experience with practicing marketing and are likely to be shaping the course of the field in the future.

Table 13. Sample Descriptive Statistics

	Frequency	Percentage
<i>Location</i>		
USA	54	67.50%
SEE	26	32.50%
Greece	1	1.30%
Serbia	21	26.30%
Macedonia	2	2.50%
Slovenia	2	2.50%
<i>Language</i>		
English	60	75.00%
Other	20	25.00%
skill level 5	6	7.70%
skill level 6	5	6.30%
skill level 7	9	11.30%
<i>Current Role</i>		
Practitioner	42	52.50%
Academic	5	6.25%
Researcher	9	11.25%
Student	9	11.25%
Expert	22	27.50%
Editor	0	0.00%
Other	3	3.75%
<i>Years of Experience</i>		
<1	17	21.30%
1-9	35	43.80%
10+	28	35.00%
<i>Total</i>	80	100.00%

Table 13. shows the characteristics of the sample.

6.6.2. Theoretical Framework Variables

Table 14 shows survey results for the entire sample, as well as the difference between USA and SEE regions across all variables. The frequencies of answers across all variables are shown in Appendix G.

Table 14. Sample Descriptive Statistics

Variables	Total	USA	Region	Sig.
	mean(SD)	mean(SD)	SEE mean(SD)	
<i>Knowledge</i>				
I am aware of the neuromarketing as a concept	5.38 (1.796)	5.48 (1.809)	5.15 (1.782)	0.977
I have knowledge about neuromarketing	4.20 (1.872)	4.41 (1.786)	3.77 (2.006)	0.191
I have experience implementing neuromarketing practices in my current job	3.14 (2.042)	3.39 (2.149)	2.62 (1.722)	0.027*
Neuromarketing is a new area of research in marketing	4.78 (1.509)	4.72 (1.420)	4.88 (1.705)	0.362
Neuromarketing is a new way of thinking about consumer behavior	5.13 (1.586)	5.11 (1.501)	5.15 (1.782)	0.251
<i>Advantages</i>				
Neuromarketing offers a lot of opportunities to marketers	6.00 (1.169)	6.22 (1.022)	5.54 (1.334)	0.014*
Using data from neuromarketing research will give me more insights into the topic I am investigating	5.93 (1.271)	6.26 (1.031)	5.23 (1.451)	0.002*
Neuromarketing research can provide more accurate data about people's opinions than traditional marketing research	5.68 (1.220)	5.85 (1.106)	5.31 (1.379)	0.041*
Neuromarketing tools provide scientific way to reach desired results	5.69 (1.165)	5.93 (1.025)	5.19 (1.297)	0.028*
Using neuromarketing allows me to give the consumers exactly what they want	4.66 (1.440)	4.76 (1.386)	4.46 (1.555)	0.464
Neuromarketing can help me better understand what my customers need	5.69 (1.259)	6.00 (1.082)	5.04 (1.371)	0.201
Neuromarketing can help me make better decisions	5.77 (1.242)	5.98 (1.107)	5.35 (1.413)	0.037*
Neuromarketing can help me increase profits, sales, visibility and exposure of my (clients') products	5.49 (1.369)	5.70 (1.207)	5.04 (1.587)	0.060
<i>Disadvantages</i>				
Implementing neuromarketing requires large budgets	4.32 (1.320)	4.41 (1.281)	4.15 (1.405)	0.822
Using neuromarketing tools in research is uncomfortable for the participants	3.21 (1.429)	3.19 (1.347)	3.27 (1.614)	0.230
Most marketers lack skills to implement neuromarketing	4.89 (1.518)	4.80 (2.052)	5.08 (1.695)	0.175
Neuromarketing research takes a lot of time to collect data	4.10 (1.218)	4.15 (1.280)	4.00 (1.095)	0.082
There are a lot of providers of neuromarketing research that I know of	2.34 (1.432)	2.39 (1.547)	2.23 (1.177)	0.074
<i>Acceptance</i>				
Neuromarketing is useful to my work	5.19 (1.794)	5.44 (1.880)	4.65 (1.495)	0.271
Neuromarketing would make my job easier	4.99 (1.611)	5.24 (1.659)	4.46 (1.392)	0.466
Neuromarketing researchers use the latest technology	5.16 (1.247)	5.20 (1.219)	5.08 (1.324)	0.769
Neuromarketing is easy to use	3.90 (1.218)	3.87 (1.166)	3.96 (1.341)	0.806
You need proper equipment in order to be able to implement neuromarketing principles	4.68 (1.541)	4.81 (1.591)	4.38 (1.416)	0.150
I (would) like to experiemnt with the new neuromarketing technologies	6.09 (1.265)	6.19 (1.183)	5.88 (1.423)	0.020*
<i>Subjective Norms</i>				
My colleagues already use neuromarketing	3.90 (2.010)	4.37 (1.965)	2.92 (1.765)	0.416
My friends would be impressed with me using neuromarketing	5.01 (1.732)	5.24 (1.682)	4.54 (1.772)	0.620
My family would think favorably of me is I told them I am using neuromarketing in my job	4.65 (1.897)	5.02 (1.654)	3.88 (2.160)	0.023*
Neuromarketing research and practice follows ethical guidelines	4.89 (1.543)	5.26 (1.417)	4.12 (1.532)	0.698
<i>Perceived Behavioral Control</i>				
With my current knowledge and skills, I can implement neuromarketing	3.75 (1.703)	3.96 (1.648)	3.31 (1.761)	0.598
With enough money in the budget and access to neuromarketing tools, I can start a neuromarketing project within a month	3.85 (1.707)	3.93 (1.612)	3.69 (1.914)	0.160
I need more training in neuromarketing	6.16 (1.354)	6.24 (1.243)	6.00 (1.575)	0.120
Neuromarketing should be taught at every business school	5.84 (1.479)	6.00 (1.166)	5.50 (1.965)	0.000*
<i>Behavioral Intentions</i>				
I intend to implement neuromarketing in my work	4.95 (1.799)	5.15 (1.676)	4.54 (2.005)	0.150
I encourage others to use neuromarketing	4.87 (1.899)	5.13 (1.749)	4.35 (2.116)	0.064
If I had a budget large enough and access to neuromarketing tools, I would start a neuromarketing project next month	5.05 (1.922)	5.30 (1.870)	4.54 (1.964)	0.572
<i>Prototype Willingness</i>				
Neuromarketing is only used in research	3.01 (1.611)	3.20 (1.630)	2.62 (1.525)	0.979
Only big companies use neuromarketing	3.06 (1.716)	3.13 (1.770)	2.94 (1.623)	0.833
Neuromarketing is the latest trend in the last 10 years	4.39 (1.619)	4.46 (1.634)	4.23 (1.608)	0.819
Neuromarketing adds value to business	5.89 (1.169)	6.13 (0.972)	5.38 (1.388)	0.005*
Neuromarketing should become the industry standard	5.00 (1.387)	5.13 (1.304)	4.73 (1.538)	0.248
Neuromarketing will become the industry standard	5.01 (1.471)	5.09 (1.278)	4.85 (1.826)	0.009*

Table 14. shows the mean values for all variables across both USA and SEE regions (*values show statistically significant differences with $p < 0.005$)

6.6.2.1 Knowledge of Neuromarketing

Marketing professionals that participated in the study have a fair understanding of neuromarketing. Their familiarity of the concepts is strong, with mean value of 5.38 and the majority of the participants rating their awareness as 7, as described by the mode. Their experience with implementing neuromarketing, however, is on the lower end, where the majority stated “not at all” and the mean value of 3.14 still indicating a limited level of experience. The difference between USA and SEE participants is statistically significant only for the statement measuring experience with neuromarketing. For all the other variables, while there are observable differences in the mean values between the regions, those differences are not statistically significant.

The overall awareness of neuromarketing as a concept is strong, with almost 74% of participants indicating some level of knowledge and 40% stating high awareness of neuromarketing. While awareness of neuromarketing is high, the knowledge of it is somewhat lower.

The results of experience with implementing neuromarketing paint a different picture. While marketing professionals are aware and have knowledge of it, the majority have no experience implementing it, with the rate of 61.3%. Only 30% of participants have some experience using neuromarketing in their practices, with majority of those being in the USA, where the mean value of 3.39, which is higher compared to the mean value of the overall sample of 3.14. This difference is statistically significant, with $p < 0.05$ (0.027).

Looking at how marketing professionals define neuromarketing, the majority of 55% see it as a new area of research with the mean value being 4.78. Overall, marketing professionals agree more with the statement that neuromarketing is a new way of thinking about consumer behavior than it being a new area of research with the mode value at 7 compared to 4, respectively. Specifically, 66.7% of participants agree that neuromarketing is a new way of thinking about consumer behavior. And while there are observed differences in responses from USA and SEE participants, these differences are not statistically significant.

6.6.2.3 Explicit Attitudes

To measure explicit attitudes towards neuromarketing, the participants were asked to rate the statement pertaining to its advantages, disadvantages and overall acceptance of neuromarketing

6.6.2.3.1 Advantages of Neuromarketing

Overall, marketing professionals see advantages of neuromarketing positively, with the mean value from 4.66 to 6, depending on the exact statement. Across all statements the standard deviation varies from 1.17 to 1.44, suggesting that there is a slight expected difference across all participants. Across most of the statements, the median value is 6 and the mode value is 7, suggesting on average the agreement with the statements. There is only one statement about the ability of neuromarketing to give customers what they want that enjoys lower levels of acceptance, with median of 5 and mode of 4. The differences observed between USA and SEE participants are statistically significant only for five out of eight questions.

The perception of neuromarketing offering marketing professionals a lot of opportunities has the strongest acceptance rate, with its mean value being 6 across both regions. 83.7% of participants agree with this statement, with close to 50% rating it as “absolutely agree”. There are only 15% of participants who are neutral when it comes to their perception of this advantage of neuromarketing. This statement is particularly true for marketing professionals in the USA, with the mean value of 6.22. In addition, the marketing professionals have not shown disagreements with this statement, given that the minimum value provided is 4, which is neutral. On the other hand, while the marketing professionals in the SEE region overall agree with this statement, the mean value is at 5.54. There is only one participant that disagrees with this statement, and this participant is from the SEE region. Overall, there is more variability in the agreement with this statement among the participants from the SEE region. These differences are statistically significant with $p < 0.05$ (0.014).

When it comes to perception of utility of neuromarketing data for more insights, mean and median are close in values, 5.93 and 6 respectively. While only 6.3% of participants disagree with this statement, approximately 81.2% agree with it. Out of the 65 participants that agree, 36 show absolute agreement. Looking at the differences across USA and SEE regions, the participants from

the USA show stronger support for this statement. The mean value for the USA participants is at 6.26 and the median is 7, while for the SEE participants both are lower by a value of 1, arriving at 5.23 for mean and 6 for median. These differences are statistically significant, with $p < 0.05$ (0.002). Similarly to the previous statement, there is higher variability among the SEE participants, as indicated by the deviation from the mean.

Overall, 77.5% of marketing professionals agree that neuromarketing provides more accurate data than traditional marketing methods. This agreement seems stronger among the participants from the USA region, with mean value of 5.85 compared to the mean value of the overall sample at 5.68. In comparison, the mean value for the SEE participants is 5.31, which is lower than the overall sample. This difference is statistically significant with $p < 0.05$ (0.041). The marketing professionals from the SEE region again show higher variability in their responses, with both participants who disagree coming from this region, as indicated by the minimum value.

Most of the participants are in agreement that neuromarketing tools provide a scientific way to reach desired results. The mean value of the answers is at 5.69, with the median answer value at 6 and the mode at 7. Specifically, 78.7% agree with this statement, with 32.5% strongly agreeing. Similarly to previous statements, the only participant that disagrees comes from SEE region, where the mean value of 5.19 is lower than the mean value for the entire sample. Consequently, the mean value of the answers provided by the participants from the USA is 5.93. This difference is statistically significant with $p < 0.05$ (0.028). Again, the range of answers is broader among the SEE participants, going from 3 to 7, while the minimum value among the USA participants was recorded at 4.

The utility of neuromarketing as a way to provide customers what they want is overall perceived as neutral to positive, with the mean value at 4.66 and mode at 4. More specifically, 16.3% of participants disagree with this statement, while only slightly more than a half of participants (51.2%) agree with it, and 32.5% remain neutral.

While the perception around the utility of neuromarketing towards understanding customer's wants and needs is neutral to positive, the perception of its utility towards understanding customer

needs is more positive with mean value at 5.69, median value at 6 and mode at 7. 80% of participants agree that neuromarketing can help them understand customer needs, while only 3.8% disagree with it. This disagreement is stronger among the SEE participants, where the minimum value is at 2, and the mean and median value at 5.04 and 5, respectively. Yet, these differences are not statistically significant.

Majority of marketing professionals, 82.5%, agree that neuromarketing can help them make better decisions, while only 5% disagree with that statement. The agreement is somewhat stronger among the USA participants, where the mean value is 5.98 compared to 5.35 among the SEE participants. The difference is statistically significant, with $p < 0.05$ (0.037). In addition, the range of the answers is wider among the SEE participants, with the difference being in the negative domain with the minimum value of 2. However, the biggest difference lies in the range with the highest concentration of answers - while for the USA participants, the majority of the answers are in the range of 5-7, among the SEE participants this is between 4-6.

Similar perception of neuromarketing exists when it comes to its ability to help with the overall marketing performance. While 65% of marketing professionals strongly or mostly agree neuromarketing helps them with better decision making, 55% of marketing professionals believe neuromarketing can help with specific results, such as profit, sales, visibility and exposure.

6.6.2.3.2 Disadvantages of Neuromarketing

The disadvantages of neuromarketing that are examined here are a result of the qualitative research performed in Study 2. Looking at the mean values for each statement that was tested, it seems that somewhat agree that neuromarketing requires large budgets and that marketers lack appropriate skills to implement; the participants are overall neutral to the statement that neuromarketing research takes a lot of time to collect data; and participants disagree to various degrees with the statements that neuromarketing is uncomfortable for consumers and that there are a lot of providers of such research. While there is variability in answers between SEE and USA participants, these differences are not statistically significant for any of the statements.

When looking at the results regarding the perception of neuromarketing requiring large budgets across both regions, the participants remain mainly neutral as indicated by all three values of mean, median and mode are close to the value of 4. In total, 40% of participants answered as neutral to this question, while the remaining 36.3% mostly agreed with this statement, compared to 23.8% who disagreed.

For the most part, the participants disagree with the statement that neuromarketing is uncomfortable for the participants of this research, with 52.5% in disagreement. Only 13.7% agree with this statement.

On average, 52.5% of marketing professionals seem to agree that marketers lack skills to implement neuromarketing, with mean value being 4.89, though 31.3% remain neutral on this topic. This agreement is stronger among SEE marketers with a mean of 5.08 and the median of 5.5.

Another disadvantage of neuromarketing that has been identified during the interviews was that neuromarketing research takes a lot of time to collect data. For the most part, it seems that the marketing professionals don't seem to agree or disagree with this statement. 30% of participants indicated they have experience with implementing neuromarketing. In evaluating this statement, 30% indicated it does not take a lot of time, while 35% said it does.

Marketing professionals, on average, are not familiar with neuromarketing providers. 78.8% state that they are not familiar with a lot of providers of neuromarketing research, while only 7.5% say they are aware of such providers.

6.6.2.3.3 Acceptance of Neuromarketing

Due to the extent of novel technologies that neuromarketing introduces, the participants were asked to rate the usefulness and the ease of use of neuromarketing. Looking at the mean value of responses across multiple statements, it appears that most of them are above 4, suggesting positive attitudes towards neuromarketing. This is especially the case for the desire to experiment for new

marketing technologies, in which case the mean value exceeds 6. On the other hand, participants don't think that neuromarketing is easy to use.

Over 70% of marketing professionals believe that neuromarketing is useful to their work and close to half of this group strongly agree with this. They believe to a lesser extent that it would make their job easier. Over 60% of the participants believe that neuromarketing research leverages the latest technology, which puts the mean value at 5.19 and median value at 5. Nevertheless, the most common answer is still 4, which indicates neutral position. The difference between USA and SEE marketing professionals is not particularly distinguishable, with the minimum, maximum and median values being the same.

When it comes to the perceptions around neuromarketing's ease of use, 76.3% do not think it is easy to use. More specifically, 23.7% agree it is easy to use while 15% think it is difficult to use. The remaining participants remain neutral on that front. There is not much difference in this perception between USA and SEE participants based on the mean value and the range of answers is identical, if the outliers are taken out of the consideration.

Just slightly over 50% of participants believe that you need proper equipment in order to implement neuromarketing, with the highest number of participants neither agreeing nor disagreeing. This finding suggests the possibility that half of the participants do not believe neuromarketing is constrained to the technology being used in research.

The majority of marketing professionals, specifically 83.7%, either would like or like using new neuromarketing technologies, with the mean value of their answers at 6.09. In addition, more than half of all participants say they would absolutely like to use neuromarketing technologies. The differences between USA and SEE participants are statistically significant, with $p < 0.05$ (0.020). The preference is slightly stronger among USA participants, as SEE participants' mean value is lower than the overall sample. This conclusion can be further discerned from the range of answers, where the evaluation among the majority of SEE participants is concentrated broader anywhere from 4 to 7, compared to that same concentration among USA participants being between 6 and 7.

6.6.2.4 Subjective Norms

In this section, data analysis focuses on the perceptions of marketing professionals towards how their social environment looks at neuromarketing. Across all variables tested, the participants demonstrated a full range of answers, with varying degrees of mean values. The strongest positive belief towards neuromarketing includes the belief that the social environment would be impressed by implementation of neuromarketing. On the other hand, the only belief falling on the negative spectrum includes the perception that their colleagues are already using neuromarketing. The only statement where there is statistically significant difference between USA and SEE participants is the perception of one's family on adopting neuromarketing.

There is an equal number of participants that believe their colleagues are using neuromarketing, as well as that they are not using neuromarketing, in both counting 33 out of 80 participants. Nevertheless, based on the mean values among USA and SEE participants, it appears that the belief that others are using neuromarketing holds truer among the USA marketing professionals. While the range of answers is the same, the mean value of the answers is higher among the USA participants, being 4.37 compared to 2.92 among SEE participants. However, this difference is not statistically significant.

The majority of the participants, or 62.5% to be precise, believe their friends would be impressed if they were to use neuromarketing. In addition, 52.5% believe their family would have favorable evaluation of them using neuromarketing, which is lower compared to the perceptions by friends. Participants from the USA are more likely to believe their family would have favorable thoughts with 5.02 mean, than the SEE participants with 3.88 mean. This difference is statistically significant, with the $p < 0.05$ (0.023). As a matter of fact, 25% of participants believe their family would disapprove of their use of neuromarketing, a belief that is more likely to be true among SEE participants.

When it comes to beliefs around neuromarketing ethical practices, 58.7% of participants believe neuromarketing follows ethical guidelines while 7.5% are undecided.

With all things considered, subjective norms seem to be more positive among the USA marketing professionals compared to their SEE colleagues.

6.6.2.5 Perceived Behavioral Control

Perceived behavioral control represents barriers that participants believe are standing in their way of engaging in a particular behavior, in this case implementing neuromarketing. During the Study 2, participants outline as the main barrier their lack of knowledge and skills, as well as resources needed to implement neuromarketing. The following section explores to what extent these barriers are perceived to be present among USA and SEE marketing professionals. Nevertheless, the only statement where there are significant differences among participants from these two regions with regards to belief whether neuromarketing should be taught at every business school.

Similarly to the qualitative study, the participants on average believe they would not be able to implement neuromarketing with their current skills and knowledge despite having all the necessary resources and need additional training. In addition, on average they believe neuromarketing should be taught at every business school.

On average, only 38.7% believe they can implement neuromarketing with their current knowledge and skills. On the other hand, 42.5% believe they wouldn't be able to do it. This belief still holds true, even if the participants had the budgets necessary to implement it. As a matter of fact, there is not much change in the mean value, which is still below 4 for the overall sample, as well as each of the regions. There is a small 2.5% change in whether availability of budgets would still prevent them from implementing neuromarketing - for the previous statement 42.5% said no, while here 40% said no. Nevertheless, this difference is not statistically significant. The percentage of those thinking maybe they could is higher with the budgets available, as well as those thinking "mostly" and absolutely yes"; the number of participants saying "somewhat yes" has dropped from 21 to 12.

Given the perceived barriers from the two previous statements, it is expected that marketing professionals believe they need training in neuromarketing. This has shown true among the

participants, with over 90% agreeing they need training. In addition, the mean value of rating for this statement is 6.16, with both mode and median values at 7.

When it comes to institutionalizing neuromarketing and it being taught in business schools, there are participants who disagree with or are neutral to this notion. Yet, 82.5% still agree it should become part of standard business education. The acceptance of this idea is still stronger among the marketing professionals in the USA, as indicated by the mean value of 6, compared to 5.5 among the SEE participants among whom are the ones believing that neuromarketing should “not at all” be taught. This difference is statistically significant, with $p < 0.05$ (0.000).

6.6.2.6 Behavioral Intentions and Willingness

Looking at the mean scores across multiple items that were aiming at gauging the intentions to implement neuromarketing, participants seem to have positive responses, with mean values above 4 across all three. This notion is further confirmed by the finding that 63.7% of participants intend to implement neuromarketing, while this number increases to 65% in case all barriers to its adoption are removed.

When it comes to willingness, the items that have mean values above 4, demonstrate positive outlook towards the future of neuromarketing. The two items that participants seem to disagree with are negative in nature, demonstrating limited understanding of neuromarketing and its adoption only by big companies, which is a finding aligned with the overall likability of the prototype behavior that neuromarketing introduces. However, when it comes to the questions of neuromarketing adding value to business and whether it should become the industry standard, 87.5% and 58.7% participants agree, respectively.

6.6.3 Experience Implementing Neuromarketing

In order to look at the characteristics of participants who have experience with neuromarketing, cases were selected if the participants' response to the statement was “I have experience implementing neuromarketing practices in my current job” higher than 4 (If Knowledge_3 > 4). This ensured only participants who rated the statement as 5, 6 or 7 are included in the analysis. Based on the case selection, there are 24 participants that have experience with neuromarketing. The results of their answers are presented in Table 15.

The majority of the participants who have experience with neuromarketing (83.3%) are currently located in the USA region and most likely have at least several years of marketing experience. Specifically, 50% of these participants have more than 10 years of experience in the marketing industry. And only a small percentage, 16.7% of participants with neuromarketing experience are from the SEE region.

Table 15. Participants with Experience Implementing Neuromarketing

Variables	With Experience	
	mean(SD)	Sig.
<i>Knowledge</i>		
I am aware of the neuromarketing as a concept	6.71 (0.550)	0.000*
I have knowledge about neuromarketing	6.04 (0.751)	0.000*
I have experience implementing neuromarketing practices in my current job	5.83 (0.868)	
Neuromarketing is a new area of research in marketing	5.17 (1.685)	0.414
Neuromarketing is a new way of thinking about consumer behavior	5.12 (1.849)	0.500
<i>Advantages</i>		
Neuromarketing offers a lot of opportunities to marketers	6.54 (0.721)	0.152
Using data from neuromarketing research will give me more insights into the topic I am investigating	6.42 (0.881)	0.287
Neuromarketing research can provide more accurate data about people's opinions than traditional marketing research	6.00 (1.142)	0.549
Neuromarketing tools provide scientific way to reach desired results	6.25 (0.847)	0.184
Using neuromarketing allows me to give the consumers exactly what they want	4.83 (1.551)	0.354
Neuromarketing can help me better understand what my customers need	6.08 (1.213)	0.267
Neuromarketing can help me make better decisions	6.29 (0.859)	0.295
Neuromarketing can help me increase profits, sales, visibility and exposure of my (clients') products	6.00 (1.002)	0.292
<i>Disadvantages</i>		
Implementing neuromarketing requires large budgets	4.42 (1.501)	0.867
Using neuromarketing tools in research is uncomfortable for the participants	3.04 (1.574)	0.632
Most marketers lack skills to implement neuromarketing	5.17 (1.435)	0.293
Neuromarketing research takes a lot of time to collect data	4.00 (1.285)	0.618
There are a lot of providers of neuromarketing research that I know of	3.21 (1.817)	0.000*
<i>Acceptance</i>		
Neuromarketing is useful to my work	6.42 (0.776)	0.001*
Neuromarketing would make my job easier	5.88 (1.116)	0.038*
Neuromarketing researchers use the latest technology	5.67 (1.167)	0.179
Neuromarketing is easy to use	4.00 (1.180)	0.283
You need proper equipment in order to be able to implement neuromarketing principles	4.92 (1.886)	0.003*
I (would) like to experimnt with the new neuromarketing technologies	6.67 (0.702)	0.009*
<i>Subjective Norms</i>		
My colleagues already use neuromarketing	5.00 (1.956)	0.001*
My friends would be impressed with me using neuromarketing	5.29 (1.488)	0.476
My family would think favorably of me is I told them I am using neuromarketing in my job	5.13 (1.597)	0.774
Neuromarketing research and practice follows ethical guidelines	5.50 (1.063)	0.238
<i>Perceived Behavioral Control</i>		
With my current knowledge and skills, I can implement neuromarketing	5.29 (0.999)	0.000*
With enough money in the budget and access to neuromarketing tools, I can start a neuromarketing project within a month	5.25 (1.260)	0.000*
I need more training in neuromarketing	5.79 (1.474)	0.010*
Neuromarketing should be taught at every business school	6.37 (0.875)	0.276
<i>Behavioral Intentions</i>		
I intend to implement neuromarketing in my work	6.17 (1.007)	0.000*
I encourage others to use neuromarketing	6.17 (0.816)	0.001*
If I had a budget large enough and access to neuromarketing tools, I would start a neuromarketing project next month	6.29 (1.233)	0.006*
<i>Prototype Willingness</i>		
Neuromarketing is only used in research	3.38 (1.740)	0.605
Only big companies use neuromarketing	2.96 (1.967)	0.740
Neuromarketing is the latest trend in the last 10 years	4.75 (1.595)	0.420
Neuromarketing adds value to business	6.38 (0.824)	0.153
Neuromarketing should become the industry standard	5.58 (1.176)	0.058
Neuromarketing will become the industry standard	5.38 (1.313)	0.239

Table 15. shows the mean values for all variables for participants with previous neuromarketing experience and the difference from the overall sample (*values show statistically significant differences with $p < 0.005$)

The participants with neuromarketing experience are most likely to be practitioners of neuromarketing, with the next most likely role being the expert (Table 16). There are a few participants who self-identify as researchers and students, as well as academics. This distribution of roles demonstrates that participants in this sample who have experience with implementing neuromarketing come from various roles where they implement neuromarketing.

Table 16. Neuromarketing Experience - Current Role

<i>Descriptive Statistics</i>			
	N	Sum	Std. Deviation
Practitioner (current role)	24	15	.495
Academic (current role)	24	2	.282
Researcher (current role)	24	3	.338
Student (current role)	24	3	.338
Expert (current role)	24	6	.442
Editor (current role)	24	0	.000
Other (current role)	24	2	.282
Valid N (listwise)	24		

Table 16. shows the distribution of participants with previous neuromarketing experiences across all strata.

When it comes to overall attitudes towards neuromarketing, it is expected that the sub-group of participants that have previous experience with neuromarketing shows a higher level of agreement compared to the overall sample. This can be seen on the level of knowledge these participants have when it comes to neuromarketing, with the mean values across multiple statements exceeding the value of 5. The strongest agreement exists with the awareness and the knowledge of neuromarketing, with the mean value exceeding 6. In both cases, there is a statistically significant difference between participants who have experience and those who don't, with p-value less than 0.05 in both cases. While the mean values across all the statements are higher compared to the

values of the entire sample, it can be concluded that marketing professionals with neuromarketing experience have higher awareness and higher knowledge about neuromarketing than the rest of the sample.

Practitioners with previous experience believe that neuromarketing offers stronger advantages compared to the overall sample. The closest mean value with regards to the statement is “Using neuromarketing allows me to give the consumers exactly what they want”, where the sub-group analysis shows a similar mean value of 4.83. However, these differences are not statistically significant. In addition, a similar pattern in answers is observed among the disadvantages of neuromarketing, where participants with prior experience rated disadvantages higher, including the items related to neuromarketing requiring larger budgets, most marketers lacking skills in neuromarketing, and knowledge of a lot of providers of neuromarketing services. This might be coming from the fact that their experience gives them a broader understanding of the limitations of neuromarketing. The only statement where there is a difference between those with and without neuromarketing experience is with regards to the perceived availability of neuromarketing providers, with $p < 0.05$ (0.000).

On the other hand, when it comes to the acceptance of neuromarketing practices, specifically their usefulness and ease of use, the participants with previous neuromarketing experience rated all the statements higher compared to the entire sample. The mean value on two specific statements, “Neuromarketing is useful to my work” and “Neuromarketing would make my job easier”, is higher by more than 1 whole point compared to the entire sample, 6.42 vs 5.19 and 5.88 vs 4.99, respectively. In both cases, the difference is statistically significant, with p-values less than 0.05 (0.001 and 0.032, respectively). This indicates that prior neuromarketing experiences increases the acceptance of neuromarketing, making it more likely to result in positive attitudes towards it, as proposed by the Technology Acceptance Model.

The same premise is observed for subjective norms, that appear to be higher among the participants with experience in neuromarketing practices. While neuromarketing-experienced professionals show higher mean value rating compared across all statements to the entire sample, the statistical difference is present only with regards to the statement “My colleagues already use

neuromarketing”, with $p < 0.05$ (0.001). This implies that marketing professionals that have experience using neuromarketing know other marketing professionals that do the same, which might mean that there is a peer influence when it comes to adoption.

When it comes to perceived behavioral control, participants with prior neuromarketing experience believe they have higher self-efficacy in overcoming those barriers, as their mean value ratings are again higher compared to the overall sample. One item where this subgroup shows lower evaluation compared to the entire sample is around the statement “I need more training in neuromarketing”. While the entire sample rated this statement highly, suggesting the recognition of the need for more training, neuromarketing-experienced professionals have a mean value of 5.79, still indicating the need for training, but to a lower extent, as the entire sample mean value is 6.16. There is a statistically significant difference between the two groups across all of the items except one. The belief that neuromarketing should be taught in business schools is highly rated regardless of the experience level with neuromarketing.

The difference among the sub-group and the overall sample is higher and statistically significant when it comes to the intentions to implement neuromarketing. The difference in mean values is in some instances larger than 2 points in favor of participants with neuromarketing experience, suggesting that those participants are more likely to use neuromarketing in the future and encourage others to do so, as well. In addition, when it comes to the belief that neuromarketing adds value and will become a new industry standard, marketing professionals with prior neuromarketing experience rate it higher compared to the entire sample results, but this difference is not statistically significant. This, again, suggests, willingness of marketing professionals to adopt neuromarketing in the future is high, regardless of the previous experience with it.

6.6.4 Implicit Attitudes

The results for implicit attitudes are summarized in Table 17. Looking at the D-Score results across the participants, the mean value is -0.17 and the standard deviation is close to 0.5, indicating that the overall implicit attitudes towards neuromarketing are negative. Comparing the implicit attitude results across the two regions, it appears that the negative attitudes are stronger in the SEE region, with the mean value being -0.21 and median value -0.35. However, this difference is not

statistically significant. In addition, the range of answers seems to be larger among the US population compared to SEE (Figure 32). Interestingly, the same distinction is not observed between participants with English vs. non-English as a mother tongue, further proving that there is no language effect. While the mean D-Square value for participants with English as a primary language is -0.18, the mean value for participants with English as a second language is -0.16. However, this difference is not statistically significant.

Table 17. Implicit Attitudes

	Total		Region		Language		Sig.
	mean (SD)	mean (SD)	mean (SD)	mean (SD)	English mean (SD)	Other mean (SD)	
D-Score	-0.17 (0.497)	-0.16 (0.531)	-0.21 (0.427)	-0.21 (0.427)	-0.17 (0.525)	-0.15 (0.415)	0.175

Table 17. shows results from the implicit association test based on region and primary language.

Figure 32. Range of Implicit Attitudes Across Regions

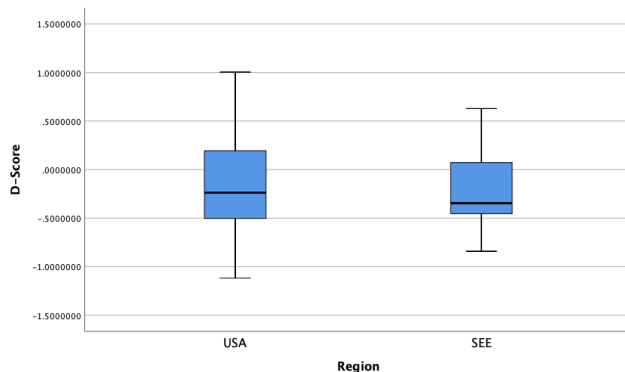


Figure 32. shows the range of IAT results across regions.

In addition, marketing professionals with neuromarketing experience seem to have less negative implicit attitudes towards neuromarketing. The mean D-Score for the overall sample was -0.173, while this value for participants with neuromarketing is -.012. It appears that SEE professionals with neuromarketing experience have positive implicit attitudes towards neuromarketing, with the mean D-score at 0.132. Compared to the overall sample from the SEE region, there seems to be a shift, given that the mean value for the entire SEE sample was -0.21. On the other hand, the USA participants initially showed the mean value of -0.157, while the subgroup with neuromarketing

experience shows -0.042 (Table 18). While this can still be interpreted as negative implicit attitudes towards neuromarketing, the negative tendency has decreased. Nevertheless, this difference is not statistically significant, with the p-value well above 0.05.

Table 18. Implicit Attitudes of Marketing Professionals with Neuromarketing Experience

	With Experience			Sig.
	Total mean (SD)	US mean (SD)	SEE mean (SD)	
D-Score	-0.01 (0.590)	-0.04 (0.600)	0.13 (0.597)	0.200

Table 18. shows results from the implicit association test from the subgroup of participants with previous neuromarketing experience.

6.6.5 Internal Validity of the Scales

While this research uses adopted scale items from various TPB, TAM and PWM studies that have demonstrated reliability and validity of the scales, its adoption to investigate neuromarketing-specific behavior requires testing for internal validity. To test for scale validity, there is a wide consensus in the literature to use Cronbach’s alpha as an indication for it, as it represents an estimate of internal consistency (Vaske, Beaman & Sponarski, 2017). While the common rule of thumb applied to the acceptable value of Cronbach’s alpha is 0.7, there are a number of papers that argue that a lower number of 0.65 or even 0.6 should be deemed as acceptable (Alam & Sayuti, 2011; Nunnally & Bernstein, 1994; Nunnally, 1978). The main argument behind a wider range of acceptable Cronbach’s alpha values is in the structure of the scale itself, since smaller numbers of items with smaller alpha still demonstrate high correlation among these items and, thus, demonstrates internal validity of the scale.

The initial test scores for Cronbach’s alpha across all variables are shown in Table 19. It appears that for the majority of variables, there is strong internal validity for the items used in this research, as 6 out of 8 variables exceed 0.65 value. This suggests that further analyses need to be done to identify the items that should be removed to improve the reliability of the scales.

Table 19. Internal Validity of Scales

Variable	Chrombach's Alpha	N of Items
Knowledge	0.754	5
Advantages	0.919	8
Disadvantages	0.555	5
Acceptance	0.725	6
Subjective Norms	0.658	4
Perceived Behavioral Control	0.565	4
Behavioral Intentions	0.808	3
Prototype Willingness	0.721	6

Table 19. shows Cronbach's alpha for each variable.

In order to arrive at the threshold of 0.6 or 0.65, further tests were performed, which included removing some of the items from the scale intended to measure disadvantages and perceived behavioral control. When removing PBC_3 item, the overall Cronbach's alpha for perceived behavioral control improves significantly and reaches the value of 0.696, as this item has low corrected-item total correlation (Table 20). Similar process was followed for the disadvantages variable, where DIS_5 item was removed due to its low corrected item-total correlation to arrive at the alpha value of 0.635 (Table 21). While a different combination of items was tested, this particular one resulted in the highest validity value, without reducing the scale to three items. For testing purposes, the same process was performed for all the items of the scale and the results are as following:

- The reliability of the knowledge scale can be improved by removing K5 (0.779)
- The reliability of the Advantages scale gets reduced if any of the items get removed
- The reliability of Acceptance scale can be improved by removing ACC4 (0.742) or ACC5 (0.751)
- The reliability of Subjective Norms scale gets improved if SN1 gets removed (0.774)
- The reliability of the Intentions scale gets reduced if any of the items get removed
- The reliability of Willingness scale gets improved if P2 is removed (0.752)

Table 20. Improved Cronbach’s Alpha - PBC

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item–Total Correlation	Cronbach's Alpha if Item Deleted
PBC1 With my current knowledge and skills, I can implement neuromarketing	15.85	8.990	.508	.343
PBC2 With enough money in the budget and access to neuromarketing tools, I can start a neuromarketing project within a month	15.75	9.253	.473	.378
PBC3 I need more training in neuromarketing	13.44	14.933	.030	.696
PBC4 Neuromarketing should be taught at every business school	13.76	10.816	.419	.440

Table 20. shows the Cronbach’s alpha for all items within the PBC variable.

Table 21. Improved Cronbach’s Alpha - Disadvantages

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item–Total Correlation	Cronbach's Alpha if Item Deleted
DIS1 Implementing neuromarketing requires large budgets	14.54	11.948	.397	.454
DIS2 Using neuromarketing tools in research is uncomfortable for the participants	15.65	10.559	.507	.377
DIS3 Most marketers lack skills to implement neuromarketing	13.97	11.620	.327	.494
DIS4 Neuromarketing research takes a lot of time to collect data	14.76	12.968	.326	.497
DIS5 There are a lot of providers of neuromarketing research that I know of	16.52	14.455	.074	.635

Table 21. shows the Cronbach’s alpha for all items within the disadvantages variable.

The results show that there are a number of scales that can be slightly improved by removing specific items. However, it is believed that keeping more items in the scale would improve the results of the analysis without compromising its validity, which is why further reduction of items

was not performed. Therefore, the items that have been included in the final scales are presented in Table 22. The reliability of these final scales is shown in Table 23, and the mean scores are shown in Table 24.

Table 22. Scale Items in the Variables

Knowledge	<p>I am aware of the neuromarketing concept</p> <p>I have knowledge about neuromarketing</p> <p>I have experience implementing neuromarketing practices in my current job</p> <p>Neuromarketing is a new area of research in marketing</p> <p>Neuromarketing is a new way of thinking about consumer behavior</p>
Advantages	<p>Neuromarketing offers a lot of opportunities to marketers</p> <p>Using data from neuromarketing research will give me more insights into the topic I am investigating</p> <p>Neuromarketing research can provide more accurate data about people's opinions than traditional marketing research</p> <p>Neuromarketing tools provides a scientific way to reach desired results</p> <p>Using neuromarketing allows me to give the consumers exactly what they want</p> <p>Neuromarketing can help me better understand what my customers need</p> <p>Neuromarketing can help me make better decisions</p> <p>Neuromarketing can help me increase profits, sales, visibility and exposure of my (clients') products</p>
Disadvantages	<p>Implementing neuromarketing requires large budgets</p> <p>Using neuromarketing tools in research is uncomfortable for the participants</p> <p>Most marketers lack skills to implement neuromarketing</p> <p>Neuromarketing research takes a lot of time to collect data</p>
Acceptance	<p>Neuromarketing is useful to my work</p> <p>Neuromarketing would make my job easier</p> <p>Neuromarketing researchers use the latest technology</p> <p>Neuromarketing is easy to use</p> <p>You need proper equipment in order to be able to implement neuromarketing principles</p> <p>I (would) like to experiment with the new neuromarketing technologies</p>
Subjective Norms	<p>My colleagues already use neuromarketing</p> <p>My friends would be impressed with me using neuromarketing</p> <p>My family would think favorably of me if I told them I am using neuromarketing in my job</p> <p>Neuromarketing research and practice follows ethical guidelines</p>
PBC	<p>With my current knowledge and skills, I can implement neuromarketing</p> <p>With enough money in the budget and access to neuromarketing tools, I can start a neuromarketing project within a month</p> <p>Neuromarketing should be thought at every business school</p>
Intentions	<p>I intend to implement neuromarketing in my work</p> <p>I would encourage others to use neuromarketing</p> <p>If I had enough budget and access to neuromarketing tools, I would start a neuromarketing project the next month</p>
Willingness	<p>Neuromarketing is only used in research</p> <p>Only big companies use neuromarketing</p> <p>Neuromarketing is the latest trend in the last 10 years</p> <p>Neuromarketing will become the industry standard</p> <p>Neuromarketing should become the industry standard</p> <p>Neuromarketing adds value to business</p>

Table 22. shows all variables that are part of the final model.

Table 23. Cronbach’s Alpha for Final Scales

Variable (corrected)	Chrombach's	
	Alpha	N of Items
Knowledge	0.754	5
Advantages	0.919	8
Disadvantages	0.635	4
Acceptance	0.725	6
Subjective Norms	0.658	4
Perceived Behavioral Control	0.696	3
Behavioral Intentions	0.808	3
Prototype Willingness	0.721	6

Table 23. shows the Cronbach’s alpha for the final variables.

Table 24. Descriptive Statistics for Final Scales

	N	Mean	Std. Deviation
Knowledge_allB	80	4.5225	1.25829
Advantages_all_B	80	5.6125	1.01562
Disadvantages_B	80	4.1313	.95050
Acceptance_all_B	80	5.0000	.94839
SubjectiveNorms_all_B	80	4.6125	1.26785
PBC_B	80	4.4792	1.28810
BI_all_B	80	4.9583	1.59321
PW_all_B	80	4.3937	.97300
Valid N (listwise)	80		

Table 24. shows the mean values for the vinyl variables.

6.6.6 Regression Analysis

To look at the predictive power of each of the variables, multiple regression has been selected as the analysis method. There is strong evidence in the literature for the hierarchical effects of different variables towards target behavior (Hrubes, Ajzen & Daigle, 2001). However, this represents a novel study since it explores the adoption of neuromarketing, a behavior that, to the author's knowledge, has not been explored in using quantitative methods. For these reasons, multiple regression analysis is being performed to test the effect of all the variables, identify the best predictor of neuromarketing adoption, and determine the model with highest predictability.

In order to develop the model that predicts the adoption of neuromarketing, Structural Equation Modelling was considered as a possible method. According to Nachigall, Kroehne, Funke & Steyer

(2003), Structural Equation Model (SEM) represents a statistical model that demonstrates the relationship between a number of indicators and a variable that is the target of observation. However, for SEM to be properly employed, it requires a significant sample size, often at a minimum of 200 or at least one 10 participants per one indicator (Kline, 1998). Since the sample size for this study was determined to be 74 by the power analysis, using SEM would not be considered appropriate. In addition, a number of studies that use theory of planned behavior as the foundational theoretical framework have later used regression modelling in their analysis (Alam & Sayuti, 2011; Hrubes, Ajzen & Daigle, 2001; Norman, Conner & Bell, 1999).

6.6.6.1 Variables Used in Regression Analysis

The first step in running the regression analysis on the model used in this research is to compute the variables for each scale, including only the items from previous analysis that confirm its reliability. Across all variables, the mean values are larger than 4, which on a 7-point Likert scale signifies positive evaluations towards neuromarketing (Table 25). The only exceptions to this interpretation are disadvantages and implicit attitudes, where it seems that perceived disadvantages are high and the implicit associations with neuromarketing are mainly negative. The highest mean score is recorded for advantages of neuromarketing, followed by acceptance, which initially was defined as perceived usefulness and ease of use. In addition, the intentions to implement neuromarketing are close to the mean value of 5, while the willingness to adopt it based on the prototype similarity and familiarity around 4.4. This implies that planned intention to engage in neuromarketing adoption is higher than the more impulsive determinant of this behavior.

Table 25. Descriptive Statistics for All Variables of the Theoretical Model

	N	Mean	Std. Deviation
D-Score	80	-.17286883	.497704942
Knowledge_allB	80	4.5225	1.25829
Advantages_all_B	80	5.6125	1.01562
Disadvantages_B	80	4.1313	.95050
Acceptance_all_B	80	5.0000	.94839
SubjectiveNorms_all_B	80	4.6125	1.26785
PBC_B	80	4.4792	1.28810
BI_all_B	80	4.9583	1.59321
PW_all_B	80	4.3937	.97300
Valid N (listwise)	80		

Table 25. shows the mean values of all the variables that are included in the final model.

When looking at the correlation between the variables, for the most part, the variables outlined by the theoretical framework are correlated (Table 26). Advantages are significantly correlated with acceptance, subjective norms, perceived behavioral control, intentions, and willingness. In addition, it is significantly correlated to knowledge, which shouldn't be a surprise because the higher level of knowledge would imply the higher realization of advantages. However, advantages are negatively correlated to the variable of region, suggesting that going from the USA to SEE region, the perception of advantages decreases. The same thing can be said for the acceptance variable with regard to the theoretical framework, where all correlations are significant at 99% confidence interval, while its correlation with willingness is significant at 95% confidence interval. However, the correlation between acceptance and advantages is very high, at 0.699, which due to the fact that these two variables are both measures of attitudes towards neuromarketing. Interestingly, disadvantages are not correlated with many items. The only significant correlation can be found with knowledge and prototype, suggesting that the more a person knows, the more disadvantages they will realize, and more willing they will be to engage in neuromarketing behavior. This finding is not surprising, considering the application of prototype willingness models in the study of risky behaviors, suggesting that despite the awareness of disadvantages, the participants find neuromarketing behavior favorable (Gerrard, Gibbons, Stock, Lune & Cleveland, 2005). PBC is also significantly correlated to all variables of the model, as well as knowledge.

However, the correlation is the highest with behavioral intention, at 0.716. The reason behind it can be that these two variables together have direct influence on the behavior itself. In addition, a number of studies using TPB have found strong predictive power of PBC towards intentions (Muzaffar, Chapman-Novakofski, Castelli & Scherer, 2014). As far as variables having significant correlation with intentions and willingness, the outcome is similar - all the variables from the theoretical framework are significantly correlated with intention, as well as knowledge of neuromarketing, while willingness also is correlated to disadvantages. An interesting finding, however, is that implicit attitudes, represented by the D-Score are only correlated to knowledge, and the correlation is positive. This implies that the more a person knows about neuromarketing, the more likely it is she/he will have positive associations with neuromarketing.

As part of this analysis, other variables were also looked at, such as years of experience, region and language, and how they are correlated with variables described by the theoretical framework. Not surprising, it seems that the years of experience are positively correlated with the knowledge, suggesting that those marketing professionals with more experience are likely to know more about neuromarketing. In addition, years of experience are also correlated with the region and language, the two variables that are strongly correlated with each other. This implies that the more years of experience one has, s/he is more likely to be from the SEE region. On the contrary to that, these two variables are negatively correlated with subjective norms, suggesting that subjective norms decrease going from the USA to SEE region.

Table 26. Correlation Between the Variables

Correlations	Region	Primary language	Years of marketing experience	D-Score	Knowledge_allB	Advantages_all_B	Disadvantages_B	Acceptance_all_B	SubjectiveNorms_all_B	PBC_B	BI_all_B	PW_all_B
Region	1	.524**	.233*	-.045	-.115	-.322**	-.005	-.194	-.411**	-.169	-.212	-.195
Primary language	.524**	1	.284*	.016	.077	-.018	.111	.015	-.241*	-.013	-.040	.078
Years of marketing experience	.233*	.284*	1	-.021	.234*	-.201	.104	-.210	-.383**	-.004	-.077	.053
D-Score	-.045	.016	-.021	1	.353**	.126	-.001	.088	.197	.197	.098	.143
Knowledge_allB	-.115	.077	.234*	.353**	1	.439**	.302**	.442**	.279*	.545**	.523**	.487**
Advantages_all_B	-.322**	-.018	-.201	.126	.439**	1	.171	.699**	.495**	.434**	.587**	.507**
Disadvantages_B	-.005	.111	.104	-.001	.302**	.171	1	.030	-.046	.018	.045	.450**
Acceptance_all_B	-.194	.015	-.210	.088	.442**	.699**	.030	1	.514**	.597**	.692**	.260*
SubjectiveNorms_all_B	-.411**	-.241*	-.383**	.197	.279*	.495**	-.046	.514**	1	.449**	.541**	.348**
PBC_B	-.169	-.013	-.004	.197	.545**	.434**	.018	.597**	.449**	1	.716**	.371**
BI_all_B	-.212	-.040	-.077	.098	.523**	.587**	.045	.692**	.541**	.716**	1	.401**
PW_all_B	-.195	.078	.053	.143	.487**	.507**	.450**	.260*	.348**	.371**	.401**	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 26. shows the correlation between all the variables tested

In summary, it seems that all of the variables described by the theoretical framework are correlated to each other (Table 27). The exception is implicit attitudes which, while acknowledged by many researchers, are not officially part of TPB theoretical framework, though many argue for the need to update it (Chevance, Caudroit, Romain & Boiché, 2017). Implicit attitudes are often seen as relatively independent from the TPB framework, though show significant contributions to the prediction and interpretation of behavior (Ledesma, Tosi, Diaz-Lazaro & Poo, 2018). Similarly to implicit attitudes, the disadvantages represent only one facet of attitudinal evaluation of the behavior and should be considered in the exploration of the behavioral intentions and willingness to adopt neuromarketing. And finally, while the knowledge variable is not considered as part of the theoretical framework, it does represent an important premise for behavioral adoption, hence is included in the regression analysis.

Table 27. Correlation between Variables in Theoretical Framework

<i>Correlations</i>									
	D-Score	Knowledge_allB	Advantages_all_B	Disadvantages_B	Acceptance_all_B	SubjectiveNorms_all_B	PBC_B	BI_all_B	PW_all_B
D-Score	1	.353**	.126	-.001	.088	.197	.197	.098	.143
Knowledge_allB	.353**	1	.439**	.302**	.442**	.279*	.545**	.523**	.487**
Advantages_all_B	.126	.439**	1	.171	.699**	.495**	.434**	.587**	.507**
Disadvantages_B	-.001	.302**	.171	1	.030	-.046	.018	.045	.450**
Acceptance_all_B	.088	.442**	.699**	.030	1	.514**	.597**	.692**	.260*
SubjectiveNorms_all_B	.197	.279*	.495**	-.046	.514**	1	.449**	.541**	.348**
PBC_B	.197	.545**	.434**	.018	.597**	.449**	1	.716**	.371**
BI_all_B	.098	.523**	.587**	.045	.692**	.541**	.716**	1	.401**
PW_all_B	.143	.487**	.507**	.450**	.260*	.348**	.371**	.401**	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 27. Shows correlation between variables included in the theoretical framework.

6.6.6.2 Regression Model Based on Theory of Planned Behavior

The first model tested for multiple regression is the TPB since this represents a foundational framework for the research. Multiple regression was conducted using a stepwise approach with behavioral intentions as the dependent variable. The independent variables included in the analysis are the ones outlined by the theoretical framework, including advantages, disadvantages (as measures of explicit attitudes), D-Score (as a measure of implicit attitudes), subjective norms and perceived behavioral control. The analysis outlined three models that demonstrate predictive power towards behavioral intentions (Table 28). The first model includes only the PBC, showing it accounts for 50.6% of the variance in behavioral intentions. The second model includes

perceived behavioral control and advantages, indicating that these two variables explain 59.6% of the variance in behavioral intentions. And the third model suggests that three variables - perceived behavioral control, advantages, and subjective norms - explain 61.2% of variability in behavioral intentions. The third model is very much aligned with the theoretical framework, suggesting that these three variables account for the majority of variance in the behavioral intentions. However, this model suggests that the highest portion of the variance in behavioral intentions is explained by perceived behavioral control, accounting for 50.6% of variance. Interesting finding is that implicit attitudes and disadvantages don't seem to contribute to the variance in behavioral intentions. The same results are found when knowledge is added to the dependent variables, where it does not seem to contribute to any change in the behavioral intentions, despite the fact that earlier correlation analysis show strong correlation between the two variables.

Table 28. Multiple Regression for TPB

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.716 ^a	.512	.506	1.11973
2	.779 ^b	.607	.596	1.01220
3	.792 ^c	.627	.612	.99272

- a. Predictors: (Constant), PBC_B
- b. Predictors: (Constant), PBC_B, Advantages_all_B
- c. Predictors: (Constant), PBC_B, Advantages_all_B, SubjectiveNorms_all_B
- d. Dependent Variable: BI_all_B

Table 28. shows the models generated using multiple regression analyses.

Looking at the distribution of the variables, Figure 33 shows that there is normal distribution. In addition, the plot of the regression shows a linear model, as demonstrated by Figure 34. Finally, ANOVA table, shown in Table 29, shows that the findings for all three models are significant.

Figure 33. Normal Distribution of TPB Model

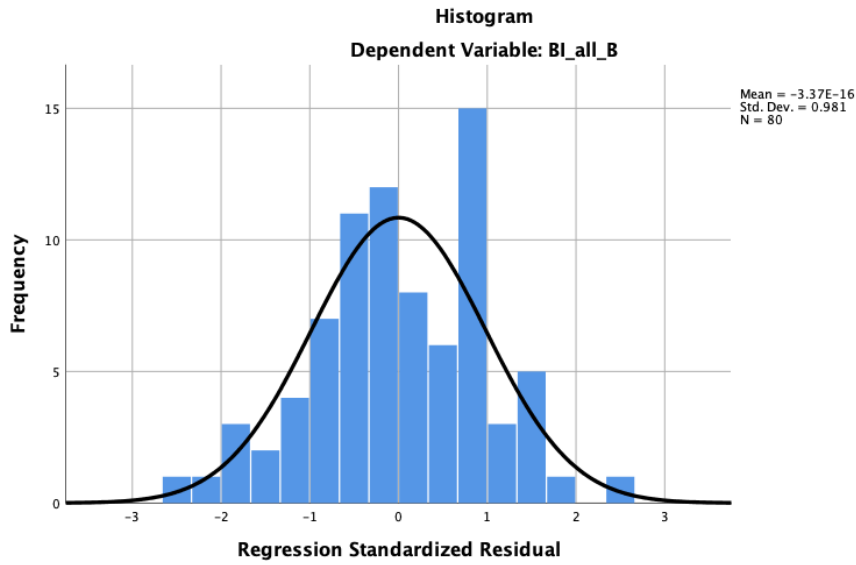


Figure 33. shows the bell-shaped curve for normal distribution of the TPB model.

Figure 34. Linear Plot of TPB Model

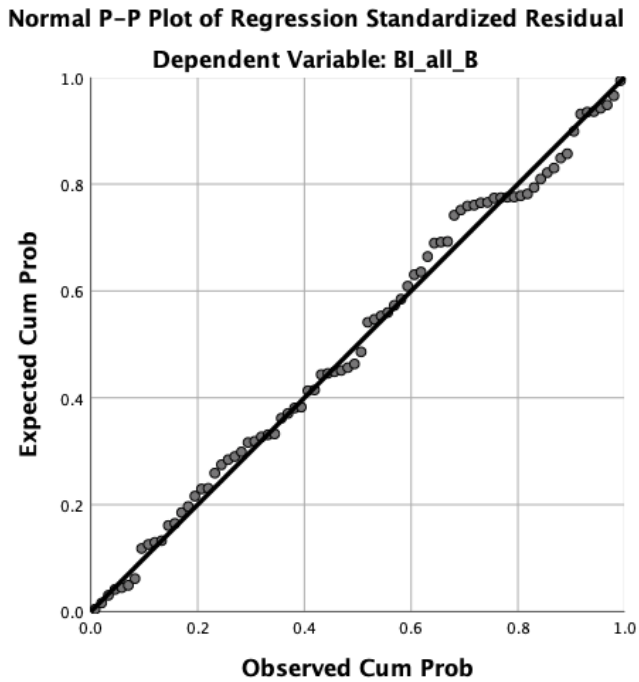


Figure 34. shows the plot of the regression.

Table 29. ANOVA for TPB Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	102.731	1	102.731	81.936	.000 ^b
	Residual	97.796	78	1.254		
	Total	200.528	79			
2	Regression	121.638	2	60.819	59.362	.000 ^c
	Residual	78.890	77	1.025		
	Total	200.528	79			
3	Regression	125.631	3	41.877	42.494	.000 ^d
	Residual	74.897	76	.985		
	Total	200.528	79			

a. Dependent Variable: BI_all_B

b. Predictors: (Constant), PBC_B

c. Predictors: (Constant), PBC_B, Advantages_all_B

d. Predictors: (Constant), PBC_B, Advantages_all_B, SubjectiveNorms_all_B

Table 29. shows the statistical significance of the three models.

6.6.6.3 Regression Model based on Technology Acceptance Model

The second theoretical model tested for multiple regression includes the Technology Acceptance Model (TAM). According to this theoretical framework, behavioral intentions are predicted by attitudes towards the technology, which are defined by perceived usefulness and perceived ease of use. These items are represented by the acceptance variable in this research. Therefore, multiple regression for behavioral intentions as the dependent variable was conducted to include advantages, disadvantages, and acceptance as independent variables. The analysis shows only one model in which acceptance explains 47.2% of variance in behavioral intention (Table 30). The multiple regression analysis using TAM as a theoretical framework has excluded advantages and disadvantages, as they are believed not to contribute to the variance in behavioral intentions. Results from ANOVA, presented in Table 31, show the statistical significance for the model in predicting the variance in behavioral intentions. And similar to TPB multiple regression, the model shows linear plot and normal distribution (Figure 35 and Figure 36).

Table 30. Multiple Regression for TAM

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.692 ^a	.479	.472	1.15737

a. Predictors: (Constant), Acceptance_all_B

b. Dependent Variable: BI_all_B

Table 30. shows the one model based on the regression analysis using TAM framework.

Table 31. ANOVA for TAM

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	96.046	1	96.046	71.702	.000 ^b
	Residual	104.482	78	1.340		
	Total	200.528	79			

a. Dependent Variable: BI_all_B

b. Predictors: (Constant), Acceptance_all_B

Table 31. shows the statistical significance of the model.

Figure 35. ANOVA for TAM

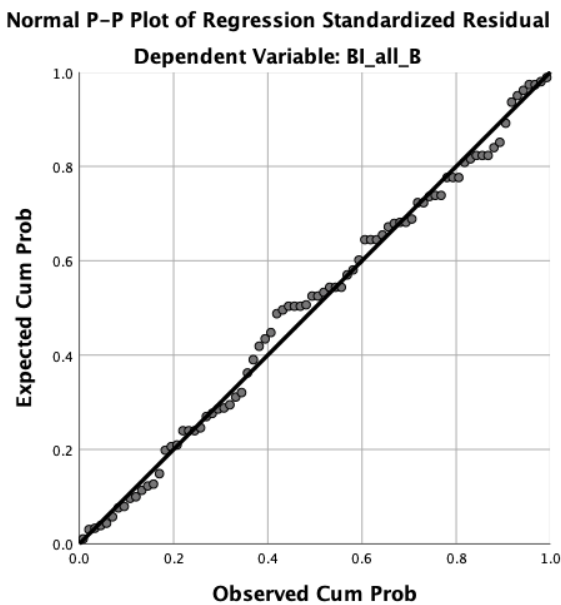


Figure 35. shows the plot of the regression.

Figure 36. Normal Distribution of TAM

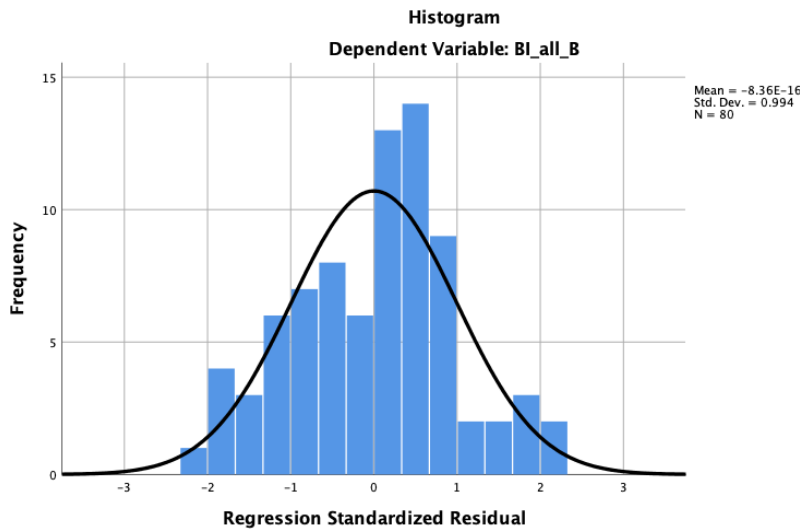


Figure 36. shows the bell-shaped curve for normal distribution of the TAM model.

When knowledge and implicit attitudes are added into the equation, the predictive power of the model slightly changes. While implicit attitudes are not included in the model, knowledge seems to increase the explanatory power in variance of behavioral intentions by 5.8%, which would be the change in R square, now accounting for 52.5% of behavioral intentions variance explained by acceptance and knowledge (Table 32).

Table 32. Multiple Regression for TAM with Knowledge

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.692 ^a	.479	.472	1.15737
2	.733 ^b	.537	.525	1.09750

a. Predictors: (Constant), Acceptance_all_B

b. Predictors: (Constant), Acceptance_all_B, Knowledge_allB

c. Dependent Variable: BI_all_B

Table 32. shows the two models based on the regression analysis using TAM framework with the knowledge variable.

6.6.6.4 Regression Model Based on Prototype Willingness Model

The final theoretical model included in the theoretical framework used in this study includes Prototype Willingness Model (PWM). According to this theory, behavioral willingness is explained by subjective norms and attitudes as well as the perception of prototype similarity and prototype favorability. To conduct multiple regression analysis, behavioral willingness was selected as the dependent variable, while advantages, disadvantages (as a function of explicit attitudes) and subjective norms were selected as independent variables. The multiple analyses show only two significant models, one including just the advantages, and the other one including advantages and disadvantages. While advantages account for 24.7% change in variance of behavioral intentions, together with disadvantages, these two variables explain 37.7% of variance in behavioral intentions (Table 33). Interestingly, subjective norms don't seem to contribute to the variance in behavioral intentions. ANOVA table in Table 34 shows statistical significance of both models. And similar to previous theoretical frameworks, PWM seems to have normal distribution and has a linear plot (Figure 37 and Figure 38).

Table 33. Multiple Regression for PWM

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.507 ^a	.257	.247	.84418
2	.627 ^b	.393	.377	.76778

a. Predictors: (Constant), Advantages_all_B

b. Predictors: (Constant), Advantages_all_B, Disadvantages_B

c. Dependent Variable: PW_all_B

Table 33. shows the two models based on the regression analysis using PWM framework.

Table 34. ANOVA for PWM

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.206	1	19.206	26.950	.000 ^b
	Residual	55.586	78	.713		
	Total	74.791	79			
2	Regression	29.401	2	14.700	24.938	.000 ^c
	Residual	45.390	77	.589		
	Total	74.791	79			

a. Dependent Variable: PW_all_B

b. Predictors: (Constant), Advantages_all_B

c. Predictors: (Constant), Advantages_all_B, Disadvantages_B

Table 34. shows the statistical significance of the models.

Figure 37. Normal Distribution for PWM

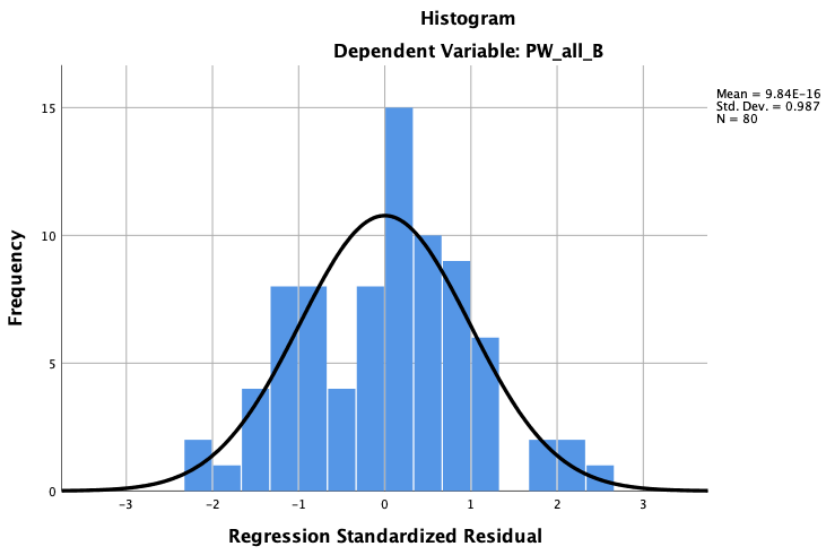


Figure 37. shows the bell-shaped curve for normal distribution of the PWM model.

Figure 38. Linear Plot for PWM

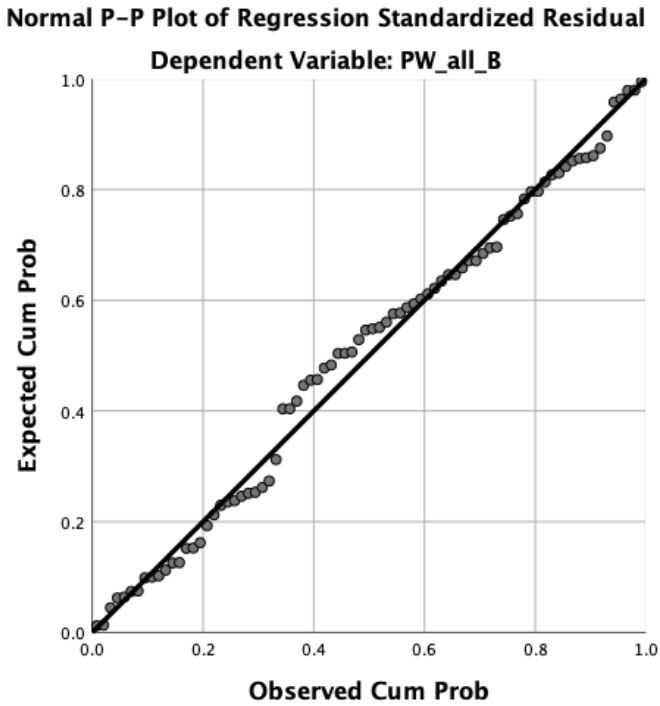


Figure 38. shows the plot of the regression.

The multiple regression analysis was also conducted with knowledge and implicit attitudes as additional variables as they can be argued to contribute to the overall construct of attitudes towards neuromarketing. While implicit attitudes don't seem to contribute to the variance in behavioral willingness, the knowledge variable does. As a matter of fact, knowledge accounts for an additional 4.3% of change in R squared, which allows the new model to explain 41.4% of variance in behavioral willingness (Table 35).

Table 35. Multiple Regression for PWM with Knowledge

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.507 ^a	.257	.247	.84418
2	.627 ^b	.393	.377	.76778
3	.660 ^c	.436	.414	.74495

a. Predictors: (Constant), Advantages_all_B

b. Predictors: (Constant), Advantages_all_B, Disadvantages_B

c. Predictors: (Constant), Advantages_all_B, Disadvantages_B, Knowledge_allB

d. Dependent Variable: PW_all_B

Table 35. shows the three models based on the regression analysis using PWM framework with the knowledge variable.

6.6.6.5 Regression Model Based on Final Theoretical Framework

To test the theoretical frameworks used in this study, multiple regression analysis was performed to include all the elements of TPB, TAM and PWM. The dependent variable for this analysis is behavioral intentions since research of PWM and TPB suggests willingness to engage in behavior contributes to behavioral intentions (Figure 39, as presented in chapter 4). Together, behavioral willingness, behavioral intentions and perceived behavioral control explain specific behavior. However, since this study does not include the measures of behavior, behavioral intention was selected as the key dependent variable for testing.

Figure 39. Theoretical Framework for Predicting Neuromarketing Adoption

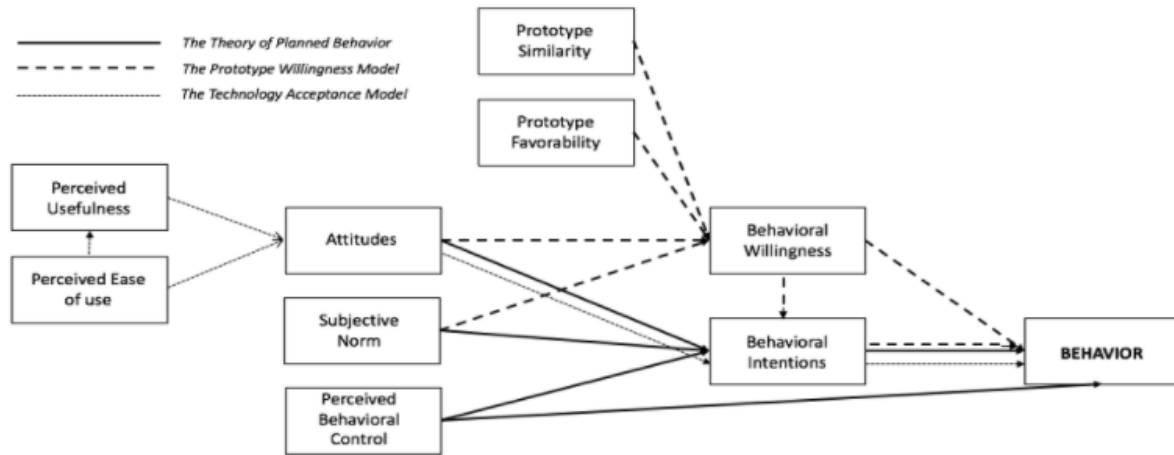


Figure 39. Demonstrates the theoretical framework used in this research.

The selection of independent variables included advantages, disadvantages, acceptance (as the function of explicit attitudes), subjective norms, perceived behavioral control, and prototype willingness. Three different models were tested (Table 36). The first one included only perceived behavioral control, which seems to contribute to 50.6% of variance in behavioral intentions. The second model includes perceived behavioral control and acceptance, which accounts for 61.1% in variance in behavioral intentions. In addition, this model demonstrates that acceptance provides an additional 10.9% change in predictive power of behavioral intentions. The final model includes perceived behavioral control, acceptance and subjective norms. These three variables together explain 62.7% of variance in behavioral intentions to adopt neuromarketing.

Interestingly, the only variable for attitude measure included in the model is acceptance, while advantages and disadvantages were excluded from analysis. In addition, the variable measuring prototype willingness has not been included in any of the models, suggesting it does not contribute to the variance in behavioral intentions in a way that's statistically significant. However, the fact that perceived behavioral control has the strongest predictive power behavioral intentions, as it explains over 50% of its variance, is aligned with previous studies that used TPB as a theoretical framework.

Table 36. Multiple Regression for Theoretical Framework

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.716 ^a	.512	.506	1.11973	.512	81.936	1	78	.000
2	.788 ^b	.621	.611	.99317	.109	22.147	1	77	.000
3	.801 ^c	.641	.627	.97311	.020	4.206	1	76	.044

- a. Predictors: (Constant), PBC_B
- b. Predictors: (Constant), PBC_B, Acceptance_all_B
- c. Predictors: (Constant), PBC_B, Acceptance_all_B, SubjectiveNorms_all_B
- d. Dependent Variable: BI_all_B

Table 36. shows the three models based on the regression analysis using the theoretical framework based on TPB, TAM, and PWM.

All three models are significant, according to the ANOVA table in Table 37. The data used in this multiple regression analysis has normal distribution, and the regression plot shows linear structure (Figure 40 and Figure 41).

Table 37. ANOVA for Theoretical Framework

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	102.731	1	102.731	81.936	.000 ^b
	Residual	97.796	78	1.254		
	Total	200.528	79			
2	Regression	124.577	2	62.288	63.149	.000 ^c
	Residual	75.951	77	.986		
	Total	200.528	79			
3	Regression	128.559	3	42.853	45.254	.000 ^d
	Residual	71.968	76	.947		
	Total	200.528	79			

- a. Dependent Variable: BI_all_B
- b. Predictors: (Constant), PBC_B
- c. Predictors: (Constant), PBC_B, Acceptance_all_B
- d. Predictors: (Constant), PBC_B, Acceptance_all_B, SubjectiveNorms_all_B

Table 37. shows the statistical significance of the three models.

Figure 40. Normal Distribution for Theoretical Framework

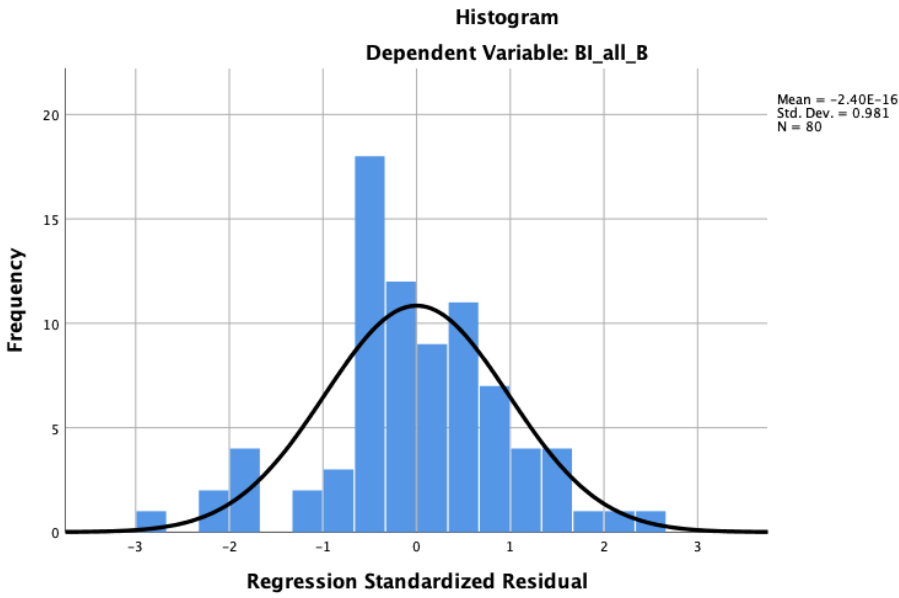


Figure 46. shows the bell-shaped curve for normal distribution of the theoretical framework.

Figure 41. Linear Plot for Theoretical Framework

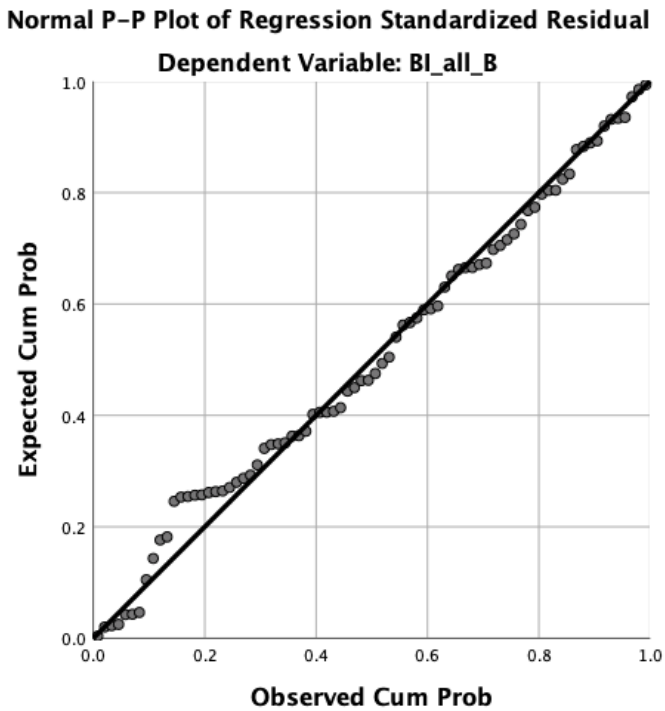


Figure 47. shows the plot of the regression.

Considering that a number of additional variables that are not part of the theoretical framework are correlated with the behavioral intentions or behavioral willingness, additional multiple regression analysis has been conducted to see whether they have any effect on the variance of behavioral intentions. The first set of variables that were included in the analysis is implicit attitudes and knowledge. As it turns out, both of those variables, in addition to advantages, disadvantages, and prototype, have been excluded from the model, suggesting that they have no influence on the variance (Table 38). The same process has been done to check the effect of potentially confounding variables, such as years of experience, region or language, and no significant effect has been found.

Table 38. Multiple Regression for Theoretical framework - with Additional Variables 1

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	D-Score	-.044 ^b	-.549	.585	-.062	.961
	Knowledge_allB	.189 ^b	2.044	.044	.227	.703
	Advantages_all_B	.341 ^b	4.296	.000	.440	.812
	Disadvantages_B	.032 ^b	.403	.688	.046	1.000
	Acceptance_all_B	.411 ^b	4.706	.000	.473	.644
	SubjectiveNorms_all_B	.275 ^b	3.295	.001	.352	.798
	PW_all_B	.157 ^b	1.871	.065	.209	.862
2	D-Score	-.032 ^c	-.440	.661	-.050	.960
	Knowledge_allB	.124 ^c	1.476	.144	.167	.682
	Advantages_all_B	.187 ^c	1.943	.056	.218	.511
	Disadvantages_B	.024 ^c	.342	.733	.039	.999
	SubjectiveNorms_all_B	.168 ^c	2.051	.044	.229	.705
	PW_all_B	.139 ^c	1.864	.066	.209	.860
3	D-Score	-.054 ^d	-.756	.452	-.087	.939
	Knowledge_allB	.127 ^d	1.540	.128	.175	.682
	Advantages_all_B	.151 ^d	1.547	.126	.176	.486
	Disadvantages_B	.035 ^d	.500	.619	.058	.994
	PW_all_B	.111 ^d	1.480	.143	.168	.821

a. Dependent Variable: BI_all_B

b. Predictors in the Model: (Constant), PBC_B

c. Predictors in the Model: (Constant), PBC_B, Acceptance_all_B

d. Predictors in the Model: (Constant), PBC_B, Acceptance_all_B, SubjectiveNorms_all_B

Table 38. shows the three models based on the regression analysis using the theoretical framework based on TPB, TAM, and PWM, with additional variables.

6.7 Discussion

This study looked at both implicit and explicit variables that contribute to the intention and willingness of marketing professionals to adopt neuromarketing. The data has been described using standard statistics in terms of average values and frequency across two regions, as well as based on the experience level. It shows that the perception towards neuromarketing across multiple variables is more positive among the USA marketing professionals, as well as those who have experience implementing it. The data from the survey and IAT was used to assess a number of factors that were believed to explain the intention and willingness of marketing professionals in the USA and SEE regions to adopt neuromarketing. These variables included a measure of implicit and explicit attitudes towards neuromarketing, overall knowledge about and experience in the area, subjective norms, perceived behavioral control, acceptance of the technology, and willingness to engage in neuromarketing behavior based on the prototype perception. All of these variables have been previously defined by the theoretical framework used in this research that combines TPB, TAM and PWM. All three models individually, as well as the combined model, have been tested using multiple regressions analysis to determine which one better predicts the adoption of neuromarketing.

While the pilot research confirmed the validity and reliability of the instrument, additional observations were noted. The results indicated that all the participants from the SEE region tend to have more negative attitudes towards neuromarketing, while all the participants from the US have positive attitudes. One possible explanation for this difference can be found in the test language. However, these observations are consistent with the Study 2 findings, where there is a higher tendency for marketing professionals in the SEE to perceive neuromarketing disadvantages as stronger, especially when considering the ethics implications, compared to US participants. More so, neuromarketing has a higher presence in the US, which might have an influence on the overall attitudes towards neuromarketing. For this reason, the author decided to continue with the main study and closely monitor the D-Score values between the geographical groups. Further observations have disputed these findings, as some of the participants from the US have demonstrated negative attitudes, while some participants from the SEE region demonstrated positive attitudes towards neuromarketing.

Overall, this study shows that participants believe they have knowledge about neuromarketing, they have either heard about this concept or know what neuromarketing is. This is an important finding because there is evidence in existing literature that knowledge contributes to the formation of attitudes (Zhu & Xie, 2015). More so, Chang (2004) claims that there is a difference in information processing between participants that have high knowledge and those that have low knowledge. With participants claiming to have higher levels of knowledge (with mean values above 4 across multiple questions), it can be expected that this knowledge influences the attitudes they hold towards neuromarketing.

The conclusion on the valence of attitudes towards neuromarketing based on a number of measures indicates that participants have positive attitudes towards neuromarketing. This finding is consistent with the previous research conducted with marketing professionals (Eser, Isin & Tolon, 2011). The statements indicating advantages of neuromarketing were rated highly while disadvantages were met either with disagreement or with neutral response. This finding is important because, according to behavioral theory, high object attitudes lead to high behavioral intentions towards that object (Vermeir & Verbeke, 2006). In addition, there is a strong support among social scientists for the notion of attitude-behavior consistency. According to this concept, attitudes are a strong predictor of future behaviors because there is a tendency for people to act in a way that is consistent with their opinions (Kallgren & Wood, 1986). Failure to do so usually results in cognitive dissonance, a psychological state that is uncomfortable and represents motivation to resolve this inconsistency (Festinger, 1957). Another point regarding the importance of positive attitudes leading to behavioral intentions is that once an individual engages in this behavior, his/her attitudes towards that behavior are updated based on this experience and present even stronger predictor of subsequent behavior (Fazio & Zanna, 1981). When looking at the subgroup of participants that had previous experience implementing neuromarketing, they scored even higher on the measures of attitudes towards neuromarketing, though the differences were not found to have statistical significance.

The concepts of perceived usefulness and perceived ease of use have shown to be highly influential on the formation of attitudes towards a behavior that involves a technological component (Porter & Donthu, 2006). The current research indicated that there is high perceived usefulness of

neuromarketing technology in their current practices. This finding is consistent with a similar study by Constantinescu et al (2019), who showed that there is high perception of the usefulness of neuromarketing research across multiple tools employed by neuromarketers. Perceived usefulness was even higher among participants with previous neuromarketing experience, though there isn't statistical significance for these differences. Nevertheless, it can be concluded that acceptance of neuromarketing technology is strong among all participants.

While explicit attitudes towards neuromarketing, measured using the survey, appeared to be positive, the IAT results showed that the implicit attitudes were negative. This inconsistency in valence of implicit and explicit attitudes has been found in other studies (Rydell, McConnell, Strain, Claypool & Hugenberg, 2007; Rydell, McConnell, Mackie & Strain, 2006). Some examples of this phenomenon include stigmatized behaviors and cases of prejudice and racism (Gawronski & LeBel, 2008; Swanson, Swanson & Greenwald, 2001). A study by Hofmann, Gschwendner, Castelli & Schmitt (2008) argues that the difference in implicit and explicit attitudes can be attributed to the situationally available control resources. Their findings suggest that when cognitive resources are available, participants are able to utilize these resources to evaluate the object, which may result in more positive evaluation. Therefore, given a context for evaluation of beliefs, participants may engage in a more explicit or implicit evaluation, which results in a different type of attitude, implicit or explicit, having more effect on the behavior. In addition, since implicit attitudes represent an automatic evaluation of the object in question, they are a product of knowledge and experience, but also of affective experience and cultural biases one has towards that object (Rudman, 2004). Due to the nature of these attitudes, Gawronski & Bodenhausen (2006) believe that explicit attitudes are easier to change, while implicit attitudes change takes longer and involves a different kind of stimuli. This is supported with the results of the current study, where both explicit and implicit attitudes are correlated to knowledge, and with the same level of knowledge obtained about neuromarketing, there is a difference in implicit and explicit evaluations of it. In addition, previous studies have found that explicit attitudes are strongly associated with deliberate behavior while implicit attitudes have stronger effects on impulsive behaviors. Considering that adopting neuromarketing does require deliberate efforts, it is not surprising that negative implicit attitudes don't seem to have an effect on its adoption (Muschalik, Elfeddali, Candel, Crutzen & de Vries, 2019). However, it is important to note that even though

implicit attitudes were not found to influence behavioral intention and willingness to adopt neuromarketing behavior, studying them is important in evaluating different patterns of behavioral prediction, as recommended by Perugini (2005). They represent different assessments of the evaluative quality of the target behavior (Nosek, 2005).

Apart from the attitudes, the study examined the strength of normative beliefs that participants hold towards neuromarketing. Participants had positive subjective norms towards neuromarketing behavior. This finding is consistent with previous studies that have shown that when participants have positive subjective norms, they are more likely to engage in said behavior (Tarkiainen & Sundqvist, 2005; Ham, Jeger & Frajman Ivkovic, 2015). This tendency is further confirmed by the final model in this study which explains the highest variance in adopting neuromarketing behavior, as it includes subjective norms.

Previous research in the area of behavioral intentions across different behaviors suggests that the more positive perceived behavioral control is towards a specific behavior, the stronger the intentions are to engage in that behavior (Gabbiadini & Greitemeyer, 2019; Manstead & Van Eekelen, 1998; Godin, Valois & Lepage, 1993). And the effect of perceived behavioral control usually is stronger than other variables due to the fact that it has both direct and indirect, via behavioral intentions, influence on the behavior (Elie-Dit-Cosaque, Pallud & Kalika, 2011). In the current study, it was observed that perceived behavioral control has the strongest influence on the intention to adopt neuromarketing, as it explained over 50% of the variance. The results from the survey identified barriers that marketers have towards adopting neuromarketing and the overall evaluation of perceived behavioral control was not as strong as other variables. There is however, a significant difference between the overall sample and the subgroup of marketing professionals that have previous neuromarketing experience, and this difference was found to be statistically significant. Therefore, it can be argued that the key element for fostering neuromarketing adoption is found to be increasing the perceived behavioral control, by removing some of the existing barriers and increasing the self-efficacy of marketing professionals to implement neuromarketing.

In addition, this study revealed that marketing professionals in both regions have strong intentions and willingness to adopt neuromarketing, which is consistent with previous research conducted

about neuromarketing (Eser, Isin & Tolon, 2011). Multiple regression analyses have been performed to determine the variables that best describe overall intention to adopt neuromarketing. They suggest that the combined theoretical framework, which was developed for this research, explains close to 63% of variance in intention to adopt neuromarketing. Specifically, the variables accounting for the major portion of variance in behavioral intentions to adopt neuromarketing include acceptance, subjective norms and perceived behavioral control. Another significant result of the study includes the finding that knowledge about neuromarketing, implicit attitudes towards it, as well as the perceived advantages and disadvantages do not explain the variance in adoption of neuromarketing.

6.8 Limitations

The major limitation of this research is the sample size used to collect the data. Even though power analysis explained in chapter 4 indicates that the 80 participants provided a sufficient number for statistical significance, this sample was not large enough to perform exploratory factor analysis (ETA), confirmatory factor analysis (CFA), or structural equation modeling (SEM). Further research is needed to determine further the structure of the factors that explain the adoption of neuromarketing, as well as the specific contribution of each of those factors to the variance in intention to adopt neuromarketing.

It is also important to acknowledge the fact that participants in the study are likely the ones that are interested in or keen on applying neuromarketing in the first place, Therefore, the results might be skewed towards more positive neuromarketing attitudes. In addition, the study was designed to include participants from six strata that are believed to represent different stakeholders in the marketing field: practitioners, academics, researchers, experts, students, and editors of academic journals. Nevertheless, despite numerous efforts to recruit participants from all strata, there was a lack of participation by the editors of marketing journals, whose role is crucial in the adoption of any new field, not just neuromarketing. The lack of input from this subgroup of participants is considered to be one of the notable limitations of the study.

Furthermore, this research has been conducted among marketing professionals in the USA and SEE regions. While the initial objective of this research was to look at the differences between

these two regions, further research should be used to explore the variables in different countries to determine the effect of the variables on intentions to adopt neuromarketing. Therefore, the implication on the intentions to adopt neuromarketing should be interpreted only for these regions.

In addition to sample-related limitations, there are a few limitations related to the methodology that should be acknowledged. First, in order to ensure consistency across the entire sample population, the author is using only English language. While there is no literature that would suggest that language to impact implicit attitudes when culturally neutral stimuli is being used, further research should confirm there is no language effect on neuromarketing stimuli.

Second, as it is argued in chapter 3, new revolutionary ideas usually bring up a new set of tools that are used to evaluate and solve problems. If it is accepted that neuromarketing is a new revolution in marketing, then the methodology used in this study represents a framework based on older ideas. As such, it can be argued that the theory from the current dominant theory might be ill-equipped to measure the phenomenon of the new theory. Further research is needed to evaluate the adoption of neuromarketing using the theories and tools that are part of neuromarketing conduct. The current research relies on the behavioral intentions and willingness as the main predictors of neuromarketing adoption while there are other elements of human condition that play an important role in predicting behavior, such as emotions, personality, motivation, heuristics, etc., all of which are a subject of neuromarketing research.

Third, this study used the iatgen tool to conduct IAT. While the tool itself has been empirically validated, a significant part of the procedure was automated, including data cleaning and latency calculations. In addition, IAT was embedded in the Qualtrics survey and was web-based, which means that the participants were not supervised when taking part in the research. While this prevented the participants from being influenced by the researcher, there is no evidence to suggest presence or absence of any confounding variables that might have had an effect on the answers provided.

Fourth, the entire premise of this research is that behavioral intentions, and behavioral willingness, are strong predictors of future behavior (Webb & Sheeran, 2006; Ajzen, 2005; Landis, Triandis &

Adamopoulos, 1978). However, there is significant evidence to suggest the existence of an intention-behavior gap (Sheeran & Webb, 2016; Fennis, Adriaanse, Stroebe & Pol, 2011). The intention-behavior gap represents the discrepancy in actual behaviors even though there has been an intention to engage in such behavior (Sheeran, 2002). This gap can be a result of multiple factors, most prominently the physical barriers that emerge before one engages in target behavior. While this is being mitigated in the TPB by showing a direct relationship between the behavior and perceived behavioral control, the interpretation of the results should take this into consideration. This effect is, however, consistent with the findings of Study 2, where perceived behavioral control demonstrated the highest effect on variance in behavioral intention to adopt neuromarketing. Nevertheless, the future studies of neuromarketing adoption should measure the extent of this gap, as well as the viable strategies to reduce the intention-behavior gap in neuromarketing adoption.

Finally, as with all social science research, common method bias should be considered as a potential limitation. Common method bias, or common method variance (CMV), represents an observable variance that can be attributed to the methods used in the research rather than constructs measured in the research (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). According to Podsakoff, MacKenzie, Lee & Podsakoff (2003), some sources of CMV can be participant-specific, context-specific or can be found in the measurement item or the context within items are presented. The authors also suggest techniques for controlling CMV, which include procedures under which the data is collected, as well as statistical analysis to measure the effects CMV. While most of the statistical remedies for controlling CMV require employment of factor analysis, they were not used in this research (please see previous discussion outlined in the limitations of this study). Nevertheless, the post hoc analysis conducted by Schaller, Patil & Malhotra (2015) suggest that CMV is not of concern in the TPB domain. Procedurally, however, the following measures were taken to minimize the effects of CMV, as supported by the existing literature. First of all, the participants in this research were promised anonymity, which could reduce the tendency to provide socially desirable answers (Huang, Chang & Backman, 2019). Second of all, Study 2 used two different methods of measuring attitudes, explicit and implicit, which is believed to control for CMV by introducing different scale properties (Podsakoff, MacKenzie & Podsakoff, 2012). Third, IAT was administered before the survey questions to avoid priming effect, where both

neuromarketing and marketing concepts were tested within positive and negative context (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Fourth, in an effort to obtain objective measure in addition to subjective ones, participants were asked to report their previous experience with neuromarketing, and the results were analyzed among both groups, in comparative and aggregated manner (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). And fifth, the survey items were designed in accordance with TPB literature while ensuring the presence of concrete constructs across all variables (Malhotra, Kim & Patil, 2006). Even with all these measures taking place, the potential effect of common method bias can not be entirely ruled out, which is why future research needs to be designed in a way that further controls for the presence and extent of CMV.

6.9 Chapter Summary

Study 2 represents an extension of Study 1 in a sense that it further investigated the attitudes and beliefs of marketing professionals towards neuromarketing. Study 2 represents a quantitative study that was conducted with 80 marketing professionals within SEE and USA regions. The data instrument was designed using the theoretical framework outlined in the methodology chapter. The study consisted of a survey and an IAT that was conducted using Qualtrics platform in English. The data output was analyzed using SPSS, while IAT was calculated using iatgen tool available for academic use free of charge. The statistical analysis shows differences in attitudes toward neuromarketing among SEE and USA marketing professionals, as well as among those with previous neuromarketing experience. While overall explicit measures indicate positive attitudes towards neuromarketing, IAT data shows that there are negative implicit associations towards neuromarketing across both regions. In addition, the analyses provide a regression model that suggests that 63% of variance in behavioral intentions to adopt neuromarketing can be explained by acceptance (perceived usefulness and perceived ease of use), subjective norms, and perceived behavioral control. While the interpretation needs to take in consideration the limitations, this study provides a significant contribution to the empirical evidence in support of adoption of neuromarketing among marketing professionals across SEE and USA regions.

Chapter 7. Integration of Findings, Implications and Future Research

“In science, as in the playing card experiment, novelty emerges only with difficulty, manifested by resistance, against a background provided by expectation.”

- Thomas Kuhn (2012)

7.1 Introduction

This section provides a comprehensive discussion on the research that has been conducted with the aim to understand the intentions and willingness to adopt neuromarketing among marketing professionals in the USA and SEE, and what these findings suggest with relation to neuromarketing as a new revolution in marketing. Upon reviewing the currently available literature on the topic, there is sufficient evidence that shows the added value that neuromarketing brings to the study and practice of marketing, however there is little to suggest the extent of neuromarketing adoption in the future. This aspect is very important from the decision-making perspective as there is little evidence to assist marketing professionals to make informed investment decisions regarding employment and adoption of neuromarketing. As such, having an indication for the extent to which neuromarketing can be expected to influence the future of marketing is quite important. Whether neuromarketing becomes a new revolution in marketing or if its application becomes limited to just innovative research technology, will have a significant influence on the study and practice of marketing overall.

This research was designed to investigate the variables that the literature suggests play an important role in determining the intentions and willingness of marketing professionals to adopt neuromarketing. More specifically, this research consisted of a comprehensive literature review and a total of three studies, each designed to investigate a specific aspect of dispositions of neuromarketing:

- *Comprehensive literature review* - The literature review was conducted to understand the current definitions of neuromarketing and assess the current state of the field.
- *Study 1* - this study was conducted to elicit the beliefs of marketing professionals towards neuromarketing. By design, this study used qualitative methods to acquire valuable insights

into the content of beliefs of marketing professionals towards neuromarketing across multiple variables that have previously been defined by the literature.

- *Study 2* - the final study of this research project included a quantitative analysis of the previously elicited beliefs towards neuromarketing. In addition to the measurement of the explicit attitudes towards neuromarketing, it also provided the first account of implicit attitudes towards neuromarketing. Apart from contributing valuable insights into the disposition of relevant professionals towards neuromarketing, this study introduced a theoretical framework that was used to study the adoption of neuromarketing and identified a statistical model that predicts a high portion of variance in intentions to adopt neuromarketing.

Together, these three studies provide empirical evidence towards the research objectives that have been defined based on the literature review conducted at the beginning of this research. As a reminder, the research objectives, and research questions defined in an effort to achieve these objectives, are as follows:

- RO1: Understand the current awareness of and experience using neuromarketing
- RO2: Discover the beliefs marketing professionals hold towards neuromarketing
- RO3: Understand the attitudes of marketing professionals towards neuromarketing
- RO4: Uncover intentions and willingness of marketing professionals to adopt neuromarketing
- RO5: Investigate indicators for the neuromarketing adoption

7.2 Research Outcomes

After the completion of all three studies, the results can be interpreted specifically for each of the research objectives. The following section reports on the specific questions that have been defined under each of the objectives, and final discussion on how these objectives have been achieved is outlined. While the results of Study 2 provided a good indication for the beliefs that marketing professionals hold towards neuromarketing as a basis for their attitudes, it has also provided a significant input towards the specific variables that have been tested in Study 2. The summary of the outcomes from each study, including the methodology, is presented in Table 39.

7.2.1 Research Objective 1

The first objective of this research has been to understand the current state of neuromarketing knowledge. To achieve this objective and properly describe the current knowledge of neuromarketing, the following research questions have been defined:

- a. What is the awareness level of neuromarketing?
- b. What is the level of understanding of neuromarketing?
- c. What is the level of experience using neuromarketing?

The answer to the first questions has been provided by the results of Study 1. As it was discussed in the literature review, there is a steady increase in the number of publications exploring the topic of neuromarketing. This shows that the new knowledge is continuously being accumulated and works to expand the basis of available resources. At the same time, this trend shows continuous interest in the topic, which further contributes to the depth of understanding of neuromarketing as a concept. The awareness and the level of understanding of neuromarketing, on the other hand, have been explored both in Study 1 and in Study 2. The results of Study 1 show that the majority of participants have heard of and are aware of neuromarketing. More specifically, some see it as the application of the new research tools, while others see it as a new way of thinking about marketing and consumer behavior. These findings have further been confirmed by Study 2, where the majority of participants report being aware of neuromarketing, while this awareness is slightly stronger among the USA participants. When it comes to the actual knowledge of neuromarketing, participants reported having some, which seemed to be truer of the USA marketing professionals. When looking at how participants understand neuromarketing, some agreed it is a new research area, while others believed it is a new way of thinking. The level of knowledge of neuromarketing was further confirmed through the experience of implementing neuromarketing, which came from participants that reported to have some prior experience.

What the literature review has shown, however, is that there isn't a universally accepted definition of neuromarketing. Currently, the way that neuromarketing is perceived can be described either as a new tool for research, a new research area, or a new era. The same lack of consensus exists when it comes to which of the existing scientific fields contribute to the growing body of knowledge in neuromarketing. While these discrepancies might be common for a new field, they represent a

barrier for future development of the field. They impede the progress of the field because there is no clarity regarding the overall scope of neuromarketing inquiry, which brings into question the overall contribution of the field towards better understanding of consumer behavior. That level of uncertainty makes it difficult for academics and professionals to determine when and how to apply neuromarketing and what the outcome of its application can be. After all, definitions are a useful starting point for scientific discussion as they provide a framework for conversation and ensure all parties to the discussion have a common understanding of core concepts.

7.2.2 Research Objective 2

The second objective of this research is to discover the beliefs marketing professionals hold towards neuromarketing. This objective was achieved with Study 1, with quantitative confirmation demonstrated in Study 2, where the following research questions were answered:

- d. What do professionals believe are the advantages and disadvantages of adopting neuromarketing?
- e. How are neuromarketing practices useful to marketing professionals?
- f. Do marketing professionals see neuromarketing as acceptable behavior?
- g. What do marketing professionals believe to be barriers to neuromarketing adoption?
- h. What do marketing professionals believe is the prototype neuromarketing behavior?
- i. Do marketing professionals see value in adopting neuromarketing?

According to Study 1 results, there is an overwhelmingly positive sentiment arising from the excitement and enthusiasm that marketing professionals have with regard to neuromarketing. Participants recognize neuromarketing providing the opportunity for generation of new insights that can allow for better understanding of consumer needs and design of marketing stimuli that can resonate better. These notions were further confirmed in Study 2, that shows few participants disagree that neuromarketing offers opportunities to marketers, gives more insights, or can help them make better decisions. When looking at its usefulness and ease of use, there is a tendency to focus on the broader scope of neuromarketing and its applicability beyond just the research aspect. But, understandably, any negative beliefs with respect to usefulness and ease of use are focused on the technological aspects of it, especially for participants who didn't have prior exposure and

experience using neuromarketing. Despite that, only a small portion of participants believe neuromarketing is not useful to their work, and even less think it would not make their job easier.

While participants believe that their peers in the marketing industry have at least basic understanding and approve of its use, they don't think this applies to the wider public. In terms of ethics, the participants believe the increased knowledge about neuromarketing can mitigate the ethical concerns that would facilitate adoption of neuromarketing. To that extent, only a small number of participants disagreed that neuromarketing research and practice follow ethical guidelines. Nevertheless, they believe these concerns are not present among the marketing community, and as such, see positive perceptions by their peers.

On the other hand, the most common barriers to neuromarketing adoption represent time, money and knowledge. In addition, almost all participants believe they need more training in neuromarketing. However, while there are both physical and cognitive barriers to neuromarketing adoption, participants believe that by having a better understanding of neuromarketing and what it offers would facilitate their application in research and everyday conduct of marketing.

Interviews with marketing professionals demonstrated that there is a high intention to implement neuromarketing. This same result was found in Study 2. Moreover, participants demonstrate high favorability towards professionals already using neuromarketing and their desire to be part of that group that they think of so highly. The primary reason for such perception is the inherent pursuit of knowledge that this group of marketing professionals project that makes them forward-thinking and visionary that resonates so well with the participants in this research. In addition, only a small number of participants believe neuromarketing should not become the industry standard.

7.2.3 Research Objective 3

The third objective of the research is to understand the attitudes of marketing professionals towards neuromarketing. In doing so, the specific questions that this study answered include the following:

- j. Do marketing professionals have positive explicit attitudes towards neuromarketing?
- k. Do marketing professionals have positive implicit attitudes towards neuromarketing?

- l. What is the difference in the valence of attitudes towards neuromarketing between professionals who have experience in using it vs. those who do not?
- m. What is the difference in valence of attitudes towards neuromarketing between USA and SEE marketing professionals?

Based on the theoretical framework, attitudes were measured by looking at advantages and disadvantages (via the TPB), as well as acceptance (via the TAM). The participants showed strong agreement with the advantages of neuromarketing being listed. This was further confirmed with the statement that neuromarketing offers a lot of opportunities. In terms of disadvantages, the mean values indicated that the participants either disagreed with the statements or remained neutral. When it comes to perceptions of marketing professionals towards neuromarketing as a useful practice and the one that would make their jobs easier, there was a strong agreement. However, participants did disagree that it is easy to use. Nevertheless, the participants showed strong preference for experimenting with neuromarketing, which was measured with a statement “I (would) like to experiment ...”

In addition to explicit attitudes, Study 2 measures implicit attitudes, as well. The implicit attitudes have been measured using IAT that provided a D-Score as a measure of implicit associations – a mean difference in reaction time divided by standard deviation. Across the entire sample, the D-Score was negative, signifying that the marketing professionals have strong association towards Neuromarketing+Negative, Traditional Marketing+Positive.

Only one third of the marketing professionals that participated in the research had previous experience with implementing neuromarketing. The majority of these participants were in the US and are primarily practitioners. Within this group, there were still negative associations with neuromarketing, but the strength of these negative associations was lower than the overall sample. Nevertheless, the participants with prior neuromarketing experience did show strong agreement with advantages of neuromarketing, with their mean value across multiple statements going above 6 for the most part. On the other hand, they also showed stronger agreement with the disadvantages of neuromarketing compared to the overall sample. This is likely due to the fact that prior experience enabled them to have a higher level of knowledge of neuromarketing, including its pros

and cons. When asked whether neuromarketing is easy to use, their answers suggested it was neither easy nor difficult. However, this does not seem to prevent them from realizing the value that neuromarketing adds or the belief that it should/will become the industry standard, as their mean rating was still very high. Another interesting finding about participants with prior neuromarketing experience is that they believe their colleagues are already using neuromarketing. This finding, combined with an overall high rating of subjective norms, suggests higher importance of the impact of their social environment on neuromarketing perception. They did also see lower barriers to implementing neuromarketing and higher intent to adopt it moving forward.

Overall, Study 2 shows that marketing professionals have mostly positive perceptions towards neuromarketing. The positive attitudes are observed despite the implicit associations with neuromarketing being negative, and their valence remains the same regardless of the region, language or the previous experience with neuromarketing. The effect of inconsistency of implicit and explicit attitudes can have different effects of the behavior depending on the situationally available control resources. For more automatic behaviors, implicit attitudes are believed to have more effect on the behavior, while in deliberate decision-making explicit attitudes are likely to be more dominant. In the context of a decision whether to use neuromarketing or not, quick decisions are less likely to be present. It is expected that such decisions will be made through a more deliberate and structured process that requires planning and thinking. For example, in the context of writing a research grant or a company strategy, both processes which involve long-term planning, it can be expected that explicit attitudes will have a stronger role. However, situations that might be prone to quick evaluation and heuristic decision-making, thus more susceptible to implicit attitudes, might include selection of a research vendor or paper selection for a publication. In addition, in light of knowing that implicit attitudes are negative, it is imperative that certain processes are put in place to ensure that thoughtful deliberation is present. These processes can be leveraged from an extensive literature that already exists in the area of mitigating implicit bias.

7.2.4 Research Objective 4

The fourth objective of this research is to uncover the intentions and willingness of marketing professionals to adopt neuromarketing. To uncover these indicators of neuromarketing adoption, the following research questions were explored:

- n. Do marketing professionals have intentions to adopt neuromarketing?
- o. Are marketing professionals willing to adopt neuromarketing practices?

Both of these questions have been approached from a qualitative and quantitative perspective. And in both instances, this research has shown that, overall, marketing professionals in the US and SEE regions have intentions to adopt neuromarketing in their marketing practices, and they have strong willingness to adopt it per very positive perceptions towards what they believe is the prototype neuromarketing behavior. In Study 1, the participants were asked about their beliefs about a number of factors that are considered to contribute to willingness and intention, per theoretical framework. Later in Study 2, these same factors were measured quantitatively. It can be concluded that overall, marketing professionals have intentions and are willing to adopt neuromarketing because they see the value of neuromarketing in their current practices, they perceive it as a positive thing, they recognize the potential limits and disadvantages, consider their social environment to generally be favorable of them adopting it, and are aware of what conditions need to be satisfied for them to be able to implement neuromarketing properly. In addition, the analyses indicated that across all measures there are positive perceptions towards neuromarketing. Specifically looking at intentions and willingness, the results indicate agreement.

7.2.5 Research Objective 5

The final objective of this research is to investigate the indicators for neuromarketing adoption. Specifically, the results from Study 2 are aiming to answer the following research questions:

- p. What factors explain the intention and willingness of marketing professionals to adopt neuromarketing practices?
- q. What is the best predictor of neuromarketing adoption?

These research questions were answered through the multiple regression analysis, where the aim was to identify the variables that explain the variance in behavioral intention to adopt neuromarketing. While multiple regression was conducted for each of the individual theoretical models used in this research, the analysis shows that the combined theoretical framework developed for this research provides the strongest theoretical basis for explaining the difference in intentions to adopt neuromarketing. Multiple regression showed that perceived behavioral control

has the highest potential to explain the difference in behavioral intentions, with over 50% contribution to the variance in intention. However, when combined with acceptance and subjective norms, the model estimated 63% of the variance in intentions can be explained by these three variables. A further interesting finding is that implicit attitudes, advantages, disadvantages, prototype, or even knowledge do not contribute to the intention to adopt neuromarketing.

Table 39. Summary of Findings

Research Objectives	Research Questions	Study	Methodology	Findings
RO1: Understand the current awareness of and experience using neuromarketing	a. What is the level of interest in neuromarketing?			<p>Marketing professionals in USA and SEE have high behavioral intentions and willingness to adopt neuromarketing:</p> <ul style="list-style-type: none"> 1. Positive attitudes - This is evident from the number of advantages they perceive, which outweigh the disadvantages. - They see the adoption of neuromarketing practices as useful to their work and one disadvantage. 2. Positive subjective norms - They perceive neuromarketing behavior as positive - People important to them will see them positively if they were to adopt neuromarketing 3. Positive perceived behavioral control - While skills, budget and time represent the most common barriers cited, participants are able to identify the what they need to overcome in order to engage in neuromarketing behavior 4. Positive behavioral intentions - There is a high intention to implement neuromarketing 5. Positive prototype of neuromarketing behavior, - Participants described it as a forward-looking, innovative, educated, scientific approach to marketing
	b. What is the awareness level of neuromarketing?			
	c. What is the level of understanding of neuromarketing?			
	d. What do professionals believe are the advantages and disadvantages of adopting neuromarketing?			
	e. How are neuromarketing practices useful to marketing professionals?	Study 1	Qualitative semi-structured interviews: thematic analysis	
	f. Do marketing professionals see neuromarketing as acceptable behavior?			
	g. What do marketing professionals believe are the barriers to neuromarketing adoption?			
	h. What do marketing professionals believe is the prototype neuromarketing behavior?			
	i. Do marketing professionals see value in adopting neuromarketing?			
	j. Do marketing professionals have positive explicit attitudes towards neuromarketing?			
RO2: Discover the beliefs marketing professionals hold towards neuromarketing				
RO3: Understand the attitudes of marketing professionals towards neuromarketing				
RO4: Uncover intentions and willingness of marketing professionals to adopt neuromarketing				
RO5: Investigate indicators for the neuromarketing adoption				

Table 39. shows the summary of findings from all studies conducted as part of this research.

7.3 Contributions

Neuromarketing has been present over the past 20 years or so and the knowledge of the field has been consistently growing during that time. However, as the literature review shows, there are still a number of areas where future contributions are needed in order to solidify its scope, definition, and impact. With that in mind, this research has demonstrated a number of contributions that can help inform future research needed in the field.

7.3.1 Theoretical Contributions

To begin with, the extensive literature review conducted as part of this research provides a comprehensive report of the current status of the work that has been done in the domain of neuromarketing definitions. The analysis revealed three distinct groupings of the definition, ranging from application of new tools, development of the new research field, to emergence of a new marketing era. And while the previous studies have reported various versions of the definitions of neuromarketing available to date, this research is the first one to author's knowledge to identify a pattern in how these definitions can be organized, which can further influence the extent of neuromarketing adoption.

In addition, the present research introduced empirical evidence in the study of intentions and willingness for marketing professionals to adopt neuromarketing. While previous studies have looked into the growth of neuromarketing either through observable behaviors (number of companies created, studies conducted, etc.) or budgetary commitments, this research leveraged widely used theoretical framework to study dispositions at individual level for implementing neuromarketing in the future. As such, it is a first of its kind to outline specific conditions that can increase the likelihood of neuromarketing implementation.

With the sample consisting of both marketers with and without neuromarketing experience, Study 2 showed the extent of differences across a number variable. While the moderating effects that behavior has on attitudes are not new to the social sciences literature (Ajzen, 2005), its evidence-based observation in the area of neuromarketing behavior is. Similarly, the sample used in this research included marketers from both USA and SEE regions. And while the results provided additional insight into the beliefs and attitudes towards the adoption of neuromarketing in the USA,

they also outlined the current dispositions towards neuromarketing among marketing professionals in the SEE region. These findings are believed to be among the first to provide empirical support for the measure of knowledge, attitudes (both explicit and implicit), subjective norms, perceived behavioral control, technology acceptance, prototype, as well as intentions to adopt neuromarketing among marketing professionals in SEE.

7.3.2 Methodological Contributions

This research used a new framework within which neuromarketing adoption can be studied in an empirical way. While the premise for the theoretical framework was grounded in the Theory of Planned Behavior, the results demonstrated that the intention to adopt neuromarketing can be better explained when the variables from the Theory of Planned Behavior are used in conjunction with the variables from the Technology Acceptance Model. Specifically, Study 2 used a survey-based instrument specifically adapted to measure intentions and willingness to engage in neuromarketing behavior (i.e., adopt neuromarketing).

In addition, this research is the first to investigate implicit attitudes towards neuromarketing, at least to the author's knowledge. While implicit attitudes don't seem to have a direct influence on the model for neuromarketing adoption, its effects still need further exploration. Based on everything that is known about the influence of implicit factors on human behavior, it can't be denied that they play a role in the cognitive processes. The question that future research should aim to answer should be which implicit factors are significant in neuromarketing adoption. The current research shows that there is lack of consistency between implicit and explicit attitudes, and the consequences of that should be explored further.

7.3.3 Practical Contributions

What this research managed to demonstrate is the evidence around the perceptions that marketing professionals have towards neuromarketing and where they see it going in the future, as well as the value that they see it provide with respect to the current practices. The findings from this research show that marketing professionals see neuromarketing as a provider of new tools they can use for insight generation, as well as the new way of thinking about consumer behavior. And

the majority of the participants actually suggested that neuromarketing will, or at least should, become the new industry standard.

With one of the research objectives being to explain the factors that contribute to the intentions and willingness of marketing professionals to adopt neuromarketing, this research revealed that the major contributor in the variance to adopt neuromarketing is perceived behavioral control - or, simply put, barriers to its adoption. As such, the research showed that the biggest barriers to neuromarketing adoption are (the lack of) skills and budget.

7.4 Implications

As this research has shown, marketing professionals see the value and the opportunities that neuromarketing brings to the overall business practices. Regardless of whether it is considered to be a field of study or an area of interest within marketing, neuromarketing has shown to have an impact on and elicit interest from both academics and practitioners. That is why the implications of this study are considered to be three-fold, providing a contribution to the academic community, marketing industry, as well as the potential development of the South East European region. Specific contributions to each of these communities are discussed in more detail in the following sections.

7.4.1 Implications for the academic community

Even though neuromarketing has been around for almost 20 years now, there is still a significant need to further the understanding of its role within marketing. Over the years, the knowledge accumulated within the neuromarketing area has provided new empirical evidence towards its application and has expanded the pool of opportunities that it provides. However, as it was described in chapter 3, there are still a number of areas where further research is needed. This research revealed that there is a lack of universally accepted definition and scope of the field. This finding has great implications for the future of neuromarketing because its current state fails to provide an operating framework within which neuromarketing can develop in a way that allows for the progress of scientific thought in the area of marketing.

The findings of this research provide a clear path to neuromarketing adoption, by outlining that strong perception of usefulness and ease of use (acceptance), low cognitive and physical barriers (perceived behavioral control), and opinions of relevant social groups (subjective norms) lead to strong intentions to implement neuromarketing. This finding should provide incentives to other academics to explore the ways of how that might happen and what are the knowledge gaps that still exist that are standing in the way of that level of adoption.

Future research studying the intentions to adopt neuromarketing should use TAM in addition to TPB, based on the results observed here. As the multiple regression analyses showed, the variance in intention to adopt neuromarketing is better explained when both TAM and TPB are used.

This research also provides valuable evidence towards the intention to adopt neuromarketing in the SEE region. Most of the studies currently available, including reports from industry sources, report on the forecasts for neuromarketing in the USA region. The comparative analyses of the two regions also provides a reliable framework that can be further used to replicate the research in different countries. In addition, having identified the differences between the two regions, this knowledge can now be used to inform different strategies for fostering neuromarketing adoption in the future. This research enables the future efforts to be more locally nuanced and tailored to the audience.

7.4.2 Implications for the practitioner community

The practitioner community has been very active participants in the adoption of neuromarketing. As the research has shown, the majority of participants who have experience with neuromarketing actually represent practitioners. This finding is consistent with the current state of neuromarketing, where there is a growing number of neuromarketing companies and clients that use their services that appreciate the value it provides. One of the contributions of this study is certainly to enable companies to better understand the value proposition of neuromarketing and its strategic role in the practice of marketing, based on scientifically obtained information. Participants already seem to appreciate the fact that neuromarketing brings new insights that are grounded in science, and the majority recognize its impact on the sales and marketing metrics.

This research further expands on what those values are, which in summary have been identified as an opportunity to generate new insights that can allow for better understanding of consumer needs and design of marketing stimuli that can resonate better. It also demonstrated that while neuromarketing contribution to marketing research is perceived strongly in a positive way, the practitioners do see it as a new way of thinking about marketing. This can further help shape the way in which neuromarketing insights are being used, as well as the extent to which neuromarketing is applied, and to what aspects of the marketing process.

7.4.3 Implication for the SEE region

From the start, the main objective of this research was to evaluate the current status of neuromarketing in the SEE region and provide direction for future development. To identify the gaps and directionality of this development, the research was conducted in the USA, where marketing is traditionally believed to be at the forefront. While qualitative research has shown that the level of understanding of neuromarketing or its perceived value is not much different, the quantitative research shows that there is still some discrepancy. Overall, the positive perceptions about neuromarketing are still slightly weaker among the marketing professionals in the SEE region, the implicit associations tend to be more negative, and there is a higher level of disadvantages perceived. In addition, the extent of knowledge and experience is lower in the SEE region.

Moreover, the multiple regression analysis described in Chapter 6 does outline the path forward in emphasizing what should be the areas of focus for broader neuromarketing adoption. In terms of increasing the acceptance, there should be more efforts put towards increasing the perceptions of usefulness of neuromarketing across multiple scenarios, as well as facilitating the perceived ease of use of neuromarketing. Considering that subjective norms represent an important variable in predicting intentions to adopt, more effort should be made to disseminate the work that is being done in neuromarketing in the region, such as conferences, publications, case studies, etc. There are already a number of neuromarketing companies and established experts in the SEE region; however, the marketing professionals should gain higher awareness of their work. The final variable that has shown to have impact on the adoption of neuromarketing is perceived behavioral control, which translates to perceived barriers. Very frequent barriers cited during the interviews,

which was later confirmed with the survey, are the resources available to marketers, such as budget, time, and skills. To that end, there should be more efforts invested towards demonstrating the reality of investments needed to apply neuromarketing. While in the early days of neuromarketing it was expensive to use some of the novel tools, this has changed quite a bit with technological advancement. While many marketing practitioners don't have the experience of implementing neuromarketing, they have perception that it requires significant resources, which represents a belief that should be updated. The same logic applies to the perception some participants have regarding the level of discomfort that neuromarketing research creates for the participants. This belief system is outdated, and efforts should be made to change it in order to increase the likelihood of wider neuromarketing adoption. On the other hand, the perceived lack of skills needed can be easily influenced by providing training programs, degrees, and further graduate level education that allow for specialization in neuromarketing and professional development.

While these findings have significant implications for the SEE region, the same can be said for the USA region. Despite the fact that that SEE region is of a particular importance for this research, the research findings outline the beliefs towards neuromarketing that are held by marketing professionals in the USA region. As such, the findings can be used to strengthen and improve neuromarketing adoption in the USA, as well.

7.5 Impact and Dissemination

During the course of this research study, the following contribution has been made in disseminating information:

- Doctoral Student Conference Proceedings (DSC2014) - After the first year of study, the initial literature review was published as part of the Doctoral Student Conference organized by SEERC, where the paper presented was exploring the topic of scientific paradigm shifts, trying to identify the process and conditions that would influence neuromarketing adoption.
 - Gorgiev, A, Dimitriadis, N., Nikolaidis, D.V. & Martin, M. (2014). Developing a Conceptual Framework for Detecting the Emergence of New Scientific Paradigms. In *Proceedings of the 9th Annual South-East European Doctoral Student Conference* (p. 509-517). South East European Research Centre.

- IntegracIAA 2016 - Serbian chapter of the International Advertising Association and its division for Young Professionals organized a conference that highlighted the new thinking in marketing. The topic of this presentation was to introduce neuromarketing to these young marketing professionals, where the results of the literature review were presented, with the main focus on the analysis of current definitions of neuromarketing.
- International Conference of Neuromanagement and Neuromarketing (ICNN 2018) - The results of Study 1 were presented at the ICNN Conference organized by World Academy of Science, Engineering and Technology. The paper was later published in the International Journal of Mechanical and Industrial Engineering.
 - Gorgiev, A., Martin, C, Dimitriadis, N. & Nikolaidis D.V. (2018). Intentions and Willingness of Marketing Professionals to Adopt Neuromarketing. ICNN 2018 : International Conference on Neuromanagement and Neuromarketing.
 - Gorgiev, A., Martin, C, Dimitriadis, N. & Nikolaidis D.V. (2018). Intentions and Willingness of Marketing Professionals to Adopt Neuromarketing. *International Journal of Mechanical and Industrial Engineering*, 12(10).
- Psychology Postgraduate Research Conference (2018) - The results of the research were presented at the Postgraduate Research Conference organized by the Department of Psychology at the University of Sheffield. During this presentation, initial work on the thesis has been presented, including the results from the literature review and proposed methodology.
- Fireside chat at Rutgers University (2019) - upon invitation from the Cognitive Science Club, a student-run club at the Rutgers University, the fireside chat was organized where the main topic of the discussion was the interdisciplinary nature of neuromarketing, as well as its application to marketing study and practice.
- Book Chapter - prior to starting the doctoral program, the author commenced writing a book chapter with one of the supervisors on new tools used in neuromarketing research. This book chapter was published in 2015 in *Trends and Innovations in Marketing Information Systems*, well into the duration of the research program. This same chapter was later re-published in 2018 as a part of a different handbook on *Applications of Neuroscience: Breakthroughs in Research and Practice*. The focus of both of these

publications was the application of new research methods that neuromarketing offers to marketing academics and practitioners.

- Gorgiev, A., & Dimitriadis, N. (2015). Upgrading marketing research: neuromarketing tools for understanding consumers. In *Trends and Innovations in Marketing Information Systems* (pp. 350-370). IGI Global.
- Gorgiev, A., & Dimitriadis, N. (2018). Upgrading marketing research: neuromarketing tools for understanding consumers. In *Applications of Neuroscience: Breakthroughs in Research and Practice* (pp. 350-370). IGI Global.
- Rejected publications - over the last year of the study, attempts were made to publish the paper with a new proposed definition of neuromarketing. The versions of the paper were submitted to Q1 marketing journals, including Journal of Marketing, Journal of Marketing Research, and Journal of Consumer Research. The paper was rejected by all three journals. Nevertheless, feedback received from these journals provides a direction for necessary edits that will be made for future submissions.

With the completed all three studies, there are ongoing efforts for further dissemination via journal publication.

7.6 Recommendations and Future Research

This research was designed to answer specific research questions that were identified through literature review as potential gaps in the current understanding of neuromarketing and, specifically, in the understanding of neuromarketing adoption. And while these questions were answered through the three studies conducted as part of this research, some new questions arose that could be answered through future research:

- What are the behavior change strategies that would facilitate adoption of neuromarketing among marketing professionals?
- To what extent are changes in any of the identified variables contributing to the level of investment in neuromarketing?
- What other factors, outside of the theoretical framework, explain adoption of neuromarketing?

These questions represent potential areas for future research that would provide more insights into neuromarketing adoption and ways to influence it.

Based solely on the conclusions made from this research, there are few recommendations that come as a result of this research that can be leveraged by both academic and practitioner marketing communities to facilitate neuromarketing adoption. Study 2 analysis shows that perceived behavioral control explains the biggest portion of variance in neuromarketing adoption. This means that by reducing the barriers to adoption, there is a high likelihood that neuromarketing would be implemented more by marketing professionals. Reflecting further back on the Study 1 and Study 2 results, budgets required for neuromarketing implementation represent one of the major barriers. Therefore, by reducing the level of investment needed to implement neuromarketing, it is likely that the adoption would be higher. And this barrier will likely be reduced over time, as neuromarketing technology matures, more options become available, and new solutions are introduced. In addition, increasing the neuromarketing skill level among marketing professionals should help with further neuromarketing adoption as it is considered as one of the perceived barriers. This would require specialized educational and training programs to be available for marketers to attend. In addition, as knowledge is correlated and highly influential on a number of different aspects of neuromarketing adoption, the effect of education can be exponential. While being asked whether neuromarketing should be taught at a business school, the majority of the participants agreed. And while this scale item is not part of the ones believed to explain intention to adopt neuromarketing, it is an indication of the potential solution for increasing the level of neuromarketing skills. Furthermore, this is reinforced by the need for neuromarketing to be easy to use, a scale item measured under acceptance, which is part of the model for neuromarketing behavioral intention. This goes hand in hand with maturing technology, which allows for more simplified and broader use.

7.7 Chapter Summary

Overall, this research represents an attempt to explain the factors that influence the future adoption of neuromarketing among marketing professionals in the USA and SEE regions. In doing so, each of the three studies conducted, as well as the comprehensive literature review, provide different data points and empirical evidence that are contributing to the better understanding of how

neuromarketing is being viewed by marketing professionals - the literature review show the discrepancy and lack of consensus in how neuromarketing is being defined and the pace of knowledge accumulation and the upward trajectory of sources being available on neuromarketing; Study 1 provides detailed information into the structure of positive beliefs that marketing professionals hold towards neuromarketing; Study 2 confirms the findings of Study 1 with quantitative data, provides the first data result on implicit attitudes towards neuromarketing, and defines a model that can predict future adoption of neuromarketing among marketing professionals in the USA and SEE regions. The limitations of each individual study have been addressed by the preceding chapters, leaving the core limitation to be the sample used in this research, which did not allow for exploratory factor analysis to be conducted. Nevertheless, the theoretical framework that was used for purposes of studying behavioral intentions for neuromarketing adoption has facilitated the development of a model that explains future intentions to implement neuromarketing in USA and SEE regions.

As Thomas Ramsøy (2019) stated in one of his recent articles published by the Journal of Advertising Research:

“The current state of neuromarketing and consumer neuroscience is far from where it is intended and has been promised to be” (p. 291).

This research was an attempt to help neuromarketing get closer to where it should and has the potential to be. There is still a lot of empirical evidence that needs to be generated and new knowledge that needs to be produced. However, this research provides insights that can guide more immediate steps that need to be taken to facilitate neuromarketing adoption, and it provides a basis for future replication across multiple countries that are making efforts in bringing neuromarketing to the marketing profession and study. Nevertheless, the biggest hope for this research is that it enables neuromarketing to be applied towards novel marketing problems in pursuit of overall progress in the field as such approach has historically been shown necessary in bringing about a revolution and initiating a shift in current scientific thinking.

Chapter 8. Conclusions and Final Thoughts

“When we have unified enough knowledge, we will understand who we are and why we are here.”

- Edward O. Willson (1998)

According to Niiniluoto (2019), scientific progress is different from scientific development; it implies an improvement over what used to be rather than just describing what happened. As such, it has a purpose, which is to enable a betterment of the world for all its stakeholders. And from the very beginning, that has been the main motivation for this research - to evaluate the current developments in the field of neuromarketing and assess whether it is just a direction that the field is taking or if it provides an opportunity to do things better, knowing what we know now.

Neuromarketing is undeniably one of the latest developments in the study and practice of marketing. The marketing community knows more about consumers and customers at this point than ever before. And the new tools that have been introduced from various disciplines allow for furthering the knowledge about these groups every day. But is it an improvement over what already exists in marketing? Is neuromarketing enabling marketing professionals to just know more about customers? Or is it also allowing them to implement this knowledge in a new, revolutionary way that unveils a new level of understanding? What is the impact and the scale of the change that is happening as a result of neuromarketing?

This research has shown that marketing professionals in US and SEE regions show strong agreement with neuromarketing as an approach that can improve business, provide a scientific way of acquiring better insights, and help them better understand consumers' needs. As a matter of fact, most participants in the research believe that neuromarketing will or, at least, should become an industry standard. And, as a result, they state to have an intention to implement neuromarketing practices in their everyday marketing conduct. And these findings can be viewed as markers for a revolutionary shift that neuromarketing has introduced.

But if neuromarketing is indeed perceived as such, why isn't it mainstream yet? That has been the question this research set out to understand and expand the bounds of the scientific knowledge in

this area. There are a number of new learnings that have been acquired in the process of conducting this research, but a couple of lessons can be considered as particularly influential.

First, while many academics are invested in driving the development of neuromarketing, not much consensus has been achieved yet. There still isn't an accepted definition for the field, and there aren't strong indications that we are getting there soon. Although there is some discourse around the definition of neuromarketing, the available definitions of neuromarketing exist on spectrum, from narrow understanding of it being just a simple application of novel research tools, to broad phenomenon that is redefining foundational assumptions on everything we know about marketing. There isn't even a consensus on the different fields from which neuromarketing is leveraging its foundations. Available literature can name anywhere from two to eleven different fields that can take the credit. And such discrepancies are preventing the unification of existing knowledge.

The second learning relates to how marketing professionals perceive neuromarketing. Regardless of the level of previous experience and current role, marketing professionals see neuromarketing favorably. There is a high level of acknowledgement of the potential benefits that it can bring to the practice and study of marketing and business overall. What is more interesting, these benefits are recognized despite the fact that there are still some unresolved issues around the ethics of it, which is not uncommon for a new field, and existence of physical barriers to its implementation due to lack of skills, budget or time. There is a sense that the benefits outweigh the challenges, which should grant neuromarketing the space to try and address them.

The final, and possibly most valuable learning from this research concerns what we can do to facilitate the adoption of neuromarketing, considering the improvements it provides over the current conduct of marketing. The final study identifies a model that describes and predicts the adoption of neuromarketing that gives us the formula for future neuromarketing use. If in a given population there is strong acceptance of the neuromarketing technology, there is perception that neuromarketing is positively accepted by one's social environment and the barriers are easy to overcome, per Study 2 findings, there is 63% likelihood that the population will intend to implement neuromarketing. This final learning gives a framework that marketing community can use to accelerate the adoption of neuromarketing. As a community that recognizes the learnings of

the cognitive revolution, there are more factors at play than what meets the eye (or rather, what crosses the lips). So, if there is a belief that neuromarketing indeed represents scientific revolution, now there is an empirically evidenced framework for improving marketing activity. This is especially true for a region such as South East Europe, that has been challenged with economic progress over the past few decades.

Throughout this research, a number of issues have been identified with respect to the current marketing research and practice. The main hope for the future is to identify a way that resolves these issues. As a matter of fact, to achieve scientific progress in the marketing field, it is required to resolve these issues. Marketing is not the first field that encountered these problems, which means that there is a way forward that has been tried before. And looking into the solutions forged by other fields, that would imply the need for interdisciplinarity.

“An interdisciplinary approach should drive people to ask questions and solve problems that have never come up before. But it can also address old problems, especially those that have proved unwilling to yield to conventional approaches.” (Nature, 2015)

Interdisciplinary science is thought to be the future of science. And the only candidate for interdisciplinary approach currently in marketing is neuromarketing. As such, it should receive the proper attention, at least until a new revolutionary science emerges. Yet, we know that marketing professionals, as all humans, are resistant to change and this resistance has even been documented in the works of Thomas Kuhn with respect to the resistance towards a big change that a new revolution brings along. This resistance shouldn't discourage neuromarketing academics and practitioners. On the contrary, it should motivate them to generate sufficient evidence to address all of its current shortcomings, and in doing so, generate the critical mass needed to drive the change in the way that allows marketing thought, research, and practice to achieve progress.

References

- Abedini, S., MorowatiSharifabad, M., Kordasiabi, M. C., & Ghanbarnejad, A. (2014). Predictors of Non-Hookah Smoking Among High-School Students Based on Prototype/Willingness Model. *Health promotion perspectives, 4*(1), 46.
- Abratt, R., & Sacks, D. (1988). The Marketing Challenge: Towards Being Profitable and Socially Responsible. *Journal of Business Ethics, 7*(7), 497-507.
- Achrol, R. S. (1997). Changes in the Theory of Interorganizational Relations in Marketing Paradigm. *Journal of The Academy of Marketing Science, 25*(1), 56-71.
- Achrol, R., & Kotler, P. (2012). Frontiers of the Marketing Paradigm in the Third Millennium. *Journal of The Academy of Marketing Science, 40*(1), 35-52.
doi:10.1007/s11747-011-0255-4
- Adli, M., Berger, M., Brakemeier, E. L., Engel, L., Fingerhut, J., Gomez-Carrillo, A., ... & Tolaas, S. (2017). Neurourbanism: Towards a new discipline. *The Lancet Psychiatry, 4*(3), 183-185.
- Agarwal, S., & Dutta, T. (2015). Neuromarketing and consumer neuroscience: current understanding and the way forward. *Decision, 42*(4), 457-462.
- Aggarwal, P., & McGill, A. L. (2012). When Brands Seem Human, Do Humans Act Like Brands? Automatic Behavioral Priming Effects of Brand Anthropomorphism. *Journal of Consumer Research, 39*(2), 307-323. doi:10.1086/662614
- Ajzen, I. (1985). From Intentions to Actions: A Theory of Planned Behavior. In J. Kuhl & J. Beckman (Eds.), *Action-Control: From Cognition to Behavior* (pp. 11-39). Heidelberg: Springer.
- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes, 50*, 179-211.
- Ajzen, I. (2002). Constructing a TPB Questionnaire: Conceptual and Methodological Considerations. Available online:
http://chuang.epage.au.edu.tw/ezfiles/168/1168/attach/20/pta_41176_7688352_57138.pdf
- Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior 1. *Journal of applied social psychology, 32*(4), 665-683.
- Ajzen, I. (2005). *Attitudes, Personality, and Behavior*. New York: McGraw Hill.

Ajzen, I. (2014). The Theory of Planned Behavior: A Bibliography. Retrieved from: <http://people.umass.edu/aizen/tpbrefs.html> (August 2, 2014)

Ajzen, I. & Cote, G.N. (2008). AttitudesandthePredictionofBehavior. In W. D. Crano & R. Prislin (Eds.), *Attitudes and Attitude Change* (pp. 289-311). New York: Psychology Press.

Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs: Prentice-Hall.

Ajzen, I., & Fishbein, M. (2005). The Influence of Attitudes on Behavior. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *The Handbook of Attitudes* (pp. 173-221). Mahwah, NJ: Erlbaum.

Ajzen, I., Joyce, N., Sheikh, S., & Cote, N. (2011). Knowledge and the Prediction of Behavior: The Role of Information Accuracy in the Theory of Planned Behavior. *Basic & Applied Social Psychology*, 33(2), 101-117. doi:10.1080/01973533.2011.568834

Alam, S. S., & Sayuti, N. M. (2011). Applying the Theory of Planned Behavior (TPB) in halal food purchasing. *International journal of Commerce and Management*.

Albarracin, D., Fishbein, M., Johson, B. T., & Muellerleile, P. A. (2001). Theories of Reasoned Action and Planned Behavior as Models of Condom Use: A Meta-Analysis. *Psychological Bulletin*, 127(1), 142.

Almeida, M. (2013). Revisiting Ontologies: A necessary Clarification. *Journal of The American Society For Information Science & Technology*, 64(8), 1682-1693. doi:10.1002/asi.22861

Alonso-Martin, F., Malfaz, M., Sequeira, J., Gorostiza, J. F., & Salichs, M. A. (2013). A multimodal emotion detection system during human–robot interaction. *Sensors*, 13(11), 15549-15581.

Alvino, L., Constantinides, E., & Franco, M. (2018). Towards a better understanding of consumer behavior: marginal utility as a parameter in neuromarketing research. *International Journal of Marketing Studies*, 10(1), 90-106.

AMA (2014). Definition of Marketing. Retrieved from: <https://www.ama.org/AboutAMA/Pages/Definition-of-Marketing.aspx>

AMA Committee on Definitions (1960). *Marketing Definitions: A Glossary of Marketing Terms*. Chicago: AMA.

AMA Publishing (2013) Definition of Marketing. Retrieved from: <https://archive.ama.org/archive/AboutAMA/Pages/DefinitionofMarketing.aspx>

Amado, A., Cortez, P., Rita, P., & Moro, S. (2018). Research trends on Big Data in Marketing: A text mining and topic modeling based literature analysis. *European Research on Management and Business Economics*, 24(1), 1-7.

Amir, O., Ariely, D., Cooke, A., Dunning, D., Epley, N., Gneezy, U., ... & Prelec, D. (2005). Psychology, behavioral economics, and public policy. *Marketing letters*, 16(3-4), 443-454.

ANA (2018) Neuroscience: Tapping into Consumer Consciousness. Retrived on March 19, 2019 from http://marketingfutures.ana.net/Global/FileLib/Demand_Metric/ANA_Consumer_Neuroscience_Report.pdf

Andersen, H., Baker, P. & Chen, X. (2006). *The Cognitive Structure of Scientific Revolutions*. New York: Cambridge University Press.

Andzulis, J. M., Panagopoulos, N. G., & Rapp, A. (2012). A review of social media and implications for the sales process. *Journal of personal selling & sales management*, 32(3), 305-316.

Angel, R. (2004). Sustaining Profitable Customer Relationships Requires Real Leadership. *Ivey Business Journal*, 69(2), 1-7.

Araujo-Soares, V. F., Rodrigues, A., Presseau, J. & Sniehotta, F.F. (2013). Adolescent Sunscreen Use in Springtime: A Prospective Predictive Study Informed by A Belief Elicitation Investigation. *Journal of Behavioral Medicine*, 36(2), 109-123.

Ariely, D. (2008). *Predictably Irrational: The Hidden Forces That Shape Our Decisions*. New York: HarperCollins.

Ariely, D. (2009). The End of Rational Economics. *Harvard Business Review*, 87(7/8), 78-84.

Ariely, D. & Berns, G. S. (2010). Neuromarketing: The Hope and Hype of Neuroimaging in Business. *Nature Reviews Neuroscience*, 11(4), 284-292.

Armitage, C.J. & Christian, J. (2003). From Attitudes to Behavior: Basic and Applied Research on the Theory of Planned Behavior. *Current Psychology*, 22(3), 187-195.

Armitage, C.J. & Conner, M. (2001). Efficacy of the Theory of Planned Behavior: A Meta-Analytic Review. *British Journal of Social Psychology*, 40, 471-499.

Ashman, R., Solomon, M. R., & Wolny, J. (2015). An old model for a new age: Consumer decision making in participatory digital culture. *Journal of Customer Behaviour*, 14(2), 127-146.

Ashraf, A. R., Narongsak (Tek), T., & Seigyoung, A. (2014). The Application of the Technology Acceptance Model under Different Cultural Contexts: The Case of Online Shopping Adoption. *Journal of International Marketing*, 22(3), 68-93.

Association of National Advertisers (2017) Consumer Neuroscience Report. Retrieved on July 26, 2018 from: <http://marketingfutures.ana.net/neuroscience#About-ANA>

Atenstaedt, R. (2017). Word cloud analysis of the BJGP: 5 years on. *British Journal of General Practice*, 67(658), 231-232.

Bagozzi, R. P. (1975). Marketing as Exchange. *Journal of Marketing*, 39(4), 32-39.

Bagozzi, R. P., Davis, F. D., & Warshaw, P. R. (1992). Development and test of a theory of technological learning and usage. *Human relations*, 45(7), 659-686.

Bailey, L. F. (2014). The Origin and Success of Qualitative Research. *International Journal of Market Research*, 56(2), 167-184. doi:10.2501/IJMR-2014-013

Baker, M.J. (2006). The Lessons of History. *Marketing Intelligence and Planning*, 24(1), 7-14. doi: 10.1108/02634500610641525

Ball, Philip (2004). *Critical Mass - How One Thing Leads to Another*. New York: Farrar, Straus and Giroux.

Ballantyne, D., Christopher, M., & Payne, A. (2003). Relationship marketing: looking back, looking forward. *Marketing Theory*, 3(1), 159-166.

Barabasi, A.L. (2003) *Linked: How Everything Is Connected to Everything Else and What It Means for Business, Science, and Everyday Life*. New York: Penguin Group.

Bargh, J. A. (2013). *Social psychology and the unconscious: The automaticity of higher mental processes*. Psychology Press.

Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of Social Behavior: Direct Effects of Trait Construct and Stereotype Activation on Action. *Journal Of Personality & Social Psychology*, 71(2), 230-244.

Bargh, J.A. (2005). Bypassing the Will: Toward Demystifying the Nonconscious Control of Social Behavior. In R.R. Hassin, J.S. Uleman & J.A. Bargh (Eds.) *The New Unconscious*, (pp. 37-61). New York: Oxford University Press.

Barker, J.A. (1992) *Paradigms: The Business of Discovering the Future*. New York: HarperCollins Publishers.

Barth, M., Haustein, S., & Scheidt, B. (2014). The life sciences in German–Chinese cooperation: an institutional-level co-publication analysis. *Scientometrics*, 98(1), 99–117.

Bas, G., Kubiato, M., & Sünbül, A. M. (2016). Teachers' perceptions towards ICTs in teaching-learning process: Scale validity and reliability study. *Computers in Human Behavior*, 61, 176-185.

Batts, B. & Crawford, L.L. (1991) Problematic Progress: A Review of Laudan's Progress and Its Problems and Science and Values. *Journal of the Experimental Analysis of Behavior*. 3 (55), 337-349.

Bear, M.F., Conors, B.W. & Paradiso, M.A. (2007) *Neuroscience: Exploring the Brain*. Baltimore: Lippincott Williams & Wilkins.

Becker, L., & Jaakkola, E. (2020). Customer experience: fundamental premises and implications for research. *Journal of the Academy of Marketing Science*, 1-19.

Belden, S. R. A. (2008). Science is Culture: Neuroeconomics and Neuromarketing. Practical Applications and Ethical Concerns. *Journal of Mind Theory*, 1(2), 249-258.

Bell, L., Vogt, J., Willems, C., Rutledge, T., Butler, L. T., & Sakaki, M. (2018). Beyond self-report: A review of physiological and neuroscientific methods to investigate consumer behavior. *Frontiers in psychology*, 9, 1655.

Bentley, J.H (1996). Cross-Cultural Interaction and Periodization in World History. *The American Historical Review*, 101(3), 749-770.

Bercea, M. D. (2012, August). Anatomy of methodologies for measuring consumer behavior in neuromarketing research. In *Proceedings of the Lupcon Center for Business Research (LCBR) European Marketing Conference* (pp. 1-14).

Bercea, M. D. (2012). Taking the Pulse of the Market: A Consumer's Decision-Making Algorithm Using Insights from Neuromarketing Research. *Neuropsychoeconomics Conference Proceedings*, p. 42-42.

Berlucchi, G. (2010). Neuropsychology: theoretical basis. *Encyclopedia of neuroscience*, 1001-1006.

Berkman, E. T., & Lieberman, M. D. (2011). What's Outside the Black Box?: The Status of Behavioral Outcomes in Neuroscience Research. *Psychological Inquiry*, 22(2), 100-107. doi:10.1080/1047840X.2011.550182

Berman, S., & Marshall, A. (2014). The next digital transformation: from an individual-centered to an everyone-to-everyone economy. *Strategy & Leadership*.

Bernard P. (2001) *Sociology's Tower of Babel: Reconstructing Scientific Method*. New York: Aldine De Gruyter.

Bhaduri, G., & Ha-Brookshire, J. (2017). The role of brand schemas, information transparency, and source of message on apparel brands' social responsibility communication. *Journal of Marketing Communications*, 23(3), 293-310.

Blau, J. (2013) Europe's Billion-Euro Brain Research. *Research Technology Management*, 56(3), 8-10.

Bluemke, M., & Friese, M. (2006). Do features of stimuli influence IAT effects?. *Journal of Experimental Social Psychology*, 42(2), 163-176.

Bogenhold, D. (2013) Social Network Analysis and the Sociology of Economics: Filling a Blind Spot with the Idea of Social Embeddedness. *American Journal Of Economics & Sociology*, 72(2), 293-318. doi:10.1111/ajes.12005

Bohner, G. & Dickel, N. (2011). Attitudes and Attitude Change. *Annual Review of Psychology*, 62, 391-417. doi: 10.1146/annurev.psych.121208.131609

Borden N.H. (1965). The Concept of the Marketing Mix. In G. Scharitz (Ed.), *Science in Marketing* (pp. 386-397). Chichester: Wiley.

Boricean, V. (2009) Brief history of Neuromarketing. *The International Conference on Economics and Administration*, Faculty of Administration and Business, University of Bucharest, Romania, ICEA – FAA Bucharest, 14-15th November 2009.

Bornmann, L., & Mutz, R. (2015). Growth rates of modern science: A bibliometric analysis based on the number of publications and cited references. *Journal of the Association for Information Science and Technology*, 66(11), 2215-2222.

Bosco, F. A., Aguinis, H., Singh, K., Field, J. G., & Pierce, C. A. (2014, October 13). Correlational Effect Size Benchmarks. *Journal of Applied Psychology*. Advance online publication. <http://dx.doi.org/10.1037/a0038047>

Bozdogan, H., & Akbilgic, O. (2013). Social network analysis of scientific collaborations across different subject fields. *Information Services & Use*, 33(3), 219-233. doi:10.3233/ISU-130715

Braeutigam, S., Rose, S. P.R., Swithenby, S.J. & Ambler, T. (2004). The Distributed Neuronal Systems Supporting Choice-Making in Real-Life Situations: Differences between Men and Women When Choosing Groceries Detected Using Magnetoencephalography. *European Journal of Neuroscience*, 20, 293-302.

Breiter, H. C., Block, M., Blood, A. J., Calder, B., Chamberlain, L., Lee, N., ... & Stern, D. B. (2015). Redefining neuromarketing as an integrated science of influence. *Frontiers in Human Neuroscience*, 8, 1073.

Brosnan, C. & Michael, M. (2014). Enacting the 'neuro' in practice: Translational research, adhesion and the promise of porosity. *Social Studies of Science*, 44(5), 680-700.

Brunel, F. F., Tietje, B. C., & Greenwald, A. G. (2004). Is the Implicit Association Test a Valid and Valuable Measure of Implicit Consumer Social Cognition?. *Journal of Consumer Psychology*, 14(4), 385-404.

Bryman, A. (2001) *Social Research Methods*. Oxford: Oxford University Press.

Burgos-Campero, A. A., & Vargas-Hernández, J. G. (2013). Analytical approach to neuromarketing as a business strategy. *Procedia-Social and Behavioral Sciences*, 99, 517-525.

Burrell, G. & Morgan, G. (1979) *Sociological Paradigms and Organizational Analysis: Elements of the Sociology of Corporate Life*. London: Ashgate Publishing.

Butler, M.J.R. (2008). Neuromarketing and the Perception of Knowledge. *Journal of Consumer Behavior*, 7, 415-419. doi: 10.1002/cb.260

Butt, M.A. & Saddar, R. (2012). Factors Influence Financial Decisions under the Pyramid of Natural Constraints. *International Journal of Research in Commerce and Management*, 3(11), 28-30.

Buzzotta, V. R., & Lefton, R. E. (1982). Is There a Preferred Style of Sales Management?. *Journal of Personal Selling & Sales Management*, 2(2), 1.

Carmines, E. G., & Zeller, R. A. (1979). *Reliability and validity assessment* (Vol. 17). Sage publications.

Carr, A., Shin, Y. H., Severt, K., & Lewis, M. (2017). A qualitative approach to understanding the underlying beliefs of microbrewery consumers. *International Journal of Hospitality Beverage Management, 1*(1), 4.

Carpenter, T., Pogacar, R., Pullig, C., Kouril, M., Aguilar, S. J., LaBouff, J. P., ... & Chakroff, A. (2018). Survey-based implicit association tests: A methodological and empirical analysis. *Preprint*. doi, 10.

Carpenter, T., Pogacar, R., Pullig, C., Kouril, M., Aguilar, S., LaBouff, J. P., Isenberg, N., & Chakroff, A. (2019). Survey-software implicit association tests: A methodological and empirical analysis. *Behavior research methods, 51*(5), 2194-2208.

Carpenter, T., Pogacar, R., Pullig, C., Kouril, M., LaBouff, J.,... Chakroff, A. (2018). Conducting IAT Research within Online Surveys: A Procedure, Validation, and Open Source Tool. Retrieved from <http://doi.org/10.17605/OSF.IO/6XDYJ>

Castellion, G., & Markham, S. K. (2013). Perspective: New Product Failure Rates: Influence of Argumentum ad Populum and Self-Interest. *Journal of Product Innovation Management, 30*(5), 976-979. doi:10.1111/j.1540-5885.2012.01009.x

Causse, M. (2010). Monitoring Cognitive and Emotional Processes through Pupil and Cardiac Response during Dynamic versus Logical Task. *Applied Psychophysiology & Biofeedback, 35*(2), 115-123.

Chaffey, D., & Patron, M. (2012). From web analytics to digital marketing optimization: Increasing the commercial value of digital analytics. *Journal of Direct, Data and Digital Marketing Practice, 14*(1), 30-45.

Chaiken, S., & Baldwin, M. W. (1981). Affective-cognitive consistency and the effect of salient behavioral information on the self-perception of attitudes. *Journal of Personality and Social Psychology, 41*(1), 1.

Chang, C. (2004). The interplay of product class knowledge and trial experience in attitude formation. *Journal of Advertising, 33*(1), 83-92.

Chavaglia, J. N., Filipe, J. A., & Ramalheiro, B. (2011). Neuromarketing: consumers and the anchoring effect. *International Journal of Latest Trends in Finance and Economics Sciences, (4)*, 183-189.

Cherubino, P., Martinez-Levy, A. C., Caratu, M., Cartocci, G., Di Flumeri, G., Modica, E., ... & Trettel, A. (2019). Consumer behaviour through the eyes of neurophysiological measures: State-of-the-art and future trends. *Computational intelligence and neuroscience*.

Cheung, G. W., & Wang, C. (2017). Current approaches for assessing convergent and discriminant validity with SEM: Issues and solutions. In *Academy of Management Proceedings* (Vol. 2017, No. 1, p. 12706). Briarcliff Manor, NY 10510: Academy of Management.

Cheung, S.F., Chan, D.K.S. & Wong, Z.S.Y. (1999). Reexamining the Theory of Planned Behavior in Understanding Wastepaper Recycling. *Environment and Behavior*. 31, 587-612. doi:10.1177/00139169921972254

Chevance, G., Caudroit, J., Romain, A. J., & Boiché, J. (2017). The adoption of physical activity and eating behaviors among persons with obesity and in the general population: the role of implicit attitudes within the Theory of Planned Behavior. *Psychology, health & medicine*, 22(3), 319-324.

Chopdar, P. K., Korfiatis, N., Sivakumar, V. J., & Lytras, M. D. (2018). Mobile shopping apps adoption and perceived risks: A cross-country perspective utilizing the Unified Theory of Acceptance and Use of Technology. *Computers in Human Behavior*, 86, 109-128.

Christakis, N.A. and Fowler, J.H. (2011) *Connected: The Surprising Power of Our Social Networks and How They Shape Our Lives*. New York: Little, Brown and Company.

Cluley, R., Green, W., & Owen, R. (2020). The changing role of the marketing researcher in the age of digital technology: Practitioner perspectives on the digitization of marketing research. *International Journal of Market Research*, 62(1), 27-42.

Colaferro, C. A., & Crescitelli, E. (2014). The contribution of neuromarketing to the study of consumer behavior. *Brazilian Business Review*, 11(3), 123.

Collingwood, R. G. (1994). *The idea of history*. Oxford University Press on Demand.

Coman, A., & Ronen, B. (2009). Focused SWOT: Diagnosing Critical Strengths and Weaknesses. *International Journal of Production Research*, 47(20), 5677-5689. doi:10.1080/00207540802146130

Confos, N., & Davis, T. (2016). Young consumer-brand relationship building potential using digital marketing. *European Journal of Marketing*.

Constantinescu, M., Orindaru, A., Pachitanu, A., Rosca, L., Caescu, S. C., & Orzan, M. C. (2019). Attitude evaluation on using the neuromarketing approach in social media: matching company's purposes and consumer's benefits for sustainable business growth. *Sustainability, 11*(24), 7094.

Constantinides, E. E. (2006). The Marketing Mix Revisited: Towards the 21st Century Marketing. *Journal of Marketing Management, 22*(3/4), 407-438.

Converse, P.D. (1959). *Fifty Years of Marketing in Retrospect*. Austin: Bureau of Business Research.

Converse, P.D. (1959). *Fifty Years of Marketing in Retrospect*. Austin: Bureau of Business Research.

Cooke, E. F., Rayburn, J., & Abercrombie, C. L. (1992). The History of Marketing Thought as Reflected in the Definitions of Marketing. *Journal of Marketing Theory & Practice, 1*(1), 10.

Cooke, E. F., Rayburn, J., & Abercrombie, C. L. (1992). The History of Marketing Thought as Reflected in the Definitions of Marketing. *Journal of Marketing Theory & Practice, 1*(1), 10.

Cooperstein, D. (2012, December). Is 2013 The Year We Welcome 'Post-Digital' Marketing? I Vote Yes. *Forbes*. Retrieved from: <http://www.forbes.com/sites/davidcooperstein/2012/12/18/is-2013-the-year-we-welcome-post-digital-marketing-i-vote-yes/>

Corniani, M. (2006). Digital marketing communication. *Symphonya: Emerging Issues in Management, 2*(2), 41-61.

Cortés, M. D. M. L., & García, M. G. (2017). Neuromarketing: Current Situation and Future Trends. In *Media and Metamedia Management* (pp. 373-380). Springer, Cham.

Crawford, C. M. (1979). New product failure rates—facts and fallacies. *Research Management, 22*(5), 9-13.

Crawford, C. M. (1987). New product failure rates: a reprise. *Research Management, 30*(4), 20-24.

Creative Commons (2013) Creative Commons Attribution-NonCommercial 4.0 International License. Retrieved on August 10, 2019 from:

https://wiki.creativecommons.org/wiki/License_Versions#Detailed_attribution_comparison_chart

Creusen, M., Hultink, E., & Eling, K. (2013). Choice of Consumer Research Methods in The Front End of New Product Development. *International Journal of Market Research*, 55(1), 81-104. doi:10.2501/IJMR-2013-008

Crewell, J.W. (2013). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Los Angeles: Sage Publication.

Crotty, M. (1998). *The Foundations of Social Research: Meaning and Perspective in the Research Process*. Sydney: Allen & Unwin.

Cullinane, P. (2013). Neuromarketing for Dummies. *NZ Marketing Magazine*, 8.

Cvencek, D., Greenwald, A. G., Brown, A. S., Gray, N. S., & Snowden, R. J. (2010). Faking of the Implicit Association Test Is Statistically Detectable and Partly Correctable. *Basic & Applied Social Psychology*, 32(4), 302-314. doi:10.1080/01973533.2010.519236

D'ostilio, K., & Garraux, G. (2012). Brain mechanisms underlying automatic and unconscious control of motor action. *Frontiers in human neuroscience*, 6, 265.

Damasio, A. (2005). *Descartes' Error: Emotion, Reason and the Human Brains*. Penguin Books: New York.

Danziger, S., & Ward, R. (2010). Language changes implicit associations between ethnic groups and evaluation in bilinguals. *Psychological Science*, 21(6), 799.

Darker, C.D., French, D.P., Longdon, S., Morris, K. & Eves, F.F. (2007). Are Beliefs Elicited Biased By Question Order? A Theory of Planned Behaviour Belief Elicitation Study about Walking in the UK General Population. *British Journal of Health Psychology*, 12(1), 93-110.

Darroch, J., Miles, M.P., Jardine, A. & Cooke, E.F. (2004). The 2004 AMA Definition of Marketing and Its Relationship to a Market Orientation: An Extension of Cooke, Rayburn, & Abercrombie (1992). *Journal of Marketing Theory & Practice*, 12(4), 29-38.

Daugherty, T., & Hoffman, E. (2017). Neuromarketing: understanding the application of neuroscientific methods within marketing research. In *Ethics and Neuromarketing* (pp. 5-30). Springer, Cham.

Daugherty, T., & Hoffman, E. (2017). Neuromarketing: understanding the application of neuroscientific methods within marketing research. In *Ethics and Neuromarketing* (pp. 5-30). Springer, Cham.

Davar, S.C. & Kashyap, S. (2013). A Meta-Analysis of the Relationship Between Market Orientation and Business Performance. *International Journal of Trade & Global Business Perspectives*, 2(4), 634-640.

Davidovski, V. (2018, November). Exponential innovation through digital transformation. In *Proceedings of the 3rd International Conference on Applications in Information Technology* (pp. 3-5).

Davies, A., & Elliott, R. (2006). The evolution of the empowered consumer. *European Journal of Marketing*, 40(9/10), 1106-1121.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology, *MIS Quarterly*, 13(3), 319-340.

Day, G. S. (1977). Diagnosing the Product Portfolio. *Journal Of Marketing*, 41(2), 29-38.

De Guinea, A. O., Titah, R., & Leger, P. (2014). Explicit and Implicit Antecedents of Users' Behavioral Beliefs in Information Systems: A Neuropsychological Investigation. *Journal of Management Information Systems*, 30(4), 179-210. doi:10.2753/MIS0742-1222300407

De Houwer, J. (2006). What are implicit measures and why are we using them. *The handbook of implicit cognition and addiction*, 11-28.

de Oliveira, J. H. C., & de Moura Engracia Giraldo, J. (2017). What is Neuromarketing? A Proposal for a Broader and more Accurate Definition. *Global Business & Management Research*, 9(2).

De Vroey, M. (2009). A Marshall-Walras Divide? A Critical Review of the Prevailing Viewpoints. *History of Political Economy*, 41(4), 709-736.

DellaVigna, S. (2009). Psychology and Economics: Evidence from the Field. *Journal of Economic Literature*, 47(2), 315-372.

Demirdjian, Z. S., & Senguder, T. (2004). Perspectives in Consumer Behavior: Paradigm Shifts in Prospect. *Journal of American Academy Of Business*, 4(1/2), 348-353.

Devlin, J. (June 1 , 2017). Five Warning Signs of Neuromarketing Snake Oil. Retrieved from <https://www.ucl.ac.uk/pals/research/experimental-psychology/blog/five-warning-signs-of-neuromarketing-snake-oil/>

Di Iorio C. K. (2005) *Measurement in health behaviour: methods for research evaluation*. Chapter 10. Jossey-Bass, San Francisco, USA, pp. 176–210.

Diamond, P., & Vartiainen, H. (Eds.). (2012). *Behavioral economics and its applications*. Princeton University Press.

Dietrich, M. (1993). Total Quality Control, Just-in-Time Management, and the Economics of the Firm. *Journal of Economic Studies*, 20(6), 17-31.

Dimitriadis, N., & Psychogios, A. (2016). *Neuroscience for Leaders: A Brain Adaptive Leadership Approach*. Kogan Page Publishers.

Dimitriadis, N., Jovanovic Dimitriadis, N. & Ney, J. (2019). *Advanced marketing management: practices, skills and tools*. 1st Edition. Kogan Page: New York, USA.

Dimoka, A., Bagozzi, R. P., Banker, R. D., Brynjolfsson, E., Davis, F. D., Gupta, A. & Riedl, R. (2009). NeuroIS: Hype or hope?, *Proceedings of the International Conference on Information Systems*, 1-10.

Dooley, R. (2012). *Brainfluence: 100 Ways to Persuade and Convince Consumers with Neuromarketing* (ebook). New Jersey: John Wiley & Sons.

Du Gay, P., & Salaman, G. (1992). The Cult[ure] of The Customer. *Journal of Management Studies*, 29(5), 614-633.

Egan, J. (2008) A Century of Marketing. *Marketing Review*, 8(1), 3-23.
doi:10.1362/146934708X290223

El-Ansary, A. I. (1974). Towards a Definition of Social and Societal Marketing. *Journal of The Academy Of Marketing Science*, 2(2), 316-321.

El-Ansary, A.I. (2005). Relationship Marketing Management: A School in the History of Marketing Thought. *Journal of Relationship Marketing*, 4(1/2), 43-57.

Elie-Dit-Cosaque, C., Pallud, J., & Kalika, M. (2011). The influence of individual, contextual, and social factors on perceived behavioral control of information technology: A field theory approach. *Journal of Management Information Systems*, 28(3), 201-234.

Ellard, C. (2014, February 4). Cities and Their Psychology: How Neuroscience Affects Urban Planning. Available from: <http://www.theguardian.com/cities/2014/feb/04/cities-psychology-neuroscience-urban-planning-study>

Ellegaard, O., & Wallin, J. A. (2015). The bibliometric analysis of scholarly production: How great is the impact?. *Scientometrics*, *105*(3), 1809-1831.

Emery, J. C. (1991, March). Re-Engineering the Organization. *MIS Quarterly*, iii-iv.

Emmer, M. (2018). 95 Percent of New Products Fail. Here Are 6 Steps to Make Sure Yours Don't. Inc. Retrieved on June 30, 2019 from <https://www.inc.com/marc-emmer/95-percent-of-new-products-fail-here-are-6-steps-to-make-sure-yours-dont.html>

Erevelles, S., Fukawa, N., & Swayne, L. (2016). Big Data consumer analytics and the transformation of marketing. *Journal of business research*, *69*(2), 897-904.

Eser, Z., Isin, F. B., & Tolon, M. (2011). Perceptions of marketing academics, neurologists, and marketing professionals about neuromarketing. *Journal of Marketing Management*, *27*(7-8), 854-868. doi:10.1080/02672571003719070

Etzioni, A. (2011). Behavioral Economics: Toward a New Paradigm. *American Behavioral Scientist*, *55*(8), 1099–1119. doi:10.1177/0002764211412355

Evans, B.C., Coon, D.W. Ume E. (2011). Use of Theoretical Frameworks as a Pragmatic Guide for Mixed Methods Studies: A Methodological Necessity?. *Journal of Mixed Methods Research*. *5*(4):276–292.

Evans, J.S.B.T. (2003). In Two Minds: Dual-Process Accounts Of Reasoning. *Trends in Cognitive Sciences*. *7*(10), 454-459. doi:10.1016/j.tics.2003.08.012

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological methods*, *4*(3), 272.

Fahey, L. (1998). Business Process Redesign: The Implications of Tacit Knowledge. *Knowledge & Process Management*, *5*(2), 110-117.

Faria, J., Besancenot, D. and Novak, A. J. (2011). Paradigm Depletion, Knowledge Production And Research Effort: Considering Thomas Kuhn's Ideas. *Metroeconomica*, *62*(4), 587-604. doi:10.1111/j.1467-999X.2011.04128.x

Farquhar, J. D., & Rowley, J. (2009). Convenience: a services perspective. *Marketing Theory*, *9*(4), 425-438.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41, 1149-1160.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39, 175-191.

Fazio, R. H., & Zanna, M. P. (1981). Direct experience and attitude-behavior consistency. In *Advances in experimental social psychology* (Vol. 14, pp. 161-202). Academic Press.

Fazio, R. H., Chen, J. M., McDonel, E. C., & Sherman, S. J. (1982). Attitude accessibility, attitude-behavior consistency, and the strength of the object-evaluation association. *Journal of experimental social psychology*, 18(4), 339-357.

Feilden, T. (2012, September 5). A Golden Age of Discovery in Neuroscience. Available online: <http://www.bbc.com/news/health-19367832>

Fennis, B. M., Adriaanse, M. A., Stroebe, W., & Pol, B. (2011). Bridging the intention-behavior gap: Inducing implementation intentions through persuasive appeals. *Journal of Consumer Psychology*, 21(3), 302-311.

Festinger, L. (1957). *A theory of cognitive dissonance* (Vol. 2). Stanford university press.

Feyerabend, P. (1993). *Against Method*. New York: Verso Books.

Fichman, R. G. (2004) Going Beyond the Dominant Paradigm for Information Technology Innovation Research: Emerging Concepts and Methods. *Journal of the Association For Information Systems*, 5(8), 314-355.

Finch, B. J., & Cox, J. F. (1986). An examination of Just-In-Time Management for the Small Manufacturer: With an Illustration. *International Journal of Production Research*, 24(2), 329.

Fishburn, F. A., Norr, M. E., Medvedev, A. V., and Vaidya, C. J. (2014). Sensitivity of fNIRS to cognitive state and load. *Front. Hum. Neurosci.* 8:76. doi: 10.3389/fnhum.2014.00076

Fisher, C. E., Chin, L., & Klitzman, R. (2010). Defining neuromarketing: Practices and professional challenges. *Harvard review of psychiatry*, 18(4), 230-237.

Fisher, R. J., & Katz, J. E. (2000). Social-desirability bias and the validity of self-reported values. *Psychology & marketing*, 17(2), 105-120.

Fitzsimons, G. M., Chartrand, T. L., & Fitzsimons, G. J. (2008). Automatic Effects of Brand Exposure on Motivated Behavior: How Apple Makes You "Think Different". *Journal of Consumer Research*, 35(1), 21-35.

Fortunato, V.C.R., Giraldo, J.M.E. & Oliveira, J.H.C. (2014). A Review of Studies on Neuromarketing: Practical Results, Techniques and Limitations. *Journal of Management Research*, 6(2), 201-220.

Foster, S., Wallin, C., & Ogden, J. (2011). Towards a better understanding of supply chain quality management practices. *International Journal of Production Research*, 49(8), 2285-2300. doi:10.1080/00207541003733791

Foxall, G.R. (2008). Reward, Emotion and Consumer Choice: From Neuroeconomics to Neurophilosophy. *Journal of Consumer Behavior*, 7, 368-396.

Frater, J., Kuijer, R., & Kingham, S. (2017). Why adolescents don't bicycle to school: Does the prototype/willingness model augment the theory of planned behaviour to explain intentions?. *Transportation research part F: traffic psychology and behaviour*, 46, 250-259.

Frazzetto, G. (2009). Neuroculture. *Nature Reviews Neuroscience*, 10(11), 815-821.

Fugate, D.L. (2007). Neuromarketing: a Layman's Look at Neuroscience and its Potential Application to Marketing Practice. *Journal of Consumer Marketing*, 24(7), 385-394.

Fugate, D.L. (2008). Marketing Services More Effectively with Neuromarketing Research: A look into the Future. *Journal of Services Marketing*, 22(2), 170-173.

Gabbiadini, A., & Greitemeyer, T. (2019). Fitness mobile apps positively affect attitudes, perceived behavioral control and physical activities. *The Journal of sports medicine and physical fitness*, 59(3), 407.

Gang, D. J., Lin, W., Qi, Z., & Yan, L. L. (2012, May). Neuromarketing: marketing through science. In *2012 International Joint Conference on Service Sciences* (pp. 285-289). IEEE.

Garcia-Santillan, Arturo, Elena Moreno-García, Juan Carlos-Castro, Jorge H. Zamudio-Abdala, and Julieta Garduño-Trejo. "Cognitive, affective and behavioral components that explain attitude toward statistics." *Journal of mathematics research* 4, no. 5 (2012): 8.

Garcia, J. R., & Saad, G. (2008). Evolutionary neuromarketing: Darwinizing the neuroimaging paradigm for consumer behavior. *Journal of Consumer Behaviour: An International Research Review*, 7(4-5), 397-414.

Garcia, J.R. & Saad, G. (2008). Evolutionary Neuromarketing: Darwinizing the Neuroimaging Paradigm for Consumer Behavior. *Journal of Consumer Research*, 7, 397-414.

Gardner, D.M. (1987). The Product Life Cycle: It's Role in Marketing Strategy/Some Evolving Observations About the Life Cycle. *AMA Winter Educators' Conference Proceedings*, 176.

Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in evaluation: an integrative review of implicit and explicit attitude change. *Psychological bulletin*, 132(5), 692.

Gawronski, B., & LeBel, E. P. (2008). Understanding patterns of attitude change: When implicit measures show change, but explicit measures do not. *Journal of experimental social psychology*, 44(5), 1355-1361.

Gebel, M (September, 2019) How to use Google Trends to measure what people are searching for on Google and compare popular search terms. [access date: July 11, 2020]

Genco, S. J., Pohlmann, A. P., & Steidl, P. (2013). *Neuromarketing for Dummies*. John Wiley & Sons. Chicago.

Gerrard, M., Gibbons, F. X., Houlihan, A. E., Stock, M. L., & Pomery, E. A. (2008). A dual-process approach to health risk decision making: The prototype willingness model. *Developmental review*, 28(1), 29-61.

Gerrard, M., Gibbons, F. X., Stock, M. L., Lune, L. S. V., & Cleveland, M. J. (2005). Images of smokers and willingness to smoke among African American pre-adolescents: An application of the prototype/willingness model of adolescent health risk behavior to smoking initiation. *Journal of Pediatric Psychology*, 30(4), 305-318.

Gibbons, F. X., & Gerrard, M. (1995). Predicting Young Adults' Health Risk Behavior. *Journal of Personality & Social Psychology*, 69(3), 505-517.

Gibbons, F. X., Gerrard, M., Blanton, H., & Russell, D. W. (1998). Reasoned Action and Social Reaction: Willingness and Intention as Independent Predictors of Health Risk. *Journal of Personality & Social Psychology*, 74(5), 1164-1180.

- Gigerenzer, G. & Gaissmaier, W. (2011) Heuristic Decision Making. *Annual Review of Psychology*, 62, 451-482. doi: 10.1146/annurev-psych-120709-145346
- Gigerenzer, G. & Selten, R. (2002) Rethinking Rationality. In G. Gigerenzer & R. Selten (Eds.) *Bounded Rationality: The Adaptive Toolbox*. Boston: MIT Press.
- Gladwell, M. (2002) *The Tipping Point: How Little Things Can Make a Big Difference*. New York: Little, Brown and Company.
- Glasman, L.R. & Albarracin, D. (2006) Forming Attitudes That Predict Future Behavior: A Meta-Analysis of the Attitude–Behavior Relation. *Psychological Bulletin*, 132(5), 778–822.
- Gleick, J. (1996) The lives they lived: Thomas Kuhn - The paradigm Shifts. The New York Times Magazine. Retrieved on November 16, 2020 from <https://www.nytimes.com/1996/12/29/magazine/the-paradigm-shifts.html>
- Gleitman, H., Gross, J. & Reisberg, D. (2011) *Psychology*. New York: W.W. Norton & Company.
- Glimcher P. (2004). Neuroeconomics: The Consilience of Brain and Decision. *Science*, 306, 447–52.
- Godelnik, R. (2017). Millennials and the sharing economy: Lessons from a ‘buy nothing new, share everything month’ project. *Environmental Innovation and societal transitions*, 23, 40-52.
- Godin, G. & Kok, G. (1996). The Theory of Planned Behavior: A Review of Its Applications to Health-related Behaviors. *Behavior Change*, 11, 2, 87-98.
- Godin, G., Valois, P., & Lepage, L. (1993). The pattern of influence of perceived behavioral control upon exercising behavior: An application of Ajzen's theory of planned behavior. *Journal of behavioral medicine*, 16(1), 81-102.
- Golder, P.N. (2000). Historical Method in Marketing Research with New Evidence on Long-Term Market Share Stability. *Journal of Marketing Research*, 37(2), 156-173.
- Golhar, D. Y., & Deshpande, S. P. (1993). An Empirical Investigation of HRM Practices in JIT Firms. *Production & Inventory Management Journal*, 34(4), 28-32.
- Gómez-Suárez, M., Martínez-Ruiz, M. P., & Martínez-Caraballo, N. (2017). Consumer-brand relationships under the marketing 3.0 paradigm: a literature review. *Frontiers in Psychology*, 8, 252.

Google (2019) How Search Algorithms Work. Retrieved on July 21, 2019 from:
<https://www.google.com/search/howsearchworks/algorithms/>

Gorgiev, A. & Dimitriadis, N. (2015). Upgrading marketing research: Neuromarketing tools for understanding consumers. In T. Tsiakis (Ed.) *Trends and Innovations in Marketing Information Systems*. IGI Global.

Gorgiev, A. Martin, C. Dimitriadis, N. & Nikolaidis, D.V. (2018). Intentions and Willingness of Marketing Professionals to Adopt Neuromarketing. *International Journal of Mechanical and Industrial Engineering*, 12, 10.

Gorgiev, A., & Dimitriadis, N. (2018). Upgrading marketing research: neuromarketing tools for understanding consumers. In *Applications of Neuroscience: Breakthroughs in Research and Practice* (pp. 350-370). IGI Global.

Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse education today*, 24(2), 105-112.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, 74, 1464–1480. <https://doi.org/10.1037/0022-3514.74.6.1464>

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and Using the Implicit Association Test: I. an Improved Scoring Algorithm. *Journal of Personality & Social Psychology*, 85(2), 197-216.

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the Implicit Association Test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, 85, 197–216. <https://doi.org/10.1037/0022-3514.85.2.197>

Greenwald, A. G., Poehiman, T., Uhlmann, E., & Banaji, M. R. (2009). Understanding and Using the Implicit Association Test: III. Meta-Analysis of Predictive Validity. *Journal of Personality & Social Psychology*, 97(1), 17-41. <https://doi.org/10.1037/a0015575>

GRIT (2017) Greenbook Research Industry Trend Report. Retrieved on March 30, 2019 from <http://acei.co/wp-content/uploads/2018/01/GRIT-Q3-Q4-2017.pdf>

Guba, E. & Lincoln, Y. (1994). Competing Paradigms in Qualitative Research, Chapter 6 in N. Denzin and Y. Lincoln (eds.), *Handbook of Qualitative Research*. Thousand Oaks: Sage Publication.

- Gummesson, E. (1987). The New Marketing: Developing Long Term Interactive Relationships. *Long Range Planning*, 20(4): 10–20.
- Gummesson, E. (1997). Relationship marketing as a paradigm shift: some conclusions from the 30R approach. *Management decision*.
- Gundlach, G., & Wilkie, W. (2009). The American Marketing Association's New Definition of Marketing: Perspective and Commentary on the 2007 Revision. *Journal of Public Policy & Marketing*, 28(2), 259-264. doi:10.1509/jppm.28.2.259
- Gurevich, G., Kliger, D., & Weiner, B. (2012). The Role of Attribution of Causality in Economic Decision Making. *Journal of Socio-Economics*, 41(4), 439-444. doi:10.1016/j.socec.2011.07.005
- Hadadgar, A., Changiz, T., Masiello, I., Dehghani, Z., Mirshahzadeh, N., & Zary, N. (2016). Applicability of the theory of planned behavior in explaining the general practitioners eLearning use in continuing medical education. *BMC medical education*, 16(1), 215.
- Hafez, M. (2019). Neuromarketing: A New Avatar in Branding and Advertisement. *Pacific Business Review International*, 12(4), 58-64.
- Halevy, R., Shalvi, S. & Verschuere, B. (2014). Being Honest About Dishonesty: Correlating Self-Reports and Actual Lying. *Human Communication Research*, 40(1), 54–72.
- Hall, J. H. (1989). Just-In-Time Management: A Critical Assessment. *Academy Of Management Executive* (08963789), 3(4), 315-318. doi:10.5465/AME.1989.4277413
- Ham, M., Jeger, M., & Frajman Ivković, A. (2015). The role of subjective norms in forming the intention to purchase green food. *Economic research-Ekonomska istraživanja*, 28(1), 738-748.
- Hambrick, D. C., & MacMillan, I. C. (1982). The Product Portfolio and Man's Best Friend. *California Management Review*, 25(1), 84-95.
- Hambrick, D. et al (1982). Strategic Attributes and Performance in the BCG Matrix--A PIMS-Based Analysis of Industrial Product Businesses. *Academy Of Management Journal*, 25(3), 510-531.
- Hammou, K.A., Galib, M.H., & Melloul, J. (2013). The contributions of neuromarketing in marketing research. *Journal of Management Research*, 5(4), 20-33.

Hankins, M. R., French, D. & Horne, R. (2000). Statistical Guidelines for Studies of the Theory of Reasoned Action and the Theory of Planned Behaviour. *Psychology & Health*, 15(2), 151.

Harari, Y.N. (2015) *Homo Deus: A Brief History of Tomorrow*. HarperCollins Publishers: New York.

Harman, W. (1979) *An Incomplete Guide to the Future*. New York: W. W. Norton & Company.

Harrell, E. (2019). Neuromarketing: What you need to know. *Harvard Business Review*, 97(4), 64-70.

Harris, J. M., Ciorciari, J., & Gountas, J. (2018). Consumer neuroscience for marketing researchers. *Journal of Consumer Behaviour*, 17(3), 239- 252.

Harrison, T. (2012). Quote in Wind, Y. J., & Hays, C. F. (2016). *Beyond advertising: Creating value through all customer touchpoints*. John Wiley & Sons.

Hayashi, A. M. (2004). Technology trajectories and the birth of new industries: markets develop according to the specific paths by which innovations in a given field occur. *MIT Sloan Management Review*, 45(3), 7-9.

Hayes, R. H., & Pisano, G. P. (1994). Beyond World-Class: The New Manufacturing Strategy. (cover story). *Harvard Business Review*, 72(1), 77-87.

Heath, C. (2008) *Made to Stick: Why Some Ideas Take Hold and Others Come Unstuck*. New York: Arrow Books.

Heath, R. G. (2011). The Secret of Television's Success: Emotional Content or Rational Information?. *Journal of Advertising Research*, 5(1), 112-121.

Hempel, C. (1966). *Philosophy of Natural Sciences*. New Jersey: Prentice-Hall.

Hendriyani, C., & Auliana, L. (2018). Transformation from relationship marketing to electronic customer relationship management: A literature study. *Review of Integrative Business and Economics Research*, 7, 116-124.

Henninger CE, Alevizou PJ & Oates CJ (2016) What is sustainable fashion?. *Journal of Fashion Marketing and Management*, 20(4), 400-416.

Henriksen, L. F. (2013). Economic Models as Devices of Policy Change: Policy Paradigms, Paradigm Shift, and Performativity. *Regulation & Governance*, 7(4), 481-495. doi:10.1111/rego.12031

- Hermida, A., Fletcher, F., Korell, D., & Logan, D. (2012). Share, like, recommend: Decoding the social media news consumer. *Journalism studies*, 13(5-6), 815-824.
- Hertzog, M. A. (2008). Considerations in Determining Sample Size for Pilot Studies. *Research in Nursing & Health*, 31, 180-191.
- Hess, T. J., McNab, A. L., & Basoglu, K. A. (2014). Reliability Generalization of Perceived Ease of Use, Perceived Usefulness, and Behavioral Intentions. *MIS Quarterly*, 38(1), 1-A29.
- Hill, C. R., & Hughes, J. N. (2007). An examination of the convergent and discriminant validity of the Strengths and Difficulties Questionnaire. *School Psychology Quarterly*, 22(3), 380.
- Hill, R. (1998). What Sample Size is “Enough” in Internet Survey Research. *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century*, 6(3-4), 1-12.
- Hofmann, W., Gschwendner, T., Castelli, L., & Schmitt, M. (2008). Implicit and explicit attitudes and interracial interaction: The moderating role of situationally available control resources. *Group Processes & Intergroup Relations*, 11(1), 69-87.
- Holden, A.C. & Holden, L. (1998). Marketing History: Illuminating Marketing's Clandestine Subdiscipline. *Psychology & Marketing*, 15(2), 117-123.
- Holden, R.J. (2010). Physicians' Beliefs about Using EMR and CPOE: In Pursuit of a Contextualized Understanding of Health IT Use Behavior. *International Journal of Medical Informatics*, 79(2), 71–80. doi: 10.1016/j.ijmedinf.2009.12.003.
- Hollander, S.C. (1986). A Rearview Mirror Might Help Us Drive Forward - A Call for More Historical Studies in Retailing. *Journal of Retailing*, 62(1), 7.
- Hollander, S.C., Rassuli, K.M., Jones, B.D.G. & Dix, L.F. (2005). Periodization in Marketing. *Journal of Macromarketing*, 25(32), 32-41. doi: 10.1177/0276146705274982
- Holtgraves, T. (2004). Social desirability and self-reports: Testing models of socially desirable responding. *Personality and Social Psychology Bulletin*, 30(2), 161-172.
- Hoyer, W. D., Kroschke, M., Schmitt, B., Kraume, K., & Shankar, V. (2020). Transforming the Customer Experience Through New Technologies. *Journal of Interactive Marketing*.

Hrubes, D., Ajzen, I., & Daigle, J. (2001). Predicting hunting intentions and behavior: An application of the theory of planned behavior. *Leisure Sciences*, 23(3), 165-178.

Hsu, M. (2017). Neuromarketing: inside the mind of the consumer. *California Management Review*, 59(4), 5-22.

Hsu, M. (2017). Neuromarketing: Inside the mind of the consumer. *California Management Review*, 59(4), 5-22.

Hsu, M. Y. T., & Cheng, J. M. S. (2018). fMRI neuromarketing and consumer learning theory. *European Journal of Marketing*.

Huang, Y. C., Chang, L. L., & Backman, K. F. (2019). Detecting common method bias in predicting creative tourists behavioural intention with an illustration of theory of planned behaviour. *Current Issues in Tourism*, 22(3), 307-329.

Hubert, M. & Kenning, P. (2008). A Current Overview of Consumer Neuroscience. *Journal of Consumer Behaviour: An International Research Review*, 7(4/5), 272-292.

Hussey, D. E. (1994). Change and Rationalization. *Journal of Strategic Change*, 247-248.

Hyde, M. M. (2010). Are Organ Donation Communication Decisions Reasoned Or Reactive? A Test of the Utility of an Augmented Theory of Planned Behaviour with the Prototype/Willingness Model. *British Journal of Health Psychology*, 15(2), 435-452.

Iatgen Tutorial 4. Retrieved from <https://osf.io/963yv/>

Ibrahim, N., Shiratuddin, M. F., & Wong, K. W. (2015). Instruments for measuring the influence of visual persuasion: validity and reliability tests. *European Journal of Social Science Education and Research*, 2(3), 25-37.

ICC/ESOMAR (2007) ICC/ESOMAR International Code on Market and Social Research. Retrieved from http://www.esomar.org/uploads/public/knowledge-and-standards/codes-and-guidelines/ICCESOMAR_Code_English_.pdf

Iglesias, O., Ind, N., & Alfaro, M. (2017). The organic view of the brand: A brand value co-creation model. In *Advances in corporate branding* (pp. 148-174). Palgrave Macmillan, London.

Iloka, B. C., & Onyeke, K. J. (2020). Neuromarketing: a historical review. *Neuroscience Research Notes*, 3(3), 27-35.

Jack N. (April 3, 2019) Time To Rethink Neuromarketing; It's No Longer Just Snake Oil. Retrieved from <https://adage.com/article/cmo-strategy/snake-oil/317166>

Jackson, T. (2005). CRM: From 'art to science'. *Journal of Database Marketing & Customer Strategy Management*, 13(1), 76-92.

Jarratt, D., & Stiles, D. (2010). How are Methodologies and Tools Framing Managers' Strategizing Practice in Competitive Strategy Development?. *British Journal Of Management*, 21(1), 28-43. doi:10.1111/j.1467-8551.2009.00665.x

Javor, A., Koller, M., Lee, N., Chamberlain, L. & Ransmayr, G. (2013). Neuromarketing and Consumer Neuroscience: Contributions to Neurology. *BMC Neurology*, 13(13), 1-12. doi:10.1186/1471-2377-13-13

Jeffrey, H.J. (2006). Expanding the Range of Behavioral Factors in Economic Simulations. *Journal of Behavioral Finance*. 7, (2), 97-106.

Jemison, D. B. (1981). Organizational versus Environmental Sources of Influence in Strategic Decision Making. *Strategic Management Journal*, 2(1), 77-89.

Jessor, R., Donovan, J. E., & Costa, F. M. (1991). *Beyond Adolescence: Problem Behavior and Young Adult Development*. Cambridge: Cambridge University Press.

Jiang, C. (1998) Why some theories fail to describe, explain, and predict: Reconstructing the future. *Social Science Journal*, 35(4), 645.

Jiang, F., Lu, S., Hou, Y., & Yue, X. (2013). Dialectical Thinking and Health Behaviors: The Effects of Theory of Planned Behavior. *International Journal of Psychology*, 48(3), 206-214. doi:10.1080/00207594.2012.656130

Jonassen, D.H. (1991). Objectivism Versus Constructivism: Do We Need a New Philosophical Paradigm?. *Educational Technology Research and Development*, 39(3), 5-14.

Jones, D., & Richardson, A. J. (2007). The Myth of the Marketing Revolution. *Journal of Macromarketing*, 27(1), 15-24. doi:10.1177/0276146706296708

Jones, P., Clarke-Hill, C., Comfort, D., & Hillier, D. (2008). Marketing and sustainability. *Marketing Intelligence & Planning*, 26(2), 123-130.

Kahneman, D. (2003). Maps of Bounded Rationality: Psychology for Behavioral Economics. *American Economic Review*, 93(5), 1449-1475. doi:10.1257/000282803322655392

Kahneman, D. (2011). *Thinking, Fast and Slow*. New York: Farrar, Straus, and Giroux.

Kahneman, D. & Frederick, S. (2002). Representativeness Revisited: Attribute Substitution in Intuitive Judgment. In T. Gilovich, D. Griffin & D. Kahneman (Eds.)

Heuristics and Biases: The Psychology of Intuitive Thought (pp. 49-81). New York: Cambridge University Press.

Kahneman, D. & Tversky, A. (1973). On the Psychology of Prediction. *Psychological Review*, 80, 4, 237-251.

Kahneman, D., & Tversky, A. (1972). Subjective probability: A judgment of representativeness. *Cognitive psychology*, 3(3), 430-454.

Kaiser, H.F. (1974) An index of factorial simplicity. *Psychometrika* 39, 31–36.
<https://doi.org/10.1007/BF02291575>

Kalafatis, S. P., & Pollard, M. (1999). Green Marketing and Ajzen's Theory of Planned Behaviour: A Cross-Market Examination. *Journal of Consumer Marketing*, 16(4/5), 441-460.

Kalafatis, S.P., Pollard, M., East, R. & Tsogas, M.H. (1999). Green Marketing and Ajzen's Theory of Planned Behaviour: A Cross-Market Examination. *Journal of Consumer Marketing*, 16(5), 441-460.

Kalbfleisch, M. (2008). Getting to the Heart of the Brain: Using Cognitive Neuroscience to Explore the Nature of Human Ability and Performance. *Roepers Review*, 30(3), 162-170.

Kallgren, C. A., & Wood, W. (1986). Access to attitude-relevant information in memory as a determinant of attitude-behavior consistency. *Journal of Experimental Social Psychology*, 22(4), 328-338.

Kang, J., & Hustvedt, G. (2014). Building trust between consumers and corporations: The role of consumer perceptions of transparency and social responsibility. *Journal of Business Ethics*, 125(2), 253-265.

Keefe, L. M. (2004, September 15). What is the Meaning of 'Marketing'?. *Marketing News*, 17-18.

Keefe, L.M. (2008, January 15). Marketing Defined?. *Marketing News*, 28–29.

Keith, R.J. (1960). The Marketing Revolution. *Journal of Marketing*, 24(3), 35-38.

Kemp, S (January 30, 2019) Digital trends 2019: Every single stat you need to know about the internet. Retrieved from <https://thenextweb.com/contributors/2019/01/30/digital-trends-2019-every-single-stat-you-need-to-know-about-the-internet/>

Kemper, J. A., Hall, C. M., & Ballantine, P. W. (2019). Marketing and Sustainability: Business as Usual or Changing Worldviews?.

Kenning, P. & Linzmajer, M.(2011). Consumer Neuroscience: An Overview of an Emerging Discipline with Implications for Consumer Policy. *Journal of Consumer Protection and Food Safety*, 6, 111-125. doi: 10.1007/s00003-010-0652-5

Kenning, P. & Plassmann, H. (2005). Neuroeconomics: An Overview from an Economic Perspective. *Brain Research Bulletin*, 67, 343-354.

Kern, R. G. (1989). Second language reading strategy instruction: Its effects on comprehension and word inference ability. *The Modern Language Journal*, 73(2), 135-149.

Kiefer, T. (2010). Neuroleadership--More than another Leadership Framework. *People & Strategy*, 33(4), 10-12.

Kiel, L., & Lusch, R. F. (1992). Toward a New Paradigm for Marketing the Evolutionary Exchange Paradigm. *Behavioral Science*, 37(1), 59.

Kim, H., Ku, B., Kim, J. Y., Park, Y. J., & Park, Y. B. (2016). Confirmatory and exploratory factor analysis for validating the phlegm pattern questionnaire for healthy subjects. *Evidence-Based Complementary and Alternative Medicine*, 2016.

Kim, T., Barasz, K., & John, L. K. (2018). Why am I seeing this ad? The effect of ad transparency on ad effectiveness. *Journal of Consumer Research*, 45(5), 906-932.

Kitchens, B., Dobolyi, D., Li, J., & Abbasi, A. (2018). Advanced Customer Analytics: Strategic Value Through Integration of Relationship-Oriented Big Data. *Journal of Management Information Systems*, 35(2), 540–574.

<https://doi.org/10.1080/07421222.2018.1451957>

Klein, J.T. (1990). *Interdisciplinarity: History, Theory and Practice*. Detroit: Wayne State University Press.

Klemm, W. (2011, September 28). Neuro-Education: The Hot New Area in Education. Available online: <http://www.psychologytoday.com/blog/memory-medic/201109/neuro-education-the-hot-new-area-in-education>

Klinckova, S. (2016). Neuromarketing—research and prediction of the future. *International Journal of Management Science and Business Administration*, 2(2), 53-57.

Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York: The Guilford Press.

Koch, K. J. (2013). Convergence of Two Independent Roads Leads to Collaboration between Education and Neuroscience. *Psychology in the Schools*, 50(6), 577-588.

Kolev, D. (2012). Neuromarketing as a New Marketing Paradigm. *Casopis za ekonomiju*, 273.

Kornfeld, W.A. and Hewitt, C. (1981) The Scientific Community Paradigm. *IEE Transactions on Systems, Man, and Cybernetics*. 11(1), 24-33.

Kotler, P. (1967). *Marketing Management: Analysis, Planning and Control*. New York: Prentice-Hall.

Kotler, P. (1991). Chapter 1: Understanding the Critical Role of Marketing in Organizations and Society. In *Marketing Management* (0-13-552480-6) (pp. 1-31).

Kotler, P. [Philip Kotler]. (2020, October 13) I just gave a short zoom lecture to Kellogg marketing students. I told them about Marketing 1, 2, 3, 4, and 5. Marketing 1 is the old product-centered marketing, do anything to get a sale. Marketing 2 recognizes how consumers make decisions emotionally most of the time. Marketing 3 asserts that marketers want to create, communicate and deliver value that improves the lives, happiness and wellbeing of customers, employees, partners and communities. Marketing 1, 2 and 3 are described in detail in Marketing 3.0. My colleagues and I wrote Marketing 4.0 to describe how the digital revolution has completely changed marketing. We know not only market segment behavior but even each individual's behavior within the segment. Applying machine learning to consumer data, we derive marketing insights that we turn into meaningful messages that arrive at the right time, place and price to motivate that individual's purchase. Marketing 5.0 will be published this January. We want to recognize the new digital tools that marketers will increasingly use. Artificial intelligence (AI) and algorithms, marketing automation, robotics, sensors and the Internet of Things, virtual and augmented reality, natural language processing (Siri, Alexa), chatboxes, neuralmarketing and brain science. [LinkedIn Activity] Retrieved from <https://www.linkedin.com/feed/update/urn:li:activity:6720780158086766592/>

Kotler, P., & Levy, S. J. (1969). Broadening the Concept of Marketing. *Journal Of Marketing*, 33(1), 10-15.

Kotler, P., & Zaltman, G. (1971). Social Marketing: An Approach to Planned Social Change. *Journal of Marketing*, 35(3), 3-12.

Kotler, P., Karatajaya, H. & Setiawan, I. (2021) *Marketing 5.0: Technology for Humanity*. John Wiley & Sons.

Kotler, P., Kartajaya, H., & Setiawan, I. (2016). *Marketing 4.0: Moving from traditional to digital*. John Wiley & Sons.

Krampe, C., Gier, N. R., & Kenning, P. (2018). The Application of Mobile fNIRS in Marketing Research—Detecting the “First-Choice-Brand” Effect. *Frontiers in human neuroscience, 12*, 433.

Krosnick, J.A. et al (2002). The Impact Of" No Opinion" Response Options On Data Quality: Non-Attitude Reduction Or An Invitation To Satisfice?. *Public Opinion Quarterly, 66*(3), 371-403.

Kuhn, T.S. (1962) *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.

Kuhn, T.S. (1962). Historical Structure of Scientific Discovery. *Science, 136*(3518), 760-764.

Kuhn, T.S. (1965) Logic of Discovery or Psychology of Research. Editor Lakatos, I. & Musgrave, A., *Criticism and the Growth of Knowledge: Proceedings of the International Colloquium in the Philosophy of Science* (pp. 1-25). London: Cambridge University Press.

Kuhn, T.S. (1970) *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.

Kuhn, T.S. (2012) *The Structure of Scientific Revolutions*. Chicago: The University of Chicago Press.

Labrecque, L. I., vor dem Esche, J., Mathwick, C., Novak, T. P., & Hofacker, C. F. (2013). Consumer power: Evolution in the digital age. *Journal of Interactive Marketing, 27*(4), 257-269.

Lafferty, C. L., & Alford, K. L. (2010). NeuroLeadership: Sustaining Research Relevance into the 21st Century. *SAM Advanced Management Journal* (07497075), 75(3), 32-40.

Lahmiri, S. (2017). Neuromarketing Perspective of Consumer Choice. In *Applying Neuroscience to Business Practice* (pp. 49-62). IGI Global.

Lakatos, I. (1965) Falsification and Methodology of Scientific Research Programmes. Editor Lakatos, I. & Musgrave, A., *Criticism and the Growth of Knowledge: Proceedings of the International Colloquium in the Philosophy of Science* (pp. 91-197). London: Cambridge University Press.

Lakatos, I. (1978). *The Methodology of Scientific Research Programmes: Philosophical Papers Volume I*. Cambridge: Cambridge University Press.

Lakatos, I. (1980) *The Methodology of Scientific Research Programmes*. New York: Cambridge University Press.

Landis, D., Triandis, H. C., & Adamopoulos, J. (1978). Habit and behavioral intentions as predictors of social behavior. *The Journal of Social Psychology*, 106(2), 227-237.

Laroche, M., & Richard, M. O. (2011). Book review: Neuromarketing: Exploring the Brain of the Consumer, Leon Zurawicki. *Journal of Retailing and Consumer Services*, 18(4), 378-379.

Laudan, L. (1978). *Progress and Its Problems: Towards a Theory of Scientific Growth*. Los Angeles: University of California Press, Ltd.

Leach, W. (1994). *Land of Desire: Merchants, Power, and the Rise of a New American Culture*. New York: Vintage.

Ledesma, R. D., Tosi, J. D., Díaz-Lázaro, C. M., & Poó, F. M. (2018). Predicting road safety behavior with implicit attitudes and the Theory of Planned Behavior. *Journal of safety research*, 66, 187-194.

Lee, L., Amir, O., & Ariely, D. (2009). In Search of Homo Economicus: Cognitive Noise and the Role of Emotion in Preference Consistency. *Journal of Consumer Research*, 36(2), 173-187.

Lee, N., Brandes, L., Chamberlain, L., & Senior, C. (2017). This is your brain on neuromarketing: reflections on a decade of research. *Journal of Marketing Management*, 33(11-12), 878-892.

Lee, N., Broderick, A.J. & Chamberlain, L. (2007). What is “Neuromarketing”? A Discussion and Agenda for Future Research. *International Journal of Psychophysiology*. 63, 199-204. doi: 10.1016/j.ijpsycho.2006.03.007

Lee, N., Chamberlain, L., & Brandes, L. (2018). Welcome to the jungle! The neuromarketing literature through the eyes of a newcomer. *European Journal of Marketing*, 52(1/2), 4-38.

Lehmann, D. R. (2020). The evolving world of research in marketing and the blending of theory and data. *International Journal of Research in Marketing*.

- Lesic, V., de Bruin, W. B., Davis, M. C., Krishnamurti, T., & Azevedo, I. M. (2018). Consumers' perceptions of energy use and energy savings: A literature review. *Environmental Research Letters*, 13(3), 033004.
- Levallois, C., Smidts, A., & Wouters, P. (2019). The emergence of neuromarketing investigated through online public communications (2002–2008). *Business History*, 1-40.
- Leventhal, H., & Cleary, P. D. (1980). The Smoking Problem: A Review of the Research Theory in Behavioral Risk Modification. *Psychological Bulletin*, 88, 370-405.
- Levitt, T. (1960) Marketing Myopia. *Harvard Business Review*, 38, 45-56.
- Levy, P.S. & Lemeshow, S. (2008). *Sampling of Populations: Methods and Applications*. New York: John Wiley & Sons.
- Lim, W. M. (2018). Demystifying neuromarketing. *Journal of Business Research*, 91, 205-220.
- Linden, S. (2011). Charitable Intent: A Moral or Social Construct? A Revised Theory of Planned Behavior Model. *Current Psychology*, 30(4), 355-374. doi:10.1007/s12144-011-9122-1
- Lindstrom, M. (2008) *Buy-ology*. New York: Doubleday.
- Linyun W., Y., Cutright, K. M., Chartrand, T. L., & Fitzsimons, G. J. (2014). Distinctively Different: Exposure to Multiple Brands in Low-Elaboration Settings. *Journal of Consumer Research*, 40(5), 973-992. doi:10.1086/673522
- Lisa Randall, Dark Matter and The Dinosaur - quote
- Ludicke, M.K. (2006). *A Theory of Marketing: Outline of a Social Systems Perspective*. Wiesbaden: Deucher Universitat - Verlag.
- Lusch, R.F. (2007). Marketing's Evolving Identity: Defining Our Future. *Journal of Public Policy & Marketing*, 26(2), 261-268.
- Lustig, N. (2013). Intuition vs. Big Data and Predictive Analytics. *Smart Business Northern California*, 6(12), 6.
- Lysus, D., Rogers, B., & Simms, C. (2011). The Role of Sales and Marketing Integration in Improving Strategic Responsiveness to Market Change. *Journal of Database Marketing & Customer Strategy Management*, 18(1), 39-49. doi:10.1057/dbm.2011.5
- Ma, L., & Sun, B. (2020). Machine learning and AI in marketing—Connecting computing power to human insights. *International Journal of Research in Marketing*.

Madan, C. R. (2010). Neuromarketing: the next step in market research?. *Eureka*, 1(1), 34-42.

Mahrt, M., & Scharkow, M. (2013). The value of big data in digital media research. *Journal of Broadcasting & Electronic Media*, 57(1), 20-33.

Maison, D., Greenwald, A. G., & Bruin, R. H. (2004). Predictive Validity of the Implicit Association Test in Studies of Brands, Consumer Attitudes, and Behavior. *Journal of Consumer Psychology*, 14(4), 405-415.

Malhotra, N.K. & Birks, D.F. (2007). *Marketing Research: An Applied Approach*. London: Pearson Education.

Malhotra, N. K., Kim, S. S., & Patil, A. (2006). Common method variance in IS research: A comparison of alternative approaches and a reanalysis of past research. *Management science*, 52(12), 1865-1883.

Manning, M. (2009). The Effects of Subjective Norms on Behaviour in the Theory of Planned Behaviour: A Meta-Analysis. *British Journal of Social Psychology*, 48(4), 649-705.

Manning, M. (2011). When We Do What We See: The Moderating Role of Social Motivation on the Relation Between Subjective Norms and Behavior in the Theory of Planned Behavior. *Basic & Applied Social Psychology*, 33(4), 351-364.

doi:10.1080/01973533.2011.589304

Manstead, A. S., & Van Eekelen, S. A. (1998). Distinguishing between perceived behavioral control and self-efficacy in the domain of academic achievement intentions and behaviors. *Journal of applied social psychology*, 28(15), 1375-1392.

Marichamy, K. & Sathiyavathi, K.J. (2014) Neuromarketing: The New Science of Consumer Behavior. *Tactful Management Research Journal*, 2(6), 1-5.

Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does Sample Size Matter In Qualitative Research?: A Review Of Qualitative Interviews In Is Research. *Journal Of Computer Information Systems*, 54(1), 11-22.

Marthadiansyah, Meutia, I., Mukhtaruddin, & Saputra, D. (2013). Empirical Study of Tax Payer Compliance in Tax Filing: Applying Theory of Planned Behavior. *Annual International Conference on Accounting & Finance*, 26-32. doi:10.5176/2251-1997_AF13.14

Martin, W. C., Engelland, B. T., & Collier, J. E. (2011). Assessing the Impact of Acquiescence Response Bias on Marketing Data. *Marketing Management Journal*, 21(1).

McCarthy, E.J. (1964). *Basic Marketing: A Managerial Approach*. Homewood: R.D. Irwin.

McClure, S. M., Li, J., Tomlin, D., Cypert, K. S., Montague, L. M., & Montague, P. R. (2004). Neural correlates of behavioral preference for culturally familiar drinks. *Neuron*, 44(2), 379-387.

McDonagh, P., & Prothero, A. (2014). Sustainability marketing research: Past, present and future. *Journal of Marketing Management*, 30(11-12), 1186-1219.

McLinden, D. (2013) Concept maps as network data: Analysis of a concept map using the methods of social network analysis. *Evaluation & Program Planning*, 36(1), 40-48. doi:10.1016/j.evalprogplan.2012.05.001

Meeker, D., Linder, J. A., Fox, C. R., Friedberg, M. W., Persell, S. D., Goldstein, N. J., ... & Doctor, J. N. (2016). Effect of behavioral interventions on inappropriate antibiotic prescribing among primary care practices: a randomized clinical trial. *Jama*, 315(6), 562-570.

Mehta, S., Saxena, T., & Purohit, N. (2020). The New Consumer Behaviour Paradigm amid COVID-19: Permanent or Transient?. *Journal of Health Management*, 22(2), 291-301.

Merrilees, B. (2016). Interactive brand experience pathways to customer-brand engagement and value co-creation. *Journal of Product & Brand Management*, 25(5), 402-408.

Meyerding, S. G., & Mehlhose, C. M. (2020). Can neuromarketing add value to the traditional marketing research? An exemplary experiment with functional near-infrared spectroscopy (fNIRS). *Journal of Business Research*, 107, 172-185.

Micu, A., & Plummer, J. T. (2010). Measurable Emotions: How Television Ads Really Work. *Journal of Advertising Research*, 50(2), 137-153.

Milgram, S. (1969). Interdisciplinary Thinking and the Small World Problem. In M. Sherif and C. W. Sherif (Eds.), *Interdisciplinary Relations in Social Sciences* (pp. 103-120). Chicago: Aldine.

Millar, M. G., & Tesser, A. (1989). The effects of affective-cognitive consistency and thought on the attitude-behavior relation. *Journal of Experimental Social Psychology*, 25(2), 189-202.

Millisecond Software (2019) Inquisit Web. Retrieved from <https://www.millisecond.com/products/inquisit5/weboverview.aspx>

Millisecond Software (2019) Retrieved from <https://www.millisecond.com/>

Milosavljevic, M., Shiv, B., Ohme, R. K., & Plassmann, H. (2008). Special Topics Session: How The Consumer's Brain Functions: Where Marketing Meets Neuroscience. *American Academy of Advertising Conference Proceedings*, 30-31.

Mirzaei, N., Dehdari, T., Taghdisi, M. H., & Zare, N. (2019). Development of an instrument based on the theory of planned behavior variables to measure factors influencing Iranian adults' intention to quit waterpipe tobacco smoking. *Psychology Research and Behavior Management*, 12, 901.

Mitchell, J.P., Nosek, B.A. & Banaji, M.R. (2003). Contextual Variations in Implicit Evaluation. *Journal of Experimental Psychology: General*, 132(3), 455-469. doi: 10.1037/0096-3445.132.3.455

Mitsuyoshi, S., Shibasaki, K., Tanaka, Y., Kato, M., Murata, T., Minami, T., ... & Ren, F. (2007). Emotion voice analysis system connected to the human brain. In *2007 International Conference on Natural Language Processing and Knowledge Engineering* (pp. 476-484). IEEE.

Moncrief, W. C., & Marshall, G. W. (2005). The Evolution of the Seven Steps of Selling. *Industrial Marketing Management*, 34(1), 13-22. doi:10.1016/j.indmarman.2004.06.001

Monestina, N. G., Berdasco, D. P., Begoña, M., Albiñana, J., & Royo, T. M. (2014). Emotional design through measurement of psychophysiological and behavioral parameters: taking steps towards neurodesign. In *The 9th International Conference on Design & Emotion* (pp. 325-331).

Montano, D.E. & Kasprzyk, D. (2008). Theory of Reasoned Action, Theory of Planned Behavior, and the Integrated Behavioral Model. In K. Glanz, B.K. Rimer & K. Viswanath (Eds.), *Health Behavior and Health Education: Theory, Research, and Practice*. San Francisco: Jossey-Bass.

Mooney, C. (2012). Is Your BRAIN Right-Wing?. *New Humanist*, 127(3), 28-30.

- Moore, A. (2019). When AI Becomes an Everyday Technology. *Harvard Business Review Digital Articles*, 2–5. Retrieved on June 10, 2019 from: <https://hbr.org/2019/06/when-ai-becomes-an-everyday-technology>)
- Moore, K. (2005). Maybe it is like brain surgery. *Marketing Magazine*, 110(15), 12.
- Morin, C. (2011). Neuromarketing: The New Science of Consumer Behavior. *Society*, 48, 131-135. doi: 10.1007/s12115-010-9408-1
- Morin, E. (1992) From the Concept of System to the Paradigm of Complexity. *Journal of Social and Evolutionary Systems*, 15(4), 371–385.
- Morse, S. J. (2011). The Status of NeuroLaw: A Plea for Current Modesty and Future Cautious Optimism. *Journal Of Psychiatry & Law*, 39(4), 595-626.
- Moss, A. K., & Frieze, I. H. (1993). Job Preferences in the Anticipatory Socialization: A Comparison of Two Matching Models. *Journal of Vocational Behavior*, 42, 282-297.
- Murphy, E. R., Illes, J., & Reiner, P. B. (2008). Neuroethics of neuromarketing. *Journal of Consumer Behaviour: An International Research Review*, 7(4-5), 293-302.
- Muschalik, C., Elfeddali, I., Candel, M. J., Crutzen, R., & de Vries, H. (2019). Does the discrepancy between implicit and explicit attitudes moderate the relationships between explicit attitude and (intention to) being physically active?. *BMC psychology*, 7(1), 52.
- Muzaffar, H., Chapman-Novakofski, K., Castelli, D. M., & Scherer, J. A. (2014). The HOT (Healthy Outcome for Teens) project. Using a web-based medium to influence attitude, subjective norm, perceived behavioral control and intention for obesity and type 2 diabetes prevention. *Appetite*, 72, 82-89.
- Myers, D.G. (2010). *Social Psychology*. New York: McGraw Hill.
- Nachigall, C., Kroehne, U., Funke, F., & Steyer, R. (2003). Should We Use SEM? Pros and Cons of Structural Equation Modelling. *Methods of psychological Research Online*, 8(2), 1-22.
- Nancarrow, C., Brace, I. & Wright, L. (2001). Tell me Lies, Tell me Sweet Little Lies: Dealing with Socially Desirable Responses in Market Research. *Marketing Review*, 2(1), 55-55.
- Narvainen, J., Pulkkinen, K., Kuoppa, P., Tarvainen, M., Lankinen, M., Lapveteläinen, A., & Karhune, L. (2013). Probing Psychophysiology by Pictorial Stimuli of Emotional

Content: General Patterns and Personality Effects. *Neuropsychoeconomics Conference Proceedings*, p. 25-25.

Nature (September 17, 2015). Mind Meld. *Nature*, 525(7569), 289-290. Retrieved on November 27, 2020 from <https://www.nature.com/news/mind-meld-1.18353>

Naughton, J. (2012) Thomas Kuhn: the man who changed the way the world looked at science. *The Guardian*. Retrieved on November 16 from:

<https://www.theguardian.com/science/2012/aug/19/thomas-kuhn-structure-scientific-revolutions>

Nenycz-Thiel, M., Beal, V., Ludwichowska, G., & Romaniuk, J. (2013). Investigating the accuracy of self-reports of brand usage behavior. *Journal of Business Research*, 66(2), 224-232.

Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, 20(9), 1408-1416.

Nighswonger, N. J., & Martin Jr, C. R. (1981). On using voice analysis in marketing research. *Journal of Marketing Research*, 18(3), 350-355.

Niiniluoto, Ilkka (2019). Scientific Progress, In *The Stanford Encyclopedia of Philosophy* (Winter 2019 Edition), Edward N. Zalta (ed.), Retrieved from <https://plato.stanford.edu/archives/win2019/entries/scientific-progress/>.

Nissani, M. (1997). Ten Cheers for Interdisciplinarity: The Case for Interdisciplinary Knowledge and Research. *The Social Science Journal*, 34, 2, 201-216.

NMSBA (2013) NMSBA Code of Ethics. Retrieved from <http://www.nmsba.com/ethics>

NMSBA (2018) Buying Neuromarketing” Where to start?. Retrieved on March 19, 2020 from <https://www.nmsba.com/buying-neuromarketing/the-state-of-neuromarketing-in-2018>

NMSBA (2020) About the NMSBA. Retrieved from <https://www.nmsba.com/become-a-member/about-the-nmsba>

NMSBA (2020) NMSBA Code of Ethics. Retrieved on October 25, 2020 from: <https://www.nmsba.com/buying-neuromarketing/code-of-ethics>

Nobel Media AB (2020) Daniel Kahneman – Facts. NobelPrize.org. Retrieved on October 18, 2020 from <https://www.nobelprize.org/prizes/economic-sciences/2002/kahneman/facts/>

Norman, P., Conner, M., & Bell, R. (1999). The theory of planned behavior and smoking cessation. *Health psychology, 18*(1), 89.

Nosek, B. A. (2005). Moderators of the relationship between implicit and explicit evaluation. *Journal of Experimental Psychology: General, 134*(4), 565.

Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2005). Understanding and Using the Implicit Association Test: II. Method Variables and Construct Validity. *Personality and Social Psychology Bulletin, 31*, 2, 166-180. doi: 10.1177/0146167204271418

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric Theory* (3rd ed.). New York: McGraw-Hill.

O'Reilly, L. (2013, September). P&G's Marc Pritchard: 'The Era of Digital Marketing Is Over'. *MarketingWeek*. Retrieved from: <http://www.marketingweek.co.uk/news/pgs-marc-pritchard-the-era-of-digital-marketing-is-over/4007981.article>

Ogunnaiké, O., Dunham, Y., & Banaji, M. R. (2010). The language of implicit preferences. *Journal of Experimental Social Psychology, 46*(6), 999-1003.

Ohme, R. (2009). Special Topics Session: How Neurophysiological Research Contributes to Advertising Research. *American Academy of Advertising Conference Proceedings, 55-57*.

Ohme, R., Kowalski, J. & Reykowska, D. (2007). Exploring Consumers' Mind Via EEG And EMG Activity. *Neuropsychoeconomics Conference Proceedings*, p. 26-26.

Omrani, D. (1992). Business Process Re-Engineering: A Business Revolution?. *Management Services, 36*(10), 12-16.

Onnela, J. P., & Rauch, S. L. (2016). Harnessing smartphone-based digital phenotyping to enhance behavioral and mental health. *Neuropsychopharmacology, 41*(7), 1691.

Orzan, G., Zara, I. A., & Purcarea, V. L. (2012). Neuromarketing techniques in pharmaceutical drugs advertising. A discussion and agenda for future research. *Journal of medicine and life, 5*(4), 428.

Oswald, F. L., Mitchell, G., Blanton, H., Jaccard, J., & Tetlock, P. E. (2013). Predicting ethnic and racial discrimination: A meta-analysis of IAT criterion studies. *Journal of personality and social psychology, 105*(2), 171.

Pavlou, P.A. & Fygenon, M. (2006). Understanding and Predicting Electronic Commerce Adoption: An Extension of the Theory of Planned Behavior. *MIS Quarterly, 30*(1), 115-143.

Pearce, M. T., Zaidel, D. W., Vartanian, O., Skov, M., Leder, H., Chatterjee, A., & Nadal, M. (2016). Neuroaesthetics: The cognitive neuroscience of aesthetic experience. *Perspectives on psychological science*, 11(2), 265-279.

Pentina, I., & Tarafdar, M. (2014). From “information” to “knowing”: Exploring the role of social media in contemporary news consumption. *Computers in Human Behavior*, 35, 211-223.

Perdomo, O. J., Gonzalez-Benito, J., & Galende, J. (2009). The Intervening Effect of Business Innovation Capability on the Relationship between Total Quality Management and Technological Innovation. *International Journal of Production Research*, 47(18), 5087-5107. doi:10.1080/00207540802070934

Perrachione, T.K. & Perrachione, J.R. (2008). Brains and Brands: Developing Mutually Informative Research in Neuroscience and Marketing. *Journal of Consumer Behavior*, 7, 303–318.

Pertrushin, V. A. (2000). *U.S. Patent No. 6,151,571*. Washington, DC: U.S. Patent and Trademark Office.

Perugini, M. (2005). Predictive Models of Implicit and Explicit Attitudes. *British Journal of Social Psychology*, 44, 29–45. doi: 10.1348/014466604X23491

Perugini, M. (2005). Predictive models of implicit and explicit attitudes. *British Journal of Social Psychology*, 44(1), 29-45.

Piercy, N.F. & Morgan, N.A (1997). The Impact of Lean Thinking and the Lean Enterprise on Marketing: Threat or Synergy?. *Journal of Marketing Management*, 13, 679-69

Pina, L. S., Loureiro, S. M. C., Rita, P., Sarmiento, E. M., Bilro, R. G., & Guerreiro, J. (2019). Analysing Consumer-Brand Engagement Through Appreciative Listening on Social Network Platforms. *Journal of Promotion Management*, 25(3), 304–313. <https://doi.org/10.1080/10496491.2019.1557805>

Pinel, J. P. J. (2011). *Biopsychology*. Boston: Allyn & Bacon.

Pirson, M.A. & Lawrence, P.R. (2009) Humanism in Business – Towards a Paradigm Shift?. *Journal of Business Ethics*. 93(4), 553-565.

Plassmann, H., Ramsøy, T. Z., & Milosavljevic, M. (2012). Branding the Brain: A Critical Review and Outlook. *Journal of Consumer Psychology*, 22(1), 18-36. doi:10.1016/j.jcps.2011.11.010

Plassmann, H., Venkatraman, V., Huettel, S., & Yoon, C. (2015). Consumer neuroscience: applications, challenges, and possible solutions. *Journal of Marketing Research*, 52(4), 427-435.

Plassmann, H., Yoon, C., Feinberg, F. M., & Shiv, B. (2010). Consumer neuroscience. In *Wiley international encyclopedia of marketing*. John Wiley & Sons.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879.

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual review of psychology*, 63, 539-569.

Pope, L. (February 5, 2020) Four Major Trends Shaping The Marketing Landscape In 2020. Retrieved from

<https://www.forbes.com/sites/forbescommunicationscouncil/2020/02/05/four-major-trends-shaping-the-marketing-landscape-in-2020/#3a7a03b813c3>

Popper, K. (1959) *The Logic of Scientific Discovery*. London: Hutchinson.

Popper, K. (1963) *Conjectures and Refutations: The Growth of Scientific Knowledge*. London: Roudledge & Kegan Paul.

Popper, K. (1965) Normal Science and Its Dangers. Editor Lakatos, I. & Musgrave, A., *Criticism and the Growth of Knowledge: Proceedings of the International Colloquium in the Philosophy of Science* (pp. 51-59). London: Cambridge University Press.

Popper, K. (1972). *Objective Knowledge: An Evolutionary Approach*. New York: Oxford University Press.

Popper, K. (2005) *The Logic of Scientific Discovery*. New York: Routledge.

Porter, C. E., & Donthu, N. (2006). Using the technology acceptance model to explain how attitudes determine Internet usage: The role of perceived access barriers and demographics. *Journal of business research*, 59(9), 999-1007.

Porter, M. E. (1979). How Competitive Forces Shape Strategy. *Harvard Business Review*, 57(2), 137-145.

Porter, M. E. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: The Free Press.

Porter, M. E. (2008). The Five Competitive Forces That Shape Strategy. *Harvard Business Review*, 86(1), 78-93.

Powers, T.L. (2012). Early Schools of Marketing Thought and Marketplace Evolution. *Journal of Historical Research of Marketing*, 4(1), 190-206. doi: 10.2208/17557501211195127

Pradeer, A.K. (2010). *The Buying Brain: Secrets for Selling to the Subconscious Mind*. New Jersey: John Wiley & Sons.

Project Implicit. (2020) Test Implicitnih Asocijacija. Retrieved from <https://implicit.harvard.edu/implicit/serbia/>

Quinton, S. (2013). The Community Brand Paradigm: A Response to Brand Management's Dilemma in the Digital Era. *Journal of Marketing Management*, 29(7/8), 912-932.

Ralph, E. C. (2009) *Harnessing The Healing Power Of Fruit: The New Paradigm for Optimum Health*. Florida: Siloam.

Ramsay, T. Z. (2019). Building a foundation for neuromarketing and consumer neuroscience research: how researchers can apply academic rigor to the neuroscientific study of advertising effects. *Journal of Advertising Research*, 59(3), 281-294.

Randall, L (2015). *Dark Matter and the Dinosaurs: The Astounding Interconnectedness of the Universe*. Ecco, HarperCollins Publishers: New York.

Rangel, A., Camerer, C. & Montague, P. R. (2008). A Framework for Studying the Neurobiology of Value-Based Decision Making. *Nature Reviews Neuroscience*, 9, 545-556.

Reardon, S. (2014, March 18). Brain-Mapping Projects to Join Forces. *Nature*. Available online: <http://www.nature.com/news/brain-mapping-projects-to-join-forces-1.14871>

Rehder, R., & Ralston, F. (1984). Total Quality Management: A Revolutionary Management Philosophy. *SAM Advanced Management Journal* (07497075), 49(3), 24.

Reid, E., & Duffy, K. (2018). A netnographic sensibility: developing the netnographic/social listening boundaries. *Journal of Marketing Management*, 34(3/4), 263–286. <https://doi.org/10.1080/0267257X.2018.1450282>

Rejeb, A., Keogh, J. G., & Treiblmaier, H. (2020). How Blockchain Technology Can Benefit Marketing: Six Pending Research Areas. *Frontiers in Blockchain*, 3, 3.

Renvois, P. & Morin, C. (2007) *Neuromarketing: Understanding the "Buy Button" in Your Customer's Brain*. Nashville: T. Nelson.

Repko, A.F. (2012). *Interdisciplinary Research: Process and Theory*. Los Angeles: Sage Publication Inc.

Research and Markets (2016, November). \$22 Million Neuromarketing Technologies Market: Global Report 2015-2020 - Research and Markets. *Business Wire* (English).

Rettie, R., Burchell, K., & Riley, D. (2012). Normalising green behaviours: A new approach to sustainability marketing. *Journal of Marketing Management*, 28(3-4), 420-444.

Ringold, D.J. & Weitz, B. (2007). The American Marketing Association Definition of Marketing: Moving from Lagging to Leading Indicator. *Journal of Public Policy & Marketing*, 26(2), 251-260.

Rivis, A. (2011). Understanding Young And Older Male Drivers' Willingness to Drive While Intoxicated: The Predictive Utility of Constructs Specified by the Theory of Planned Behaviour and The Prototype Willingness Model. *British Journal of Health Psychology*, 16(2), 445-456.

Rivis, A. J., Sheeran, P. & Armitage, C.J. (2006). Augmenting the Theory of Planned Behaviour with the Prototype/Willingness Model: Predictive Validity of Actor Versus Abstainer Prototypes For Adolescents' Health-Protective And Health-Risk Intentions. *British Journal of Health Psychology*, 11(3), 483-500.

Rivis, A., Abraham, C., & Snook, S. (2011). Understanding young and older male drivers' willingness to drive while intoxicated: The predictive utility of constructs specified by the theory of planned behaviour and the prototype willingness model. *British journal of health psychology*, 16(2), 445-456.

Roalf, D. R., & Gur, R. C. (2017). Functional brain imaging in neuropsychology over the past 25 years. *Neuropsychology*, 31(8), 954.

Robin, R., McEachanab, C., Connerb, M., Taylor, N.J. & Lawton, R.J. (2011). Prospective Prediction of Health-Related Behaviours with the Theory of Planned Behaviour: A Meta-Analysis. *Health Psychology Review*, 5(2), 97-144.
doi:10.1080/17437199.2010.521684

Rogers, E. (2003). *Diffusion of Innovations*. New York: Simon & Schuster.

- Roy, S. K., Lassar, W. M., & Shekhar, V. (2016). Convenience and satisfaction: mediation of fairness and quality. *The Service Industries Journal*, 36(5-6), 239-260.
- Royle, J., & Laing, A. (2014). The digital marketing skills gap: Developing a Digital Marketer Model for the communication industries. *International Journal of Information Management*, 34(2), 65-73.
- Rubinson, J. (2010). What Behavioral Economics Can Teach Marketing Research. *Journal of Advertising Research*, 114-117.
- Rudawska, E. (2011). Customer as an Active Partner in Creating Offer in Banking Services. *International Journal of Management Cases*, 13(3), 50-58.
- Rudman, L. A. (2004). Sources of implicit attitudes. *Current Directions in Psychological Science*, 13(2), 79-82.
- Ruekert, R.W. (1992). Developing a Market Orientation: An Organizational Strategy Perspective. *International Journal of Research in Marketing*, 9, 225-245.
- Rydell, R. J., McConnell, A. R., Mackie, D. M., & Strain, L. M. (2006). Of two minds: Forming and changing valence-inconsistent implicit and explicit attitudes. *Psychological Science*, 17(11), 954-958.
- Rydell, R. J., McConnell, A. R., Strain, L. M., Claypool, H. M., & Hugenberg, K. (2007). Implicit and explicit attitudes respond differently to increasing amounts of counterattitudinal information. *European Journal of Social Psychology*, 37(5), 867-878.
- Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., ... & Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & quantity*, 52(4), 1893-1907.
- Savall, H., & Zardet, V. (2011). *The Qualimetrics Approach: Observing the Complex Object*. Charlotte: Information Age Pub.
- Savitt, R. (1980). Historical Research in Marketing. *Journal of Marketing*, 44(4), 52-58.
- Schaller, T. K., Patil, A., & Malhotra, N. K. (2015). Alternative techniques for assessing common method variance: An analysis of the theory of planned behavior research. *Organizational Research Methods*, 18(2), 177-206.
- Scherbaum, C. A., & Meade, A. W. (2013). New Directions for Measurement in Management Research. *International Journal of Management Reviews*, 15(2), 132-148.
doi:10.1111/ijmr.12003

Schifter, D. E., & Ajzen, I. (1985). Intention, perceived control, and weight loss: an application of the theory of planned behavior. *Journal of personality and social psychology*, 49(3), 843.

Schmidt, R. (1992). Psychological mechanisms underlying second language fluency. *Studies in second language acquisition*, 14(4), 357-385.

Schweidel, D. A., & Moe, W. W. (2014). Listening in on social media: A joint model of sentiment and venue format choice. *Journal of Marketing Research*, 51(4), 387-402.

Sebastian, V. (2014). Neuromarketing and neuroethics. *Procedia-Social and Behavioral Sciences*, 127, 763-768.

Senior, C. & Lee, N. (2008). Editorial: A Manifesto for Neuromarketing Science. *Journal of Consumer Behavior*. 7, 236-271.

Senior, C. et al (2007). Mapping the Mind for The Modern Market Research. *Qualitative Market Research*. 10, 153-167.

Shachak, A., Kuziemsky, C., & Petersen, C. (2019). Beyond TAM and UTAUT: Future directions for HIT implementation research. *Journal of biomedical informatics*, 100, 103315.

Shahriari, M., Feiz, D., Zarei, A., & Kashi, E. (2020). The meta-analysis of neuro-marketing studies: past, present and future. *Neuroethics*, 13(3), 261-273.

Shapin, S. (1995) Here and Everywhere: Sociology of Scientific Knowledge. *Annual Review of Sociology*, 21, 289-321.

Shapin, S. (1996) *The Scientific Revolution*. Chicago: The University of Chicago Press.

Sharma, N., Koc, M. & Kishor, J. (2014). Neuromarketing - A Step Ahead of Traditional Marketing Tools. *Proceedings of 3rd International Conference on Management Innovations (ICMI-2014)*, India, 549-555. doi: 10.2139/ssrn.2406314

Shaw, E.H. & Jones, B.D.G. (2005). A History of Schools of Marketing Thought. *Marketing Theory*, 5(3), 239-281. doi: 10.1177/1470593105054898

Sheeran, P. (2002). Intention—behavior relations: a conceptual and empirical review. *European review of social psychology*, 12(1), 1-36.

Sheeran, P., & Webb, T. L. (2016). The intention—behavior gap. *Social and personality psychology compass*, 10(9), 503-518.

Sheth, J. N. (2000). Relationship marketing: paradigm shift or shaft?. *Handbook of relationship marketing*, 609-620.

Sheth, J., & Uslay, C. (2007). Implications of the Revised Definition of Marketing: From Exchange to Value Creation. *Journal of Public Policy & Marketing*, 26(2), 302-307.

doi:10.1509/jppm.26.2.302

Shukla, S. (2019). Neuromarketing: a change in marketing tools and techniques. *International Journal of Business Forecasting and Marketing Intelligence*, 5(3), 267-284.

Shye, S. (1988). Inductive and Deductive Reasoning: A Structural Reanalysis of Ability Tests. *Journal of Applied Psychology*, 73(2), 308-311.

Sigman, M. (2014). Neuroscience and Education: Prime Time to Build the Bridge. *Nature Neuroscience*, 17(4), 497-502.

Silberstein, R.B. (1995) Steady state visually evoked potentials, brain resonances and cognitive processes. In P. L. Nunez. *Neocortical dynamics and human EEG rhythms*. New York. Oxford University Press. 272-303. 34.

Silberstein, R.B., Schier, M.A., Pipingas, A., Ciorciari, J., Wood, S.R., Simpson D.G. (1990) Steady state visually evoked potential topography associated with a visual vigilance task. *Brain Topography*, 3, 337-347.

Simon, H.A. (1972). Theories of Bounded Rationality. In C.B. McGuire & R. Radner (EDS.) *Decision and organization* (pp. 161-176). Amsterdam: North-Holland Publishing Company.

Simon, H.A. (1995). A Behavioral Model of Rational Choice. *The Quarterly Journal of Economics*, 69(1), 99-118.

Simpson, B. K. & Radford, S. K. (2012). Consumer Perceptions of Sustainability: A Free Elicitation Study. *Journal of Nonprofit & Public Sector Marketing*, 24(4), 272-291.

doi:10.1080/10495142.2012.733654

Skar, S., Sniehotta, F. F., Araújo-Soares, V., & Molloy, G. J. (2008). Prediction of Behaviour vs. Prediction of Behaviour Change: The Role of Motivational Moderators in the Theory of Planned Behaviour. *Applied Psychology: An International Review*, 57(4), 609-627.

doi:10.1111/j.1464-0597.2008.00346.x

Smith, A. (1982) *Power of Mind*. New York: Simon & Schuster.

Society for Neuroscience (2014). The Human Brain — A Spongy, Three-Pound Mass of Tissue — Is the Most Complex Living Structure in the Known Universe. Retrieved from <http://www.sfn.org/about/about-neuroscience>

- Sparrow, B., & Wegner, D. M. (2006). Unpriming: The Deactivation of Thoughts through Expression. *Journal of Personality & Social Psychology*, 91(6), 1009-1019.
- Stanovich, K.E. & West, R.F. (2000). Individual Differences in Reasoning: Implications for the Rationality Debate?. *Behavioral and Brain Sciences*, 23(5), 645-665.
- Stanton, S. J., Sinnott-Armstrong, W., & Huettel, S. A. (2017). Neuromarketing: Ethical implications of its use and potential misuse. *Journal of Business Ethics*, 144(4), 799-811.
- Steelman, Z. R., Hammer, B. I., & Limayem, M. (2014). Data Collection in the Digital Age. *Mis Quarterly*, 38(2), 355-378.
- Steenkamp, J.B.E.M., Jong, M.G. & Baumgartner, H. (2010). Socially Desirable Response Tendencies in Survey Research. *Journal of Marketing Research*, 47(2), 199-214.
- Stipp, H. (2015). The Evolution of Neuromarketing Research: From Novelty to Mainstream: How Neuro Research Tools Improve Our Knowledge about Advertising. *Journal of Advertising Research*, 55(2), 120-122.
- Stoll, M., Baecke, S., & Kenning, P. (2008). What They See is What They Get? An fMRI Study on Neural Correlates of Attractive Packaging. *Journal of Consumer Behavior*, 7, 342-359.
- Strong, C. (2015). *Humanizing Big Data : Marketing at the Meeting of Data, Social Science and Consumer Insight*. London: Kogan Page.
- Suh, B. (2019) Can AI Nudge Us to Make Better choices? Retrieved on June 10, 2019 from <https://hbr.org/2019/05/can-ai-nudge-us-to-make-better-choices>
- Sutton, S., French, D. P., Hennings, S. J., Mitchell, J., Wareham, N. J., Griffin, S., Hardeman, W. & Kinmonth, A. L. (2003). Eliciting Salient Beliefs in Research on the Theory of Planned Behaviour: The Effect of Question Wording. *Current Psychology*, 22(3), 234-251.
- Swanson, J. E., Swanson, E., & Greenwald, A. G. (2001). Using the Implicit Association Test to investigate attitude-behaviour consistency for stigmatised behaviour. *Cognition & Emotion*, 15(2), 207-230.
- Tadajewski, M. (2009). Eventualizing the Marketing Concept. *Journal of Marketing Management*, 25 (1-2), 191-217.
- Tallis, R. & Taylor, M (2011) Neuromania?. *RSA Journal*, 157(5547), 48-48. Retrieved October 17, 2020 from <http://www.jstore.org/stable/41380121>

Tarkiainen, A., & Sundqvist, S. (2005). Subjective norms, attitudes and intentions of Finnish consumers in buying organic food. *British food journal*.

Thaler, R. H., & Ganser, L. J. (2015). *Misbehaving: The making of behavioral economics*. New York: WW Norton.

Thaler, R. H., & Sunstein, C. R. (2009). *Nudge: Improving decisions about health, wealth, and happiness*. Penguin.

Thomas H. (2012). in Wind, Y. J., & Hays, C. F. (2016). *Beyond advertising: creating value through all customer touchpoints*. John Wiley & Sons.

Thomas, J. W. (2018). Artificial Intelligence And Machine Learning: If sufficiently understood, AI offers various new tools for marketing directors. *HCM Sales, Marketing & Alliance Excellence Essentials*, 17(12), 25–28.

Tokuno, S., Tsumatori, G., Shono, S., Takei, E., Yamamoto, T., Suzuki, G., ... & Shimura, M. (2011, August). Usage of emotion recognition in military health care. In *2011 Defense Science Research Conference and Expo (DSR)* (pp. 1-5). IEEE.

Tonglet, M., Phillips, P.S. & Read, A.D. (2004). Using the Theory of Planned Behaviour to Investigate the Determinants of Recycling Behaviour: A Case Study from Brixworth, UK. *Resources, Conservation and Recycling*, 41, 191-214. doi:10.1016/j.resconrec.2003.11.001

Tsironis, L. & Psychogios, A. (2012). Towards a Systematic e-Business Excellence Framework, *International Journal of Innovation and Regional Development*. 4(1), 28-43.

Tung-Liang, C., Hsu-Kuan, L., & Shu A-Mei, L. (2014). Construct of Educational Information System's Using Willingness Model: An Extended Application of Technology Acceptance Model. *International Journal of Organizational Innovation*, 6(4), 60-71.

Tversky, A. & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive psychology*, 5(2), 207-232.

Tversky, A. & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. *Science*, 185, 4157, 1124-1131.

Ulman, Y. I., Cakar, T., & Yildiz, G. (2015). Ethical issues in neuromarketing: "I consume, therefore I am!". *Science and engineering ethics*, 21(5), 1271-1284.

Urban, G. L. (2005). Customer Advocacy: A New Era in Marketing?. *Journal of Public Policy & Marketing*, 24(1), 155-159.

Usui, K. (2011). Precedents for the 4Ps Idea in the USA: 1910s-194s. *European Business Review*, 23(2), 136-153. doi: 10.1108/095553411111111174

Vallar, G., & Caputi, N. (2020). The History of Human Neuropsychology in *Reference Module in Neuroscience and Biobehavioral Psychology*. <https://doi.org/10.1016/B978-0-12-809324-5.23914-X>

Van Belle, G. (2002). *Statistical Rules of Thumb*. New York: John Wiley.

van Raan, A. F. (2005). For your citations only? Hot topics in bibliometric analysis. *Measurement: interdisciplinary research and perspectives*, 3(1), 50-62.

Van Vaerenbergh, Y., & Thomas, T. D. (2013). Response Styles in Survey Research: A Literature Review of Antecedents, Consequences, and Remedies. *International Journal of Public Opinion Research*, 25(2), 195-217.

Varadarajan, P. R., & Jayachandran, S. (1999). Marketing strategy: an assessment of the state of the field and outlook. *Journal of the Academy of Marketing Science*, 27(2), 120-143.

Varadarajan, P. R., & Jayachandran, S. (1999). Marketing strategy: an assessment of the state of the field and outlook. *Journal of the Academy of Marketing Science*, 27(2), 120-143.

Vaske, J. J., Beaman, J., & Sponarski, C. C. (2017). Rethinking internal consistency in Cronbach's alpha. *Leisure Sciences*, 39(2), 163-173. - 0.65

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly*, 157-178.

Venkatraman, V., Dimoka, A., Paviou, P.A., Vo, K., Hampton, W., Bollinger, B., Hershfield, H.E., Ishihara, M. and Winer, R.S. (2015). Predicting advertising success beyond traditional measures: new insights from neurophysiological methods and market response modelling. *Journal of Marketing Research*. 52(4), 436-452.

Vermeir, I., & Verbeke, W. (2006). Sustainable food consumption: Exploring the consumer "attitude-behavioral intention" gap. *Journal of Agricultural and Environmental ethics*, 19(2), 169-194.

Vitorino, L. C., Lisboa, A., & Antunes, R. J. (2020). Digital Era: How Marketing Communication Develops Business Innovation—Case Studies. In *Digital Marketing Strategies and Models for Competitive Business* (pp. 1-29). IGI Global.

Vlasceanu, S. (2014). New Directions in Understanding the Decision-Making Process: Neuroeconomics and Neuromarketing. *Procedia - Social and Behavioral Sciences*, 127, 758-762.

VonBergen, C. W., Kernek, C., Bressler, M. S., & Silver, L. S. (2016). Cueing the customer using nudges and negative option marketing. *Atlantic Marketing Journal*, 5(2), 12.

Vrijssen, J. (2014). Can Memory Bias be Modified? The Effects of an Explicit Cued-Recall Training in Two Independent Samples. *Cognitive Therapy & Research*, 38(2), 217-225.

Wallin, J. A. (2005). Bibliometric methods: Pitfalls and possibilities. *Basic and Clinical Pharmacology and Toxicology*, 97(5), 261–275.

Waltman, L., Calero-Medina, C., Kosten, J., Noyons, E. C. M., Tijssen, R. J. W., van Eck, N. J., et al. (2012). The Leiden ranking 2011/2012: Data collection, indicators, and interpretation. *Journal of the American Society for Information Science and Technology*, 63(12), 2419–2432.

Wang, W. C., Pestana, M. H., & Moutinho, L. (2018). The effect of emotions on brand recall by gender using voice emotion response with optimal data analysis. In *Innovative Research Methodologies in Management* (pp. 103-133). Palgrave Macmillan, Cham.

Webb, T. L., & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological bulletin*, 132(2), 249.

Weiner, J. (2016, November). Letter of Recommendation: ‘Pinky and the Brain’. Retrieved on July 11, 2020 from <https://www.nytimes.com/2016/11/06/magazine/letter-of-recommendation-pinky-and-the-brain.html>

Wieckowski, A. G. (2019). When neuromarketing crosses the line. *Harvard Business Review*.

Williams, L. A. (2008). Experiencing Physical Warmth Promotes Interpersonal Warmth. *Science*, 322(5901), 606-607.

Wilson, E.O. (1998). *Consilience: The Unity of Knowledge*. Vintage Books: New York.

- Wilson, R., Gaines, J., & Hill, R. (2008). Neuromarketing and Consumer Free Will. *Journal of Consumer Affairs*, 42(3), 389-410. doi:10.1111/j.1745-6606.2008.00114.x
- Wind, Y. J., & Hays, C. F. (2016). *Beyond advertising: Creating value through all customer touchpoints*. John Wiley & Sons.
- Windmann, S., & Chmielewski, A. (2008). Emotion-Induced Modulation of Recognition Memory Decisions in a Go/Nogo Task: Response Bias or Memory Bias?. *Cognition & Emotion*, 22(5), 761-776. doi:10.1080/02699930701507899
- Winkielman, P., Halberstadt, J., Fazendeiro, T., & Catty, S. (2006). Prototypes are attractive because they are easy on the mind. *Psychological science*, 17(9), 799-806.
- Wolf, L. & Morrissey, S. (2013). Brain Initiative Unveiled. *Chemical & Engineering News*. 91(14), 9-9.
- Wymbs, C. (2011). Digital marketing: The time for a new “academic major” has arrived. *Journal of Marketing Education*, 33(1), 93-106.
- Yagci, M.I., Kuhzady, S., Balik, Z.S., & Ozturk, L. (2018). In Search of Consumer's Black Box: A Bibliometric Analysis of Neuromarketing Research. *Journal of Consumer and Consumption Research*. 10(1), p. 101-134.
- Ye, Q., Cheng, Z., & Fang, B. (2013). Learning From Other Buyers: The Effect of Purchase History Records in Online Marketplaces. *Decision Support Systems*, 5(6), 502-512. doi:10.1016/j.dss.2012.11.007
- Youssef, M. A. (1994). Design for Manufacturability and Time-to-Market Part 1: Theoretical Foundations. *International Journal of Operations & Production Management*, 14(12), 6-21.
- Yu, T., & Richardson, J. C. (2015). An exploratory factor analysis and reliability analysis of the student online learning readiness (SOLR) instrument. *Online Learning*, 19(5), 120-141.
- Zakharov, I., Nikulchev, E., Ilin, D., Ismatullina, V., & Fenin, A. (2017). Web-based platform for psychology research. In *ITM Web of Conferences* (Vol. 10, p. 04006). EDP Sciences.
- Zhu, D., Lin, T. C., & Hsu, Y. (2012). Using the Technology Acceptance Model to Evaluate User Attitude and Intention of Use for Online Games. *Total Quality Management & Business Excellence*, 23(7/8), 965-980. doi:10.1080/14783363.2012.704269

Zhu, X., & Xie, X. (2015). Effects of knowledge on attitude formation and change toward genetically modified foods. *Risk Analysis*, 35(5), 790-810.

Zimmermann, F. & Sieverding, M. (2010). Young Adults' Social Drinking as Explained By an Augmented Theory of Planned Behaviour: The Roles of Prototypes, Willingness, and Gender. *British Journal of Health Psychology*, 15(3), 561-581.

Zoellner, J., Krzeski, E., Harden, S., Cook, E., Allen, K., & Estabrooks, P. A. (2012). Qualitative application of the theory of planned behavior to understand beverage consumption behaviors among adults. *Journal of the Academy of Nutrition and Dietetics*, 112(11), 1774-1784.

Zolait, A. (2014). The Nature and Components of Perceived Behavioural Control as an Element of Theory of Planned Behaviour. *Behaviour & Information Technology*, 33(1), 65-84. doi:10.1080/0144929X.2011.630419

Zurawicki, L. (2012). Merging Neuromarketing into Practice. *Neuropsychoeconomics Conference Proceedings*, 36-36.

Appendices

Appendix A: Informed Consent for Study 1

INFORMED CONSENT

This interview was developed to assess your ideas, beliefs and opinions about neuromarketing, in the framework of a doctoral research study. The questions are open-ended, so you are allowed to provide answers as broad or specific as you feel appropriate. You are kindly requested to respond to all the questions by providing the answer that best represents your personal beliefs. There are no right or wrong answers. The interview is anonymous, and your answers will be kept anonymous and confidential and used only for statistical analysis, technical reports and scientific publications. You have the right to deny participation or withdraw from the study at any stage without any foreseeable consequence.

By ticking 'Yes' you confirm that you have understood the terms and conditions of your participation in the study, and you give your consent.

Yes, I have understood the terms and conditions of my participation and agree to take part in the study

DATE:.....

SIGNATURE:....._____

Appendix B: Discussion Guide for Study 1 Interviews

Introduction

- Thank the participant for taking the time to participate in the research
- Remind the participant what the research is about
- Remind the participant that the interview will be recorded
- If he/she hasn't sent the consent form yet, ask for it to be sent before the discussion starts
- Ask the participant for their experience in marketing
- Probing questions

What is the industry you work in?
How many years of experience do you have?
How would you describe the scope of your work?

General information

- Get an understanding of participant's awareness and knowledge about neuromarketing
- Probing questions

Do you know what neuromarketing is?
How would you define neuromarketing?
Do you have past experience with neuromarketing practices?

Attitudes

- Acquire information about participant's attitudes towards neuromarketing
 - Discuss positive and negative beliefs he/she has about neuromarketing
- Ask participant about his/her perceptions of usefulness and ease of use on neuromarketing
- Probing questions

What do you believe to be the advantages of adopting neuromarketing?
What do you believe to be the disadvantages of adopting neuromarketing?
Do you have any other beliefs about neuromarketing?
How do you feel about neuromarketing adoption?
How would neuromarketing make your job easier?
How would neuromarketing make your job more difficult?
Do you find neuromarketing practices useful to your work?
Do you believe it is easy or difficult to use neuromarketing?
What elements of neuromarketing would be easy to use?

What elements of neuromarketing would be difficult to use?
What do you associate neuromarketing with?

Subjective Norms

- Assess participant's beliefs around what other are thinking about neuromarketing
- Ask participants whose opinions about neuromarketing matter the most to them
- Discuss the ethics of neuromarketing with the participant
- Probing questions

Would others approve your use of neuromarketing?
Would others disapprove your use of neuromarketing?
What do you believe others think about neuromarketing?
Do any ethical or moral issues come to mind when you think about neuromarketing?
How do you think others would feel if you adopted neuromarketing?
Whose opinion is the most relevant to you?

Perceived behavioral control

- Ask participants about the barriers or issues that they see in using neuromarketing
- Ask them what would facilitate their adoption of neuromarketing
- Assess their confidence level with implementing neuromarketing
- Probing questions

What (factors, circumstances) would facilitate your use of neuromarketing practices?
What difficulties would you encounter in adopting neuromarketing practices?
What criteria would you need satisfied in order to start using neuromarketing?
Do you see any opportunities in adopting neuromarketing? If yes, what would they be? If no, why so?
To what extent is the decision to use neuromarketing practices your own?
How confident are you that you could adapt neuromarketing in your practice of marketing?
To what extend would you be able to adapt neuromarketing in your practice of marketing?
What do you feel is the biggest issue with adopting neuromarketing?

Prototype

- Ask participant to describe a person using neuromarketing
- Ask participant to what he/she thinks of people using neuromarketing
- Ask participant to describe what he/she think is a typical neuromarketing behavior
- Probing questions

How would you describe a person or institution using neuromarketing?
What do you think of people using neuromarketing?
What characteristics do these individuals or institutions have?
What would these people use neuromarketing for?
Which individual or group participants do you look up to regarding neuromarketing practices?
How do you feel about people using neuromarketing?

Implicit Associations

- Ask participant about his/her top-of-mind associations with neuromarketing
- Ask participant about specific positive words he/she associates with neuromarketing
- Ask participant about specific negative words he/she associates with neuromarketing

What positive attributes do you associate with neuromarketing?
Which words with positive meaning would you associate with neuromarketing?
What negative attributes do you associate with neuromarketing?
Which words with negative meaning would you associate with neuromarketing?
What do you consider to be the completely opposite concept from neuromarketing?
Which objects would you associate with neuromarketing? (5 answers)
What is the first thing that comes to your mind when you hear neuromarketing?
What other terms would you use for neuromarketing?
What characteristics do you associate with neuromarketing?

Closing

- Ask participant what he/she thinks neuromarketing is contributing to business and whether this contribution is positive or negative
- Ask participant if there is anything he/she would like to add
- Ask participant if he/she has any questions
- Thank participant for his/her participating
- Explain to the participant the purpose of the research
- Probing questions

Do you believe neuromarketing can contribute to business practices?
Do you believe neuromarketing can contribute in positive or negative way?

Appendix C: Informed Consent for Study 2

INFORMED CONSENT

The information provided at the beginning of the survey:

This Implicit Associations Test (IAT) was developed to assess your ideas, beliefs, and opinions about marketing, in the framework of a doctoral research study. You are kindly asked to sort words into categories as quickly and accurately as possible.

This study should take about 15 minutes to complete.

Confidentiality

Your participation in this study is anonymous, and your answers will be kept anonymous and confidential and used only for statistical analysis, technical reports, and scientific publications. You have the right to deny participation or withdraw from the study at any stage without any foreseeable consequence. If at any point you wish your data to be removed from this study, please send an email to the researcher using the contact information provided below.

Contact information

If you have any questions about this study, its aims and purposes, procedures on data handling or any other research-related questions, please feel free to contact Anka Gorgiev by sending an email to agorgiev1@sheffield.ac.uk or Dr. Chris Martin by sending an email to c.martin@sheffield.ac.uk.

By selecting 'YES', you confirm that you have understood the terms and conditions of your participation in the study, and you give your consent.

If you do not wish to participate in this research, you can just exit the browser.

Thank you very much for your participation!

The information provided after the first part of the survey:

In the following section, you will be given a list of statements about neuromarketing. Please rate to what extent you agree with these statements.

Appendix D: Debrief Form

Upon participation in the interviews, participants were offered more information about the study. For participants questioning that information, the following debrief form was sent.

Debrief Form for Participation in the Study University of Sheffield

Thank you very much for participating in the study “Paradigm Shift in Marketing: Using Intentions and Willingness as Behavioral Indicators for Adopting Neuromarketing”. Your contribution is greatly appreciated.

Purpose of the Study

Initially, you were informed that this interview was developed in the framework of a doctoral research study to assess your ideas, beliefs and opinions about neuromarketing. The main motivation for such approach lays in the fact that neuromarketing is becoming a growing trend in the marketing industry worldwide and it is capturing a lot of interest among the members of academia. However, it is still not very clear how big of an impact neuromarketing should have in the following years. This study was developed to identify behavioral indicators for the existence of the new marketing paradigm. The data collected from this interview will be used to investigate behavioral intentions and willingness of marketing professionals, including academics, practitioners, students, researchers, experts and journal editors to adopt neuromarketing and its practices.

Confidentiality

Your participation in this study is anonymous, and your answers will be kept anonymous and confidential and used only for statistical analysis, technical reports and scientific publications. You have the right to deny participation or withdraw from the study at any stage without any foreseeable consequence. If at any point you wish your data to be removed from this study, please send an email to the researcher using the contact information provided below.

Contact information

If you wish to receive more information about this study, its aims and purposes, procedures on data handling or any other research-related questions, please feel free to contact Anka Gorgiev by sending an email to agorgiev@seerc.org or agorgiev1@sheffield.ac.uk.

Please keep a copy of this form for your future reference.
Once again, thank you for your participation in this study.

Upon completion of Study 2, all participants were presented with the following message:

If you have any questions about this study, its aims and purposes, procedures on data handling or any other research-related questions, please feel free to contact the researcher, Anka Gorgiev, by sending an email to agorgiev1@sheffield.ac.uk or the supervisor, Dr. Chris Martin, by sending an email to c.martin@sheffield.ac.uk.

Appendix E: Implicit Associations Test Experimental Design

Block	1	2	3	4	5	6	7
Task description	Left finger (L) - neuromarketing Right finger (R) - marketing	Left finger (L) - positive Right finger (R) - negative	Left finger (L) - positive/neuromarketing Right finger (R) - negative/marketing	Left finger (L) - positive/neuromarketing Right finger (R) - negative/marketing	Left finger (L) - negative Right finger (R) - positive	Left finger (L) - negative/neuromarketing Right finger (R) - positive/marketing	Left finger (L) - negative/neuromarketing Right finger (R) - positive/marketing
Number of Screens	20	20	20	40	40	20	40
Task instructions	Neuromarketing (left) Marketing (right)	Positive (left) Negative (right)	Neuromarketing or Positive (left) Marketing or Negative (right)	Neuromarketing or Positive (left) Marketing or Negative (right)	Negative (left) Positive (right)	Neuromarketing OR Negative (left) Marketing OR Positive (right)	Neuromarketing OR Negative (left) Marketing OR Positive (right)
Stimuli	consumer behavior psychology fMRI behavioral economics advertising marketing neuromarketing promotion consumer behavior consumer neuroscience focus group psychology fMRI survey digital marketing promotion neuroscience survey behavioral economics	new wrong right low old bad high low high wrong true old right weak strong false hot strong good	consumer behavior true fMRI strong neuroscience weak marketing hot behavioral economics wrong promotion cold focus group old psychology new neuromarketing right digital marketing low	advertising true fMRI neuroscience weak digital marketing old EEG strong survey false neuromarketing false focus group high psychology weak digital marketing hot promotion cold marketing wrong consumer neuroscience behavioral economics low new psychology bad behavioral economics old consumer behavior right neuromarketing good survey high advertising good	cold weak old low false new hot wrong false good wrong right right bad low strong high true right true hot cold bad high good false bad cold weak low weak strong hot old true wrong strong high good	consumer behavior true psychology false advertising low fMRI high digital marketing good consumer neuroscience hot right neuromarketing survey old neuroscience marketing cold	neuromarketing good survey low fMRI hot consumer neuroscience right digital marketing strong survey right promotion true promotion low focus group weak EEG cold consumer behavior high behavioral economics false psychology new neuroscience wrong marketing hot advertising false old neuromarketing bad strong fMRI cold

Appendix F: Qualitative Data Analyses

Variable	Code	Indicative Statement	Theme
Attitudes	Advantages	When it comes to testing commercials, I think that from a practical perspective the methodologies open up a lot of opportunities because until now you could only test people’s opinions. The point is their opinion, but this way you can go much deeper to what they want to say or what they feel. For some reason, they might not want to say it to you, or they might not know how to verbalize what they want to say. So, of course, there is no one perfect technique that will give you everything, but with a combination of the two I think you can get much more, but not everything. Since psychology isn’t everything, it is difficult to figure out. But essentially, you can get more data that you can later use for whatever. Probably more than you initially assumed.	benefits
Attitudes	Advantages	Generally speaking I can see the use. For example, I work for mobile industry. They at least have the money, but it’s my opinion that when they do market segmentation, and they do it every 3-4 years when they define target groups in terms of behavior, clothing, gender, they use a lot of parameters which help us later to develop the creative and create the communication which is in line with the target. There I can totally see as part of mapping those groups, to see if people react to specific stimuli – I don’t know love, humor, this type of emotion, to see how we can, if the emotional ad would work better for some group compared to humor, for example. I don’t know, that might be the use.	benefits
Attitudes	Advantages	any input from research means a lot to advertisers. I can make a difference before we work on segmentation groups. When we work with segmented target groups it’s simpler because you know who you are talking to and what you are saying. It’s much easier, very simplified opinion.	benefits
Attitudes	Advantages	I think that neuromarketing is a tool that helps you to do market research, but more accurately. What people say is not what they actually think, that’s why you cannot rely on a focus group. The neuromarketing tools help you to be more precise, actually see the people going to engage with your brand, when people [person] is down and not paying enough attention. Also if your brand is going to be, like the values you want to sell with your brand, if they are actually perceiving the same. That’s why I think it’s helpful.	novel quality
Attitudes	Advantages	Yes, I certainly see the clarity that you cannot have, in terms of how messages work in the brain millisecond by millisecond, understanding about encoding the effective message, understanding emotional lifts, what is really truly going on in the narrative construction, do we have an emotional lift, do we have an emotional dip and why. Is there something in the story that seems to need more cognitive effort. You cannot begin to answer any of those questions without neuromarketing tools, it’s impossible.	improvement in work
Attitudes	Advantages	The main advantage is that nowadays this is the most scientific - I will not say the only scientific, I will say - the most scientifically secure way to increase chances that your results are correlated to reality.	novel quality
Attitudes	Advantages	And the answer is of course it’s good, because it gets all the clutter away and gives you relevant things. Or more relevant things, as marketers can understand your aims. I see the same with neuromarketing. I see as a concern that maybe it’s going too deep in our minds and planting seeds that are not ours. But again I see the positive part of getting the right messages through and somehow getting below the first layer to touch your deeper feelings, deeper thoughts. This is how I see it. I have not training in this.	benefits

Variable	Code	Indicative Statement	Theme
Attitudes	Advantages	I think we're entering a realm of consumer insights in marketing science in which increasingly clients and the people in industry, marketing and consumer scientists are trying to get, what I would call, answers without questions. And we're becoming increasingly skeptical of the process of explicit question and answer in which the respondent reflects on, and processes the content and the question at about 7 levels, including why are they asking this question in this way, what's it going to mean if I give this this answer that way. It's just a lot of meta-processing going on, which isn't just an open candid answer to the question. And I think moreover that a question and answer sort of interaction, relying on ones' frontal lobes only allows you to take the information about those things of which the respondent is conscious of and there are ways we now know that a lot of processes that determine behavior include neurological phenomenon of which the respondent is not necessarily conscious. And so I think you are serving the client's interest by commending to them a range of these tools which give you access to processes to learning techniques that go beyond question and answer, and to learning from process that have a more preconscious and subconscious emotional content as their target.	novel quality
Attitudes	Advantages	But frankly, the difficulty of acquiring a new client versus the difficulty of maintaining a relationship with an existing client are vastly different and one of the ways to maintain a good roster of clients that come to you again and again and again is if they trust you. And in this neuroscience space that trust is going to reside in objective transparent information about what's going on in that space, what you're offering, why you're offering it and what it can do.	benefits
Attitudes	Advantages	I strongly believe also according to my previous experience, it's very hard, almost impossible to make only neuromarketing study. Because if you look at the script from some company which will test some advertising or some product design or something like this, it's very hard to be only using neuromarketing tool. Usually we have to make a combination of neuromarketing tools and classical traditional marketing tools - interviews, focus groups and things like this.	improvement in work
Attitudes	Advantages	Well, it is objectivity because it is very hard to very objectively measure some feelings, degree of attention, degree of memorability or something like this, and brain activations provide you a very clear measure of the degree of activation. And if you accepted this degree of activation, it's a measure of attention spam, likelihood, probability, so something like this is much more objective than the interview or questionnaires or something like this.	novel quality
Attitudes	Advantages	The main advantage is that it starts with "I want to solve a problem you have and I'm offering exactly the right solution for what bothers you". That's the main advantage especially now when personalization and the final result and benefit are more and more important.	benefits
Attitudes	Advantages	I think you remove the filters. You know exactly and the insights are really insights. And I think it's like I would like to use a metaphor. Imagine you have Parkinson's. What do you prefer – one physiotherapists who moves your legs or one who moves your legs but in connection with your brain. Because brain and legs are not two different things. So the traditional marketing is like I move your legs. Sorry for my English.	novel quality
Attitudes	Advantages	Advantages – identifying target groups precisely, the most advantages that can be done. Excellent research method for product development because of all the details that matter. Let's say that the advantage for the consumer that those who use it will do it to see what really attracts us to a product. I am saying that for a product, for a promotion we would probably get it concrete to be able to dissect it, but generally for a product that can give some opportunities for product development in the context of identifying something that the consumer really wants.	improvement in work

Variable	Code	Indicative Statement	Theme
Attitudes	Advantages	Honestly, I think that at the end of the day it is the only, if use correctly, right way to get the messages that are directly targeted from the see of all the messages that we are exposed to every day. I look at it from a perspective of someone who is selling a product. And it is one of the ways to reach the consumer, but to his deeper emotions, thoughts, and leave a message that will stay there longer and create some kind of emotions that generally wouldn't be caused using the classic approach or we wouldn't be aware.	improvement in work
Attitudes	Advantages	Well, I don't believe that we have to manipulate people but I think that we have to find a right messages that can help them understand their needs. I don't know if you understand me, but what I mean is that very often we are not exactly aware of what we need until we see or hear something about it.	novel quality
Attitudes	Advantages	I think neuromarketing can mean a lot to people that do marketing because the role of marketing in companies is very inconvenient. On one side, it's strategic because it's a person that needs to set up the whole thing. And on the other, when it's tight with the budgets, with sales, then marketing budgets are being cut. And marketing is always first to go when they are doing some optimization of anything.	improvement in work
Attitudes	Advantages	My brand for example. If we had unplanned high costs of production, my General Manager thinks that if we have increase in the costs, we should decrease the budgets for marketing to compensate for it. I want to say that the role of marketing is very inconvenient and often we are exposed to budget cuts whenever there is a problem and we can't do everything we should with the campaign, with communication, we can measure results for a lot of things that we are doing. For example, we spend a lot of money on the campaign and based on some basic indicators, GRPs we cant evaluate the success of the campaign. Ok, you have the indicators from the sales. So on one side we spend a lot of money, on the other side we don't have the tools to evaluate the quality of it all, which is why people in the companies, especially general managers, are not trusting towards marketing. It seemed to me that neuromarketing can help a lot there as a quantitative indicator before you invest a lot of money in something, indicator that will tell you that for X number of people this was very emotional, effective, etc. Then I think it will be easier for us to stand behind things, to defend all those things that we think are important that we in marketing understand and the others don't. So I think it can help us there with people that are skeptical and those that think through the numbers, that are more financially oriented, to influence them easier to believe in what we are doing, planning, that it makes sense, that we checked everything, that we are not doing it based on a feeling, but that we took it all through very concrete research, quantitative, and that we optimized everything we could optimize, and that this is the best we can show our consumers. So I see it as a good tool to help us increase the quality of our marketing department. On the other hand, what I already said, it will mean to us personally because when we are working on some projects, we rely on an instinct. We brief the designer, designer does something different than that brief, and often in the same situation as the agency, company, who decides about the campaign. On the other hand, if we were to have a specific inquiry towards the designer in an agency where we can take that solution through the lens of neuromarketing research and get the solutions that's optimized by neuromarketing, then we would have more room to debate why this logo needs to be to the left, right, in the middle, smaller, bigger.	novel quality
Attitudes	Advantages	We can define at one point using A/B testing what are the rules in consumer thinking, because we assume certain parts of the brain act the same way with all consumers. And we are interested in that information. Unless we are doing one on one marketing, then we would be interested in what that one consumer thinks, but we are interested in the many. A/B testing can give conclusions without neuromarketing, but not some more complex things. We would be interested to see some patterns, what part of the brain functions in a certain way and to observe that and make conclusions faster. That would be an advantage.	

Variable	Code	Indicative Statement	Theme
Attitudes	Advantages	Definitely! With business, you are always looking for ways to position yourself and give yourself an edge over the competition, so it definitely makes sense to explore this more if there is an opportunity to increase profits, sales, visibility or exposure.	benefits
Attitudes	Advantages	So, I'm in the health and wellness industry, I'm in a digital health tech, which is a hard for people to opt into even though it's very good for them. And it will have great benefit for them after having a hard time saying yes to the product for mental health. So from that perspective, I think it can be used in great ways to help people find access to products that are good for them and services that can help them. And for neuromarketing to help kind of ease the point of entry.	benefits
Attitudes	Advantages	What I believe, as far as I have read, from books and paper, the main advantage of neuromarketing is, first of all, to save money and time on marketing campaigns in order to prepare a new product or new idea or new service and throw it in the market. Traditional marketing techniques and traditional marketing research actually are based on what people do say when asked, when they respond to questionnaires and focus panels etc. But basically the problem with traditional marketing practices is that people don't actually know what exactly they want, they might want for something and go for something else, or decide and say that their preference is A when it's B. Whereas with neuromarketing we can actually shed light implicitly on what people like and don't like and by not focusing on what they say but what their body reactions related to eyes and temperature and voice and all these. So implicitly we might have a better knowledge of what people like rather than asking them straight.	novel quality
Attitudes	Advantages	Secondly, everyone can use it, even if that was the case. And something else – finally, you will have 4-5 designs to choose between which will be produced based on neuromarketing research, but you will choose one of 3 or 4 designs and then you will run some research to validate whether this design will work or not, but keep in mind that the result that is another design that could be designed based on same research data that could perform even better. So, neuromarketing is just a way to show you whether you are on the right path or not. It will not show you the best path necessarily. Yes, this is not necessarily the ideal path or the \$1,000,000 path, but it's a right path for sure. In that perspective, it doesn't violate the market, it's not a monopoly, it does not create monopolies, so subjects sign an informed consent just as they do in usual marketing research. So, in my point of view, there are no ethical issues. We do follow ESOMAR rules, the European Society Of Marketing Research, which are the same rules of anonymity etc. We do follow these rules, so I cannot see any ethical problems.	skills, ethics
Attitude	Disadvantages	In principle, there are some ethical challenges, if it's ok or not. But you can always do at the beginning – not that you can, it's your responsibility to inform the participants about the methodology, what you'll do, and to tell them everything, and if they don't want to accept then you shouldn't work with them. So, no matter what, you'll ethically be protected. Another thing that can be a problem, is the skill. At one point when you realize your skills and knowledge so you can make an accurate evaluation of all the inputs and not be carried away with just one data point. There. And of course, right now, for example, eye-tracking or facial coding, from my perspective here is Serbia that costs too much. That's a big problem here.	ethics
Attitude	Disadvantages	I assume it very expensive. I assume that fMRI is not something cheap. That's hours and hours of someone's work.	cost
Attitude	Disadvantages	Ethically speaking, one needs to understand that neuromarketing isn't the answer to everything, meaning that this is the best scientific method which we so far have to conduct marketing research, but for instance a designer with 30 years of more of experience can also be as effective or more effective as a advertising designer witch was based on neuromarketing research and neurodesign. The same result may come from very talented, experienced advertiser or designer, just because they are very insightful and they are very equated to a specific target group and they just don't need any research data because they just know that specific target audience. So, it doesn't mean that	skills

Variable	Code	Indicative Statement	Theme
		using neuromarketing or any other marketing method you will have absolute results that no one can reach. That's just another method, this is not in that sense it does not violate the market, it doesn't mean that who is in neuromarketing will surpass everyone else.	
Attitude	Disadvantages	This is where it gets tricky because I could definitely see it being used in "evil ways", which I'm sure it will be. It will be used to convince people to use Nike's which for me is not the best use of it.	ethics
Attitude	Disadvantages	I can't see any negative thing except the price and maybe the time needed to form an opinion. Advertising is very dynamic as a business, and I'm not sure that for a regular campaign that would be shot, would we have enough time to test it with fMRI because it will take some time. I don't think you can get the data quickly. And testing campaigns in Macedonia is done very rarely, usually foreign companies ask for that, and do the testing after they run the campaign to measure the campaign, to check the awareness, everything is done like that. There are just a few focus groups that are used to test the creative solution. Things go very fast and there isn't time for testing and no time to wait for the results. That's the only thing that comes to mind. Other than that, I can't see anything negative for that because any input from research means a lot to advertisers.	cost and time
Attitude	Disadvantages	Right now I think it's really expensive, even though in a couple of years I do believe more neuroscientists mainly are going to bring the prices down because there are going to be more of these tools around. And also, a couple of years before it was more expensive, so I honestly think this is going to be more affordable so people can use it more, because I do believe it's important. A couple a years before, it was like 'I don't know if this is going to work'. People right now know that it's working, honestly they know that neuromarketing is accurate and stuff. But people sometimes right now are afraid of trying because they think it's expensive and also they must be a little bit more accurate.	cost
Attitude	Disadvantages	There might be some. Having to do with the research setup, meaning that there is research evidence showing that the laboratory settings might your subjects biased. If you over do it with laboratory setting, then your subjects might be instructed from the fact that they are connected to EEG or that they are important with the fMRI and they might actually focused on the task at hand. That's the main danger. But that's why we always try to make our subjects feel calm, to make them feel that the fact that they are connected to EEG is nothing serious. So take the whole procedure as normal as possible and make them think that what's happening is an everyday practice. Which I hope that it will be soon or later and then that negative effect will disappear. Because the more equated people and subjects become with this techniques, then the least distracted there will be from when they are connected to EEG or whatever else.	Protocol
Attitude	Disadvantages	For sure to be used in a wrong way. For malicious purposes.	ethics
Attitude	Disadvantages	Like any space in human civilization where there is a bunch of money to be made, people rush in. And if you don't have legitimate value, you may well give up a value. That looks like and feels like that people are looking for. I guess my caveat to the buyer would be to vet the particular value stream that you're decided to spend money on thoroughly to make sure it's real, number one. And real does not necessarily mean that it's real as opposed to fake or misrepresented, but also that the interpretation and the implications of those interpretations aren't stretched beyond the limits of the science as it currently is today. Years back, there was a famous case when some neuroscience people said to advertiser team, started scaring people based on stuff they saw going on neurologically, but of course the exaltation that they saw, the arousal of the neural structures that they were observing was not unambiguously a sign of fear. So, they were misstating by reaching beyond the real bounds of confidence in their interpretation and as a result they were ill-serving the client.	ethics

Variable	Code	Indicative Statement	Theme
Attitude	Disadvantages	Here in Romania I noticed some disadvantages. One of these is price. Here usually different company has a budget of 5-7,000eur for a classical neuromarketing study, and we didn't succeed in lowering it below 70,000 eur in neuromarketing study	cost
Attitude	Disadvantages	Usually it is between 70,000-90,000 eur. But it is quite great gap between 7,000 and 70,000. And it's very hard to convince people that it is worth to give this money.	cost
Attitude	Disadvantages	Yes, and the price is not the only issue. Maybe the same magnitude issue is the perception that neuroscience, especially neuromarketing has in general public. A lot of confusion between neuromarketing as subliminal stimulation and you know the Coke and soda study in the 60's. And one of the philosophical concepts here in marketing area in Romania is that some very big companies, corporations can use neuromarketing to manipulate, to be usually unconscious of your receiving sources in order to manipulate you. And also to give your privacy, see in side your brain to see you hate your wife, you hate your husband, or others, and see what is hidden under your brain. That is legend with neuroscience of neuromarketing concept. It's very difficult to convince people that it's not possible to view inside their brain and see autobiography. Just to test how much they like a product or advertising.	cost, ethics
Attitude	Disadvantages	The main disadvantage might be that, for local market, and I mean the region, it's still not an accessible methodology and then clients think "why would I pay three times more, for a campaign or a visual or similar, just because someone uses neuromethodology, when I can get it for three times less" [emphasized]. There's not awareness about it, but that's not a disadvantage, it's the disadvantage of the local market.	cost, awareness
Attitude	Disadvantages	There are still technical difficulties but it has become an everyday part of a research as with time the things get resolved with more frequent usage. As the tools get made easier, they are being used more.	skills
Attitude	Disadvantages	Their disadvantage (of the tools) is the lack of comfort for the participants and being expensive. If you spend 50,000eur to develop a commercial, you won't pay 20,000eur to test whether it works. Do you understand? Especially with digital campaigns that are even cheaper than 50,000. And 2,500 still sounds ok, that's still acceptable.	protocol, cost
Attitude	Disadvantages	There are 2 or 3 problems, I think. 2-3 issues. Money. We are not sure about theories, brain theories and I'm always afraid if someone is really expert in brain. Because in psychology we are not sure. We have confrontation with [name]. He is really expert about brain, but we assume that there is one theory and brain working in that way. It's not true. We don't know anything about the brain. We know a bit, but not too much. We are not sure. When we speak about emotional reaction to one stimuli, but we are sure we are speaking about this stimuli. We are sure that people, the sample that we are testing, they are not thinking about the terrible night.	cost, skills
Attitude	Disadvantages	And the last issue. I think sometimes we are speaking in psychology about ecological. The meaning of this terms is not the same that we use normally. Ecological means that the instrument or the tools has to be, like not to be. Do you think EEG cannot modify the brain activity? I'm not sure. Yes, you got to always do the pretest to make confident test. But it's not like you go in the supermarket without an itch. Also if you make a pretest 3-5 times, it's not the same. So there is some issues.	protocol
Attitude	Disadvantages	The disadvantage is that the sample is questionable, because we can research only those that agree, that want. So we automatically exclude some segments that can be useful – both the sceptics and those that are not early adopters - but maybe we can use all of that for life cycle for that beginning, but later we need other target audiences and we don't have them. That's the main disadvantage. I'm not talking about the ethics, but from a marketing perspective.	protocol

Variable	Code	Indicative Statement	Theme
Attitude	Disadvantages	I don't know, I used to read research that's connected – I can't remember how they're called, when they follow it under MRI and so on – I think it's a huge disadvantage that it's hasn't been commercialized in that way to use some simple tools to measure those things. At least my thought. I don't know if in the meantime something changed drastically, to be the same cost as the survey or something. I think that's the biggest problem. Cost of it and all that's needed to come to a result to be able to say "this is based on the measurement that was done in MRI", I think that's a problem. There is an agency in Serbia – I don't know, maybe I'll come off as retarded – that has a helmet that measures the impulses. But that doesn't measure at the level that MRI would do, it measures emotions. More like EEG. There's one agency that does that.	cost, protocol
Attitude	Disadvantages	Something to make the whole process simpler, because we were spending time in those offices doing research endlessly. I am missing that process being simpler, to have something that's easier to implement.	protocol
Attitude	Disadvantages	You can create some expectations that you will later on not meet, which works against your reputation.	skills
Attitude	Disadvantages	Well, I don't have a lot of experience to be able to say exactly. I think that above all, the disadvantage is that it is still a bit abstract, so people are still skeptical, so that's not the disadvantage of neuromarketing, but it's the situation and a lot needs to be done to bring it closer to people, so it becomes important and neuromarketing has credibility as a new approach in marketing. On the other hand, maybe a disadvantage can be that sometimes it kills credibility, kills a personal touch. If we go to the other extreme and we neuro-optimize everything than you lose that reason that we are doing it for and why we are doing it. On the other hand, you lose that personal touch. I can't say creativity, but some creativity, you lose a bit of that if you go to the extreme and optimize everything. It seems like that now, but that's just a subjective impression because I don't have a concrete experience to say that this is a disadvantage.	skills
Attitude	Disadvantages	I can't say that it's intense, but the consumer needs to accept that kind of research. Whether the consumer will consent to have a certain device on his head. And it would be just a sample, we can't research the entire population. On the other hand, when we have consumers that are being researched in that way, then it can happen that the consumer is thinking differently in that situation. Because he will feel differently compared to when he is choosing a product on the spot.	ethics, protocol
Attitude	Disadvantages	It could be considered invasive if clients become aware of something, if they think you are overstepping a boundary of infringing. Maybe that could be a negative, but as long as, from a PR point, neuromarketing as a whole has a positive perception, then it makes it easier for a client, if that's how you can solve it in, then I don't see any disadvantages. It just coming over any objections.	ethics
Attitude	Disadvantages	(a) Amount of time dedicated to it, rather than actually focusing on sale and the leads we already have, (b) the investment from monetary stand point, (c) the ease of usability, (d) also the increase to the amount of lead volume without too much research or without it being set in stone. All these would be important factors that would need to be covered before my bosses would ever adopt something.	time, cost, skills
Attitude	Disadvantages	Pure commercialism, for capitalist purposes, so that rich companies can become richer. I personally have no interest in that and that's one of the leading reasons that I left my advertising agency and turned my focus to a different industry.	ethics
Attitude	Disadvantages	fMRI or EEG those tools are still very uncomfortable. And those are some disadvantages. But that's just the matter of when they will think of a way to make it comfortable.	protocol
Attitude	Disadvantages	There are still technical difficulties but it has become an everyday part of a research as with time the things get resolved with more frequent usage. As the tools get made easier, they are being used more.	skills

Variable	Code	Indicative Statement	Theme
Attitude	Disadvantages	Everything that becomes cheaper of those tools, they are going to be used more. Their disadvantage (of the tools) is the lack of comfort for the participants and being expensive. If you spend 50,000eur to develop a commercial, you won't pay 20,000eur to test whether it works. Do you understand? Especially with digital campaigns that are even cheaper than 50,000. And 2,500 still sounds ok, that's still acceptable.	cost
Attitude	Feelings	I really sounds interesting to me because I like new things, new technologies.	positive
Attitude	Feelings	No emotion, except it sounds really exciting. No basic emotion, but it's really exciting. I wouldn't mind participating in something or looking at the results of something.	positive
Attitude	Feelings	It's interesting, but I never got interested in knowing where are the parts.	positive
Attitude	Feelings	I feel really comfortable. For example, we need to be really careful here of which tools you are going to use, because most of what is happening right now is that there are tools that are not scientifically proven. I feel like I have to be in the neuroscientific side even though I'm not a neuroscientist, I feel like I need to trust this kind of things. I was in Dubai conference last month [Neuromarketing World Forum 2015] and Professor Leon [Zurawitski] from Boston was saying 'we have to be really careful when we do these kind of studies, because there are many toys around there and they are not neuroscientific based. So, to answer your questions how do I feel using these technologies – I do believe that I feel really comfortable when I use technologies that I know that they are proven or from people that I rely on. Like for example, Aaron Reid from Sentient, Paul Conner Emotive. I honestly believe that these implicit responses tools are accurate. I think that there are lots of tracking that they can be relying, useful. I don't think that we are being kind of invasive with the people when we are using these technologies.	positive, negative
Attitude	Feelings	You know, when I did my first masters degree at NYU, I already investigated the effect of pricing on the brain. So I would argue that even though at the time I didn't use the term neuromarketing, I would argue that I was very early on fascinated by what I could learn from the effect or the success of an ad from neuroscience.	positive
Attitude	Feelings	I can also feel frustrated, so the brain is a source of excitement and frustration for me.	negative
Attitude	Feelings	What's exciting, to be honest, right now is the possibility of using tools such as EEG (I don't talk much about MRI because commercially it's difficult to use), but both are around for measuring central nervous system activity and some peripheral have been easier to acquire, the data that's being produced is still very messy and it's still overwhelming to collect data. Just to give you an idea, we just finished a study of 70 people, we had gigabytes of data. So it's a lot of data to crunch, but it will improve. The software are becoming better. I think neuromarketing will also make contribution to how we understand the relationship between media and the brain. So, we'll have a feedback loop effect. It's not just using neuroscience, I think it will contribute much to neuroscience.	positive
Attitude	Feelings	Placing all these electrodes on subjects skulls and you are standing for hours, so you also get physically tired. Because imagine Anka, let's say that you have research with 50 subjects and you only have 5 days to collect the data. And this means you will take on average 10 subjects per day. And think that you need in most cases around an hour or less, 45min for sure with each subject. Maybe you will end up standing for 10 hours during those 5 days.	negative
Attitude	Feelings	Actually, it gives you safety, you feel safe that that if you analyze the results in the proper way because neuromarketing research has these 3 or 4 steps.	positive
Attitude	Feelings	So if you know these things, then you really are safe and I feel safe that our advertising campaign that we are going to design for our clients is going to be successful.	positive
Attitude	Feelings	New, new and exciting, I think it's interchangeable.	positive

Variable	Code	Indicative Statement	Theme
Attitude	Feelings	Absolutely. I think curiosity, I think excitement, I think optimism, all those words come to mind.	positive
Attitude	Feelings	From the rational level to interpersonal side and from rational and emotional. I have that emotional approach to everything and I saw that on the example of our agency in 2014, maybe in 2013, when we were doing repositioning with [name]. And we defined those meta-claims as a strategy, results, support. And they were just three words on a paper. As we were presenting it to people, what it means in their work, in everyday work on a campaign, TV commercial, billboard, etc, all the way to participating in that, it brings us emotions for me. And at the end we come to the results and I say “well, that was the strategy, those are the right results”. I’m always happy and emotional. So, there are emotions, when you implement it, there are emotions and emotional approach.	positive
Attitude	Feelings	Curious and somewhat positive, I don’t know, it’s like an intellectual happiness for something new	positive
Attitude	Feelings	In the beginning when I started with this whole story, it was a bit scary. Somebody has a way to, I’m not saying control, but to create certain emotions or to leave something subconsciously. That was a bit to take, and then the story with Coca-Cola started, and the 125th frame, what was done, with the stickers that smoking kills but it actually increases the desire to smoke, etc. And that was like he knows what else exists that we are not aware of or that it hasn’t been fully discovered, and who knows if that level of programming has deeper consequences. And then as I entered the field and started reading all of that and as it intrigued me, then it became easier to digest and accept. And it’s too much from a scientific side, so right now it is “wow, it’s great”. At the end of the day, I look at it as someone who does marketing, and it’s great. The possibility to communicate with the consumers in that way is wow. On the other hand, as a consumer when I first entered the communication process, it was a bit hmmm. Then I started questioning whether that Coca-Cola I just had was due to the 25th frame [laughs]. Do you understand? But generally, from this angle as someone doing marketing, I find it fascinating and have positive emotions. Definitely positive emotions.	negative, positive
Attitude	Feelings	I feel very curious. I find it very interesting, and I would love to know more about it. I am very enthusiastic, honestly. Because through my experience no I learned that we invest a lot of money in research, and on the other hand we question it. Not that we question it, but we are not sure that that’s it, especially with qualitative. Focus groups are very expensive, and then we get the solution and then we doubt it – well maybe somebody said that because they were influenced by someone. In that context, I would be very happy to show that neuromarketing research reduce that gap, like it seems that they do. You say things that are shaped by some influence, but those thoughts are 1/1, those feelings and experiences are 1/1 transparent, you can see them as they are, unfiltered, etc. That’s what’s most positive to me. I am curious to see how that works and how much that would be valuable in practice.	positive
Attitude	Feelings	It would be more like “wow, it’s great that we can get this information how our consumer actually reacts briefly”.	positive
Attitude	Feelings	Anyone who has the power to influence someone else’s behavior has a great responsibility. And that responsibility is often abused and not followed through on by people who have to pass certain goals, like profit margins and revenue, becoming the richest and most leading brand in the world. So one feeling, one response that I’m immediately having is ‘oh, no’. But then the other part of me feels very positively about it for the reasons that we already talk about, in terms of using it for good and creating an access to something that wouldn’t have existed before. That is awesome and I totally believe that it can do that. But yes, when it comes to people’s psychology, people’s patterns and influences from someone, which we all get influenced every day, so many things already. It just sound very powerful, neuromarketing sounds very powerful. That’s my feeling that I have about it.	negative, positive

Variable	Code	Indicative Statement	Theme
Attitude	Feelings	Obviously, the first thing that comes to mind is that neuromarketing is something new and exciting and something that there's a long discussion around on this particular topic. I find exciting from the part that has to do with people simplistic reactions on different stimuli and it's very interesting I find that customer doesn't know what he or she likes. That's something very interesting and it's not completely exploited. Research goes on and many interesting things come up from time to time. I'm very very positive and I find it very interesting, and I believe something it's more good than bad that comes up.	positive

Variable	Code	Indicative Statement	Theme
Subjective Norms	Approval	Well, the business environment would since they figured out one part will earn money from that, if not tomorrow then in close future. As far as Serbia is concerned, I think right now there are enough people that know what it's all about and don't have any problem with it. People that do marketing, they are everywhere, so it's not like 'oh this is something so new that no one will adopt it'. I think that people in marketing are very efficiently informed, they know it very well and it won't be any problem for them. It's not like 'this is Serbia, we are falling behind', I don't have such impression. I don't know how to accelerate it here, but I don't think it's going to be a problem, nor a problem for marketeers. People in marketing are ok.	marketing community
Subjective Norms	Approval	Honestly, it depends how active they are. One think I can see and expect from the big brands and companies is that they would be interested in this. Smaller companies in MK still don't understand why you should do online advertising, digital. Everybody's still stuck with fliers, print ads, being present on TV, things like that. Unfortunately, in MK TV is still the main and only medium and that's why everybody acts like that. But if we speak in general, for example, and I'm looking at the big companies, then those that make big money in telecom, breweries. Somebody who seriously knows what they are doing, has the structure, has procedures.	level of understanding
Subjective Norms	Approval	Right now, we are doing a lot of meetings with social media agencies, PR agencies, marketing agencies, and they are really interested in partnership with us, because they find neuroscience really close with what they are trying to bring to the clients. Right now, I don't feel like people are scared about it. They don't know about this and they are eager to learn more to kind of prove that this is going to work with their clients.	marketing community
Subjective Norms	Approval	If I told them this half page message is create using neuromarketing techniques, I think they would feel maybe cheated – that's maybe too hard word, but somehow misguided. But if I would explain them what I actually did – for example, keeping the same example, making thing visual to them, I think they would say 'yes, it's fair, it's not too deep into my mind'.	customers

Variable	Code	Indicative Statement	Theme
Subjective Norms	Approval	Unquestionably. And I think they do because my approach and the approach of my company has been a very transparent one and I think that we attempt to educate our clients ahead of closing contracts about what we can and cannot do for them and what they will and won't be able to get at the end, so that we are very honest and transparent about what we offer and what value we can contribute as a result of our activities that are rooted on neuroscience's laws. And yet, not everything we do is rooted in neuroscience, where we bring it to the table we bring it for reasons that we disclose completely to the client and we do it in the context of the set of expectations that we create very candidly. When people put pen to paper and talk about abuses of neuroscience, I don't think they'd be talking about us, because of all the things that I told you at the beginning we try to be very scrupulous about making claims that are carefully constrained by the bounds of reality. I'm not going to sell anybody a pretend plane and tell them I can fly them.	marketing community
Subjective Norms	Approval	Yes, but it's subjective stuff. My family, my friends, my colleagues, it is politically correct to say that they agree.	family, friends, marketing community
Subjective Norms	Approval	They are already informed about this. So we are talking about negative perceptions. They have negative perception especially my family only about earning your money from neuromarketing. It's hard to make here more than 2 or 3 studies by year. It is like second business. So it's impossible to earn money only from neuromarketing stuff. But they are quite informed about NS and to applied neuroscience in making your people to like better. I also do some basis research for neuroscience using fMRI or EEG and neuromarketing is some science fiction for them. I've also done other much more scientific, much more science-fiction [laughs] for them then neuromarketing. Going to test some advertising or package is quite ordinary and not something scientific for them, they are quite used to it.	family
Subjective Norms	Approval	If we look at my network, such as clients and colleagues, then they certainly approve. Even if they are not aware what their problem is or what they need, what neuromarketing has set up is the right solution for them, taking those steps. So they approve.	marketing community
Subjective Norms	Approval	The other 50% are my doctoral students. Those 50% would be from a professional network maybe – colleagues from marketing, people that practice it. So for scientific development yes, but not a lot. If I can divide. From my personal network people wouldn't, but from my professional they would.	marketing community
Subjective Norms	Approval	For people in marketing it's difficult because it's not implemented. Depends on a person. There are people that hate everything that's new, unconventional, etc, so I'm sure that some people would say it's nonsense. And some would probably be cool with it. I don't know, but I think that when this shows as something that has a meaning, sooner or later everyone would be positive because it would help us to solve some difficult challenges. In general, I think they would be positive. But at first half of them would be skeptical and half would be cool because it's something new.	marketing community

Variable	Code	Indicative Statement	Theme
Subjective Norms	Approval	The laymen don't understand and you usually need to get to familiarize someone with the area, that it's not invasive, that it doesn't necessarily mean it will bring correct result, that it depends on the researcher. There needs to be a lot of background information for someone to understand the whole context.	level of understanding
Subjective Norms	Approval	Depends if I'm talking to academically educated people that see this differently to begin with and know that behind every area there is a lot of work and meaning and results that you can get.	marketing community
Subjective Norms	Approval	I don't think you can have positive or negative opinion of something until you actually understand it. If you are making some sort of preemptive connotations about something before you actually understand it, then you are not giving yourself the information you need to make an informed decision. That said, I think once people understood, they would understand that it's kind of more service to them. It could be quite invasive, but if they had opportunity to turn it off in some fashion, then sure, why wouldn't they be for it. Because it just about connecting them to potential brands or items or something that can potentially make their lives easier. But at the same time, re-marketing, re-targeting, it can be pain in the ass and invasive at the same time. But that's the world we live in. If you don't like it, maybe you should get off the computer and not use a cell phone.	level of understanding
Subjective Norms	Approval	Depending on use, totally depending on the use. If it was used to help people get rid of stigma, constant mental health, they would be all for it, hundred percent.	benefits
Subjective Norms	Approval	As far as I'm concerned, as long as I stick to the program and syllabus and use additional information and data to promote every time the class that I have to teach, I believe that there's no problem on that. After all, NM is nothing but new area of marketing.	marketing community
Subjective Norms	Approval	Specifically, I can only speak about people at [company] as a company ready to invest in innovation even though they are not 100% sure but you have to invest. So in that aspect I don't see any problem. The only problem I can see, but that's not a problem, but maybe they would expect a bit more from this market that what it's currently. But generally, I think that all people, not just bosses but also colleagues and clients, I think they are ok with the idea. I think somebody gets it faster or slower, but everyone is aware that It offers useful information. And what I previously said for bosses, I think they are prepared to invest in methodology and people to overcome all this.	marketing community
Subjective Norms	Disapproval	Yes, we had a huge problem there, we had to do it in secrecy and we had NDAs that were horrific. That's why we thought that the entire environment has a negative attitude towards it. Even the people from the team that are marketing experts and owners of marketing agencies or managers in big agencies were excluded because they couldn't hide it anymore, maybe not fear but that silent disapproval . And I think it is being disapproved. Even people I live with when they found out what I did they were silently judging me in the sense of someone who participated and now everyone will vote for him and he is this and that. And I was a professional there, I didn't care what politician it is, I was more interested in the marketing strategy and how to get someone to sell like a product. Generally, very bad attitude.	marketing community

Variable	Code	Indicative Statement	Theme
Subjective Norms	Disapproval	I think that everyone uses actually some elements of neuromarketing. And most of the times it is intentionally, but we do believe we are doing it to take care of the target. For example, I use it in our events, when we are having info-seminars for our products. That way that I use certain elements of neuromarketing. I think that if other person knows that you actually do something called neuromarketing and that you actually intentionally influence his senses, he would disagree, because he would feel manipulated. Otherwise, if you don't tell him and he just experiences what you're giving to him, he'll be the most happy person. I think it's normal, people don't want to feel manipulated. This is pretty normal and I don't want to be manipulated, as well and I know that I've been manipulated even everyday by some commercials that I hear or see, but then again just because I'm marketing person, I know it's my final decision. I just pull away the thought that I've been manipulated and say "ok, this is what I decided". But people who don't do marketing, I think they can easily feel manipulated if you tell them that these are tricks from neuromarketing. But if they don't know it, they might feel more happy because you are doing something for them that's different and that makes the feel good.	customers
Subjective Norms	Disapproval	Well my environment would probably be 50/50, but those who wouldn't really wouldn't because there is only a bit of that here. The conspiracy theory was invented so it can prove that it's all true. So we are very susceptible to conspiracy theories and real fears. So 50% would not approve.	level of understanding
Subjective Norms	Approval/Disapproval	From my personal network people wouldn't, but from my professional they would.	marketing community, friends, family
Subjective Norms	Disapproval	But people who don't do marketing, I think they can easily feel manipulated if you tell them that these are tricks from neuromarketing. But if they don't know it, they might feel more happy because you are doing something for them that's different and that makes the feel good.	customers
Subjective Norms	Disapproval	I can call my boyfriend so he can answer, because when I told him about neuromarketing, he reacted negatively. When you put something on people's heads you'll see how they feel. That's very abstract for people that don't do marketing. People that have real problems and real challenges find this abstract. I think that people that don't have anything to do with marketing find this abstract. I don't think they can realize at first. You can not know what are the challenges that we have in our work. And because of that you cannot know what would solve that. That's the type of problems it can solve. I think they see it like this more, I don't think they see it as a positive, if we are talking about people that don't do marketing. They are probably scared a bit. All of a sudden you want to put it on their heads and see how they feel. I don't think it creates a positive feeling for people.	friends, family, customers
Subjective Norms	Approval/Disapproval	Depending on use, totally depending on the use. If it was used to help people get rid of stigma, constant mental health, they would be all for it, hundred percent. If I was using it to sell FitBits, probably not.	customers

Variable	Code	Indicative Statement	Theme
Subjective Norms	How others feel	In (the agency), I think that excitement would be dominant. But for MK, I'm not sure. Here other agencies don't make the trends, especially not the clients. Maybe it would seem weird since nobody ever has done it, but I really don't know. For my agency, I'm sure that it would be exciting. If nothing else, to test the opportunity. I'm not saying that it would be used, maybe it would, but I'm sure it would be interesting to hear, if nothing else. Especially the account managers, designers don't want to listen or see	positive
Subjective Norms	How others feel	Account managers, I think it would be interesting for them.	positive
Subjective Norms	How others feel	I have a creative director that's like that, I love her. She's very detailed and very capable. And I think she loves all these gimmicks and she would apply it because she loves things like that, but designers like her who love to read research are rare, let's say.	positive
Subjective Norms	How others feel	might be afraid, maybe they would think of it as magic	negative/positive
Subjective Norms	How others feel	Right now, I don't feel like people are scared about it.	negative/positive
Subjective Norms	How others feel	I don't know. Maybe some fear because everything that's new and unknown causes fear.	negative/positive
Subjective Norms	How others feel	People might have different views. Actually, we don't like something that we don't understand, usually. So when I come up in a discussion with people having some negative opinion on neuromarketing, I try to see why does this happen. There's always reason behind everything. This works like a food for thought. I try to find out why people might be for or against neuromarketing. And that helps me on my research to look up why something happens. I'm trying to see behind what people say and feel and think, so if someone gives me pressure that he disagrees or disapproves I discuss with him or her and try to find the reasons behind that.	negative
Subjective Norms	Relevant Opinion	my bosses	peers
Subjective Norms	Relevant Opinion	All regular agencies sell themselves as the best, most creative. But in MK there are not those that are leaders, like last year it was Droga5 like most popular agency in the world. There are no leading agencies like that. That make something that others don't and set the trends. And within the company, I really appreciate and trust my creative director, she is really cool. I trust her opinion.	institutions
Subjective Norms	Relevant Opinion	I got the opportunity to go to Barcelona and to Dubai [Neuromarketing World Forum, 2015 and 2016] and I had the opportunity to meet really important guys like Steve Genco, Carl Marci, they guy from Nielsen Michael Smith, Elissa Mosses, Aaron Reid. I mean, this kind of neuroscientists, some novel from UK, I rely on what they bring on because they are the pioneers, they are the ones that created this whole concept and they are doing it right now. When it comes to neuroscience, I will rely on these big thinkers.	NM experts
Subjective Norms	Relevant Opinion	A neuroscientists' opinion.	scientists
Subjective Norms	Relevant Opinion	Or biomedical and engineer, something like that. I would really hear people who know how to analyze this kind of data.	scientists

Variable	Code	Indicative Statement	Theme
Subjective Norms	Relevant Opinion	In the end, as I count some of my clients to be. I'm a customer-driven guy (laughs). So the opinions that are important to me are the opinions of the people that I am serving or hoping to serve. And they are the people that I think I need to make comfortable with and that neuroscience has a class of activity as well as our offerings, in particular. They are the people whose enthusiasm I need to hopefully sort of curate and guide along, so that their expectations are neither too strong or inadequately strong well after what we can do for them. In my world, as I try to convince my clients, the customer is king. That's what I most care about. There are writers in the field, Daniel Kahneman obviously being the preamble one, whose work I think is pretty interesting. There are a lot of writers who put out books that I think are less interesting, so I won't name names. Just as in with the tools and the research space, in the literature itself discussing this topic there are range of efforts which are excellent and some which are not.	clients, scientists
Subjective Norms	Relevant Opinion	Actually, maybe some strangers for you, but the most important opining for me comes from my client. If a client repeats a study with you, he has the satisfaction with previous study and they tend to trust you. It is a major point for me, not my wife or beer buddies	clients
Subjective Norms	Relevant Opinion	I think I wouldn't look up to the collogues from our industry, but wider environment that involves the consumer I'm talking to, if it's consumer centric. On the other hand, I'd look up to an expert in the area. So literally the user of product/service and a person that's involve with it all to exchange opinions. So, Nikos and a user.	consumers
Subjective Norms	Relevant Opinion	Professor Nikos, he really has good questions and ideas to implement neuromarketing in managing employees. He moved a lot of things. He made me think and go through things on one hand. On the other hand, there is a bunch of innovation coming at a global level. Now the exchange of data, things are more visible and more things are visible , that was 10 years ago. And now you see in Germanys somebody used this or in Poland they did this, or often there is a partnership with the client where they innovate and you learn quickly about those innovations. And you always want to sometimes use it at home, and that's a different impact that applies only to neuromarketing. That's within our company , and externally we have clients that learn and then come to ask about this so they motivate you to learn more. In a way, sometimes it's client-driven behavior.	NM experts, clients
Subjective Norms	Relevant Opinion	Which is the goal of what I'm going to evaluate? Luckily, I don't have any concern. For example, Philip Morris, because I worked for Vodafone, can that be a problem for Vodafone. Nothing. Qatar Rail are building the rail. For Philip Morris, they are only example that can be for me problematic, but it's not problematic. You can find unethical problem anywhere. For McDonalds, you can be for bakery because they are not using solar power [laughs]. Ok, cigarettes, I think we have enough information alone and we can be aware if we want to smoke or not. We can improve the power of Philip Morris, it's true; but on other side, we can be resourceful against Philip Morris.	Institutions/companies

Variable	Code	Indicative Statement	Theme
Subjective Norms	Relevant Opinion	the professional network that I admire, and I know it's going to sound pathetic, that's my colleagues from the economic university that I work with, but especially my doctoral students. Because they do the research at postgraduate and graduate level. And I get specific studies from them. Otherwise, if I read books, until the publisher accepts it, with changes, it takes those studies. Maybe also that database of scientific studies. But those fresh research studies are always the most interesting in the region. I read what's happening in the world and all that, but only when I see the empirical research, then I see the specifics. In that sense, I hear it from my collages that I work with, people I have at the agencies. My students that are at the managerial positions, they are great. Their hands are not tied because they have the foundational knowledge and then they tell me things that I have no idea. Then I tell that to my students so they hear how it is applied because I talk only about theory. So, people from the practitioner area.	peers, scientists, students
Subjective Norms	Relevant Opinion	Honestly, official institutions, official research, trends that are being used, experts from the field. Definitely that.	Institutions, Scientists, NM experts
Subjective Norms	Relevant Opinion	Well, in my personal situation, that person would be me and of course our GM.	peers
Subjective Norms	Relevant Opinion	The most relevant to me would be opinion of someone with the same role as mine or who has similar problems. If they were to use some advantages of neuromarketing and were to say that this helped them to solve this and this. The most relevant would be the opinion of the person that has a problem and overcame it or did something better because they used something that NM gives. I can't say anything else, whether it's a director or this or that, I don't have that. I love to check everything first on my own before I share my opinion.	peers
Subjective Norms	Relevant Opinion	People that surround me.	Friends, family, peers
Subjective Norms	Relevant Opinion	Peers in my field and people whose values I very much respect, for example my husband's.	peers
Subjective Norms	Relevant Opinion	I try to keep perspective when it comes to issues like that and was always fond of other people's views and ideas. Although I may agree or disagree with someone, I always listen to their views. It's always useful to have an opposite view on something opposite to what you believe. So I couldn't say I go for As or Bs views. I listen to everything and then I decide myself what I'm keeping and what not.	everyone
Subjective Norms	What Others Think	I think they have no idea	knowledge
Subjective Norms	What Others Think	But my colleagues, knowing them, I think they would be totally interested in this. Since they are all nerd deep down, that's why they would be interested. That's the way our company is, that's the people that work here, which luckily for me are normal	positive
Subjective Norms	What Others Think	I think that they would be very interested especially thinking what type of information they can get from this.	positive
Subjective Norms	What Others Think	They don't know about this and they are eager to learn more to kind of prove that this is going to work with their clients.	knowledge

Variable	Code	Indicative Statement	Theme
Subjective Norms	What Others Think	I think that we need to be really careful with this negative PR. Last year in Barcelona that's what were discussing at the table. Ok, so we have to be really careful. Neuromarketing needs a PR for itself. We are not going to have a positive impact if we don't rely on these scientific things. And right now people are doing a lot of noise around neuromarketing and we have to be on the right side. Especially right now in Mexico and in Colombia there is a guy that is not doing the right things. He has a lot of followers and all other and you are like 'oh, man, I don't want neuromarketing to be perceived like an easy stuff'. It's not really easy to bring insights when you pull together the tools and stuff.	scientific evidence
Subjective Norms	What Others Think	And, of course, you have a lot of scientists that don't even talk or want to think about neuromarketing. They are almost offended by it. And it's true, if you start looking from distant on the web, as a scientist, you will roll your eyes and you'll think these people are crazy. And often many of the conclusions are completely idiotic. Martin Lindstrom, (laughs) not to point, has ridiculed himself worldwide, but he's been seemingly good to sell books, which probably is what he wanted. But yes, no credibility, distorted scientific evidence, all of this because I know the people that did these studies for him and were extremely upset and appalled by what he would do to the data. So these people are dangerous for the field, that's bad rep on what is being done. That's ok, we need to live with it.	negative
Subjective Norms	What Others Think	I think that, first of all, they are not informed. When they do get informed, they will definitely want to employ this kind of methods.	knowledge
Subjective Norms	What Others Think	After having talk to them, because these are people who have interacted with us, they really respect and they really understand the benefits that neuromarketing can provide.	positive
Subjective Norms	What Others Think	I think that they have little resistance to novelty. In every new era when you had innovations, at the beginning, usually people resist to try new things, so this is the resistance the unknown, this is the psychological phenomenon and it takes some time to overcome this issue. Because people tend to do things as they know, they don't like changes, they fill unsecured.	knowledge
Subjective Norms	What Others Think	I think they find it exciting in the way that I told you, as in cutting corners. People are not into taking the moral decision in business. While I am, I'm interested in the process, not only in the output. So, maybe they would find it nice as a shortcut, but nothing too wrong or too deep into like psychiatrist, it's not that deep to remember your childhood memories, but it is deep.	positive

Variable	Code	Indicative Statement	Theme
Subjective Norms	What Others Think	I think people, frankly justifiably, nervous. I think it's an area of research and an area of technology that the average client, the average marketer understands in only rudimentary or incomplete ways. I think they hear a lot of think from a lot of people what it can do, and again not all of those are true (laughs), so that there is ample reason... I mean, we have client for whom we have essentially created presentations where it says 'here are all the options that you're going to hear about and here's what each one I about and here's pro's and con's and when toy use them and when not to use them'. As a service over and above doing actual research, because clients need help. So, nervous I guess is one word. But I think also, though, they are excited, because I think they rightfully see this as a new set of tools, a new technology that will open up new possibilities for understanding people in a way that they haven't previously and new opportunities for learning what people think about their efforts, and therefore enhance capability to identify the business opportunities, understand if thinks that they are doing conform to those opportunities, and predict how well their performance is going to turn out for them in terms of the impact on the market and all those things can impair your ability to reach those goals as it has in the case of some bits of neuroscience applied in the course of your business tractus.	knowledge
Subjective Norms	What Others Think	Maybe it still in a state, at least here in Romania and in the region, it's very hard to convince people to pay extra money for neuromarketing study.	negative
Subjective Norms	What Others Think	And also some journalists because they misrepresent or very badly cited scientifically articles and research and in order to make them more available to the media or the public, they oversimplify these results and invented the buy button and other pleasure center of the brain and emotion center of the brans and other centers of the brain. Very simplistic way.	negative
Subjective Norms	What Others Think	Some of them have or used to have this kind of perception about manipulating stuff, that marketing has no ethics that they try to subliminally try manipulate you, that corporations try to sell you things that you actually don't need. But it usually all people are quite conservative.	negative
Subjective Norms	What Others Think	They think - exactly like this, in one sentence - that it's putting headphones on and measuring heartrate and pulse, and few other things that are happening in the brain. So, they literally connect it with medical approach "connect me to that thing that measures pulse, hearth attach, and else" [laughs]. When you mention to someone that we are the first certified agency in Serbia for neuromarketing - "oh it's tat thing where you use all those machines and then measure this and this". That's it, for example. That's what people think in Serbia.	knowledge
Subjective Norms	What Others Think	This group of people that's interested in neuromarketing, a few, yes. And of course, especially me, there is a part of the people that they completely cannot understand what I'm doing. Nothing, zero, completely. So the first connection is with subliminal message.	knowledge
Subjective Norms	What Others Think	I don't have access to it, I have to say. For example, the girl that is doing her masters, she came to me on her own and said I want to do it. But you know how? She said "wow, this is interesting". I don't know what's the attitude. But that it's interesting, that's there. My perception goes that far. That it's a good thing, That it's great to identify some specific things, specific people, thoughts, but we didn't go from there because	positive

Variable	Code	Indicative Statement	Theme
		there's no mention of it. It's not at a point where people talk about it.	
Subjective Norms	What Others Think	Maybe, since they had direct or indirect experience with it through me. But honestly, broadly speaking, I don't think a lot has changed. Maybe the younger crew, like younger marketing experts. I think that, as much as you are in touch with the time, the older crew wouldn't accept this still. I think they have repulsion against it. I think it's Coca-Cola's fault.	negative
Subjective Norms	What Others Think	I think that most of them they do it or they are use some elements of it. No matter if they call it neuromarketing. Maybe they call it neuromarketing. Intentionally or not.	positive
Subjective Norms	What Others Think	Well subjectively how I feel, yes. But I haven't talked a lot with people about it. I can go to the other room in 10min and ask. My opinion says that it would be very interesting to get that type of results, to bring conclusions based on it. I would assume that a lot of people would be delighted, at least people that I know, if we were able to access that type of information.	positive
Subjective Norms	What Others Think	Neuromarketing I feel like is a new term. I don't feel like too many people know what it is. So if you give them opportunity to break it down and try to understand it or get informed, you kind of bestowed some knowledge upon me. So I don't think there's too much perception about neuromarketing. I think that if you dropped that term to people that ambiguity would come to mind. Like – I guess I kind of understand what it is, but I don't really know what it is.	knowledge
Subjective Norms	What Others Think	I don't know that they know about it. They would probably have the same response – it it's used for goo, great; if it's used for bad, depending on the definition, which I know is individual. But I know we have the same definition of good and the same definition of irresponsible. So if it's used for good, they would be all over it. That's a fine line, you know. And if it was used for capitalistic purposes, they just wouldn't care or they would be outraged 'how could this'. So if it's used for good purposes – excited, if used for capitalistic purposes –neutral, coz we are used to that already.	knowledge
Subjective Norms	What Others Think	The good thing that I find personally when I teach is all this discussion that comes up and the positive reaction of students when they hear something so challenging and neuromarketing.	positive
Subjective Norms	What Others Think	Actually, I don't know if it's good or bad. When you are researcher, people are not so much aware of the term or with the neuromarketing. I could say that people don't know what marketing is. If you ask 10 people what marketing is, you will get 11 different answers. So, when people are not aware of what marketing is, although it's word that we use in our everyday life, neuromarketing is something new and I believe that you have to be in the field to know what exactly it meas. So I mostly find people not having a clue. Of course, when I discuss something like that with colleagues that they also are doing research, of course they are aware exactly what it is. But students for example or other people at other areas, if they haven't ever heard of the term, they have very very vague idea about this.	knowledge

Variable	Code	Indicative Statement	Theme
Subjective Norms	What Others Think	I believe they [colleagues] have mixed reaction on the term. Some think that it's good, some thinks that it's bad, some have no idea whether it's good or bad. So I believe it's mixed reactions. What you have read before about people that are against neuromarketing it's mixed. And stating all these unethical procedures, others read exactly the opposite views that it's very very good and it saves companies' money, promote goods and services that there are beneficial and give you exactly what you want. So it depends on what you have read and discussed before.	positive/negative
Subjective Norms	Ethics	I couldn't see that if you have consent from a person that is lying down or who says their opinion, I think there shouldn't be any ethical issues. I really cannot see that If I give my consent to participate in a research, I don't see reasons even as an advertiser, to see the results from such research as unethical to use. I guess it depends on the content of the research. Generally speaking, I don't think so, as long as there is the consent from both sides, it's ok.	positive
Subjective Norms	Ethics	Yes, there are ethical issues because people think you are trying to manipulate the consumer.	negative
Subjective Norms	Ethics	But when you show that you are just going to use brain waves because you want to prove that your ad is going to be interesting for them. When you prove that the science is being used for well [good] and not for evil, I think that they can rely in us.	positive
Subjective Norms	Ethics	Yes, in my view if there is something we can do, but neuromarketing is weakened in fact that points more scientifically how evil it can be. We can understand, for instance, how propaganda really works which right now in what we see for whether it's politically or military propaganda, this is a big issue. Persuasion goes far beyond the commercial work – it's a matter of politics, it's a matter of military propaganda	negative
Subjective Norms	Ethics	We do follow ESOMAR rules, the European Society Of Marketing Research, which are the same rules of anonymity etc. We do follow these rules, so I cannot see any ethical problems.	positive
Subjective Norms	Ethics	So, cheating is one part, cheating is taking shortcuts from marketing manager. The moral part comes when you use messages to promote something negative, wrong, not with a good purpose. Not necessarily very negative, I mean I find promoting Coca-Cola with neuromarketing not too ok.	negative
Subjective Norms	Ethics	Only just, and really truly just concerns that I have that are that there are still in that field or adopting that label some people who are not being honest with their clients. That's all. The activity itself I don't think it's ethically compromised at all. I think the chance to find people with questionable ethical principles is real one, but that's not an indictment of the field itself.	negative
Subjective Norms	Ethics	That companies can manipulate people, yes.	negative
Subjective Norms	Ethics	No. neuromarketing is just applying in business neuromarketing stuff which are very old, from the last 30 years. All the protocols that are using at different laboratories, and institutes and universities to measure rewards center of the brain and other inside the brain actually this is very difficult to make this kind of study if you don't have ethical compass. Possible features are already approve in the most famous Unis and laboratories. There's no issue about the	positive

Variable	Code	Indicative Statement	Theme
		ethics of fMRI or EEG or other stuff. But in my opinion, it would not be an issue if you use this kind of stuff especially EEG in appropriate manner.	
Subjective Norms	Ethics	And try to sell something that's not possible to capture with your tech. Because when I think very bad studies and they try to just using alpha rhythm of the brain to demonstrate everything we know - like advertising or packaged product only using alpha band of the brain, which is quite impossible, it's not scientific, and people like this they are ruining the image of neuromarketing.	negative
Subjective Norms	Ethics	Yes, also that and new tool in this kind of examples people buy very cheap caps with only 8 electrodes and let's see. And they say something like this and people walk in supermarket and they promise to deliver you everything and it's upsetting. It's not possible, it's not scientific and these people are ruining the image of this field.	negative
Subjective Norms	Ethics	I can tell you honestly that none, now that I don't see it like a measurement of something, pulse and everything, but totally different. But we were talking about it during the first workshop with [name] when there were a lot of companies, the biggest ones here multinationals, and we were talking about the ethical aspect and whether it is ok that they are measuring something, control it actually, control your emotion, sight, everything. I can tell you the impressions were positive. Nobody reacted like they feel under more surveillance, control or similar, but that we are giving what the person needs when he needs it, and we are just checking how he is viewing, observing, healing, feeling, etc. So it's not for now, not even at the panels and conferences where the topic of neuromarketing is mentioned, it didn't show up as something negative. Especially in Serbia, imagine.	positive
Subjective Norms	Ethics	No. Like all instrument, you can use an instrument to kill or to save. Ford has ethical problem with the car because car can be in war field to shoot someone to rob a house or Ford can be an ambulance. If you want to work for one project – now they have project in Saudi, now there is Ramadan and nobody works, to work for Philip Morris. It's my ethical thing if I want to work for Philip Morris or not.	positive/negative
Subjective Norms	Ethics	I should tell you that it's great, but I am more for – how can I formulate this so you don't think I have something against neuromarketing – it's a great thing, there is no better way to determine a target group. But as I tell my students, for example with promotion and direct marketing on the other end, there needs to be some ethical principle. I don't know how to add it. I'm not doing it that much to be able to say to do this or that. But if direct marketing is promotion a tool to reach directly, like we sell the seed for the grass, we can use the databases to identify the person that has the lawn and there is no better way to promote it. But now we have, are you taking those databases, how are you taking them, how much consent there is to record it. Here we don't have neuromarketing, we don't have that equipment and everything that's used for that research we don't have but that's what I think. I am confusing a bit. Because I am confused whether it should be used or not, yes or no. On the other hand, doing it so people don't know, that's a bit unethical. So there you go, that's where I am. To say that's it's phenomenal, there is absolutely no other things that's more concrete than having a brain mapped and determine where is what , or whatever, but I	positive/negative

Variable	Code	Indicative Statement	Theme
		think the ethics again and I repeat – I don't know where I would draw the line, but I think we should.	
Subjective Norms	Ethics	I'm thinking about of kids as a segment. As a grown up, some messages or impulses bring subconscious thoughts, behaviors, make you act or create a desire for something. But I think that at the end of the day as a grown up person that gets million impulses from everywhere, that sounds ok. I think every one of us can not be under control this way or that, but we make the decision. I think the kids are the biggest problem because they don't process it they just absorb it. We still have some filters that this all goes through, and they don't have the filters, but take it directly. We have some experiences, we associate it with some experiences, for some events. We have some filters, and they don't have that nor the parameters to compare it, to decide. It seems to me like they are led to do something. It might not be like that, but there.	negative
Subjective Norms	Ethics	I'm not sure. I cannot think of other issue at the moment. Maybe because I'm not so much into the topic, but yeah I cannot think of other issues now.	positive/negative
Subjective Norms	Ethics	Did we read something we were not supposed to from someone's thoughts, feelings? We are coming back to the same things. Would someone be willing to share with us everything, even things he doesn't know how to interpret. And we would have the power to say "hey, you reacted in a way that this receptor in your brain got activated, these hormones got secreted in that moment, which means that you will react like this". People are sometimes afraid to understand that all of it is connected to some natural laws, but they think that they even fell in love at a god-like level. So the most of my friends would understand it, but the mass majority wouldn't. The ethics has it's own rules – some people would be afraid for someone to read their thoughts. They wouldn't know how much of what's said can be analyzed.	positive/negative
Subjective Norms	Ethics	As far as I'm concerned, when companies decide to use neuromarketing techniques in order to promote or to mass produce product, they first follow some strict guidelines and ethical guidelines and let people know that they take part in research, so on that point I don't believe that it's unethical.	positive
Subjective Norms	Ethics	I believe the unethical thing would be not to inform respondents of taking part in procedure. That is what I find unethical. But I don't believe that's something that happens. Or at least, I'd like to believe that everyone that uses neuromarketing methods for research, they do apply the guidelines.	positive/negative

Variable	Code	Indicative Statement	Theme
PBC	Biggest issue	I honestly believe that's the price.	cost
PBC	Biggest issue	I think that they have little resistance to novelty. In every new era when you had innovations, at the beginning, usually people resist to try new things, so this is the resistance the unknown, this is the psychological phenomenon and it takes some time to overcome this issue. Because people tent to do things as they know, they don't like changes [smiles], they fill unsecured.	new methods
PBC	Biggest issue	I think the number one issue, if this is an issue for clients, the number one issue is to be clear about what your goals are and then the diligent in	knowledge

Variable	Code	Indicative Statement	Theme
		making sure that the choices you make align with your goals. Don't expect magic.	
PBC	Biggest issue	Time and money.	time, cost
PBC	Biggest issue	There is ignorance. What I'm trying to do for my business is to have companies who sell my business, my services. For example, I have one in South Africa. I think we will do some good projects because traditional marketing research company, the name is [name] in South Africa, and now they are making a deal with Grey in South Africa, but luckily the owner of this marketing research is a good guy very young. But In other case, we are speaking with [name], they are good, but it's a huge marketing research company. They sell my services, but they sell these services only when the clients ask for something new.	knowledge
PBC	Biggest issue	Another problem was - I cannot say right the name of the bank – I had some contact with marketing research and she forecasted, had insights, blablabla, we speak, we send file, we agree and at the end I cannot make anything because they have some restriction because they have a traditional market research company preference. So we cannot do anything because the problem is the product.	procurement
PBC	Biggest issue	Stereotypes that exist because I believe there isn't enough exact research that shows the consequences are this or that. As much as research there is I don't think there's enough to show some rules or to overrule some theories that exist. I think that once that scare is overruled and there is no prejudices, and on the other hand where there are tools that can simplify the application that don't include MRI. We are talking about a moment when it was done in Serbia, everything was used as part of the health system in Serbia paid by the state, if you understand. That was all carried over like something else. I think that once this is resolved, when it becomes more accessible to people that more people will accept it, especially people from the field. Not it needs persuasion in terms of the investment and there is immediately a debate on the ethics.	stereotypes
PBC	Biggest issue	On one hand, I think it's expensive, That's the problem because everything that's new and not mainstream costs a lot of money. So part of the resistance comes because you need to invest a lot in something that's new, you don't know if it works, you don't have specific examples that are close to you, who did it and how they used it, and you need to dive in. I think that's far from the practice right now.	cost, trust
PBC	Biggest issue	(a) Amount of time dedicated to it, rather than actually focusing on sale and the leads we already have, (b) the investment from monetary stand point, (c) the ease of usability, (d) also the increase to the amount of lead volume without too much research or without it that being set in stone. All these would be important factors that would need to be covered before my bosses would ever adopt something.	time, cost, skills, trust
PBC	Biggest issue	Lack of knowledge about it, lack of endorsement from trusted sources, lack of word of mouth, it's just not talked about and you don't really hear successes or revolutionary changes because of neuromarketing stories.	knowledge
PBC	Biggest issue	I think it has an unfortunate name, too. I think it would be hard for anyone to say 'hey, my company is doing neuromarketing and we are doing great'. It just doesn't sound like a positive thig. The name first draws negative association. So, it's done a bad job for itself because it triggers negative feelings and thoughts to me.	stereotypes
PBC	Confidence	I think this question extends to my customers. I told you, if I make focus out of it, which I don't think I do at the moment, it would be really successful. I don't think about it. I have one pager of activities that I deliver to businesses, consultancy services. And always when I go through it neuromarketing makes people smile or raise an eyebrow. It's exciting for them. But again, it's exciting in this sense of taking shortcuts, it's actually a lot of work to do it properly.	positive

Variable	Code	Indicative Statement	Theme
PBC	Confidence	I feel I'm at the level of a proposal, we talk the mist about the meta-claims, neuro icons and the setup. But I don't feel confident when it comes to tactical part where the measurement plays a role – why the copy is here, why this color, why this position left or right - because I didn't go through a lot of those tactical campaigns, very little, and that's why I don't feel so confident as an expert that can defend why this poster looks like this. That's what I mean.	positive/negative
PBC	Confidence	I think that as most of the other areas of marketing, this is just a new term which combines old techniques. Everyone of us use elements of it without knowing that we call it neuromarketing. So maybe yeah, if I think about how to use it better or implement it more in my work, of course I'll start looking for more information and read more about it. Yes, of course. If someone comes here and makes seminar about it, of course I will go because I want to hear about something I don't know or because I want to get inspired. I don't think it's something which requires training, because I don't think it's different than most of the other marketing techniques. It's just, I don't know, it is from a slightly different perspective. But again, we are talking about old techniques, and by old I mean proven, not outdated. And I think that also people are learning while they actually do their job, so of course all additional trainings are good, but you should be always be creative by yourself and try to improve your all work in ways that noone has ever thought of them. Just trying to be creative in your everyday work and try to use new things or just try new things or try new ideas. I don't think that I'll go to specific training for neuromarketing, but of course I will not refuse to receive more information or going to a seminar about it, to hear something that I don't know or that I haven't thought about or just to get inspired.	positive
PBC	Confidence	Definitely I could use statistics, whether this sample is representative, whether it is conclusive, whether hypothesis are set right. That's more about how much someone who uses neuromarketing needs to have the basic knowledge from statistics, in addition to the interest in marketing. No need for medical in order to develop a medical system to use here.	positive
PBC	Confidence	Definitely, I'd be very very fond of the idea to be able to discuss it more thoroughly and deeper, but as I said, this is not something that I can decide. It's very attractive as an idea, I'd love to do it, but it doesn't depend on me.	positive
PBC	Criteria to Start	Most of all the time. Assuming there is something like this in MK, assuming there is money in MK, I think the most common thing to coordinate to make it happen as part of a campaign is time.	cost, time
PBC	Criteria to Start	It depends. In most cases, you would choose to employ neuromarketing tools, but you wouldn't use certain tools in all cases. That depends on what we are searching for. For instance, there are cases where there is no point in employing eye-tracking, or there are other cases where you can do the job just with emotional facial recognition software and questionnaire. There are other cases where they can do the job just with EEG and questionnaire. There are other cases where you would employ 2 or 3 or even 4 sources of data. But that really depends on what your client needs to find.	knowledge
PBC	Criteria to Start	First would be openness of mind, and a bit of effort to actually understand what you are talking about. And the second is to get the first campaign running and see some results, because then with the results you came back and prove the point.	knowledge, results

Variable	Code	Indicative Statement	Theme
PBC	Criteria to Start	Everybody needs to go through that, through that basic level. It's wasn't a course, but all of us had to go through 26 sessions with people from [name] in order to understand what the methodology does and to be able to start applying it. And then you need additional, I don't know how much work on different projects, industries, etc, in order to have a complete picture and to say "I'm doing neuromarketing". And here only a small number of people went through that, maybe 3 or 4 of us. And then internally you always have a challenge where an art director or a designed comes to you and has no idea about it, and you try to explain and to brief him on NM in 15min. We have a lot of those situations because we didn't decide here locally to do only that, so when an external client, usually from abroad, comes along you for an ad hoc team that has the time and then you understand if internally we want to do this, we all need to be at the same level. And more than that. So ongoing communication to all members that are doing it.	knowledge, process
PBC	Criteria to Start	What would need to happen is that neuromarketing serves scientific purposes. If it were institutes to apply it, academic community, I would be the first one to say yes. If it were used in an effort to set up models, methods, something that the researchers would be able to go up to the big companies and say these are the models, this is the framework, this is the structure. But whether the users are going to buy it. I would approve it at all levels, but I would be a bigger supporter of neuromarketing being used for scientific purposes and to set up models. Science doesn't have any other purpose in marketing but to be able to tell people that this works this way or that way. Of course, indirectly in the practice, but indirectly it is in the hands of the scientist.	application
PBC	Criteria to Start	If someone reached out to me and said ' let me tell you about the process, let me tell you about the resources needed and it would have to be specific to my pains, which is a tiny startup with changes happening every day and one of the biggest things at the company at this stage is you can't implement anything easily because changes occur so often. So if something has a long process to implement, it's not even an option to consider. But if someone said 'look, you can implement this within days, here are the results you're going to get and the process can change as your company changes', then 'let's do it', and as user behavior is changing, that's huge, I would be very interested.	process
PBC	Decision to Use	Here it is organized so that each researcher offers different methodologies to his/her clients. So if I estimate that when a client calls with a need this would be the solution, and I offer whatever I want, including this. Every researcher chooses the method independently. That's how they teach us, they teach us different methodologies so we would know not just to sell but also to implement in theory.	researcher
PBC	Decision to Use	When it's about any capital projects - annual strategy, 5-year strategy, whatever – then I would like to use information like this, for sure. For monthly campaigns for products that don't require so much work, I don't think so. But for annual strategies or multi-year strategies for clients, definitely. That would be valuable to use.	participant
PBC	Decision to Use	I think if I focused my consulting on neuromarketing, I would have pretty good business success.	participant
PBC	Decision to Use	Deciding on part of the neuromarketing tools, the decision on fMRI sometimes EEG and we also have a couple for online application measuring reaction time, for this instrument, decision is mine. But as I told you, we never do only neuromarketing study. We couple neuromarketing with traditional study, and traditional part od marketing another colleagues is responsible for decision – like questionnaire or interview. When it comes to NM tools, the decision is mine.	participant

Variable	Code	Indicative Statement	Theme
PBC	Decision to Use	When we are working on annual strategies, or on new ones like a pitch, or simply getting a new client, than it's mostly mine. If I'm working on a strategy, then it most important for me to see what to do with the consumer problem and so on, and then you see methodology that's a solution. But for example, with the existing clients – that's why I see the gap – when we make the campaign 4,5 to 8 times a year, like for banks, there the decision is on the account manager that leads the account, account manager, director, and because they are not able to, it's something secondary to them, they get the brief from the client and they want to do it the fastest and most beautiful. And there is room to improve it because it's a long term client and you should always offer him more. And we don't do that, we approach it as the path to least resistance, just to finish it up.	participant, manager, client
PBC	Decision to Use	I can see that I have really good feedback from [name]. We receive the contract, I spoke with the chief of the group because I made the project for a client in Serbia, but I also met the chief in Italy last year and we are still in contact. They want to build the cognitive bank insight. I had really good feedback, but the one girl who introduced me, she knows neuromarketing. That's why we had a good feedback and we have still a good relation. I'm not sure that my report, yes they say that I have something there, but they are general feedback.	client
PBC	Decision to Use	Because of my experience, starting with confusing results, literally saying "this image within produce these reactions, great emotions, let's put it on a billboard" and then a shock that we experience after the research, it would be totally normal to me that this becomes a part of every campaign, marketing, for neuromarketing to became a common term like neuromarketing and marketing. It would make so much sense to me for it to become part of marketing. So when you say marketing, you think of neuromarketing, as well. When it does become my decision, I will definitely include it.	intention to use
PBC	Decision to Use	In the area of what I do, my brand, very much. Because at the end of the year we have a big billboard campaign I plan to use it if everything is ok and my director agrees and everything that needs to happen happens, I will probably use it. It is my initiative, so if I presenting it right to the people that need to approve the budget for it, I believe all will be ok. In most of the cases it happens, in 85% of the cases it happens that what a brand manager suggests or thinks needs to be done, it happens. Rarely we come to some resistance or something, it just needs to be presented well to someone, in a way that someone can understand, to see it's important and relevant.	participant
PBC	Decision to Use	I will be totally business oriented answering this. If there were a pre-use time when you could see and try neuromarketing in a project and test it for further use. Because sometimes a person needs to see it, it depends on what we are looking for, what we are looking to achieve like a specific neuromarketing analysis. Whether this app needs to have soft or sharp edges, whether there's a feeling that refreshes or bothers. Let's say, it would be as if for an alarm app we selected the right tone. We could see that through neuromarketing.	knowledge
PBC	Decision to Use	I can present any idea I want to my bosses, but I have no control over our budget. So while I can push and present anything I want, it needs to be signed off by the COO and the President of the company. And while I do have influence over them, I don't control the budget by any means necessary. So they value my opinion, but I am not the deciding factor.	participant
PBC	Decision to Use	Actually, I do not contribute on that [building the syllabus]. The syllabus is already provided by the institution that we cooperate with. It's not something that's we decide.	industry

Variable	Code	Indicative Statement	Theme
PBC	Difficulties	However, what we have been doing and where there is space for the clients that recognize the local market, it doesn't matter that a global client like Coca-Cola – it doesn't matter, Coca-Cola is the first thing that came to my mind. Now, you'll have Coca Cola – even Coca-Cola doesn't have the same taste everywhere, right? – but you can't adapt the commercial for SEE market and have someone lip-sync. But you'll have to shoot the commercial for the local market, to test it and invest some money instead of sending the wrong message. In that sense, I see a lot of opportunities for global clients that learn this. And then for local clients that usually invest in research, even if they are not increasing their budget, they should maybe allocate a portion of the budget to this.	cost
PBC	Difficulties	I honestly believe that's the price. When you want to come up with a study, you need at least technology to be reliable. And right now, when we are doing the pricing for the implicit response, it's really expensive and client doesn't want to pay this. Not even big companies. There's a gap between the big companies that have neuromarketing that they are already set with different tools so they can manage some prices and also they are going for big prices with big companies. And there's a gap with this with small and medium size companies that they are not going to be able to spend that amount of money. That's what we want to be for them, a solution for medium and small companies that they need these insights, but they are not going to be able to pay that.	cost
PBC	Difficulties	I think it's difficulties like with any research – 'do we need research, does it justify the money, are we going to learn anything new? It's too complicated, is it done properly'. It's certainly not an easy business to be in, it's not an easy business to be good and unsuccessful. And as you can see, there are very few companies that make neuromarketing a big business. I'm not sure it will ever be, neuromarketing, a big business. Yes it's growing, but the numbers are still tiny. It's impossible to measure how much of the, in the United States \$50 billion are spent in marketing research, but it's probably all together less that \$100 million. And if it's \$50 million, it would be great. So, we are talking tiny tiny tiny numbers, but I think they are growing and I think there is less and less crappy articles and crappy people, that neuromarketers are evil spirits, that want to implant in people's heads. I do a tone of volunteer work to demonstrate that neuromarketing, some people call it consumer neuroscience or even media neuroscience (which is a program I created for my university as part time adjunct faculty because I don't have time but I enjoy teaching at the field). So like for anything, there's lot of good about it, there's potentially threats about it. It's true that companies have questionable objectives or ethics could use neuromarketing to make their campaigns to sell to the poor or fast food to young people and that's a problem. It's a problem, but it's not new. It has happened.	cost, knowledge
PBC	Difficulties	Yes, in my view if there is something we can do, but neuromarketing is weakened in fact that points more scientifically how evil it can be. We can understand, for instance, how propaganda really works which right now in what we see for whether it's politically or military propaganda, this is a big issue. Persuasion goes far beyond the commercial work – it's a matter of politics, it's a matter of military propaganda	ethics, knowledge
PBC	Difficulties	And you need to place a lot of electrodes. Ok, not 120 or not even 64, but you need to place, depending on the research, not 3 of course. You need to place at least 14 or something like that depending on the research protocol. We usually place 21. But of course I would say that it largely depends on research question or the protocol. And I really know how difficult it is to take good readings from those electrodes, because you need to place them, and this is the difficult part, you need to place them in a proper way and this takes time.	process
PBC	Difficulties	No, I think that as soon as clients understand what are the benefits employing this method, there's no reason for them not want to use them.	knowledge

Variable	Code	Indicative Statement	Theme
PBC	Difficulties	No, it usually wins. But it is just too big difference between, for example, budgets.	cost
PBC	Difficulties	Well, at some level, I have the same challenge that my clients do, which is determining which paths on a treasure map lead to treasure; which techniques are really worth exploring and which techniques are going to prove maybe less useful. I think I'm also torn between putting resources or time against techniques that might be interesting from a pure science stand point, but that won't necessarily prove out as an applied technique. I can probably go off to a neuroscience blab and stay there and not come out, but I wouldn't be helping my employees and my colleagues	knowledge, cost, time
PBC	Difficulties	From that one experience when I was following the whole process, and not just the beginning, I think that the most difficult part was of the process is the explication, not the first suggestion, we started with meta-claims and neuro icons. It's summarized in three words or three icons of what they saw before , not sure at how many presentations slides, creative solutions, key visuals, with explication, explication, explication. And now all that is summarized in something so simple, succinct. And this is where we spent the most time with that client. Maybe even two months. At the end it was approved, but we spent two months convincing why this is the right approach, what it says, what it doesn't say, la la la.... Why it is enough to have those three stamps, or what not. So probably that all influences everything else, that education in the process. So something can really be simple, short and to the point.	process, knowledge
PBC	Difficulties	Something to make the whole process simpler, because we were spending time in those offices doing research endlessly. I am missing that process being simpler, to have something that's easier to implements.	process
PBC	Difficulties	And then we come to the moment where it can't be implemented and that at certain points the results were totally different.	results
PBC	Difficulties	(a) Amount of time dedicated to it, rather than actually focusing on sale and the leads we already have, (b) the investment from monetary stand point, (c) the ease of usability, (d) also the increase to the amount of lead volume without too much research or without it that being set in stone. All these would be important factors that would need to be covered before my bosses would ever adopt something.	time, cost, skills, trust
PBC	Difficulties	And then there's your ethos and there are ethical barriers. But generally speaking , same as we do every day, that's the second barrier. The second barrier is that habit . You have KPIs that are defined , you have a client that has a routine system for 10 years now. You go, speed it up, have 50 projects to do, and now I'm gonna push this and challenge that. And those can be standard everyday barriers. That's what I think generally.	ethics, outcomes
PBC	Extent of adoption	So after 2 or 3 decades, when neuromarketing will be the main method, one of the main methods or conducting research, then everyone will know that if I now think my favorite place (this is an example), if I make that thought, that will produce that brain wave which will make the researcher think that I liked what he showed me. A	research
PBC	Extent of adoption	Because neuromarketing for me has two sides – one is the 'how to design a campaign using the neuromarketing principles' and second thing is neuromarketing research, where we put people in fMRI and see how they reach to campaigns. I started to work with the company in the second area, the more clinical part, and it was exciting. Now I don't know with the company what's the status organization-wise, but it could have been a good direction. I kind of shift my focus. I was really interested in the topic one and a half years ago, but I shifted my focus because more opportunities came regarding retailers. And this is my base activity, retail consulting.	campaign design, research

Variable	Code	Indicative Statement	Theme
PBC	Extent of adoption	As I told you, in my field of work, it is possible to use this kind of neuromarketing, mostly in the events that we are making or in the special gifts that we are giving to our customers, the attention we pay to them. All these small gestures, which actually increases their satisfaction. All the attention that you pay to them. And because everyone wants to feel special and neuromarketing is good to really make someone feel special.	promotion
PBC	Extent of adoption	The problem is that I know and I heard I can apply it. That eye-tracking, EEG, I don't see why not, I can implement that quickly. For a bigger use I would have to know more about it. I just scratched the surface. I spoke with [name] and he told me that it can be used for this and price and packaging, and all kinds of things. So I think I would be able to use it a lot. But what is currently available, that tracker and EEG, I think I would be able to start using it. And more than that, I don't know. I don't have that information. What can be done beyond that. For now I only have the surface overview.	research, price, packaging
PBC	Extent of adoption	Without the library of knowledge, I think rarely anyone would be able to use neuromarketing as a scientific discipline fully. You need a lot of knowledge and research. If I were to start doing it from the beginning, I would be the first man that does it and I wouldn't know if it existed. That's wrong. Knowledge needs to be upgraded.	knowledge
PBC	Extent of adoption	Once step at the time. So I believe it would be something like some presentations or some conferences at first point. Maybe in the future, I'd like to believe so, syllabus would include this subject. Syllabus of the universities and colleges have to follow the market, have to follow the trends to be always in the market. So yes, I'm very optimistic that in the next years I would like to see this topic in the books.	knowledge
PBC	Facilitated Use	Right now, that would be training. I usually have 2-3 trainings weekly. Trust me, I wasn't able to attend it because it's being organized only for 250 people, and I didn't get to be selected for that cohort. But training is not a problem, there's plenty of them and they are very relevant. I think that here currently the bigger problem is for clients to realize that they need it [neuromarketing]. I don't think that demand is at a decent level. And I don't mean that research managers aren't getting it, but the decision-makers are not very familiar with the methodologies, so they need time to learn, to see some examples, case study, to understand what somebody else gained from a similar project so they would know that they might get, in order to invest.	skills, demand, knowledge
PBC	Facilitated Use	Facilitate, maybe, I [would] rephrase that into hinder it. Old school marketing approach of non-targeted blasts on TV. A lot of my customers have this approach. Actually I talk to them, let's say, about budgets of thousands of euro or tens of thousands of euro for campaigns in online and digital in general and at the same time they pay two million euro on fliers. Same flier for everybody. So when you come with this mentality, it's hard to appreciate and to get neuromarketing implemented. Although the first touch is very exciting for them. Yes, I will find the shortcut, I will get the promotion, I will make this great campaign with this subliminal technique.	cost, promotion
PBC	Facilitated Use	I think they have two answers to a question – who our target group is, and not to say man/women from 7 to 77, and to clearly identify the results they want to accomplish. That doesn't have to be using KPIs or something, but what I want to accomplish with this campaign, this year's strategy, or whatever. How I want to show up, compared to "my goal is to increase brand awareness and my target group is this this and this". So to expand those two questions and to get detailed answer to really feel them "why to accomplish this this year, what's the problem that these consumers have, these target groups". And I think that that's the ideal situation to use neuromarketing.	segmentation, strategy

Variable	Code	Indicative Statement	Theme
PBC	Facilitated Use	Time and money. Money, that's closely tied to the risk for the client. If the client plans to invest a lot of money, then often, but not always, he secures enough money and time to research that problem. If financially it's less on his side, he goes with what is 100% precise but has metrics from before and takes the old path and you take the old path for small, profit. If the risk is greater, if it's innovative, if it's a lot of money, if you have the time and the money, then you go and add more techniques to be sure and precise. If all of that is less, then you go to price competition. You can't imagine how the prices went down for the basic indicators. But clients often want to know the most basic things, simple things that they track and have experience with, like correlation between a certain answer and the sales he makes. And he has a good feeling "good, next time I'll ask only around those KPIs because I know they are tied to the business this much". And that legitimate when neuromarketing is 100 times, to show them the seventh decimal of what the campaign will accomplish. That's the same story like we had in the beginning – if he has 50,000 for online campaign in best case scenario, he won't spend 20,000-30,000 nor will he have 5 weeks to do that. You can't have 100 eye-trackers to do it with 100 people in one way, you can't. And I told you about the cameras on the computers, there are a lot more problems with that. And it's simple – time and money.	time, cost
PBC	Facilitated Use	What would need to happen is that neuromarketing serves scientific purposes. If it were institutes to apply it, academic community, I would be the first one to say yes. If it were used in an effort to set up models, methods, something that the researchers would be able to go up to the big companies and say these are the models, this is the framework, this is the structure. But whether the users are going to buy it. I would approve it at all levels, but I would be a bigger supporter of neuromarketing being used for scientific purposes and to set up models. Science doesn't have any other purpose in marketing but to be able to tell people that this works this way or that way. Of course, indirectly in the practice, but indirectly it is in the hands of the scientist.	application, knowledge
PBC	Facilitated Use	I am missing that process being simpler, to have something that's easier to implement. He was brought because he was working with the royal family. I accepted him as an expert. I'm not saying that somebody else might have done it better or simpler or he had a problem to adapt to the environment and the mentality. He was talking about some emotions that were produced in England, totally different results than in Serbia. And he was in shock. There was no consistency – like this research found this in England and then in Serbia he comes and "ups, that's not the way it is here". It is similar, but it's not the same. You know? This is very sensitive, these are political campaigns. He was working in a team of people where he had year and. Half with Charles that was hated at the time because of the whole situation, they were supposed to turn the things around so that people accept Charles. At that time, 96% of people hated him. The end result was 70% of Brits loving him. In year and a half. And then he was constantly referencing some research they were doing, that he was supposed to implement here. And then we come to the moment where it can't be implemented and that at certain points the results were totally different.	process, knowledge
PBC	Facilitated Use	Well, I don't know. Maybe as a marketing manager, what I want to is to be able to get the attention of people who don't know us. And for those who know us, I want them to feel emotionally attached to us and our brands. So I can use every opportunity to reach goals having in mind that the way that I do it is not misleading them somehow.	results, knowledge

Variable	Code	Indicative Statement	Theme
PBC	Facilitated Use	It would be great if people from the field, but people in general, knew more about it. If I were to invest money in neuromarketing research, it would make it easier for me if I didn't have to explain it from the very beginning to the general manager – what is neuromarketing, how, why. Rather, if he were to know something about it, heard it somewhere, read, something interesting that it's useful, I believe that it would make the whole process easier to start with that. And officially because I need his approval on one hand, and on the other hand it would be great if people in business, especially those that do marketing, like my marketing director, if they knew more about it, to support it.	knowledge
PBC	Facilitated Use	Yes, if the devices that are being use were at my cost level. That's on one hand. On the other hand, if there were an application software developed that would process the largest number of steps up front so I don't have to go into which receptor was activated in the brain, but to have information through the app itself and device and to get "based on previous experiences I have a well-functioning system". That would be some documentation of the cases, and that's it. Because if we analyze certain case and I don't know what the scientists have came up with before, because we need a lot of information to make decisions.	cost, application
PBC	Facilitated Use	With my company it's all about risk-reward or investment vs payoff. It really would come down to if the juice is worth the squeeze, from an investment stand point. It depends of how much we would need to put in monetarily and how much would we potentially take out of it because I feel like my company has reached a place of complacency. When it comes to their inbound marketing leads, they always want more but they don't want to invest a bunch of money in order to get minor addition to it. So I think it's a more monetary based thing for my company, which is what most companies feel, right? They don't have a bankroll to go and do something exploratory like Google or other major company, where they could be at net loss. But for us, we need to know that it's going to be a win.	cost/ROI
PBC	Facilitated Use	I would have to understand the process exactly, I would have to understand what result I'm getting, I would have to understand what resources would be needed on my end to implement it. I don't know in terms of tools, in terms of team, how long, is it something that could be implemented in a week or is it six months.	knowledge, cost
PBC	Facilitated Use	Personally, I find it very interesting topic that can provide useful feedback on many aspects with customers, customer preferences, and so on. And I believe that when it comes to that, personally, it all adds up to how you can make something more attractive and more applicable to people, to companies, to customers. I believe that would be the most important, personally speaking, to facilitate neuromarketing. Making something more attractive.	application
PBC	Opportunities	You know what, I currently work with media clients. They don't have a lot of money, to be honest. But, again, it doesn't have to be expensive, it can be very effective, but media clients do the bare minimum, as you know.	results
PBC	Opportunities	Honestly, no. If I see it being used in everyday work, I don't. Only because it requires different process of work. I think that it wouldn't work in MK, not any time soon.	negative
PBC	Opportunities	So my directors are very open for things like this, they don't make any issue and I think that if the pieces come together that they would be open for using it.	results, process
PBC	Opportunities	I think neuromarketing will also make contribution to how we understand the relationship between media and the brain. So, we'll have a feedback loop effect. It's not just using neuroscience, I think it will contribute much to neuroscience.	media

Variable	Code	Indicative Statement	Theme
PBC	Opportunities	I think that this is the next way marketing research will be conducted. I think that The conservative way of conducting research, only employing focus groups and questionnaires, has been largely shown to be inadequate for most cases and I think that it is a matter of time that this is actually the one of the ways that you should employ in marketing research. I think that we are one of the first companies in the Balkans who has the know-how and the equipment to provide this kind of research. And I think that in the next decade, this will become something usual. So there is a great opportunity there for us that we are one of the first companies in the field. Of course, you know what they say, the one who comes second benefits the most	research
PBC	Opportunities	Yes, definitely I see. Effectiveness – in the end, working less to get more. But in the beginning, working more. There is a German lady who said ‘it gets worse before it gets better’. It’s like a vaccine – get it, you will feel the pain but it’s better afterwards.	effectiveness
PBC	Opportunities	We tried different things, different approached to apply neuroscience to life. From designing TVs, containing brain exercises to a lot of application which I use in HR to make the profile of the candidate to neuromarketing. neuromarketing does just one of the fields. We tired different fields.	application
PBC	Opportunities	That’s what I said as advantages. Best way to solve a specific problem, and not to wonder around. Not to wonder in strategic way, and not to make just beautiful things that will win awards or to be noticed where we’ll say “well this campaign went well”. What does it mean to go well – that 300 million people saw it or that it earned this much or whatever? I think that the end result that solves the problem with neuromarketing can be very noticeable, to stand out, clear, and useful. That’s the main advantage if you ask me. Maybe there are more, but that’s something I’m going to discover as I’m using it more.	strategy
PBC	Opportunities	Yes, yes, yes. They are huge. I don’t know if research in all the marketing areas has it – like mystery shopper in sales – something like this can define the foundation, good for every area in marketing, for product development, pricing, everything, new connections, right on the spot, all of that, I think the opportunities are limitless. Really.	research, product development, pricing
PBC	Opportunities	Just because I would use every situation that I can. I don’t know if that helps you	positive
PBC	Opportunities	The opportunities that I see are in terms of getting the attention easier and mostly to reach this emotional engagement or emotional attachment to your brand.	emotions, attention
PBC	Opportunities	At this stage, no. I wouldn’t say so.	negative
PBC	Opportunities	As I said, nothing that’s not part of my syllabus, I use it additionally for my discussions in the class. Students are not expected to have any knowledge on that and not obviously asked to do any work on that. It’s just something that I can use for discussions so. So other than that, I wouldn’t say so.	knowledge

Variable	Code	Indicative Statement	Theme
Prototype	Description	That doesn’t have anything to do with the trend, you are simply up to date with all technologies. Probably open for new things, for new reality. Very open-minded. I’m sure that this is no big deal, but right now to me it sounds like big deal since I’ve never seen the opportunity to use it here, and now I can only daydream about it. But if there is information, and you said there is a book on neuromarketing, if somebody sat down and did the research, I would love to see it and would make an effort to collect the information.	open-minded

Variable	Code	Indicative Statement	Theme
Prototype	Description	He or she has to be really strong in marketing or in the neuroscience, because it's really hard for a person to be good at both of them. What I am seeing right now, for example my professor in Barcelona he has 30 years of experience in branding and marketing, he was bringing together all the research because he partnered with medical guys, scientists, that's why he could bring like truly neuromarketing. On the other side, I see these people, for example [name], he is truly a neuroscientist guy, but he probably isn't as a business guy. For example, [name], he is a CEO of [name], and he had a lot of experience in marketing first and then he brought all together the neuroscientists. I will describe that person that he or she has to be really strong in one, either marketing or neuroscience. But for sure marketing. Even if you are really strong with neuroscience, you are not going to be able to do neuromarketing if you don't have idea of how people behave within their retail store.	knowledgeable
Prototype	Description	Pioneers. I think that they really are pioneers. I think that they are contemporary people, that they really leap and enjoy what their era has to provide to them. They are open-minded, so they can benefit from the goods and services that their era can provide. I always believed that, an this is something my father used to tell me, "always try to have access to what the era you are living in is providing".	pioneer, contemporary, open-minded
Prototype	Description	It would be either somebody with open mind that says 'yes I believe in this'. Again, we are talking about the techniques now, not the clinical part, because for me this is a totally different topic. I think an open mind on designing messages using best practices from neuromarketing. This would be one. The second one, as I see it, would be keeping things simple. There are two types of companies, going up or going down. Going up – the greedy ones want more, more market share, more whatever. The going down ones – act of fear, fear of losing, fear of going down. So either the ones going up with the vision 'let's use something new because we are successful anyway, let increase our market share' or the ones going down because there is no other choice 'it's now or never', they need to make it or break it. I consulted both types of companies, so I have an idea of how they think.	open-minded, knowledgeable
Prototype	Description	They are forward- thinkers. They found a technique. For me, neuromarketing is very close to persuasion. I don't know if this is correct, but I see it very close with persuasion technique. I am pretty interested and I do a lot of reading on conscious decision-making versus nonconscious decision-making, starting from the bible of it, which is Kahneman 'Thinking Fast and Slow'. And from this, if you think hard enough, you understand you don't control much of your life. And again, this topic is very connected to what we are trying with neuromarketing it touched in system 1, this is our aim and maybe this is a good definition of neuromarketing – how to touch System 1 and somehow completely ignore System 2, which anyway doesn't really matter	forward-thinking,
Prototype	Description	I think they're generally very smart people, I think they are oriented to science, and often science for science sake here. I think they are a lot of dedicated people who try to understand this stuff. I think they are rightfully enthusiastic about their discipline because I think they are correct that it holds tremendous amount of promise.	smart, science, knowledgeable
Prototype	Description	I would describe it as early adopter, because only a few companies here in Romania had the courage to use neuromarketing. I remember 2009-2011 a Polish company tried to make some business here in Romania, a neuromarketing Polish company. It was the lab and they came to conclusion that it's impossible here in Romania to make neuromarketing. We proved that it is possible, but it's impossible to make a living here just only from neuromarketing.	pioneers, brave

Variable	Code	Indicative Statement	Theme
Prototype	Description	If it's from a point of view of a company using that service, that would be a person that is definitely proactive, visionary, knows what he wants, decisive, aware of what he wants to achieve. If we are going into a personality, he is more affluent and all of that, stable financial situation. And if we are describing a person that practices neuromarketing then he is the same.	proactive, visionary, confident
Prototype	Description	I don't think of Coca-Cola even though it's the icon of brand marketing and the proactive campaign, but rather someone from IT industry who is aware of the new contemporary trends and uses it in work overall and marketing, as well. But definitely those are not these big companies that have been privatized, where GMs does marketing and everything else and you have to explain it to him. You know what I mean. It's more these new companies, from IT startups to stronger IT companies, then multinationals that are global and have strong brands.	contemporary
Prototype	Description	Educated, reads literature, follows trends but it often stays at the surface and what's behind doesn't matter.. There are people that do this seriously, and that's someone who's educated, reads, follows the literature, which it's just a brief fashion trend with some.	knowledgeable, contemporary
Prototype	Description	Curious, people who study, also if they work they continue to develop their knowledge. And young. Because all young people, for example in South Afrika this guy is young, and is curious and is not afraid of this technology and I think he can understand that it's not possible that something is still locked like marketing research. So wants to try new things.	curious, knowledgeable, open-minded
Prototype	Description	Those who apply it I would describe like professionals, advanced, visionary. I don't have anything against those people that apply it because they have a certain vision like I do that it's useful. I don't have negative relationship with those people. But characteristics, you asked me specifically. Professional, visionary. They are visionary in the context of profit, but not visionary enough about the science. I'm more for more to be done, to have more studies that would be useful to them than they to do it themselves. We are simply subjective. There's all kind of people, and not that they will use it affirmative but they'll use it for promotion, but I don't think they are capable of to comprehend it really. Who can should use it.	advanced, visionary,
Prototype	Description	If I understood you right – instinctive, analytical. They have a great perception to see something from a different angle. That fascinated me , that moment of transformation where depending on the situation, data, information is incredible.	instinctive, analytical, innovative
Prototype	Description	It should be a company or a person who really believes in what they do and that the product or service that they provide is really helpful, useful and it can really benefit certain group of people. If they use neuromarketing for this, that should be ok. It should be a company or person who cares about what kind of influence they have on these people. Because even manipulation, no matter if we are talking in positive or negative aspect of I, it actually brings with it some responsibilities. And you should be ready to take this responsibility if you are not up for it.	confident, responsible,

Variable	Code	Indicative Statement	Theme
Prototype	Description	I think currently those are big companies, companies that have a long-term vision. For now the examples I know of, those are serious, big, international companies where there is the culture of innovation and using new tools, where there is a culture of accepting new trends. I think that more prominent at international companies than with the local ones. Here you need to prove, to be sure that it works. That's how people in Serbia think, that how people that lead companies think, no matter that they are at the high positions, they are very limited. It sounds stupid when you say limited, but it might be the most real word. We are far from the world. Information is available to us, but we refuse to use it. We refuse to use anything that's not close or familiar to us, that's the culture in Serbia and beyond. In Serbia it is difficult to have something live. I think that's totally real that when international companies start using it in Serbia, the local companies will go "Coca-Cola is using it, Henkel is using it, P&G is using it, they are not crazy, maybe we should start using it".	innovative, open-minded,
Prototype	Description	Characteristics, at least how I see it is that the company is currently has a lot of resources, a lot of people, a lot of products, and somewhat can risk in using neuromarketing. Because simply something that's not well researched yet is risky. Caring company. If a person cares about what his consumer thinks and feels, if he wants to create that that consumer feels better and smarter, he would use neuromarketing.	risk-taking, caring, with resources
Prototype	Description	It definitely seems like on the forefront of marketing technology. So it's kind of like a new trend now and I see it expanding and I see it maybe being relevant in couple of markets right now to start and I can maybe see more of a return on it, where being in the innovation and construction industry I don't know if it would be the forefront of neuromarketing. I don't know if that would be the pilot industry.	forward-thinking, innovative,
Prototype	Description	Advantageous, innovative. Since it's something that's not very developed, anyone in every company that could afford to use neuromarketing as part of their research obviously I believe they would have competitive advantage. So, yes, innovative and advantageous.	innovative, advantageous
Prototype	Description	Considering that this is a methodology in development and that it needs investments for the future, that needs to people that can see further in future, that are creative because they know about something that's new even methodologies – even with methodology you have some things you need to follow – but it depends on your creativity how you will come to a solution because not everything is black and white. So creative, innovative people and people ready to invest in themselves and learn something new. That's what I mean.	creative, innovative, confident, knowledgeable
Prototype	Use of Neuromarketing	I think the obvious thing is design. And probably for sales. Positioning, types of messages, timing for call for action, where to find it in the store, positioning, if it's website – where exactly, up, down – where it has the most impact. I assume that it has most applications in design and sales. Nothing else comes to mind. There are probably million other areas for application.	design, sales, positioning
Prototype	Use of Neuromarketing	The most they use for retail, for the print ads, videos, commercials. Also, I've seen it used for politics.	retail, promotion, politics
Prototype	Use of Neuromarketing	The same that would be if they did the ordinary, let me call it ordinary, the old-fashioned research. It would be the same, to get information about their consumers so that they can get that information to properly adjust goods and services and properly create advertising campaigns. Exactly the same.	research
Prototype	Use of Neuromarketing	The main reason is to capture attention because that's one of our biggest clients, that Dutch insurance company, apply it for word innovation. For instance, they use neuromarketing stuff, like fMRI and something like this together with our company and they published quite large article in a Journal presenting their work as THEIR work, it's actually our work. Make the case in using for the first time fMRI in	innovation, research

Variable	Code	Indicative Statement	Theme
		testing advertising stuff in Romania, something like this. Actually, it's PR action for this company.	
Prototype	Use of Neuromarketing	Well, they use neuromarketing mostly to explain the human behavior, that's usually research.	research
Prototype	Use of Neuromarketing	I think they used to be different. To assure they are different.	competitive advantage
Prototype	Use of Neuromarketing	Maybe some bad things are being done, but I think it's being used where it should – to make profit, but in the context of adopting the offering to the consumer. That's the way to get the profit. It sounds like they are using it the way they should, but I wouldn't go into that. But the only purpose should be to make it useful to them. Of course, with some misuse, right? When a commercial shows up, my kid gets paralyzed and there's no way for somebody to convince me that there's nothing that influences the brain. Let's be real. I haven't read about it, nor have I seen, but it does exist.	promotion
Prototype	Use of Neuromarketing	For their goal. I keep saying, as someone doing marketing at the end of the day I use for best possible testing, to reach the consumers that will recognize that message. To communicate at a higher level. It all comes down to sales as I'm talking about it, but I don't think that's bad. So, it sounds to me like 'let's find the best way, most sophisticated way to communicate something between us and the third party'.	research, sales, communication
Prototype	Use of Neuromarketing	Manipulation is not something so bad that we describe it all the time. We even manipulate our children, 'there is not chocolate for you today'. We can say it is slightly different for better result, this is manipulation as well, but it's not bad.	communication
Prototype	Use of Neuromarketing	I'll answer it as a counter question – is the main goal for a company to make a product that will make the consumer happy and satisfied, more or less? The answer is probably that they would like more satisfied consumers. And that consumer satisfaction is the goal of neuromarketing.	customer satisfaction
Prototype	Use of Neuromarketing	Obviously, as cost is one of the elements to initiate a research, they would be using this as part of their research, their effort to promote something, to find people's reactions to throwing new product or service in the market., either for themselves or on behalf the companies if we are talking about mkt consultants.	research
Prototype	Use of Neuromarketing	I don't know. I see the usage mostly in research agencies. And they are but I can limit myself only to them because we also do it. If you are asking what kind of an organization that is, first and foremost that's a research agency. That can be an advertising agency if they think it through, they'll realize that this is very important for them because they are creative, it gives them a lot of opportunities. They learn something, that's a different story, I really don't know that part but I know it has been used for much longer then it's application in marketing, but generally agencies. If clients know how to implement it, then great. But they don't have those resources.	research

Variable	Code	Indicative Statement	Theme
Attitude/ Acceptance	Difficult	But people here still either don't have cameras or are not ready to participate like that. At a central location they tell you there are cameras, that they'll record your face. You tell them that here also, but you get their background, their house and they are not as comfortable as in the field.	technology

Variable	Code	Indicative Statement	Theme
Attitude/ Acceptance	Difficult	online panel is cheaper because you don't have to pay the location, doesn't take as much time, but it's a bit more complicated and they are not as willing to participate.	cost, time
Attitude/ Acceptance	Difficult	One thing that applies to both, and I don't know the technical part, maybe you do, but I'm not sure what software you need to analyze facial coding data, whether you need servers, how to import data, what's the output. That part of the story I'm not clear about.	technology
Attitude/ Acceptance	Difficult	For sure fMRI, it's something that I am not able to do by myself, in the couple of years I will not be able to do it by myself because that requires a medical background, a technician and stuff.	technology, skills
Attitude/ Acceptance	Difficult	Just to give you an idea, we just finished a study of 70 people, we had gigabytes of data. So it's a lot of data to crunch, but it will improve. The software are becoming better.	time
Attitude/ Acceptance	Difficult	On the hard part, in the sense of fun part, is making stories. So I find this very fun. It takes a while, you need to sit like a writer, just relax and come up with a story to make a point.	skills
Attitude/ Acceptance	Difficult	We have to rent fMRI from clinic, and adjust our schedule with the clinic and make some protocols with the clinic, and something like this. And also to pay the physician and the processing. But it is more difficult. I think it is justifiable to get the data and a lot of stuff, but it is more difficult than just to make questionnaire and do interview or give a link for online survey, something like this. You have to have people who are able to interpret the data and in order to translate brain data neuroscience data into marketer language to understand the objective of the study.	cost, skills
Attitude/ Acceptance	Difficult	As far as neuromarketing is involved, there are several difficulties with the adoption or selling it to the client, there are several aspects. First, how difficult it is to do it. We are lucky that since this is adding complexity, it's a bread winner for us, because if you didn't tie into the science or if you don't invest enough money to educate in this area, you cannot do this professionally. And that a bread winner to our industry. I am very happy about this because then we invest, that's our business model. We are tied to the science, we have highly educated people, you train them and you have a certain image, and that keeps the industry.	skills, knowledge
Attitude/ Acceptance	Difficult	Well, there needs to be the right equipment	technology
Attitude/ Acceptance	Difficult	I think it's a bigger problem adopt it in some classic everyday formats than the problem itself – how to make that billboard fit, that was a constant problem, how to make it fit in regular formats that whole story without ruining the concept we had and the idea that we had and were looking for something extra, that billboard can't be done like that or that message can't go like that. I don't know how to explain it.	skills, knowledge
Attitude/ Acceptance	Difficult	When they were doing the speeches, since they were doing the research to determine what politician to select, they were doing speeches and they were measuring the impulses in the context of what that speech produces, emotions and all that. And we received the results, we were at a point where you have the press conference. At the press conference it doesn't matter what we have done before because this is live and if this politician can't share it in full and the press conference has not what he said but a different thing. Because he does it subconsciously, impulsively, and our all work goes to waste. 15min after the questions, bye. At the end we had a list where everyone had to send us questions in advance, which is still impossible because they don't know what he's gonna say. That was another problem.	protocol

Variable	Code	Indicative Statement	Theme
Attitude/ Acceptance	Difficult	Something to make the whole process simpler, because we were spending time in those offices doing research endlessly. I am missing that process being simpler, to have something that's easier to implements.	protocol
Attitude/ Acceptance	Difficult	And then we come to the moment where it can't be implemented and that at certain points the results were totally different.	protocol, skills
Attitude/ Acceptance	Difficult	I think that the research is the most difficult part. Maybe for B2C products it could be much easier, at least those who have big budgets and make several marketing research with some focus groups – yes, that's fine, that works. But in B2B, especially when we're talking about software, it's very different than sending a product that you can actually touch. So I think that the research part is the most difficult one, to know exactly what are the drivers that can make someone reach to the stage of taking a decision for something.	protocol, skills, knowledge
Attitude/ Acceptance	Difficult	If I were to do it on my own, that would be extremely difficult. You need a lot of knowledge from medicine, statistics, marketing. Many scientific areas contribute to neuromarketing. Actually, a very good statistician needs to know to apply all those methods to neuromarketing.	knowledge
Attitude/ Acceptance	Difficult	So cost is certainly something that makes it difficult.	cost
Attitude/ Acceptance	Difficult	Of course, the techniques that are much cheaper and yes they could as well use as well techniques such as those.	cost
Attitude/ Acceptance	Difficult	Cost and I believe is time. Because to use all these techniques, apart from cost you need time to find the right people and run all these experiments and tests and the main problem also I believe is it has to take place in a lab. So bringing in people and asking them questions and take them through these procedures , apart from the cost time is also an important aspect to evaluate it. Especially when you need them for half and hour or couple of hours per person, that makes it a bit difficult to go through many people.	cost, time, skills, protocol
Attitude/ Acceptance	Difficult	Just as a gut reaction, it sounds difficult. It's just a gut	difficult
Attitude/ Acceptance	Difficult	I would say difficult, but again in the topic of effectiveness, it's much more effective, but you need to put some effort in the initial stages to actually try to, for example, use it. I have somewhere a neuromarketing techniques map from this book. There are very good techniques and you need to put some effort to actually use them in a normal 'just do it' way – you start writing messages or presentations.	knowledge, skills
Attitude/ Acceptance	Difficult	Definitely it is more difficult than traditional stuff like questionnaire or interview, because many here in Romania we work with fMRI and we don't have MRI in our office in the basement	skills, technology
Attitude/ Acceptance	Difficult	We have to rent fMRI from clinic, and adjust our schedule with the clinic and make some protocols with the clinic, and something like this. And also to pay the physician and the processing. But it is more difficult. I think it is justifiable to get the data and a lot of stuff, but it is more difficult than just to make questionnaire and do interview or give a link for online survey, something like this. You have to have people who are able to interpret the data and in order to translate brain data neuroscience data into marketer language to understand the objective of the study.	technology, time, protocols, skills

Variable	Code	Indicative Statement	Theme
Attitude/ Acceptance	Difficult	When we started doing it, we started from the very beginning, from the appearances of every politician to how they dress, colors, smells that were released during those conferences to messages that were shared, look of the billboards, etc. Sometimes it was difficult to incorporate it with the standards that existed then. Whether it was the way to send a political message, whether it's certain works to use or something, and now that's a standard that needs to be followed for some reason.	skills, protocol
Attitude/ Acceptance	Difficult	Yes, but maybe that's because we are selling software. With software, I'm not sure how you can use neuromarketing, because we don't use sounds or visual. Yes, of course we use video, creatives, but I'm not quite sure that is related to neuromarketing, so maybe you can tell me more about it.	knowledge
Attitude/ Acceptance	Difficult	I think it pretty much depends on how much do you know your target, and do you know exactly how to get their attention. If we're talking about neuromarketing in terms of in the attention of someone, I think this is something everyone of us should use. There are so many advertisements everywhere, so many things that are fighting for our attention. I think this is difficult, to get someone	knowledge
Attitude/ Acceptance	Difficult	Difficult, of course. Well, there needs to be the right equipment. Maybe there is something, I don't know what, to measure, I don't know if galvanometer belongs to neuromarketing, it's not just fMRI but some other methods. Maybe galvanometer, but it existed before. Whether someone is sweating or not, that existed even before neuromarketing. But I think that the core of neuromarketing is to see what is happening in a concrete way, so of course it is demanding. And it is expensive, if done well.	technology, cost
Attitude/ Acceptance	Easy	Specifically for facial coding which I know. So, I can't tell you a lot because it's just in development here. If we were to do facial coding for what we call Central Location Test. We have our laptops and we have one central location where we animate people that come to test an ad. And you have a camera on the laptop. That's not some expensive investment. In that case, it is a bit more expensive to do the field research like compared with an online panel where people already have cameras on their laptops, not sure if there are still laptops without them. That would be cheaper to do with an online panel.	cost, technology
Attitude/ Acceptance	Easy	It is very easy if I have enough resources to hire someone to do it.	cost, support
Attitude/ Acceptance	Easy	I mean, galvanic response and eye-tracking which I found really user friendly, and there's the EEG in which I have no experience, but with this EEG that we are going to prove this pilot I feel comfortable because there are medical scientists behind that are going to give you support for that data and that device.	technology, support
Attitude/ Acceptance	Easy	As the time goes by and as you fight to win a certain place in the market, our clients care less about how we get the results. That's too much information for him – "I don't care about the sample, and what you're going to ask, how, what technique – that's less important than giving a precise answer to the initial question and when you can say what's the ROI based on what was given for the research and what can be gained.	cost/ROI

Variable	Code	Indicative Statement	Theme
Attitude/ Acceptance	Easy	Now, of course, you have clients that are interested in the novelties of all kinds. There are a few clients that say “as soon as you make something new, we want to do it”. That’s more of an image driver than the technique. There is often that trend that due to the increase of complexity or the options in the research, the client will say “you are the experts and I pay you because you know what you are doing, and I care about the answer to this and how precise you can be”. There, those are the two aspects from us as an industry and what client needs. If they need it and if it’s an image driver, and what they care to get on the other end, but techniques are just the finesse. But clients know very well and they follow. Like we go to trainings, they go to trainings too. neuromarketing is not only in research. They understand the concept of neuromarketing, that’s not the unknown for our clients. And they would ask for it themselves “what do you use here?”. We, for example, started when we are testing the concepts of new products, we test the voice color, apart from what they say, apart from the quantitative test, with new products we also code the voice tone and use it in the predictions for a new product success.	novel technology, trust, knowledge
Attitude/ Acceptance	Easy	Easy to use I find things that are straight, like rephrasing a phrase or to make it, for example, visual or distinct, black and white.	skills
Attitude/ Acceptance	Easy	Based on my experience so far, no. Following Sales Brain methodology, where you need to have everything all the way to meta-claims, neuro icons, meta presentations, this that – I can tell you that nothing was particularly difficult. You simply learn it, one follows the other, like a lever.	skills, knowledge
Attitude/ Acceptance	Easy	So attention, but if you know very well your target, and you should know it, you should focus on knowing it, then it gets easier. We use neuromarketing in terms of getting someone’s attention and send our messages, that’s fine. Because the final decision will be theirs anyway. It’s fine to protect it	knowledge
Attitude/ Acceptance	Easy	Maybe for B2C products it could be much easier, at least those who have big budgets and make several marketing research with some focus groups – yes, that’s fine, that works.	cost
Attitude/ Acceptance	Easy	I believe that all these results and discussions from research is published in papers might help on some people researching. For example, now something that comes up in my mind. Discussions on prices and how prices might manipulate people’s decisions, 0.99 prices and so on. If you focus on secondary data, data from articles, this might be of help on some situations, even in small and even larger companies. For example, if I am a retailer and I sell FMCGs, although I wouldn’t run a test/experiment myself and start searching for people’s reactions, I might use all those known results and discussions to apply them on my products. Something that it has happened many times, from a secondary data basis, yes I believe those elements might be of help.	knowledge
Attitude/ Acceptance	Easy	If you are educated enough about it – and when I say enough, I don’t mean you need to be an expert – then it’s easy to use. You literally need a few projects to go through it. We are all influenced by it now, so anything we do for the agency or the client, mi think in that way. That’s it, it actually changes your mindset and approach.	knowledge
Attitude/ Acceptance	Easy	If we see it as backwards in time, I’d say it was much more difficult. As time goes by, I believe it’s more and more easy to use, just because all these techniques which are very expensive to use and so on, they take every research as far as I’m concerned from tens to hundreds of thousands of dollars, so it’s very expensive research. And obviously not for every company. I believe it’s something, at least for now, not sure about next years, but for the time being, I believe neuromarketing is something that large companies could use as long as they can afford the cost of this research.	cost

Variable	Code	Indicative Statement	Theme
Attitude/ Acceptance	Easy/Difficult	I can see the potential already with the knowledge that we have, but I can also feel frustrated, so the brain is a source of excitement and frustration for me. What's exciting, to be honest, right now is the possibility of using tools such as EEG (I don't talk much about MRI because commercially it's difficult to use), but both are around for measuring central nervous system activity and some peripheral have been easier to acquire, the data that's being produced is still very messy and it's still overwhelming to collect data.	knowledge, time, skills,
Attitude/ Acceptance	Easy/Difficult	Well I think that neuromarketing is not just about tools. I think that when you know how the brain works, you can apply it to many different disciplines. I think that I'm using every day. I'm using social media, how people react to what I'm post on social media, also for our clients I'm doing these presentations where I'm trying to be more user-friendly, try to be more into the brain for them to catch the idea really fast. I honestly believe that neuromarketing is not just when you are using an EEG, but when you are trying to connect with your consumer in how their brain works.	knowledge, skills
Attitude/ Acceptance	Easy/Difficult	I think that if you find the right partners who will guide you, or help you guide yourself rather, to a selection of appropriate methods that fit your problem, I think there's tremendous value to be had from all forms of neurosciences. Again, the danger is that you will be steered in the wrong direction by somebody with the financial motivation. But I think in the hands of reputable people, people will consistently find value adopting these techniques. It's the way we get beyond the old methods of simply asking people what they think and what they feel, which I think we now understand doesn't get you all the way to the authentic insights that you need to serve peoples real interests.	support, benefits
Attitude/ Acceptance	Easy/Difficult	I don't see anything that's too difficult. Generally, we have an agency that can specifically implement, realize, do, test, etc. I think we need tools. At our company we would have to use it as a service, but that's not something complicated. It wouldn't be simple to use it every day for everything that we do. At this moment, it wouldn't be simple. But for some things that are important to us where we invest a lot of money, I don't see it being complicated.	support, technology, protocol,
Attitude/ Acceptance	Makes job difficult	I mean you get physically tired. And I will explain that. Sometimes I feel like a hairdresser. Placing all these electrodes on subjects skulls and you are standing for hours, so you also get physically tired. Because imagine Anka, let's say that you have research with 50 subjects and you only have 5 days to collect the data. And this means you will take on average 10 subjects per day. And think that you need in most cases around an hour or less, 45min for sure with each subject. Maybe you will end up standing for 10 hours during those 5 days.	time, effort
Attitude/ Acceptance	Makes job difficult	More difficult definitely yes, coz you have to work more, but more efficient at the same time. And it's quite tough for somebody like me, because we are not talking in general but we are talking in particular to keep everything in mind, because you get absorbed into work and actually doing stuff and you need to take time to step back and think about, I don't know, what you're doing, not just do it. I'm not a big fan of this modern 'just do it and see what happens' mantra.	time

Variable	Code	Indicative Statement	Theme
Attitude/ Acceptance	Makes job difficult	makes my job more complicated. It's much difficult to mix traditional research with neuroscience, using fMRI or other stuff, or GSR or other stuff, or for laboratory analyze this, because it's not in appropriate to commit people that you as psychologist or neuroscience are waiting to some basic research about brain or other behavioral stuff. But it's very hard to convince marketeer that you can help him with fMRI or EEG or ERP and other laboratory methodologies. Because here we try to move people from the faculty of economics and establish neuromarketing department. And one of the Deans said to me that it's very interesting stuff, it's very scientific but I don't think we have to risk now, it is better to postpone this, to wait and see what is happening and this	knowledge
Attitude/ Acceptance	Makes job difficult	Well it's very hard to generalize. Some companies are very open. I've seen last year some very exciting studies or methods to collect data – one of the main insurance companies here in Romania, I don't know if it's currently the main, but it's one of the main, it's international in Romania and Holland, they used a lot of methods imported from psychology and psychoanalysis, like hypnosis and psychodrama, a lot of other stuff. But they are reluctant to use fMRI or EEG	technology, knowledge
Attitude/ Acceptance	Makes job difficult	Maybe it's a degree of acceptance of novelty. And they are ready to use methods of psychology in 20s or 30s but not in the last 10 years	technology, knowledge
Attitude/ Acceptance	Makes job difficult	One of them, the main reason neuromarketing is quite expensive here in Romania is that nobody accept a marketing study only using neuromarketing tools. You have to prove that these neuromarketing tools are ok. If you correlate the data with some traditional tools and for this the cost goes higher, you have to do the traditional part and also neuromarketing part just to prove that NM is ok, and it is confirmed with the traditional part.	cost
Attitude/ Acceptance	Makes job difficult	Well only in the area of initial education and explanation why something needs to be done in a certain way so it lasts longer, or that it's simply done differently. And I can say that given that our client was the owner of the agency when we started to reposition the agency, we invested a lot of effort, and it took us – I'm not sure what the first result was, I think it was website - like 7 months to go through it with him, explain what each neuro icon is, this, that and to come to a website, for example. Otherwise, we would have finished in 3 months. That's what I mean.	knowledge, time
Attitude/ Acceptance	Makes job difficult	For example when we were doing that research with the slogans, in the moment when we were working on those speeches and everything else, I can't say it was simple. Especially because some slogans sounded fantastic, but then when you approach them from another angle you understand that they were a miss. I think it's demanding because you are still looking at from a different angle and something that looks nice at the first glance or sounds nice, it doesn't have to be nice when you're doing research and we were mistaken many times. We were all like "this will do great" and then after the research we learned that some things that we were convinced will do phenomenal were a catastrophe. And before the elections the strategy has changed from the initial one and when he came and we all started. It was heaven and earth. Colors and everything, we were changing everything from the roots even though we were convinced that everything will be great. Honestly, at that moment I didn't like the guy, I wasn't feeling good.	research, protocol

Variable	Code	Indicative Statement	Theme
Attitude/ Acceptance	Makes job difficult	Before anything else, the difficulty related to the resources. There needs to be one part of resources allocated only to neuromarketing and especially that limitation where we need to make decisions where to invest. If we want to analyze how neuromarketing can help us, then we need to hire a NM expert, particular infrastructure. We need fins a sample every time and I believe the participants wouldn't be willing to participate in this type of research for free. It doesn't have to be like this. If I do the same thing and I find this interesting, yes. But a lot of regular consumers wouldn't understand that. But this is my assumption, somebody needs to research this more.	cost, support, technology
Attitude/ Acceptance	Makes job difficult	Yes, if I had to manage it.	skills
Attitude/ Acceptance	Makes job difficult	For my PhD, I haven't gotten to a point where it can make it easier. For example, I'm still struggling with translations of metrics and scales to Serbian, comparing 70 year old's because it has to be done like that [laughs].	protocol
Attitude/ Acceptance	Makes job difficult	At this point, I can't say I can find something that I can use NM to my advantage. Apart from discussing with my students on this field, it's not something in the syllabus or coursework. It's something very new to them, unknown work, they find it also very interesting and the provoking think, in a good sense, is that this creates more discussion. And I try to give my students another perspective on how to think, how to behave and whether something is what it seems or what it's not.	knowledge
Attitude/ Acceptance	Makes job difficult/easy	I don't think it will make it more difficult.	not difficult
Attitude/ Acceptance	Makes job difficult/easy	I can't assume anything like that right now. For now, I mostly see positive things. I would probably have to start doing something to become comfortable implementing it in order to see the difficulties. But that's difficult to see.	not difficult
Attitude/ Acceptance	Makes job easier	No on the contrary, I would say. On the topic that I mentioned before. It doesn't have to do with making my life or my work easier or more difficult. What I do is as long as I read and go through articles and get additional knowledge from something, I have the opportunity to discuss something, not to prepare something per se, but just have the time and the mood on behalf of the students. Because this is also new to me as well. And now starting my research, I go through everything that goes through my hands.	knowledge
Attitude/ Acceptance	Makes job easier	It would help me in a way that I would be able to attract the clients. The point is that it makes their job easier, and by that it makes my job easier. Do you understand what I want to say? We already have that, but it needs to go worldwide. Russians are developing. It makes their jobs easier because they can offer their clients all kinds of methodologies that market already offers and aren't that expensive. Here it takes time until everything is set up, it. Might be a bit expensive and complicated and new and people need time to get used to it, but it will make it easier for me since I'll have something new to offer to the clients that they haven't heard or used before. And I'll be able to attract new clients.	benefits
Attitude/ Acceptance	Makes job easier	if there is a research where I can extract the conclusion, then yes.	knowledge

Variable	Code	Indicative Statement	Theme
Attitude/ Acceptance	Makes job easier	Actually, it gives you safety, you feel safe that that if you analyze the results in the proper way because neuromarketing research has these 3 or 4 steps. First there is the research question, then there is designing the experimental protocol and this needs to be designed correctly, then you need to conduct the experiments and feel like a hairdresser and then you need to analyze the data, which also takes a lot of time. So, neuromarketing, when it is conducted correctly, because you ask me before, involves not only physical but also mental effort, not only mental but also physical effort. So, need to analyze the data correctly. When I say analyze the data correctly, you know this is a huge chapter, which is also signal analysis, which is data synchronization because, for instance, if emotional facial emotional software detects fear in your face, fear is not going to be detected at the same second to your EEG signal, because first it's the brain and then you catch the reaction of the face, first you'll have the reaction in terms of brain waves and then this reaction will be depicted on your face. So a huge issue is to synchronize this data from all this different sources. You need to synchronize the data correctly, when using more than one source, and this is the correct thing to do because using more than one source of information – of course, the adequate sources – increases your chances of being accurate. But then you need to combine correctly these sources. So if you know these things, then you really are safe and I feel safe that our advertising campaign that we are going to design for our clients is going to be successful. And it always has been successful. Really. We always had success 100%, meaning that these brands make the customers feel happy, create bonding with their customers, brand awareness increased really easily and dissemination of the brand was really easy everything was designed accordingly for the specific target group. So our clients then have ROI, return on investment. And everybody's happy. First thing how I feel – I feel safe, because everything has been conducted correctly as it should be, and every time that every step has been followed we were successful. When you don't follow all the steps for whatever reason, then you decrease your chances of being successful and that makes me anxious.	benefits, protocol, safety
Attitude/ Acceptance	Makes job easier	Neuromarketing would make my [job easier by] getting customers easier rather than my job, because my aim is to get through the clutter. I have a business I am alone in this business and I want to scale up, otherwise there's not much point. I have my work fully loaded, my personal time, but I need to get more contracts so I can hire people so I can develop the company. And it helps me into this – designing messages in first contact usually, coz first contact for me is very important; once I get to meet the guy, it all goes well. I also try to use neuromarketing, but let's not take neuromarketing so precise. From my getting thinking or approach rather than techniques. In my conferences, I do a lot of speaking at different conferences, mainly around online and retail topics, so I try to apply these simple techniques, like making things visual. I must admit, I haven't done it for a while, so maybe I forgot some of the techniques, but it's a good reminder now that we are having this conversation.	benefits, support
Attitude/ Acceptance	Makes job easier	But it helps with work I think because you reach the final result that's visible and clear to the client easier. Maybe you invest more time in the education beforehand, so it won't be done in 14 but in 24 days. But I can tell you that for everyone we working with based on this principle, the final result was very tangible and measurable and marketable and obvious and clear. It's probably connected to what solving the basic pain. As soon as we solve it, he (client) is happy. And it doesn't matter that the client didn't get an award for a billboard at a local festival.	benefits

Variable	Code	Indicative Statement	Theme
Attitude/ Acceptance	Makes job easier	If you can understand human behavior better, you would be crazy not to use those instruments. Especially because with time you understand the limits of human answers and how misleading it is what they say. Of course, we use various techniques where we strip it down to come to the core of the problem, all those additional tools that help us to describe better and more precise human behavior, to understand what's really behind so we can influence the behavior, that's always welcome. Neuromarketing as a discipline that focuses on one specific way – what drives our behavior – is useful.	benefits
Attitude/ Acceptance	Makes job easier	I'm going back to the possibility of targeted communication with the consumers and building an emotional, deeper connection. I think it's a fantastic tool that allows for consumers to react in a way that we need, to bring them certain things closer through stimuli, to have an emotional connection with that, to establish a deeper emotional connection. It allows everything that can't be done via the classical channel, maybe it can now, but in Serbia now digital is everything and you're entering a third dimension but without this I think everything is just at the surface and this is the only way to get in the deeper connection with the consumers. That's the biggest benefit for me at the end of the day.	benefits
Attitude/ Acceptance	Makes job easier	I think that whether we call it neuromarketing or we call it good marketing, if you find the right way to get the attention of your target, I think it's fair enough. It's not fair if you mislead by influencing his senses and he gets emotional decision. There is nothing wrong with emotional decisions, but they are not sustainable. And in our field of work, the decision to buy a corporate software has to be some kind of rational. You have to believe that you are taking the right decision, that it will help you. It doesn't have to be only emotional. Of course, emotional decisions help to get you convinced, but it's not sustainable in long-term perspective. And our business, we don't stop only after selling the product, but we do pretty much maintenance and we charge for the maintenance, that's also part of the business. So we are creating relationships, so we have to be sure that we are not misleading our customers because they will not stay with us. They will buy the software but they will not stay with us, they will not be happy, which is not something we want.	benefits
Attitude/ Acceptance	Makes job easier	So attention, but if you know very well your target, and you should know it, you should focus on knowing it, then it gets easier. We use neuromarketing in terms of getting someone's attention and send our messages, that's fine. Because the final decision will be theirs anyway. It's fine to protect it	knowledge
Attitude/ Acceptance	Makes job easier	It can reduce time to justify some results and investments. Because often we spend a lot of time to create that content, is it this or that. I can see that it can reduce the time and effort to get the best possible content that will make an impression with the consumers, which is very difficult now when the consumers are being bombarded from everywhere, from different contents and now the question is what is relevant, what people notice, and then it would be nice if we were able to have a tool that would help us create the content that will reach people.	benefits
Attitude/ Acceptance	Makes job easier	Absolutely. Everything is dedicated to whether we are doing the right thing for the final consumer. No matter what we do, it doesn't matter if we are professors at the university, mine workers, we all make a certain product and unless we are doing it the best possible way, we are not fulfilling our purpose fully. Let's say that I am, even though I'm not, a dedicated programmer and I want to make some app that that's whatever, it will be my goal to fulfill the expectations of the consumers. Maybe some decisions like whether the background will be like this or that, whatever, will create different reactions and simply that app might not achieve success at the market and I won't achieve my goal in full.	benefits

Variable	Code	Indicative Statement	Theme
Attitude/ Acceptance	Makes job easier	For me, it's all about inbound marketing. The way that we are marketing right now, we are kind of putting all our eggs in one basket. If there was a way that we could get through a funnel of people a little bit quicker to evaluate them or pretty much figure if they would be the ideal client for us in expedited fashion, if neuromarketing could help out with that, then yes. We are always looking to weed out the bad leads and get as many good leads as possible. It's not about the lead volume, it's about the quality. So if neuromarketing can help out with the quality of leads, then yes.	benefits

Appendix G: Sample Frequencies Across All Variables

Variables	Extent of Agreement with Statements						
	1 %	2 %	3 %	4 %	5 %	6 %	7 %
<i>Knowledge</i>							
I am aware of the neuromarketing as a concept	3.8%	7.5%	5.0%	10.0%	18.8%	15.0%	40.0%
I have knowledge about neuromarketing	11.3%	12.5%	10.0%	17.5%	18.8%	20.0%	10.0%
I have experience implementing neuromarketing practices in my current job	31.3%	17.5%	12.5%	8.8%	13.8%	7.5%	8.8%
Neuromarketing is a new area of research in marketing	1.3%	3.8%	17.5%	22.5%	20.0%	18.8%	16.3%
Neuromarketing is a new way of thinking about consumer behavior	1.3%	6.3%	8.8%	17.5%	20.0%	21.3%	25.0%
<i>Advantages</i>							
Neuromarketing offers a lot of opportunities to marketers	0.0%	0.0%	1.3%	15.0%	15.0%	20.0%	48.8%
Using data from neuromarketing research will give me more insights into the topic I am investigating	0.0%	0.0%	6.3%	12.5%	8.8%	27.5%	45.0%
Neuromarketing research can provide more accurate data about people's opinions than traditional marketing research	0.0%	0.0%	2.5%	20.0%	20.0%	22.5%	35.0%
Neuromarketing tools provide scientific way to reach desired results	0.0%	0.0%	1.3%	20.0%	20.0%	26.3%	32.5%
Using neuromarketing allows me to give the consumers exactly what they want	0.0%	10.0%	6.3%	32.5%	23.8%	13.8%	13.8%
Neuromarketing can help me better understand what my customers need	0.0%	2.5%	1.3%	16.3%	17.5%	30.0%	32.5%
Neuromarketing can help me make better decisions	0.0%	1.3%	3.8%	12.5%	17.5%	28.7%	36.3%
Neuromarketing can help me increase profits, sales, visibility and exposure of my (clients') products	0.0%	3.8%	2.5%	20.0%	18.8%	25.0%	30.0%
<i>Disadvantages</i>							
Implementing neuromarketing requires large budgets	1.3%	5.0%	17.5%	40.0%	16.3%	12.5%	7.5%
Using neuromarketing tools in research is uncomfortable for the participants	10.0%	28.7%	13.8%	33.8%	7.5%	3.8%	2.5%
Most marketers lack skills to implement neuromarketing	1.3%	3.8%	11.3%	31.3%	13.8%	18.8%	20.0%
Neuromarketing research takes a lot of time to collect data	0.0%	10.0%	20.0%	35.0%	23.8%	7.5%	3.8%
There are a lot of providers of neuromarketing research that I know of	32.5%	36.3%	10.0%	13.8%	3.8%	1.3%	2.5%
<i>Acceptance</i>							
Neuromarketing is useful to my work	3.8%	8.8%	6.3%	10.0%	21.3%	17.5%	32.5%
Neuromarketing would make my job easier	3.8%	2.5%	11.3%	21.3%	17.5%	22.5%	21.3%
Neuromarketing researchers use the latest technology	0.0%	0.0%	5.0%	33.8%	22.5%	17.5%	21.3%
Neuromarketing is easy to use	1.3%	13.8%	15.0%	46.3%	13.8%	7.5%	2.5%
You need proper equipment in order to be able to implement neuromarketing principles	1.3%	8.8%	10.0%	28.7%	18.8%	17.5%	15.0%
I (would) like to experiemnt with the new neuromarketing technologies	0.0%	1.3%	2.5%	12.5%	10.0%	17.5%	56.3%
<i>Subjective Norms</i>							
My colleagues already use neuromarketing	16.3%	16.3%	8.8%	17.5%	13.8%	16.3%	11.3%
My friends would be impressed with me using neuromarketing	3.8%	7.5%	6.3%	20.0%	17.5%	18.8%	26.3%
My family would think favorably of me if I told them I am using neuromarketing in my job	7.5%	10.0%	7.5%	22.5%	11.3%	20.0%	21.3%
Neuromarketing research and practice follows ethical guidelines	2.5%	6.3%	5.0%	27.5%	22.5%	17.5%	18.8%
<i>Perceived Behavioral Control</i>							
With my current knowledge and skills, I can implement neuromarketing	16.3%	6.3%	20.0%	18.8%	26.3%	7.5%	5.0%
With enough money in the budget and access to neuromarketing tools, I can start a neuromarketing project within a month	10.0%	13.8%	16.3%	27.5%	15.0%	8.8%	8.8%
I need more training in neuromarketing	2.5%	1.3%	1.3%	3.8%	15.0%	16.3%	60.0%
Neuromarketing should be taught at every business school	2.5%	0.0%	6.3%	8.8%	16.3%	17.5%	48.8%
<i>Behavioral Intentions</i>							
I intend to implement neuromarketing in my work	6.3%	6.3%	5.0%	18.8%	25.0%	10.0%	28.7%
I encourage others to use neuromarketing	5.0%	13.8%	5.0%	11.3%	21.3%	17.5%	26.3%
If I had a budget large enough and access to neuromarketing tools, I would start a neuromarketing project next month	8.8%	3.8%	6.3%	16.3%	20.0%	10.0%	35.0%
<i>Prototype Willingness</i>							
Neuromarketing is only used in research	22.5%	21.3%	17.5%	20.0%	8.8%	10.0%	0.0%
Only big companies use neuromarketing	17.5%	31.3%	15.0%	17.5%	6.3%	7.5%	5.0%
Neuromarketing is the latest trend in the last 10 years	2.5%	11.3%	16.3%	22.5%	25.0%	7.5%	15.0%
Neuromarketing adds value to business	0.0%	0.0%	5.0%	7.5%	21.3%	26.3%	40.0%
Neuromarketing should become the industry standard	1.3%	3.8%	3.8%	31.3%	22.5%	20.0%	17.5%
Neuromarketing will become the industry standard	1.3%	3.8%	6.3%	30.0%	21.3%	15.0%	22.5%

This table shows the frequency of answers for all variables for the entire sample.