The use of statistics among journalists in the Arabian Gulf: Issues around the use of statistics in business news in Saudi Arabia and the United Arab Emirates.

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The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

Dedication

I would like to dedicate this work to my mother, Noir, and my father, Mohammed. I am saddened that you are not here to share this milestone with me. Both of you are my source of inspiration.

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Abstract

This thesis examines journalists' use of statistical data within business news reporting and how it reflects upon professional practices within journalism. To accomplish this, the thesis focuses on the use of statistical data in business news of the Arabian Gulf—and particularly, of Saudi Arabia and the United Arab Emirates—using a triangulation of the following methods: a content analysis and semi-structured interviews with journalists and editors, news sources, and heads of media and journalism schools.

This research highlights the inconsistencies between the normative professional aspirations of business journalists in the Arabian Gulf and their actual practices, specifically in terms of their use of statistics. The use of statistics is considered an important element of journalistic content in general but is especially relevant for business journalists, who often use data to convey issues to the public. As such, this thesis investigates the issues and challenges facing the articulation of business statistical data in the journalism of Saudi Arabia and the United Arab Emirates. At the centre of the analysis, the overall data reveal that journalists who cover business issues tend to use valid statistics, rely on reliable statistical sources and provide an interpretation of the statistical data they present. However, in their engagement with statistics, journalists seem mainly 'to be ticking the boxes of professionalism'; that is, they often follow the required procedures but without critically scrutinising the subject in a way that achieves a high level of professionalism.

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Chapter 1
Introduction

1.1 Overview

This study investigates the ways in which journalists use statistics to articulate their business news stories in the Arabian Gulf, and particularly, in Saudi Arabia and the United Arab Emirates (UAE) - and the main challenges, issues and opportunities related to journalism practices in those countries. This is because the importance of statistical data in business journalism cannot be overemphasised. Indeed, economic discourse has concluded that business statistics contribute significantly to the way in which an economy is constructed (Vollmer, 2016). Journalists who cover the business newsbeat interact with information daily, including managing the flow of information, handling considerable time pressure and working with official and nonofficial sources to delineate their news stories. Moreover, journalists' work is affected by the political and cultural context of the media system in which they operate, which can either boost or hinder them in fulfilling their duty to a high degree of professionalism. Thus, it is important to understand the use of statistics in the business newsbeat within the context of these many factors.

When examining this use of statistics in the business newsbeat, I consider how journalists access statistical data and how they engage with statistical sources. In addition, this study explores how journalists use statistics to frame their business news stories. This work intends to help build an innovative body of knowledge on how statistical data is used by journalists in business news reporting in Saudi Arabia and the UAE, by triangulating quantitative and qualitative methods.

As such, the methodology of this study employs both quantitative and qualitative research methods, adopting a mixed-methods strategy while examining the existing literature related to the research topic. First, a content analysis is conducted using the SPSS software to analyse news stories from a number of newspapers in the Arabian Gulf. To limit the scope of the research, the analysis examines business news related to the stock market, the housing market, the banking market and oil prices, published by Saudi and UAE newspapers. Second, semi-structured interviews are conducted with three different groups: journalists and editors, heads of media and journalism schools, and news sources. The aim of these interviews is to understand in greater depth how statistical data is used in business news and to identify the main challenges, issues and opportunities for journalism as a practice in the Arabian Gulf. Overall, triangulating these approaches helps to provide a view of the main research question of this study that is both broad and detailed.

The findings of the content analysis provide significant insight into the use of business statistical data in the press. It was found that journalists used valid statistics, rely on reliable statistical sources and provide interpretation of the statistics they include in their articles. However, only a few of the journalists verified, scrutinised and criticised these data, and the majority of them tended to rely too heavily on certain sources. The semi-structured interviews conducted with journalists and editors further elucidate the findings of the content analysis by providing greater insight into how business journalists access, manage and interpret statistical data when producing news stories. Moreover, the interviews investigate their awareness of and confidence in handling statistics, their perceptions of the use of statistical data and their criticism of standard journalistic practices related to the use of statistics. The interviews with news sources explore how they use statistical data when producing press releases, the instructions they are required to follow, the source from which these instructions are received and their relationship with journalists and newspapers. Further, the interviews explore news sources' perceptions of how journalists use business statistics. Last, the interviews with heads of media and journalism schools explore the nature and reach of data and statistics management education in Saudi Arabian media and journalism schools.

These results are discussed in relation to a broad collection of media and communications research and journalism research to highlight where these areas of study overlap in relation to handling statistical data. This study concludes by affirming that statistical data is a predominant element in business news stories and that journalists usually use valid statistics, rely on reliable statistical sources and provide an interpretation of the statistics they present. However, journalists' use of statistics shows a lack of verification and criticism of the statistical data used, which affects the quality of the news stories' content and can result in articles being produced to a low level of professionalism.

The findings of this research suggest that journalists who cover the business newsbeat lack professional autonomy, something that has been widely accepted as crucial in the media and journalism research studied, particularly when journalists are dealing with government news in the context of these countries (Mellor, 2011; Rugh, 2004; Rugh, 2007; Hadland and Zhang, 2012; Sakr, 2007; Sakr, 2003). This lack of professional autonomy is confirmed by the current findings to be one of the main problems that needs to be addressed. Journalists who cover the business newsbeat usually rely too heavily on sources, whether government or corporate, and there is a clear trend among journalists to overlook the verification of data and cross-checking of statistics.

Furthermore, there is a concern that unethical practices affect the way in which statistical data is articulated. These practices may be committed by various parties, including journalists, newspapers, news sources and advertisers. The data suggest that the ethical issues confronting newspapers in these countries, particularly in Saudi Arabia, are structural, which gives news sources and advertisers room to interfere with the data and the data publishing process; this, in turn, enables them to influence the use of statistical data in business news. Moreover, a deficiency in the procedural ethics of the Saudi newspapers studied was identified, in the form of a lack of self-regulatory systems and press codes; this, too, can affect the professional values of transparency and accountability that most newspapers strive to uphold.

In addition, the study suggests a broad deficiency in educating and training journalists who cover the business newsbeat regarding the use of statistics, which is in agreement with similar past research (Nguyen and Lugo-Ocando, 2016; Brandao, 2016); this is affirmed by the current findings to be one of the primary obstacles that needs to be addressed.

This chapter provides a background of the current research and a statement and justification of the problem being explored. It also elaborates on the study’s aims and objectives, and defines of primary terminologies used in the research. This chapter ends by offering a thorough summary of the subsequent chapters.

1.2 Research Background

1.2.1 Business Journalism

Business journalism is defined as “all reporting and writing that is written not only about business but also about the economy” (Roush, 2012, p. 1). Roush (2012) argued that this definition of business journalism contains personal finance, labour workplace, investment and consumer reporting. Indeed, this definition has been “reflected by the news coverage decisions of major financial news wires, such as Bloomberg, Reuters, and Dow Jones Newswires” (Wells, 2016, p. 70).

There is no agreement about the existence of a self-contained type of business newsbeat Mare (2010). Accordingly, researchers such as Thompson (2000), among others, contend that there is no such thing as the mind-bending concept that is a “business beat”. This contention depends on the various titles given to reporters that fall within the wide field of business news coverage (Mare, 2010). For example, individuals who report in the business sector may be known as “money-related essayists”, while individuals who report on financial or monetary arrangements may call themselves “financial matters journalists” (Thompson, 2000, p. 12). Financial, business and economic journalism are closely related genres of journalistic practice and are often referred to interchangeably (Kariithi, 2003, p. 153). Lucht (2007, pp. 24-25) differentiates between four separate areas that serve several audiences, as follows:

1. Business journalism “examines corporate structure, small-business trends, executive performance, marketing, industry, and labor”.
2. Financial journalism “mainly covers the stock, bond, and commodity markets; its readers are investors”.
3. Economic journalism “is more political in focus, explaining the policies of presidential administrations and Federal Reserve”.
4. Consumer journalism “covers products and business practices of interest to buyers”.

This classification seems clear and beneficial; however, in practice, these four genres tend to overlap in the newsroom (Wells, 2016). For example, a news story about Saudi government increases tax could be considered a business, finance, economic or consumer story. Following the path of Kariithi (2003), Lucht (2007), Roush (2012), Mare (2010) and Wells (2016), this research uses the term “business journalism” to refer to financial and business journalism.

Business journalism has become a significant and ubiquitous newsbeat globally (Mare, 2010), and business reporting has always been a significant element within media production (Hayes, 2014). Business journalism is now considered the most important journalistic genre for providing fundamental information to the general population and business people alike (Mare, 2010).

The media have witnessed significant growth in business news reporting in recent years, particularly since the financial crisis of 2008, which affected almost every country worldwide (Butterick, 2015). Given its magnitude, the crisis provides a lens for scholars to investigate the role of this newsbeat in this and similar events (Butterick, 2015; Merrill, 2015). However, business coverage has been criticised for its failure to serve the public by warning them about the impending crisis (Starkman, 2014; Stiglitz, 2011; Butterick, 2015), with the exception of just a few dissenters in the United States (US) (Schiffrin, 2011). Discussions about this failure mainly focus on the reasons why it occurred (Merrill, 2015) and on what it says about the quality of business journalism (Knowles, 2013). Some scholars have discussed the relationship between business journalists and their news sources, highlighting journalists' reliance on government and corporate sources that can control and affect the flow of information (Tambini, 2010a; Schifferes and Coulter, 2012; Manning, 2013; Starkman, 2014). Journalists' shortcomings have also been suggested by scholars to have contributed to the failure of business journalism prior to the financial crisis (e.g., inadequate training, time pressure and misunderstanding the complexities of business markets) (Butterick, 2015; Douai and Wu, 2014).

The post-financial crisis discussion is vital for underlining the results of previous studies; however, it also presents a partial clarification of the nature of business journalism (Merrill, 2015), particularly because of the current lack of research about business journalism in Arab countries, which hold important economic resources for the world and about which news stories are often covered by the global media (e.g., news about the oil and gas industries) (Kubursi, 2015). Despite the lack of investigation into the role of business journalism in the 2008 financial crisis, business journalism in the Arabian Gulf is not exempt from the same underlying reasons that might affect its quality (AlHroub, 2012; Alheezan, 2010; Babaker, 2014). Moreover, business journalists operate within a certain context (e.g., political and cultural) that can affect the media system in which they are based (Mellor, 2011; Rugh, 2004; Rugh, 2007; Sakr, 2007; Sakr, 2003).

1.2.2 The Quality of Journalism

Several scholars have argued that journalism quality is complex and difficult to measure or even define (e.g. Lacy and Rosenstiel, 2015; Liu et al., 2013; Phillips, 2012). However, according to Liu et al. (2013, p. 719), "we roughly equate higher news quality with more in-depth investigation and more insightful analysis". Kanuri et al. (2014, p. 57) pointed out that it is "generally conceived of as adjectives that are related to the quality of the news product, including such dimensions as: accuracy, believability, bias, interestingness, clarity, coherence, comprehensiveness, concise, fairness, and timeliness". In addition, Thorson (2006, p. 178) argued that for news to have a positive impact, it must be of a high quality; that is, it must be accurate and examine a topic in depth.

In their study that aimed to define and measure the quality of journalism, Lacy and Rosenstiel (2015, pp. 5-11) emphasised that one important reason for the disagreement about how journalism quality can be measured is rooted in the variety of definitions of the term "quality". They pointed out that various groups of stakeholders have different definitions of “journalism quality”, based on the positions that they occupy. They further explained that every group of academics that studies journalism—including journalism practitioners and the audiences that consume the news—have different understandings of the notion, even at the sub-group level. For instance, Lacy and Rosenstiel (2015) pointed out that when academic researchers define “journalism quality”, it is viewed from either the demand or production side, and these sides lead academic researchers to define “quality” from different angles. In contrast, professionals have tended to describe “journalism quality” based on the product approach, which makes it easier to concentrate “on what they could control, the content” (Lacy and Rosenstiel, 2015, p. 20).

In the context of this work, I use the term “quality” as the principle/aspiration according to which journalists aim to achieve accountability and accuracy when producing business news stories so as use statistics in a manner that is both reliable and valid. In this sense, accuracy and accountability are widely considered the most important dimensions to study in terms of the quality of journalism (e.g. Rosenstiel and Mitchell, 2003; Bogart, 2004; Kim, K.-H. and Meyer, 2005). Kim, K.-H. and Meyer (2005, p. 13) surveyed potential factors that determine the quality of newspaper reports by asking around 300 members of the American Society of News Editors to rank the significance of 15 indicators of journalism quality. They found that the majority of editors valued accuracy in reporting and investigating news. Moreover, Bogart (2004, p. 45) examined the quality of newspaper content by surveying more than 400 journalists to measure seven quality attributes. He found that the most significant attributes determining editorial quality were accuracy followed by investigative reports.

Both these attributes are relevant to the use of statistics by journalists who cover the business newsbeat. For instance, in the case of the Enron collapse of 2001, business journalists were criticised because they did not hold the annual report of the company accountable even though it included warning signs of the impending collapse (Doyle, 2006, p. 433). Therefore, the inability of journalists to process statistics and avoid errors may limit the accuracy of their news stories (Maier, 2003b, p. 930). In this sense, the use or misuse of statistics affects both accuracy and accountability.

It is worth noting that, while the attributes of journalism quality are built on democratic ideals (Azadi, 2014, p. 4), “there is no benchmark in place to indicate whether an outlet sufficiently adheres to the democratic standards” (Azadi, 2014, p. 18). Recently, media outlets in democratic countries have failed to achieve the required quality standards (Azadi, 2014, p. 9). For non-democratic societies -such as many in the Arab world, which is the context of this research- politics represent an additional factor that may significantly affect the quality of journalism. Ogola (2014, p. 283) argued that, for Arab journalists, politics is "at the centre of the mechanics of quality journalism". In this context, issues such as censorship and self-censorship can be assumed to deeply affect the ability of journalists to deliver accountability and transparency to the business markets, therefore affecting negatively the quality of their journalism.

In the current research project, I also discuss the fact that in the Arab context, other key elements more traditionally associated with liberal democracies (i.e., those defined by market-driven economies) also affect the quality of the journalism practice. This includes an analysis of the ways in which advertisements and corporate public relations influence the quality of journalism in the Arab world. However, as this research concentrates on studying the use of statistics by journalists who cover the business newsbeat, this analysis is performed in relation to this specific sphere in order to maintain the focus of the overall project and limit the time and scope of the dissertation.

1.2.3 Statistics in the News

Gray, J. et al. (2012, p. 19) stated that one of the first recorded uses of data journalism occurred in 1821, when statistics about schools in Manchester were listed in the *Manchester Guardian*. From that time, the use of quantitative data in journalism increased; nevertheless, it was still quite rare and difficult to obtain (Tabary et al., 2016, p. 68). Maier (2002, p. 509) mentioned that the analysis of statistics has become a necessity in the computer age. Recently, data-driven journalism has become more notable (Coddington, 2015, p. 331). As a result, new and different journalistic practices have emerged. In this context, Coddington (2015, p. 332) maintained that the production of quantitative news should be separated into three types: computer-assisted journalism, computational journalism and data journalism. While each of these types, to varying extents, rely on computer technologies to help journalists produce their news stories (Nguyen and Lugo-Ocando, 2016; Calderón et al., 2014), the focus of this study goes further, seeking to understand how journalists use statistics (which is only one type of data, as discussed in section **1.5.1**) in articulating their business news, even if the news was generated using various methods.

In a world that has witnessed the proliferation of data, journalists must have a basic understanding of statistics and data analysis for their work to remain relevant

(Nguyen, 2017). Ensuring that journalists that are able to critically engage with data and information and that the data are accurate and free from manipulation is a central tenet of the movement to professionalise journalistic practice (Lewis, S.C. and Westlund, 2015, p. 450). Some years ago, Philip Meyer (2002, p. 1) emphasised the fact that for a journalist to be considered qualified, they were traditionally required to have enthusiasm, a dedication to the truth and some skill in writing; now, however, data management skills can be just as vital. While professional journalism has traditionally depended on two significant forms of information -namely, textual and visual information- numerical information has played an important role as well (Coddington, 2015, p. 331). More importantly, it is a common belief that providing a view of events that is as objective as possible -by, for example, relying on valid and contextualised data- is the cornerstone of good journalism (Lippmann, 1922, p. 49); accordingly, having skills in managing and presenting statistics has been recognised as a scientific tool in journalism (White and Levine, 1954, p. 4). Meyer, in his pioneer book *Precision Journalism* (1973), wrote the following:

> *We can save ourselves some trouble, some inaccuracy, and some lost opportunities by merely paying attention to what the social scientists are doing and finding out. More importantly and of more direct practical value, we can follow their example by abandoning the philosopher's armchair, giving up the notion that a few facts and common sense will make any problem yield, and make the new, high-powered research techniques our own. (p. 13)*

1.2.3.1 The Journalism Process

Another important aspect of this thesis is studying the process through which journalists identify and select business news stories for coverage, which starts with the selection of information sources (Dunwoody and Griffin, 2013, p. 530). In accordance with Knowles et al. (2015, p. 14), a minimum of two independent sources are required to verify and corroborate a business news story. This triangulation of sources was used because, in theory, business journalists should be diligent about avoiding possible corporate spin (Kleinnijenhuis et al., 2013, p. 287), but in practice, this is not always the case. Over the years, corporations have become aware of the need to present a positive image of themselves to the public and, particularly, to their stakeholders (Manning, 2013, p. 180). These efforts have resulted in the growth of professional communications in the business sector, which is viewed by some scholars and researchers as the wider ascendancy of spin culture in society (Anderson, P., 2014, p. 21; Miller, D. and Dinan, 2008, p. 4). This forces journalists to deploy a wider range of methods and techniques to maintain a critical and independent stance (Berger, 2000, p. 47; Tsfati and Ariely, 2013, p. 17).

This stance is especially important at the information-gathering stage of the journalism process, as it can influence the extent to which a financial news article is reliable and objective (Lewis, J., 2010, p. 163) and can help journalists avoid negative critiques of their stories (Tuchman, 1972, p. 667).

As argued by Davis (2006, p. 607), business journalists usually conduct a series of discussions or interviews with firms and their employees to gain a fully informed understanding of a corporate financial situation or event. Furthermore, Hamilton (2009, p. 4) reported that cross-checking with information from sources outside the organisation is of central importance in developing an independent understanding and interpretation of the information. One of the key areas of information in the business newsbeats is the dissemination and scrutiny of numbers. Thus, it is hard to overestimate the role of statistics in affecting the quality of the journalism process and in the accuracy of a business news story (Nguyen and Lugo-Ocando, 2016, p. 6). At the same time, other researchers are convinced that mathematical and numerical errors pose a serious threat to the quality of information reported by journalists (Dunwoody and Griffin, 2013, p. 532; Tambini, 2010b, p. 169). Maier (2002, p. 516) and Brand (2008, p. 218) found that journalistic innumeracy has significantly contributed to inaccurate and misleading news stories. Both Maier (2002, p. 516) and Brand (2008, p. 218), however, emphasised that the journalists in their studies did not intentionally cause harm through erroneous data interpretation but were simply hampered by their own innumeracy.

However, the widespread lack of accuracy in the news reporting of data is not the only issue, as shown by Choi (2009, p. 527), who found that the quality of news is affected by the limited availability of sources, particularly when journalists only depend on official sources. While journalists might depend on governments and official representatives as their main sources when gathering and reporting data (Malone et al., 2000, p. 732), Fink and Anderson (2015, p. 476) pointed out that most journalists face obstacles, at least occasionally, when trying to obtain the data they need from government sources. In addition, Lugo-Ocando and Faria Brandão (2016, p. 9) argued that journalists are unable to craft holistic stories and reports when they rely on only government sources. Moreover, the authors noted an overreliance on government sources is not only caused by the use of government press releases as a sole source but can also be caused by failing to critically examine government-released data. Consequently, avoiding an overreliance on such sources can be difficult, especially given the increasing pressure on journalists to avoid criticising or questioning these kinds of statistics. Journalists who rely on sources' own interpretations and explanations of data can contribute to serving the government interests instead of societal interests (Lugo-Ocando and Faria Brandão, 2016, p. 9). Furthermore, some sources -particularly official sources that produce statistics published for public scrutiny- intentionally try to conceal information that could be harmful to their reputation or that does not benefit them by releasing a huge amount of data at the same time or releasing information at a time when journalists are generally unavailable (Brook, 2013; Nguyen and Lugo-Ocando, 2016, p. 7).

Another perspective is offered by Lugo-Ocando and Faria Brandão (2016, p. 4). In their study, which conducted a quantitative and qualitative content analysis of United Kingdom (UK) newspapers to examine how journalists access and interpret statistics when articulating news stories related to crime, the authors explained that statistics can be used as news sources in addition to being used as facts. For instance, journalists consider official documents themselves to be news sources (Lugo-Ocando, 2017a, p. 70). Lugo-Ocando and Faria Brandão (2016, p. 5) also noted that journalists may use statistics, which are seen as an objective and scientific tool, as a news source when they criticise society and the government. The authors added that, in regard to seeing quantitative data as a "credible source", statistics seem to act as a news source that is characterised as expert, trustworthy, neutral and honest, as well as a source that respects privacy. These factors correspond to the credibility criteria of other news sources. As a result, the need for statistics is driven by the need to legitimise the news, which is why statistics are seen as vital to the future of journalism (Lugo-Ocando and Faria Brandão, 2016).

Statistics are arguably significant legitimising elements in the construction of social reality (Dorling and Simpson, 1999), and even in the construction and consequent legitimisation of the news itself (Lugo-Ocando and Faria Brandão, 2016, p. 6). While objectivity has been the main notion guiding newsrooms and journalistic vocabulary since the early part of the 20th century (Mindich, 1998, p. 1; Hampton, 2008, p. 477), Tuchman (1972, pp. 667-675) pointed out that reporters should actively develop strategies to support their news stories in ways that avoid criticism. Lugo-Ocando and Faria Brandão (2016, p. 4) suggested that the tenet of objectivity is linked to journalists' face-value acceptance of statistics. This is because statistics in the news need to be understood as a powerful tool for constructing a narrative (Martinisi and Lugo-Ocando, 2015, p. 13), which is part of the wider positivist discourse that dominates the profession (Durham, 1998, p. 117).

Statistics create a sense of legitimacy and objectivity, which news reporters constantly aspire to achieve. This comes from the assumption that the collection and analysis of data and statistics is grounded on the scientific method, society's model of objectivity and neutrality (Lugo-Ocando and Faria Brandão, 2016, p. 5). In addition, journalists have been led to revere statistics as a "neutral source of information" because they are engraved in daily practice and provide an acceptance language that helps audiences to believe the pictures that are drawn (Lugo-Ocando and Faria Brandão, 2016, p. 5). Tuchman (1972, p. 660) emphasised the idea that objectivity constitutes a "strategic ritual" that is used to protect journalists from critique. Although numbers are considered "unbiased" and "neutral", there is a tendency to forget that they represent an agreement or convention between multiple groups, such as news sources and journalists (Fioramonti, 2014, p. 33). Lugo-Ocando and Faria Brandão (2016, p. 11) argued that although journalism claims to communicate scientific truth, it rarely applies the contextualisation and cross-referencing demanded by the pragmatic objectivity required in scrutinising statistics.

A considerable number of studies have been published on the accuracy of numeracy in journalism. About 80 years ago, Mitchell Charnley (1936, p. 401) examined the accuracy of three Minneapolis daily newspapers, and he found that the journalists at these newspapers repeatedly misused numbers. Charnley's (1936) pioneering effort was followed by multiple studies that sought to detect numerical and mathematical errors in journalism (e.g. Maier, 2002, p. 507; Brand, 2008, p. 213; Porlezza et al., 2012, p. 530). In recent years, the number of research studies on how the use of numeracy in journalism contributes to misleading and inaccurate stories has increased. This literature has discussed the use of numeracy when reporting on various issues, such as race and poverty (Gilens, 1996, p. 515), homelessness (Hewitt, 1996, p. 431), social security and Medicare (Wildavsky, 1997, p. 1786), political polls (Frankel, 1996, p. 515; Palmer and Crawford, 2006, p. 1), drug abuse (Orcutt and Turner, 1993, p. 190), HIV/AIDS and AIDS orphans (Ziehl, 2002, p. 432), technological and natural disasters (Singer, E. and Endreny, 1993, p. 1) and sports (MacNeal, 1997, p. 172).

However, relatively few studies have been conducted on how journalists use or misuse statistical data in their news stories. Maier (2002) carried out a mathematical audit of a US daily newspaper and examined the extent to which journalists rely on mathematics to articulate their news stories. He found that numbers dominate the news in the newspapers, and more importantly, the majority of business stories include numerical data, with business journalists requiring the most math skills. Interestingly, he found the misuse of statistics to be prevalent to some extent, although he did not try to measure the errors' frequency or distribution (Maier, 2002, p. 507). These findings correlate with those of Brand (2008, p. 218), who followed Maier's (2002, p. 510) study path while aiming to produce a quantitative assessment of numeracy accuracy in South African reporting. However, Brand (2008, p. 213) excluded the business pages in determining the standard of mathematical competence.

Another aim of Maier's (2002) study was to categorise the types of mathematical errors made by journalists. He identified the following 11 types: "numbers do not tally, misinterpretation of numbers, misuse of mathematical terminology, inappropriate baseline, missing break line, story–chart inconsistency, needless numbers, meaningless precision, numbers sensationalised, unquestioning use of numbers, and naked numbers" (pp. 512-515). Interestingly, even business stories included each of these types of misuse. In addition, Maier pointed out that journalists are not sceptical about numbers in the same way as they are about the other content in their news stories (Maier, 2002). In accordance with this, in Brand's (2008) study, three types of errors were found. First, "numbers do not tally" was considered by Brand (2008, p. 216) to be the most common type of error that occurs as a result of miscalculations involving simple arithmetic. Second, the "misinterpretation of numbers" is based on the misuse of interpretation of statistics (Brand, 2008, p. 217). And third, "internal inconsistency" was considered a result of inconsistency between the story and the headline or picture caption (Brand, 2008, p. 217). In both Maier's (2002) study and Brand's (2008) study, the misuse of statistical data was noted, but neither study explained how the misuse occurred, how it was visualised or even who was responsible for this abuse: the source, the journalist or other newspaper staff. Although there is debate about the relationship between numeracy and the use/misuse of statistics in the news, the studies concluded that the proficiency of journalists and editors in terms of numeracy can be an indicator of other skills-related factors that affect their ability to properly use statistics in business journalism.

Furthermore, Maier (2002, p. 509) showed that the misuse of numbers in articulating news stories does not seem be related only to ignorance or mishaps. For instance, as Huff and Geis (1954, p. 101) also stated that the misuse of graphical representations in journalism can sensationalise statistics by exaggerating or minimising certain aspects: "As long as the errors remain one-sided, it is not easy to attribute them to bungling or accident" (p. 101). Meyer (2002, p. 207) and Cohn and Cope (2011, p. 5) emphasised the point that professional bias leads editors to make headline news that includes distorted data. It has been empirically shown that journalists use statistical data selectively, highlighting negative trends related to social issues while downplaying positive trends that suggest the improvement of social conditions (Berger, 2000, p. 49). According to David Murray:

> *Journalists often reduce complexity to certainty. Sometimes that's because of deadline pressures; you can't overestimate the effects of time constraints and ignorance. But journalists also don't mind overstating things if they think it's for a good cause. And if scare stories help sell more papers, that's a bonus. (Gillespie, 2001, p. 21)*

Although the existing body of empirical literature on journalism is predominantly critical of the journalistic use of numbers and statistics, some researchers have indicated that mathematical competence varies across newspapers and even across countries (Maier, 2002, p. 517). An interesting study was carried out by Maier (2003b), in which the researcher gave reporters and editors an exam with the purpose of testing their ability to apply basic math to real-life situations in daily journalism (Maier, 2003b, p. 929). As argued by Davis (2006, p. 606), many newspapers repeatedly get their numbers wrong. This statement is in agreement with the outcome achieved by Maier (2003b, p. 921), who confirmed that a considerable portion of the examined journalists had weak math skills. Nevertheless, Maier (2003b, p. 930) also concluded that the number of strong performers in math was still greater than the number of weak performers in math. Those results contradict both the argument produced by Kilpatrick (2001, p. 5) -who analysed the number of journalistic math errors over a period of time- and those provided by Dunwoody and Griffin (2013, p. 534) -who reported that the majority of journalists could not handle even basic math. Moreover, Curtin and Maier (2001, p. 733) pointed out that journalists' perception of the own math ability seems to be a key determinant of how effectively journalists work with numbers.

Maier's (2003b, p. 930) findings have an important implication for this study, as journalists' inability to properly process statistics and avoid errors and misinterpretations may significantly limit the accuracy of their news stories, as they may then fail to completely relay to the audience what the data means. This aspect is crucial in the whole journalism process because the main aim of a journalist is to inform readers about what is going by providing them with objective and reliable information (Lewis, J., 2010, p. 163). However, mathematical errors and misinterpretations mean that journalists are not adhering to the facts (Maier, 2003b, p. 930). The result can be disastrous for readers and society as a whole; for example, potential investors may make business decisions on the basis of false information (Manning, 2013, p. 187).

Maier (2002, p. 507) maintained that the misuse of numbers in professional practice has its roots in journalism education, resulting in major problems for journalists in their careers (Brand, 2008, p. 218). Because of the language focus of journalism, the field can attract students who lack the motivation and skills to use statistics in an effective manner (Maier, 2002, p. 507; Yarnall et al., 2008, p. 158). Cohn and Cope (2011, p. 3), however, argued that journalists believe that because most of the news they present is based on numbers, they are just dealing with more facts and ideas when using statistics. Maier (2002, p. 508) likewise pointed out that using numbers is as important as using words for a journalist in demonstrating what is going on in our world.

In contrast, Nguyen and Lugo-Ocando (2016, p. 5) argued that the stereotype that journalists are unable to use statistics is not completely correct and that the misuse of statistical data in media usually occurs due to inappropriate production or misinterpretation, done for a variety of reasons. Even with modern tools and broad access to computers that help journalists calculate and analyse numbers, the main obstacle remains a lack of statistical reasoning (Utts, 2003, p. 74). This argument was supported by Nguyen and Lugo-Ocando (2016, p. 5), who explained that statistics are not mathematics, and journalists do not have to be skilful in math to have the ability to use statistics in an effective manner. Utts (2010, p. 6) stressed that journalists do not have to be taught technical details that they might not use but rather that they must be taught how to think critically when analysing statistics. In other words, journalists should be taught how to write, interpret and handle statistics with a critical eye (Utts, 2010, p. 5).

Some journalists have anxiety when using numbers, wrongly thinking that they should calculate, measure and analyse them “with eye-numbing formulae” rather than simply apply valid reasoning when working with numbers (Nguyen and Lugo-Ocando, 2016, p. 4). Moreover, Maier (2003b, p. 930) found that journalists generally have the mathematical competence to use basic math, but they do not have the confidence. In addition, based on the Scholastic Assessment Test (SAT) in the US, students attending US media schools usually attain scores that are as good as those of students in any other major (Dunwoody and Griffin, 2013, p. 535). Furthermore, some talented journalists have published great news stories that relied on statistics, set new standards and, in some cases, even led them to win the Pulitzer Prize (Nguyen and Lugo-Ocando, 2016, p. 10; Griffin and Dunwoody, 2016, p. 113). Meyer (2002, p. 3) demonstrated that journalists must be able to interpret data themselves and not have to rely on other sources’ interpretations, which may be misleading or even completely wrong. According to Meyer, truly objective journalism bases its ideas and statements on journalists' own interpretation of raw data.

Berliner and Biddle (1999, p. 4) insisted that the educational system produces journalists that are unable to interpret data. To improve the quality standard in business news, journalists should be given adequate training in how to use independent and accurate data and present it to the public in an effective manner (Knowles et al., 2015, p. 15). Furthermore, Brand (2008, p. 218) assumed that this obstacle will remain until media houses and educational institutions begin to focus their attention on solving it. As indicated by De Beer and Steyn (2002), "The core knowledge needed by journalists is changing" (p. 13); however, journalists' current training in relation to statistics has not reflected this change (Brand, 2008, p. 218).

All these contextual elements -education, background and politics- that define the way in which reporters engage with and use numbers, vary from society to society. Hence, any analysis requires one to look at the specific characteristics of not only the media systems in which these journalists operate but also the national and local elements that determine how journalists gather, process and disseminate news in general.

1.2.4 Religion, Culture and Politics in Saudi Arabia and the UAE

In this sense, it can be stated that despite the fact that the media landscape in Arab countries has dramatically changed in the last two decades (Al-Jaber, 2012, p. 2; Dickinson and Gunter, 2013, p. 174), Arab journalists still work in a constrained environment that is different from that of the US or Europe (Pintak and Ginges, 2009, p. 173). Rugh (2004, p. 88) pointed out that while Arab constitutions often support the rights of freedom of expression and thought, these rights are restrained by procedural and legal constraints, such as newspaper laws; in addition, there tend to be minimal differences between these various Arab countries in this respect. Consequently, the status of the majority of Arab countries is classified by Freedom House as "not free"; only five out of twenty-two countries are "partly free" (Freedom House, 2016, pp. 24-26).

Some scholars have pointed out that the aim of controlling the media by governments in the Arab world is not only to control the freedom of expression but also to ensure that what is published to influence public opinion is consistent with the government's intentions (Zayani, 2005, p. 9; Sakr, 2007, p. 15; Mellor, 2011, p. 164). Mellor (2005, p. 38) agreed with this and insisted that the main function of local Arab media is to support the government in articulating its news and to control the news from foreign sources. As a result, most Arab media outlets, particularly newspapers, predominantly serve their governments (Nötzold and Pies, 2010, p. 60); other media outlets choose to publish outside the region to avoid difficulties in accessing information and the censorship applied by these governments (Mellor, 2011, p. 61).

Government’s control of the media has vastly burdened reporters themselves, as revealed in a study on the relationship between the job satisfaction and performance of professional journalists (Almqoshi, 2010, p. 56). Almqoshi (2010) found that Saudi journalists are highly dissatisfied and that only 2% believe in their ability to influence public opinion through their news stories. In accordance with this, Pintak and Ginges (2009, p. 173) reported that Arab journalists see no contradiction between supporting political and social reform, and objectivity; according to one writer, “Arab journalists are still carving out their role and struggling to define their mission” (p. 174).

Pintak and Ginges (2009, p. 162) found that Arab journalists rated their professionalism as poor when compared with that of journalists from the US and Europe, and they considered a lack of ethics to be the top challenge facing journalism in the Arab world. Moreover, many scholars have argued that Arab economic journalism suffers from a weakness that affects its ability to perform the role it is expected to play (AlHroub, 2012, p. 101; AlHumood, 2014, p. 3; AlHumood et al., 2016, p. 5; Babaker, 2014, p. 188; Ibnrubbian, 2016, p. 13; Kirat, 2016, p. 7). The current research presents an in-depth investigation and discussion of the political, cultural and religious factors that make up the Arab media system and that might affect the use of statistical data by journalists who cover the business newsbeat in the Arab context, and particularly, in Saudi Arabia and the UAE (see section **2.3.2**).

1.3 Statement and Justification of the Problem

This need to strengthen journalists’ level of journalistic professionalism is particularly relevant in Arab countries. It is even more urgent in certain newsbeats, such as the business newsbeat, given its influence on the lives of ordinary people. Indeed, throughout history, the global financial system has suffered from many crises, with the stock market crash of 1929 being one of the most famous (Bierman, 2004). These types of crisis affect countries as a whole, and their impact can trickle down to the lives of people all over the world, whether directly or indirectly. For instance, in the case of the global financial crisis of 2008, the world financial system lost around US$11 trillion, translating to approximately 20% of the annual output of the global economy (Manning, 2013, p. 173). In addition, two years earlier, on 25 February 2006, the Saudi stock market crashed and more than half of Saudi families were affected (Alheezan, 2010, p. 196; AlHroub, 2012, p. 3; Babaker, 2014, p. 10). The losses amounted to approximately US$450 billion, which represented a 52% decline in the Saudi stock market price index (Babaker, 2014, p. 146). Such events undoubtedly present a challenge to journalism, which is required to act and intervene to prevent people from losing out due to financial opacity. It ought to do so by providing accurate information based on which ordinary citizens can make rational decisions in terms of politics and finances.

While several studies have shown that journalism plays a role in shaping the economic sector (Schifferes, 2014, p. 153; Schiffrin, 2011, p. 7; Schumaker and Chen, 2009, p. 571; Tetlock, 2010, p. 3554), the field of business journalism has been criticised for not bringing enough accountability in its coverage of various financial crises around the world (Doyle, 2006; Schiffrin, 2011; Knowles et al., 2015; Starkman, 2014; Butterick, 2015; Manning, 2013). A study by Doyle (2006, p. 433) assessed post-Enron financial news production. He found that the level of confidentiality shrouding corporate entities often means journalists have limited information to work with, and the articles that are eventually published are highly specialised and ineffective in improving the overall understanding of the public about the issue. He described this as a failure in journalistic practices. In another study, Manning's (2013, p. 173) analysis of reporting about the banking crisis focused on similar themes: the inability of journalists to penetrate the public relations barriers set up by financial institutions, the highly specialised nature of the topic and the overall failure of their articles to inform the public.

Recent events have stressed the importance of high-quality business journalism. Schumaker and Chen (2009, p. 571) argued that the quality of financial and business information reporting plays a crucial role in investors' behaviour. As a result of this important role, some journalists may intentionally or unintentionally abuse data and provide their readers, including potential investors, with misleading or false information (Manning, 2013, p. 187). As such, it is essential that readers carefully consider the various statistics presented by journalists who cover the business newsbeat, focusing on corroborating the information or scrutinising the methodology that was utilised to collect the information.

Understanding how these statistical data are used by journalists in articulating their business news stories is a growing necessity. As Maier (2002, p. 512) and Koetsenruijter (2011, p. 74) further pointed out, approximately half of media news outlets include information involving numbers in all the news they report. In addition, Vollmer (2016, p. 1) highlighted the fact that it is widely accepted in economic discourse, in both academia and business, that business numbers represent economic reality. Moreover, governments and equity capital firms—and even financial institutions in certain cases—have been shown to have the capacity to control the flow of information (Brook, 2013; Lugo-Ocando and Lawson, 2017, p. 63; Nguyen and Lugo-Ocando, 2016, p. 7) and may prevent the dissemination of information that could be detrimental to their reputations or prices (Manning, 2013, p. 181). This is why it is highly important for journalists to be disciplined and diligent in using statistics to avoid misleading their readers and to provide readers with relevant and accurate financial information (Kleinnijenhuis et al., 2013, p. 286).

Providing relevant statistical information about the social and economic conditions of a country and its citizens is vital to maintaining an open and independent society (Hamilton, 2009, p. 1). This importance is explained by the notion that available information shapes the debates and discourse surrounding the development of government policy, the formation of business decisions and even the micro decisions that society members make in their daily economic activities (Maier, 2002, p. 518). A majority of studies that have examined the use of statistical data in journalism have not considered how such data is used in business journalism. Brand (2008, p. 219) noted the need for research into the use of statistics in business news. This lack of research is also evident in the Arab context. According to Weaver (2015, p. 9), little information about journalists in the Middle East and their coverage of news is available, especially when they work in countries with limited freedoms. Therefore, and given recent attempts to professionalise journalism practices among journalists and news editors in the Arabian Gulf (AlHroub, 2012, p. 5), the current study aims to investigate the reality of media practices in covering business news in the Arabian Gulf, and specifically, to identify how journalists use statistics in their news coverage.

To achieve the research objectives, I conduct my study in two Arabian Gulf states: the Kingdom of Saudi Arabia and the United Arab Emirates (UAE). This research focuses on four daily newspapers from these countries. To comprehend how statistical data are used as influential effective objective sources, this study analyses 1321 (n = 1321) business news stories and conducts 14 interviews with journalists, 8 interviews with heads of Saudi media and journalism schools and 6 interviews with Saudi news sources. Furthermore, this study also examines and reviews a wide range of previous research and related literature. The findings of the current study will expand the literature related to the use of statistical information in business journalism in the Arabian Gulf. Practically, this research could lead to improving journalists' performance when using statistical data to advance business coverage in the region, bringing greater transparency and accountability to an area where they are desperately needed.

1.4 Aims and Objectives

The main purpose of the current research is to analyse the use or misuse of statistical data in business news media coverage. It endeavours to produce an innovative body of knowledge on the uses of statistical data in the coverage of business news stories, and to determine and understand the main challenges, issues and opportunities for journalism as a practice in Saudi Arabia and the UAE. Hence, the purpose is not to compare how specialists business journalists use statistical data with how non-specialists use data; rather, it examines how statistical data are used by all business journalists when they articulate their news stories. Because there is a lack of literature related to the use of statistical data in business news (Maier, 2002), particularly in the Arab context, the methodology design utilised in this research sought to consider multiple data and analytical procedures.

The six primary objectives of the research are as follows:

1. To describe and identify how statistical data are used to articulate business news stories
2. To scrutinise how statistical data are comprehended and communicated by business journalists
3. To explore the main factors, challenges, issues and opportunities that boost/hinder journalists' use of statistics in business journalism
4. To illustrate the cross-national differences/similarities that account for the use of statistics by business journalists in Saudi Arabia and the UAE
5. To provide a background of the uses of statistics by media outlets, particularly relating to business journalism in Saudi Arabia and the UAE
6. To provide a theoretical and practical contribution to the use of statistical data in business journalism

Regarding the uses of statistical data by journalists to articulate their business articles, a mixed-methods approach is used to analyse the data. In doing so, two methods are triangulated: content analysis and semi-structured interviews. The purpose of triangulating these methods is to overcome potential biases and weaknesses, to enhance the accuracy of the research and to produce richer insights and conclusions.

A quantitative content analysis of the uses of statistics in business news is presented in Chapter **4**. The purpose of this analysis is to assess how statistics are used, taking the following parameters into account: newspaper, byline, length of news story, type of statistical data, validity of statistics, reliability and accessibility of statistical sources, interpretation of statistics, human interest involved, timeliness, news values and critical evaluation, among others.

Semi-structured interviews with journalists and editors are used in this study to scrutinise how business statistics are managed and conveyed to the public. These interviews are carried out with journalists and editors from the studied newspapers—namely, *Alriyadh*, *Aleqtisadiah*, *Asharq Al-Awsat* and *Alittihad.* In addition, semi-structured interviews are conducted with news sources to scrutinise how they produce business statistics, the relationship between sources and journalists and editors, and their perspective on the use of statistics by business journalists. Because the topics included in this research are the housing market, the stock market, the banking market and oil prices, the news sources interviewed are selected from institutions related to these topics. Moreover, semi-structured interviews with heads of media and journalism schools are conducted to investigate the nature and reach of the statistical data education, and these are followed up on with a survey examining the journalism curricula and syllabi at these schools. The findings of these analyses are presented in Chapter **4**.

To provide appropriate background about the use of statistics by business journalist, works related to this topic are gathered and thoroughly assessed. This analysis is vital for understanding the results and the way in which this study plans to answer the research questions. This aim is achieved by an extensive review of the related literature, provided in chapter **2**. Last, to improve journalists' ability to communicate business statistics in the media and to provide recommendations for future research, this thesis provides a comprehensive analysis of the literature and results with the aim of identifying the remaining knowledge gaps that the current study is unable to answer. This is presented in Chapter **5**.

1.5 Definition of Main Term

1.5.1 Definition of "Business Statistics"

It is difficult to give an exact definition of the term "statistics" because it has been described in a variety of ways by researchers and institutions from different backgrounds. For instance, Young and Veldman (1972, p. 2) defined "statistics" as "a set of techniques for describing groups of data, and for making decisions in the absence of complete information". In addition, Mallows (2006, p. 322) stated that "statistics concerns the relation of quantitative data to a real-world problem, often in the presence of variability and uncertainty. It attempts to make precise and explicit what the data has to say about the problem of interest”. However, there is no concrete and universally accepted conceptualization of “statistics” within the context of journalism studies. This absence of a definition often results in misunderstanding and controversy. For example, Harrison (2014, pp. 7-8) pointed out that there is a significant degree of overlap in journalism between using terms such as “numeracy” and “statistics”. However, a review of themes that recur across the various definitions of “statistics” reveals that it can be understood as “quantitative data” (Mallows, 2006, p. 322) or a “set of techniques” (Young and Veldman, 1972, p. 2) that facilitate the understanding of reality and, thus, allow effective decision making (Mallows, 2006, p. 322; Young and Veldman, 1972, p. 2). Therefore, for the purpose of this research, I define statistics as a collection of 1) numbers (i.e., probabilities, percentages, percentage differences, index values, index value differences and count in number); 2) sets of numbers (i.e., confidence intervals) that are linked to data; or 3) graphical representations of data (i.e., histograms, time series and pie charts), as shown in Table 1.

	Objects	Lists	Example
1	Numbers	Probabilities	*p*-value
		Percentages	5% tax
		Percentage differences	Consumer Price Index (CPI) increased by 0.2% in May 2016
		Index value	Saudi Stock Market (Tadawul) = 6825
		Index value differences	Tadawul increased by 100 units
		Count in number	There were 3 million transactions in the stock exchange in a day ..
2	Sets of numbers	Confidence interval	The mean inflation for next year will be in (0.001, 0.05) w.p. 95%
3	Data	Histogram	1000 stock returns
		Time series	Stock prices
		Pie chart	Percentage of people who own 0, 1, 2, … houses

Table 1. Objects used in defining “statistics”.

In this work, “business statistics” are statistics (as defined above) that describe business data. Business journalists rely on statistics to provide technical language (e.g., “increase” and “decrease”) to describe the business terms or topics they are covering (e.g., the stock market). Therefore, this study relies on the aforementioned objects (see Table 1) to examine the use/misuse of statistics by business journalists in the Arabian Gulf publishing news stories within the four selected thematic areas (i.e., the housing market, the stock market, the banking market, and oil prices) (Figure 1).

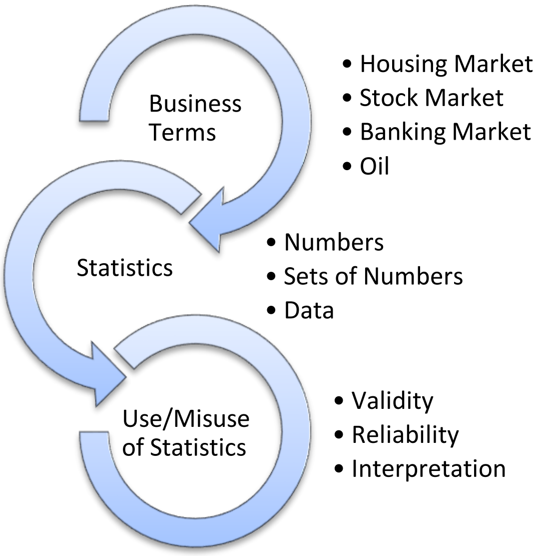

Figure 1. Flowchart showing the process of assessment of business statistics in journalism.

Because of the above, this thesis refers to "statistical outputs", as the concept of statistics covers several areas. Müller (2014, p. 17) defined "statistical outputs" as "statistics derived from (primary/secondary) source data and intermediate results. These data are the end-product of the computation process". They are the products of the mathematical rationalisation of data into numbers that convey specific information by data aggregation/summary. Hence, the objects of study are the distinctive sets of elements that are often referred to as "statistical data". Yet, in the case of this research, these numbers are used to represent specific realities and issues. Journalists usually convey statistical outputs as a part of their news stories (Camilleri, 2008, p. 204). This is why journalists have been asked to apply valid statistical reasoning when using statistics in their stories (Utts, 2003, p. 74; Nguyen and Lugo-Ocando, 2016, p. 4).

Two studies have contributed to the formulation of a measurement method for the validity of statistical reasoning, pointing out that validity, reliability and interpretation constitute the most influential factors that affect journalists' and editors' ability to effectively use statistics in their news stories (Lugo-Ocando and Faria Brandão, 2016; Cushion et al., 2017). As such, the current study identifies journalists' use of statistics as "good" or "poor" based on the factors of validity, reliability and interpretation. Originally, the omission of statistics had been planned as the fourth factor in identifying the good or poor use of statistics, as Maier (2003, p. 931) argued that journalists may avoid dealing with numbers due to a lack of self-confidence. However, as Harrison (2014, pp. 6-7) mentioned, it is difficult to prove that journalists intentionally avoided using statistics in their news stories. Because of this difficulty, this factor was excluded from the present analysis and, as discussed, only the factors of validity, reliability and interpretation were used to identify proper and improper uses of statistics, as follows:

1. Validity is audited for its assumptions. Spirer and Spirer (1998, p. 14) defined "validity" as "the connection between the concept and the measured value". In this sense, statistical validity is measured by whether (or not) statistics are used in a news story to measure what they are supposed to measure. For instance, a business story in *Aleqtisadiah* addressed the performance of the Saudi stock index over a span of 15 years, but the story itself was about the price–earnings ratio (P/E Ratio) (Aleqtisadiah, 2006). The graph, in this case, indicated the performance of the Saudi stock index over time, yet the P/E ratio would have required an entirely different graphical representation to explain its data. No explanation was provided for the graph, nor of its correlation with the subject matter.
2. Reliability[1] addresses the veracity of statistical sources. The reliability of statistical sources is evaluated as illustrated in Figure 2. The first question that has been asked is whether the source of the statistics being reported is mentioned. If the answer is "yes", I determine whether or not the source itself is reliable using the criteria outlined in the following paragraph. If the source is reliable, the statistics is said to have a high degree of reliability as well. If the source is not reliable, the statistics is deemed to lack reliability. If the source of the statistics is not mentioned, Carlson's (2011, pp. 38-39) suggestion is followed, which emphasises that unattributed sources negatively affect the reliability of the content. Moreover, Carlson added that it is more difficult and complicated to examine unnamed sources. Therefore, statistics reported without a source is

[1]It is worth mentioning that in science, "reliability", refers to the "reproducibility of results" (Kaye and Freedman, 2000, p. 341). Kaye and Freedman (2000, p. 407) stated that "reliability" means that "the extent to which a measuring instrument gives the same results on repeated measurement of the same thing". However, using this meaning, reliability is difficult to re-check in practice (Moore and Notz, 2009, p. 157). Therefore, given that the sole purpose of this study is to identify how statistics are used in business journalism in the Arabian Gulf, the focus of this study will be on the use /misuse of statistics by journalists rather than on re-checking the statistician's ability.

classified as an improper or misuse of statistics, resulting in a low degree of reliability.

In order to examine the reliability of sources of statistics, prior to conducing any fieldwork, I created a list of potential reliable sources. For example, some companies' regulations require that they publish their annual operational and financial reports in daily newspapers, and the reports need to be revised and certified by an external auditor (Ramady, 2012, p. 1495); the Ministry of Justice in Saudi Arabia provides key performance indicators for real estate (Ministry of Justice, 2016); and many organisations, such as the International Monetary Fund and the Organization of the Petroleum Exporting Countries (OPEC), provide statistics related to oil. These types of sources are classified as "reliable". An example of the misuse of statistics based on this factor can be seen in a news story with a title confirming a record Saudi real estate decline of 4% in 2014, which was published in *Asharq Al-Awsat* (Asharq Al-Awsat, 2014). At the end of the news story, it mentioned that Fahad Alwaalan, a Saudi real estate investor, had merely *estimated* a 4% decrease in the market. Consequently, while the title of the story confirmed the decline in the Saudi market, the percentage of decline was actually an estimation provided by an unknown source (Alwaalan), without any mention made of the original source of the data. In the same story, the journalist repeated the phrase "previous statistics" four times, without mentioning any sources or even identifying these statistics. This is an example of the use of an unreliable source.

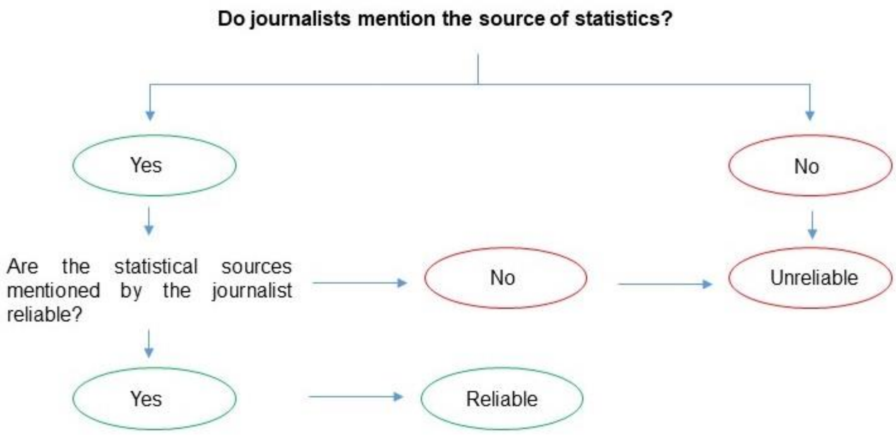

Figure 2. The reliability of statistical sources.

3. Interpretation is audited in terms of whether journalists' interpretations of statistical data provide proper clarity and details. To measure this criterion, this research follows the methodology of Cushion et al. (2017), who explored the relationship between journalism and statistics. They examined journalistic

interpretation by establishing three categories. As such, in this study, it was first asked whether the statistics provided in the news story were interpreted or not. A lack of interpretation is defined by the presence of only "vague or passing reference to statistical information" (Cushion et al., 2017, p. 1204). Second, if it was concluded that the statistics were interpreted, it was asked whether the interpretation of statistics provided proper clarity and details—or, in other words, "a clear reference with some context provided" (Cushion et al., 2017, p. 1205). If this was not provided, meaning the statistics' interpretation did not provide proper clarity or details, and only "a clear reference but with little or limited context" (Cushion et al., 2017, p. 1205) was given, this was also classified as an improper interpretation.

1.6 Overview of the Structure of the Thesis

This thesis consists of five chapters, including the introduction. Chapter 2 consists of two sections. The first section examines journalistic professionalism, including its guiding principles and ethics, and journalists' perceptions of these, in an effort to identify the core principles of journalistic professionalism. This chapter also discusses professional autonomy and its role in supporting journalistic professionalism. In addition, it discusses international perspectives of journalistic professionalism, challenging the principles of journalistic professionalism that have been identified to determine the extent to which these can be found globally. The second section provides the possible causal factors that might affect the use of statistical data by journalists. It explains the local context of the research—business journalism in the Arabian Gulf states, particularly Saudi Arabia and the UAE as well as the political, cultural and media system within this context. It also discusses source-related factors and journalist-related factors, as well as the educational systems in these countries.

Chapter 3 explains and rationalises the chosen research methodology, including its triangulation of quantitative and qualitative methods. It describes the data collection and analysis process in detail.

Chapter 4 presents the original contribution of this research in relation to the use of business statistical data in Saudi Arabian and UAE journalism. The main findings in this chapter are divided into two categories, based on the methodologies used: content analysis and semi-structured interviews.

Chapter 5 provides a conclusion and recommendations for future research. This chapter summarises the results whilst affirming the importance and contribution of study, and it offers recommendations for further studies based on the study's findings.

Chapter 2
Theoretical Framework

2.1 Introduction

The aim of this study is to examine how business journalists use statistical data to articulate their news stories in the Arabian Gulf, particularly in Saudi Arabia and the UAE, and to identify the main challenges, issues and opportunities facing journalism as a practice in those countries as journalists strive to achieve a high level of journalistic professionalism. To provide a theoretical framework on which this research can build, this chapter offers a deep discussion about journalistic professionalism and the possible casual factors that might affect journalists' ability to use statistical data in business journalism.

This chapter contains two main sections. The first section discusses the concept of journalistic professionalism, beginning with an investigation of the concept itself and an examination of the extent to which journalism can be classified as a profession. While researchers argue that journalism does not tick all the boxes necessary for it to be classified as a profession in a traditional sense, its public service ethos and the set of professional norms that guide journalists contribute to the success of journalistic professionalism as a cohesive—if somewhat contextual—standard. Furthermore, professionalisation benefits journalists, not only by allowing them to claim professional autonomy but also by enabling them to defend themselves from internal and external influences. However, the extent to which there is one set of core principles that underlies journalistic professionalism has been debated for a number of years, and different factors (e.g., politics, economics, culture and time) have been argued to have a significant impact on the professionalism ethos of journalism.

The second section of this chapter discusses the possible casual factors that might affect the level of journalistic professionalism when using statistical data in business journalism in the studied countries. It elaborates on the local context of this project, which is business journalism in the Arabian Gulf states—particularly, Saudi Arabia and the UAE. In addition, it discusses the political, cultural and media systems within this context. These systems are outlined from three perspectives: that of news sources, that of journalists and that of the educational systems used in these countries.

2.2 Journalistic Professionalism

In this work, I proposed to understand the notion of ‘journalistic professionalism’ both as an overarching concept and as a dynamic guiding principle. This will facilitate an understanding of how and why journalists make choices to fulfil their perceived roles to maintain their journalistic professionalism. To help achieve this, it is of great importance to understand how journalists use statistical data to articulate their business news stories in Saudi Arabia and the UAE. Knowing the main challenges, issues and opportunities related to journalism as a practice (and the use of statistics within journalism) in these countries will shed light upon journalistic professionalism in more general terms. Questions related to how journalistic professionalism emerged, how it is studied, how the norms and values of professionalism are understood in different contexts and countries, and how this understanding might affect the way in which journalists who cover business newsbeat use statistics are relevant not only to the Arabian Gulf but also to the profession as a whole.

Within the literature related to professional journalism, one of the main points that is contested is whether the concept of professional journalism even exists (Waisbord, 2013, p. 3), a debate that is still ongoing. Thus, there is no clear definition of “journalistic professionalism”; instead, the critical discussion of professionalism in journalism field is often approached from a sociological perspective. For instance, Waisbord (2013, p. 4) does not see professionalism as granted for all journalists; instead, he uses “profession” and “professionalism” as sociological categories of analysis to study how journalism defines itself in society in relation to other occupations, professions and areas of activity. In this sense, “[p]rofessionalism is a conceptual category, a normative ideal, a narrative that reveals how journalism intersects with economic, political, social, and cultural forces that shape media systems” (Waisbord, 2013, p. 4). From this sociological perspective, Waisbord (2013, p. 16) argued that “professionalism in journalism needs to be understood as a social process and project by which journalism seeks to maintain separation”.

Consistent with this, but from a different perspective, Deuze (2005, p. 442) argued that “the professional identity of journalists can be seen as kept together by the social cement of an occupational ideology of journalism”. Therefore, rather than seeing journalism through the lens of professionalism, he conceptualises it as an ideology, but in the same way as Waisbord (2013); as such, Deuze (2005) sees journalistic professionalism as the meaning that journalists themselves assign to their own news work. From this perspective, the principles that journalists bring to their work can be examined, as there is significant research indicating that journalists identify many of the same typical ideal values when talking about their news coverage (Hanitzsch, 2016; Van Zoonen, 1998). In this sense, the work of Deuze (2005) and Waisbord (2013) can be drawn together, as the argument of Deuze (2005) -that the process of professionalism in journalism is an ideological project to refine the common consensus of what “real” journalism is and who are “real” journalists are- is consistent with the argument of Waisbord (2013) -that the purpose of professionalism in journalism is a way of creating separation from other professions. This is also highlighted by Singer, J.B. (2003, p. 140), who first argued that professionalisation serves to make the distinction between journalists and others, and later Singer, J.B. (2015, p. 23) argued that the principles, ethics and promises that are made by journalists serve to guide their work and shape their identity but also as serve as a “wedge” against outsiders.

This section discusses journalistic professionalism, which reflects and affects journalists’ ability to use statistics; this section is divided into three main sections. The next section examines the literature on the principles and ethics of journalism, and on journalists’ perceptions of these, in an effort to identify the core principles of journalistic professionalism. The second section focuses on professional autonomy and its role in supporting journalistic professionalism. The third section discusses the international perspective of journalistic professionalism, questioning and challenging the principles of journalistic professionalism that have been identified and the extent to which these can be found globally.

2.2.1 Principles of Journalistic Professionalism

2.2.1.1 Journalism as a Profession

According to Singer, J.B. (2003), there are three general dimensions that make up the ideal profession: the cognitive, normative and evaluative dimensions. The cognitive dimension of a profession relates to the specific expertise or body of knowledge that the professionals in that field apply in their work, along with the education and training that are needed to learn and own these skills, concepts and areas of expertise (Singer, J.B., 2003, p. 144). The normative dimension of a profession refers to the service orientation of professionals, as well as a set of distinctive ethics to which they hold, both of which give the profession the opportunity to regulate itself rather than being significantly regulated by others in society (Singer, J.B., 2003, p. 144). Finally, the evaluative dimension refers to the comparison of a profession with other occupations to highlight the singular characteristics of autonomy and prestige from which some professions benefit and others do not (Singer, J.B., 2003, p. 144).

In looking at these three dimensions, it has been argued from a sociological perspective that journalism does not fit the definition of a “profession”, although it describes itself in that way (Waisbord, 2013). According to (Singer, J.B., 2003, p. 144), this is because there are no entrance requirements for becoming a journalist, there is no single discrete body of knowledge one must have to undertake the job and there is no elite group that can strip someone of the title of “journalist”. In line with this, Reese (2001, p. 175) argued that journalism “does not resemble the traditional learned professions with required credentials and licensing procedures”, although he goes on to argue that there are many “professional features to journalism”. This latter point is also mentioned by Singer, J.B. (2003, p. 144), who argued that the commitment of journalism to public service, as well as the demand that practitioners have a specific level of expertise, weigh on the side of journalism being considered a profession “for all practical purposes”. This conclusion is supported by Hallin and Mancini (2004), who argued that journalistic professionalism, from their perspective, is defined less significantly by a shortcoming in the formal regulations and educational requirements for entry into the profession than it is by journalists having “greater control over their work process, … distinct professional norms, … [and a] public service orientation” (Hallin and Mancini, 2004, pp. 34-36).

2.2.1.2 Journalistic Professionalism and Democracy

Waisbord (2013, p. 20) argued that both the market and the public broadcasting models of professionalism, from the historical experience of Anglo-American journalism, share the idea that as an institution, journalism must be unbiased, independent and unconnected with politics; it must instead be oriented toward the “greater good” to more effectively serve democracy. Within this Anglo-American perspective, Hanitzsch and Vos (2017, p. 117) argued that a majority of the normative principles of journalistic professionalism that are often identified in the literature serve to affirm the potential contribution of journalism to the “proper functioning” of democracy. Therefore, it can be seen that many of the principles identified are connected with issues of citizenship and democratic participation; journalists are expected to provide information about potentially relevant events and their context; give commentary, interpretation, advice and guidance; give citizens the means to access politics, express their political views and participate in politics; and serve as a watchdog or critic of the state that holds the powerful to account (Hanitzsch and Vos, 2017, p. 116). These are among the high ideals of journalistic professionalism that are argued to have guided journalism in the 1970s and 1980s, focusing on public service, objectivity, the maintenance of consensus and the recording of the recent past (Koljonen, 2013, p. 141). Some of these ideals have entered the journalistic profession more recently, as mentioned by Koljonen (2013, p. 142), such as the role of journalists as watchdogs and agenda setters, greater subjectivity and attempts to forecast the future. This was supported by McNair (2009, p. 239), as follows:

> *An extension of the information function of political journalism in a democracy is the role of critical scrutiny over the powerful, be they in government, business, or other influential spheres of society. This is the watchdog role of the journalists.*

Consistent with this, Singer, J.B. (2003, p. 152) argued that US journalists have long claimed to provide a public service that helps the democratic society as a whole. She argued that it is generally unquestioned within the profession that the core job of journalists is to provide information to citizens so that they can then use it to make informed decisions within society. The nature of the public service ideal has been taken for granted as one underlying journalistic professionalism, as seen across the literature. For example, McNair (2009, p. 238) pinpointed in his discussion of journalism and democracy that “from the normative perspective, the democratic ideal is one of informed choice, to which the outputs of political journalism are key contributors”. Singer, J.B. (2003, p. 152) calls this the “journalistic theory of democracy”, which argues that citizens are better equipped and able to make rational decisions and participate in the democratic process when they have more information; this would mean that more information improves the democratic process, giving journalists a fundamental role in society. This is in agreement with what journalists believe their role to be, as presented by Kovach and Rosenstiel (2001, p. 52), who found that journalists mentioned the democratic function as a distinguishing feature of journalism almost twice as often as another other feature. Nonetheless, journalists have different perspectives on what it means for journalism to be a public service; for example, those in developing and transitional societies have been shown to participate in “developmental journalism”, as they perceive their role as public servants to be in the context of nation building rather than in advocating for democracy (Hanitzsch et al., 2011, p. 273). Overall, the idea that journalism is meant to serve democracy appears to be taken for granted in only some countries, as discussed in more detail in sub-section **2.2.3**.

2.2.1.3 Principles Underlying Journalistic Professionalism

Indeed, there is no agreement as to the principles or norms that support journalistic professionalism. In seeking to identify those principles that are most often identified, this thesis will focus on the normative -and, to an extent, the cognitive- dimensions of news reporting practices. This is in line with Hanitzsch and Vos (2017, p. 115) differentiation of journalistic roles into two levels: 1) role orientation, which represents the normative and cognitive roles of journalists, and 2) role performance, which represents the practiced and narrated roles of journalists. This differentiation has been identified by several scholars, including as Deuze (2005, p. 443), who argued that journalists in democratic countries generally believe in similar values about journalism and news (i.e., role orientations) but practice these in different ways (i.e., role performance). Normative ideas about journalistic professionalism refers to the things that journalists should do (and which are often imposed on journalists externally), while the cognitive orientation of journalists refers to what they want to do (which is usually determined by the journalists themselves as a group) (Hanitzsch and Vos, 2017, p. 113). In this section, the focus is on the principles underlying the role orientations of journalists, while the role performance of journalists globally is discussed in section sub-section **2.2.3**.

The identification of the principles of journalistic professionalism is based on the idea that journalists across genres have a single ideology of journalism, and in this sense, Deuze (2005, p. 445) argued that “it is therefore possible to speak of a dominant occupational ideology of journalism on which most news workers base their professional perceptions and praxis”. Most importantly, however, over time, researchers have argued that these ideals have become liquid (Koljonen, 2013, p. 141). Consistent with this discussion, Hanitzsch and Vos (2017) provide an understanding of journalistic roles as a shared discourse. In this view, “journalistic roles are conceptualised as discursive constructions of journalism’s institutional identity, and as a struggle over discursive authority in conversations about the locus of journalism in society” (Hanitzsch and Vos, 2017, p. 116). Therefore, this provides a greater understanding of why the principles of journalistic professionalism may be in constant flow, seen, for example, in greater weight being given to transparency as a core principle of journalism in some societies (Revers, 2014, p. 808). To identify the core principle of journalistic professionalism, a range of different values have been identified; for example, Reese (2001, p. 175) pinpointed the following:

> *We assume that journalists must have a high degree of professional freedom and autonomy to carry out their function, and we gauge their work against some standard of fairness, or equal representation of*

> *relevant social feature. Ethically, we trust that journalists will observe standards that do not violate expectations of social order. We wish that journalists would adhere to certain roles and ethical conduct because we think that doing so benefits the larger society.*

The above quote highlights important values for journalistic professionalism, including professional freedom and autonomy, fairness and objectivity, a high level of ethics and public service. This is in agreement with other research in this area, such as that of Waisbord (2013, p. 20), who argued that both the market and public broadcasting models of professionalism, from the Anglo-American perspective, see journalism as being committed to public service—as are other professions—as well as having core principles of objectivity and fairness. These roles correspond with the five ideal typical traits or values that have been identified as part of journalism's ideology across the literature, according to Deuze (2005, p. 449): public service, objectivity, immediacy, ethics and autonomy.

The first principle of journalistic professionalism mentioned is usually that of public service, which is presented as comprising two roles for journalists: being active collectors and disseminators of information, and being watchdogs or "newshounds" (Deuze, 2005, p. 449). The role of the journalist as an information disseminator can be argued to be an Anglo-American ideal to an extent; for example, Relly et al. (2015) found that Iraqi Kurdish journalists who saw themselves primarily in the role of disseminator -of providing information to the pubic quickly- were significantly more likely to have received Western journalism training. Nonetheless, these journalists also agreed or strongly agreed with a number of public service ideals in terms of their role as journalists, including the roles of "interpreter" (i.e., providing analysis of complex issues), "populist mobiliser" (i.e., providing citizens the opportunity to express their views about government affairs), "supporting development" and "watchdog" (i.e., investigating government claims) (Relly et al., 2015, p. 1101).

Generally, this public service ideal can be seen as a powerful element of journalism's ideology and has been identified by several researchers as being particularly powerful for US journalists due to its perceived link to democracy (Singer, J.B., 2003, p. 146). In this sense, Relly et al. (2015, p. 1101) found that the Iraqi Kurdish journalists who saw themselves primarily in a disseminator role were also more likely to hold to a democratic ideology than to a nationalist ideology. Journalists' perspectives on what it means for journalism to be a public service differ, and therefore, their views of the final role of journalism in the public sphere also differ (Revers, 2014, p. 806). For example, in Deuze's (2002, p. 141) comparison study of news cultures in North America and Northern Europe, journalists' perceptions of their role in Anglo-American cultures (i.e., the US, the UK and Australia) included to "investigate claims of government" as one of the top two most important roles, but this was much less important for Northern European journalists, who saw their role more as to "provide analysis and interpretation". These cultural differences are discussed in more detail in section sub-section **2.2.3**.

The second core principle of journalistic professionalism identified by Deuze (2005, p. 450) is objectivity, which is the idea that journalists are neutral, impartial, even-handed and fair, and that this is what makes them credible. This value is particularly identified by US scholars (Deuze, 2005, p. 450). For example, McNair (2009, pp. 238-239) argued that "[j]ournalists must be … objective reporters of political reality, striving to be as neutral and detached as possible, even though they will hold their own political views". As seen in this quote, other terms that are often used are "neutrality", "detachment", "fairness", "professional distance" and "impartiality". While this is seen in much of the writing related to the topic of journalistic professionalism from the US, the idea of journalists being objective is currently much debated. Hallin and Mancini (2004, p. 12), for example, gave "objectivity" as a core principle that is less necessity than other principles for achieving journalistic professionalism. They argued that journalism's position as a profession is defined less significantly by the idea of objectivity than it is by its public service orientation.

Other scholars have argued that taking a detached position is a way for journalists to protect themselves from criticism and, thus, does not support journalism in its role of promoting democratic deliberation (see for example, Merritt, 1995, p. 126; Tuchman, 1972, p. 667). There is also significant debate about whether objectivity is seen as a value that journalists should hold by those outside of the US and North America; this is discussed in more detail in section sub-section **2.2.3**.

Third, journalism has a sense of immediacy that is inherent in the concept of news, which emphasises the novelty of information as its defining principle (Deuze, 2005). Journalists' work, therefore, involves speed and quick decision making so that information can be provided to the public with as little delay as possible (Deuze, 2005, p. 451). In Deuze's (2002, p. 141) comparison of news cultures in North America and Northern Europe, the second of the most important perceptions of journalists of their role across all five countries examined was to "get news to the public quickly". This indicates that immediacy is a core principle of journalistic professionalism that is likely to span across cultures.

Fourth, ethics is a core principle of any profession, as previously discussed, and Deuze (2005, p. 449) argued that journalists have a sense of ethics, validity and legitimacy as a core principle underlying journalistic professionalism. He stated:

> *Although journalists worldwide disagree on whether a code of ethical conduct should [be] in place or not, they do share a sense of being ethical -which in turn legitimises journalists' claims to the position as (free and fair) watchdogs of society. (Deuze, 2005, p. 449)*

In this sense, Singer, J.B. (2003, p. 150) mentioned that journalists generally perceive that they are adhering to ethical guidelines to fulfil their role as providing a public service. One of the most widely recognised sets of ethical guidelines for journalists is the ethics code of the Society of Professional Journalists (SPJ) (SPJ, 2018). The SPJ Code of Ethics draws on the journalistic theory of democracy, and highlights public service as a core principle of journalistic professionalism, as outlined in their introduction:

> *Members of the society of professional journalists believe that public enlightenment is the forerunner of justice and the foundation of democracy. Ethical journalism strives to ensure the free exchange of information that is accurate, fair and thorough. (SPJ, 2018)*

In this code, the SPJ identifies four principles of an ethical journalist: accuracy and fairness, minimising harm, serving the public (i.e., acting independently), and accountability and transparency. Last, the fifth principle of journalistic professionalism, as identified by Deuze (2002, p. 151), is professional autonomy, which refers to journalists' ability to be autonomous, free and independent in their work. For its importance for this thesis, this principle is discussed in detail in the next section.

2.2.2 Professional Autonomy

Mellado and Humanes (2012, p. 985) define "professional autonomy" as "the degree of judgment or ability to make personal decisions without being affected by external or internal influences". A range of influences can affect journalists' autonomy, such as the ownership of the media house with which they work, their editorial rank or their level of professional experience (Reich and Hanitzsch, 2013, p. 133). The influence of professional autonomy can be classified in many levels; Nygren et al. (2015, p. 80), for example, classified journalistic autonomy according to five levels: external autonomy, internal autonomy, autonomy of the ideal, perceived autonomy and factual autonomy.

The first level, external autonomy, is "autonomy of the profession as a group and power in society" (Nygren, 2012, p. 78). Nygren et al. (2015, p. 80) argued that in the developed world, which has strong liberal traditions, journalism holds a more independent position than it does in the developing world, where, under authoritarian regimes, politics affects journalism's autonomy. The second level, internal autonomy, is “autonomy for journalists in their daily work in relation to the media organization” (Nygren, 2012, p. 78). According to Sjøvaag (2013, p. 158), this level of influence includes the forces that can place powerful constraints on internal autonomy within journalism, such as when there is a wall between the newsroom and the marketing department. The third level is the autonomy of the ideal. As argued by (Sjøvaag, 2013, p. 160), when studying journalism in terms of a sociological perspective, it seems that a particular degree of autonomy is required in relation to the obligation that is placed on journalists by society (Benson and Neveu, 2005). As discussed earlier, in Western countries, journalists are considered the agents of the fourth estate and are expected to fulfil their role as watchdogs for a society (i.e., to fulfil the ideals of journalism); however, this type of autonomy differs from one media system to another, based on the region’s political, economic and cultural developments (Schudson and Anderson, 2009, p. 89). The fourth level is perceived autonomy, which is centred on the decisions that must be made in the everyday work of media organizations and on questions concerning the powers affecting media content (Weaver and Willnat (2012). Factual autonomy, the fifth level, is more complex in nature and is related to the fact that it is difficult to identify reliable indicators of autonomy (Nygren et al., 2015, p. 81).

Carlson (2015, p. 5) argued that the protection of autonomy is an important part of professionalism, as does Singer, J.B. (2003, p. 152), who emphasised that autonomy is a critical characteristic of any profession. Carlson (2015, p. 10) drew on Gieryn’s (1983) examination of boundary work, in which the protection of autonomy is identified as one of three generic ways in which boundary work is undertaken. Therefore, as a part of professionalism, the protection of autonomy is about defending journalism from non-professional outsiders that may seek to shape or control what is defined as “journalism”, such as keeping editorial control away from business managers or the influence of government (Carlson, 2015, p. 12). Singer, J.B. (2007, p. 81) expands on this, arguing that autonomy is about the professional community itself being able to define the nature of the services they provide and being the sole legitimate judge of improper behaviour, with neither the client nor society being able to make such determinations. In this sense, McDevitt (2003, p. 155) argued that professional autonomy gives journalism practitioners occupational benefits, and thus, he supported practitioners’ right to defend against any threats to their autonomy.

Professional autonomy is fundamentally protected in a profession by controlling members’ recruitment and certification and by standard-setting (Singer, J.B., 2003, p. 152); however, as discussed, this is difficult achieve within journalism (Lasorsa et al., 2012, p. 19; Revers, 2014, p. 806). As in other professions, journalism justifies the need for professional autonomy based on the idea that this is what best serves the interests of the public (Singer, J.B., 2003, p. 153). This is seen, for example, in the SPJ Code of Ethics, the third principle of which is to "act independently". This is followed by the statement, "the highest and primary obligation of ethical journalism is to serve the public" (SPJ, 2018), fundamentally linking professional autonomy with journalists' ability to serve the public interest. McDevitt (2003, p. 155) also suggested that practitioners should defend their autonomy by emphasising their professional expertise.

However, as with objectivity, autonomy valued by Western journalists (e.g., those in the US) as a core principle of professionalism (Singer, J.B., 2007, p. 81), as is discussed in more detail in the next section. As seen above in the SPJ Code of Ethics, journalists' demand for independence from external interference has been framed as necessary to fulfil public service obligations within a democratic society. However, Singer, J.B. (2007, p. 81) mentioned that significant personal autonomy has to be given up by journalists because it is often not the individual journalist who decides what others need to know. According to Singer, J.B. (2003, p. 154), professionalism itself can be seen as a way of decreasing the level of autonomy of journalists because it forces them to subordinate their individual ideals to those of the group or organisation and because it has been used as a justification for controlling the behaviour of reporters and editors. In this sense, McDevitt (2003, p. 156) argued that this ideal of professional autonomy serves as one way in which the attempts of journalists to be more dialogic and to welcome community engagement in their work can be precluded. Furthermore, Deuze (2005, p. 455) argued that having professional autonomy as a core ideal can elevate editorial independence to being an ideological value and can legitimise journalists' resistance to change.

2.2.3 Journalistic Professionalism: The International Context

So far, the discussion in this section has highlighted that journalism differs across countries, both in terms of its ideology (i.e., the normative and cognitive roles of journalists) and in how it is practised (i.e., the performance role of journalists). This section concludes the discussion of journalistic professionalism by discussing the international context in more detail to examine key evidence that there is no one journalistic worldview (Pintak, 2014).

Seminal pieces on comparative journalism include work by Weaver and others. On one hand, Weaver and Willnat (1998, p. 2) concluded that there is support for the idea that the characteristics of journalists are similar around the world; on the other hand, Weaver also concluded that the professional norms and values that guide these journalists vary widely, and therefore, it cannot be claimed that there are any universal standards of journalistic professionalism. Later, Weaver and Willnat (2012, p. 540) came to this conclusion again, reporting from the study of international journalists that “there are strong national differences that override any universal professional norms or values of journalism around the world”. Recent research by Hanitzsch and Vos (2017, p. 117) supported this conclusion, arguing that there are distinct normative ideas about the role of journalism in society in non-Western compared to Western contexts. As discussed above, journalists in liberal countries have expressed their ideology about their role as contributors to the effective functioning of democracy (McNair, 2009, p. 239), while those in developing and transitional societies, including Arab countries, take a more developmental approach to their role in society, seeing themselves as public servants that act as nation builders, governmental partners and agents of empowerment (Romano, 2012; Sakr, 2006; Mellor, 2007; Yin and Payne, 2004; Rugh, 2004; Rugh, 2007; Sakr, 2003).

This is seen in early comparative journalism studies, such as that of Köcher (1986, p. 43), which challenged the assumption that the normative values that guide journalistic professionalism in Western societies could also be applied globally. The first Worlds of Journalism Study (WJS) showed journalists’ willingness to be actively involved in social development to be a major difference across countries in terms of journalists’ perspective of their professional role (Hanitzsch et al., 2011, p. 273). These results were supported by the second WJS (2012–2015), in which it was again shown that journalists in developing countries are much more likely to support the normative ideals of development journalism rather than the detached, adversarial journalism that is advocated by their Western counterparts (Kalyango et al., 2017, p. 576). This was also found to an extent in some transitional countries, where an adherence to traditional Western journalism values was combined with an acknowledgment of the journalists’ role in supporting societal transition (Andresen et al., 2017).

The importance of development was also highlighted above, in the discussion of the work of Relly et al. (2015, p. 1086), which related to the role of Iraqi Kurdish journalists. This development approach to journalism calls for a journalist to take a more collaborative and constructive role in the public domain and gives greater importance on the idea of social responsibility (Hanitzsch and Vos, 2017, p. 115). This was identified by Yin and Payne (2004, p. 34) in their examination of journalism in Southeast Asia, where they argued that journalists take on a “steering mantle” as they help guide societal development. In Singapore, for example, journalists work in partnership with the government and see their role as one of nation building and of helping to instil Asian values into the population; in Indonesia, the unity of the population if of high importance, and one of the roles of the media is to support national unity across the country (Romano, 2013). These examples undermine the idea that objectivity and autonomy are universal norms of journalistic professionalism, particularly as analyses of journalism in non-Western contexts indicates that adhering to objectivity is often not a major characteristic of journalism (Schudson and Anderson, 2009, p. 89). In this sense, Donsbach and Patterson (2004, p. 254) argued that a commitment to objectivity distinguishes even American from European newsrooms, and more recent research from Bonin et al. (2017, p. 536) showed that French-speaking journalists in Canada, Belgium and Switzerland have more politicised role perceptions than do their counterparts who do not speak French.

In other political and economic contexts, the need for a development approach to journalism is not as pronounced, and journalists have taken on the role of agents of change. According to (Pintak and Nazir, 2013, p. 4) and Pintak (2014, p. 482), journalists in the Islamic world seek to serve their audiences in the role of agents of change. This role is undertaken within the context of these journalists' Islamic obligations to tell the truth, seek justice and support public interests (Pintak, 2014, p. 482). This is consistent with the conclusion of a study conducted by Muchtar et al. (2017, p. 556) on 12 Muslim majority countries, which found that journalists' perception of their role is linked to their Islamic values. This is also in agreement with an earlier study conducted by Steele (2011, p. 534), who argued that journalists in Muslim majority countries see and understand the significance of their work through the lens of Islam. Nonetheless, the larger economic, political and socio-cultural aspects of these countries have also been identified as the overriding determinants for journalistic culture, indicating that the principles of journalistic professionalism are largely contextual (Reese, 2001, p. 173; Mellado and Humanes, 2012, p. 987). In this sense, Hallin and Mancini (2004, p. 29) suggest that being a professional journalist means different things in different countries; while it may indicate a commitment to objectivity and being free from political ties in the US, it may mean active and intentional intervention in politics in Germany. As such, it must be remembered that journalists in Indonesia may be just as professional as those in the UK, but the social bases of their professionalism, as well as the particular content of their values, are different.

Understanding journalistic professionalism, both as an overarching concept and as dynamic guiding principle, will facilitate an understanding of why journalists make choices to fulfil their perceived roles. Knowing that different countries define “journalistic professionalism” differently does not make any definition less valid; instead these differences must kept in mind when attempting to understand why journalists make certain choices when publishing data, in particular.

2.2.4 Conclusion

This section has discussed journalistic professionalism, beginning with an investigation of the concept and an examination of the extent to which journalism can be classified as a profession. While researchers argue that journalism does not tick all the boxes necessary for it to be classified as a profession in a traditional sense, its public service ethos and the set of professional norms that guide journalists contribute to the success of journalistic professionalism as a cohesive—if somewhat contextual—standard. Furthermore, professionalisation benefits journalists, not only by allowing them to claim professional autonomy but also by enabling them to defend themselves from internal and external influences. However, the extent to which there is one set of core principles that underlie journalistic professionalism has been debated for a number of years, and different factors (e.g., politics, economics, culture and time) have been argued to have a significant impact on the professionalism ethos of journalism.

In this section, the journalistic theory of democracy has been identified as the core theory that is behind the principles of journalistic professionalism identified by North American journalists. However, it has also been shown that while journalists may share certain objectives or even aspire to achieve a kind of global ideology of journalism, they do not all interpret its values in the same way. This is seen in the development journalism model, for example, in which journalists view their public service role as something other than providing information to support democracy, such as to achieve nation building, national unity and other goals. Researchers have therefore argued that there may be a dominant occupational ideology of journalism, with some objectives being shared by journalists, such as public service, immediacy and ethics, but that the way in which these are interpreted, used and applied often varies among journalists internationally. This discussion will continue in the next section, which focuses on journalistic professionalism in the context of the Arabian Gulf, and particularly of Saudi Arabia and the UAE.

2.3 Possible Causal Factors

The aim of this research is to understand how journalists use statistical data to articulate their business news stories in the Arabian Gulf, and to identify the main challenges, issues and opportunities related to journalism as a practice in those countries. This section provides an in-depth discussion of the various factors that can affect the use of statistics in business journalism in the Arabian Gulf to achieve high level of journalistic professionalism, and particularly in Saudi Arabia and the UAE. These factors first include the political, cultural, religious and media systems of the Arabian Gulf, as understanding these factors will allow for a comprehension of how journalists operate in these countries. This section secondly concentrates on factors related to the news sources, factors related to the journalists, and factors related to the system of education within journalism to explain how these factors might influence journalists' ability to use statistical data to achieve high level of journalistic professionalism.

2.3.1 The Political Context and Media System

To understand the use of statistics by business journalists in Saudi Arabia and the UAE, it is first necessary to shed light on the media and political systems of these countries, and how the media systems in these countries and their political and cultural contexts may affect the use of statistical data by journalists. Indeed, Rugh (2004, p. 22-23) argued that to understand the Arab media system, it is not enough to look at the legal status of the media but it is also necessary to analyse other key aspects. He claimed that looking only at the laws that underpin the media landscape and the practice of journalism does not provide the whole picture of who decides on the content, the editorial process and what gets disseminated. Consequently, the Arab media system cannot be fully understood without mentioning the political context, history and conditions, such as "the strength and legitimacy of the ruling group", "the existence of a tradition of journalism and a Fourth Estate" and the economic strength of the media (Rugh, 2004, p. 23).

Normative thinking about journalism is the subject of considerable discussion in Western literature. The majority of such thinking depends on the unique status of the media within democratic political systems (Josephi, 2005, p. 575-576). For example, some scholars view "journalism" as another name for "democracy" and believe that journalism without democracy is simply "something resembling a news business" (Carey, 2000, p. 133). Hence, the normative character of journalism acts as both a yardstick and legitimisation for the assessment of its performance (McQuail, 1994, p.

4-5). Within this framework, the US media is often criticised in the scholarly literature due to its failure to meet the expectations of democratic ideals (Kim, N.-D., 2006, p. 40).

However, such normative approaches to journalism and democracy emerging from Western countries, particularly the US, have been questioned by supporters of a more cross-national and cross-cultural comparative perspective because of their tendency to legitimise only a democratic, ethnocentric approach (Josephi, 2005, p. 577). In this sense, organisations such as Freedom House (2015, p. 22-23) tend to rate most countries around the world as only “partly free” or “not free”, including countries in the Arabian Gulf. This yearly ranking has been seen by many critics as an attempt to view journalism as a uniquely Western phenomenon (Curran and Park, 2000, p. 11-12). While there is little doubt that the democratic value of press freedom has great appeal to practitioners of journalism around the world (McQuail, 1994, p. 130), this has nevertheless been a particular experience of North American media systems and, to some degree, the Western European countries that have been able to apply a narrow and normative-based definition of “journalism” (Hallin and Mancini, 2004, p. 6). This controversial part of the normative discussion about journalism indicates gaps between the proposed schema and its real implementation; when interests or political groups intervene in the process, inconsistencies between the proposed and actual reality become greater (Kim, N.-D., 2006, p. 41).

It is within this Westernised framework that a number of scholars have attempted to structure and classify normative models of media in the world. Siebert et al. (1956, p. 3), for example, presented four theories of press that have collectively been adopted by many scholars as an analytical paradigm. They proposed that it is possible to classify the media system into four main theories: the libertarian theory, the social responsibility theory, the Soviet theory and the authoritarian theory, where the Arab states are mostly classified under the latter. According to Josephi (2005, p. 583), this classification system was created following WWII and was presented in a manner that fit within the mentality of the Cold War. By that time, these four theories were modified, and new versions of the classification system emerged. For example, McQuail (1994, p. 131) added two models to Siebert’s classification system: the democratic-participatory theory and the developmental media theory.

However, as underlined by other scholars, the aforementioned theories emerged in the Western context and are not suitable as explanatory frameworks for media and journalistic practices of the developing world (Mellor, 2007, p. 4), where the context, conditions and nature of these practices are often entirely different. Because of this, Rugh (2004, p. 25) emphasised that understanding the Arab media system under the standard classification of the four theories fails to explain the dynamic systems that shape the system and therefore falls shorts in relation to understanding journalism practices in non-Western societies. He emphasised that “none of the existing analytical theories helps much in going beneath the surface of the Arab media systems, and to explain their real functioning we must devise new theories designed to fit the case at hand” (Rugh, 2004, p. 25). Furthermore, he classified the Arab media system into four main categories: 1) the mobilisation press, including that of Sudan, Libya, Syria and Iraq until 2003; 2) the loyalist press, including that of Saudi Arabia, the UAE, Oman, Qatar, Bahrain and Palestine; 3) the diverse press, including that of Lebanon, Morocco, Kuwait[2] and Yemen; and 4) the transitional press, including that of Jordan, Egypt, Algeria, Tunisia and Iraq after 2003 (p. 24-26).

Rugh (2004, p. 65) also argued that newspapers that belong to the loyalist press do not attack the basic doctrines of national policy in their countries prescribed by the government; they avoid critiquing the leaders at the top of the government, and they display little diversity of opinion on significant issues. He added that editors in such countries confess that they support the head and official line of government on all fundamental principles. However, he also mentioned that newspapers in the loyalist category could criticise government services that are unsatisfactory to citizens, and these newspapers may cover news of officials in a negative light. For instance, the Saudi press has criticised the Ministry of Pilgrimage on some details of its role of the annual pilgrimage, as well as other areas of society in which disagreement and debate are tolerated (Rugh, 2004, p. 66). In general, the loyalist press tends to cover government activities in an uncritical manner and to criticise different issues, including economic policies, only from time to time (Rugh, 2004, p. 66-67). This is particular significantly to the current thesis given that economic policy and finance is one of the areas of focus, and this area is open to some degree of criticism.

Having said that, Mellor (2005, p. 51) argued that Rugh’s typology of the Arab media system is lacking in three dimensions: 1) it did not clearly define its categories, 2) it did not account for the development of Arab news media and 3) it overlooked various factors, such as “émigré newspapers”. Moreover, she added that “the classification of the Arab press into four categories depending on the censorship exercised by the government does not account for the symbiotic relationship that takes place between

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[2] While Kuwait is an Arabian Gulf state, it is the only country in the Arabian Gulf that is classified by Freedom House (2016) as “partly free”, whereas the rest of the Arabian countries are classified as “not free”.

the three actors involved in news production: government, journalists/editors, and the audience" (Mellor, 2005, p. 64). Rugh (2007, p. 3) responded, saying, "the most powerful factor influencing the structure and functioning of the media in the political process is the actual political reality that prevails in each country at a given time".

Overall, during recent decades, and particularly since 9/11, there has been a renewed interest in the media of the Middle East, and a number of scholars have sought to categorise the Arab press. Ayish (2002, p. 138), for example, classified the Arab media system into three major models: the "traditional government-controlled" model, represented by *the Syrian Satellite Channel*; "the reformist government broadcasting" model, such as the Abu Dhabi Satellite Channel; and the liberal commercial model, represented by Al-Jazeera Satellite Television Channel. Another important example of theoretical paradigms that have been used to classify the Arab media within a Western framework includes the three models of media and politics developed by Hallin and Mancini (2004) in their book *Comparing Media Systems*. Nevertheless, this approach was criticised of lacking applicability in other parts of the world (Hafez, 2010, p. 3). These criticisms come in spite of the fact that in their edited book published later, in 2012, *Comparing Media Systems Beyond the Western World*, they tried to expand their cases and countries to make the models applicable to the rest of the world by analysing the four dimensions introduced in their first book: "the structure of media markets, the degree and form of political parallelism, journalistic professionalism, and the role of the state" (Hallin and Mancini, 2012, p. 2).

This attempt included some discussion of the Arab press, but in my view failed to appreciate the complexity of the journalism practice and media systems in those countries. This is because these Westernised approaches to explaining the media and journalism in the Arab word tend to Orientalise the interpretations of other media systems (Said, 1978, p. 6). This, of course, is not an attempt to make excuses for the excessive influence of the government and elite in these countries over the press but rather to highlight that journalists, as an interpretative community, can operate in very different manners in these societies while still having a legitimate claim to be practicing journalism.

In this sense, Kraidy (2012, p. 180) pointed out that the majority of Arab media relies on the nation-state as a shaper and container of media. This mindset could be a contributing element to why Western-developed classifications do not seem to effectively apply to the media in the Arab world. He asserted that the nation-state could be a debatable category for comparative analysis that can be addressed in four different manners: 1) as an "object of study", 2) as a "context of study", 3) as a "unit of analysis" or 4) as a "component of a larger international or transnational system" (Livingstone, 2003, p. 484-485). While Rugh's (2004) approach relied on the nation-state as a unit of analysis, Kraidy (2012) moved from the "comparative research to the transnational realm" (p. 180).

Kraidy (2012, p. 198) also argued that relying on the transnational perspective could "be more heuristic than a traditional comparative approach that just uses the nation-state as [the] unit of analysis". He added that the traditional comparative approach offered some insights into the diversity and characteristics of Arab national systems. However, the transnational perspective directs the research to the complexities of Arab media operations through conceptual innovations, which include "notions of a transnational system, transnational parallelism, and an expanded understanding of media professionalization" (Kraidy, 2012, p. 198). Furthermore, he emphasised that the Arab media system consists of a hybrid of a liberal model and a polarised pluralist model.

It is difficult to ascribe one general media system to the entire Arab world, as each state has undergone its own unique media development. Thus, it is important to analyse each Arab country separately to understand its respective media systems (Mellor, 2007, p. 48). In the same way, Lugo-Ocando (2008, p. 11) rejected the idea of seeing the media in Latin America as a homogenous entity, instead calling for a more subtle and localised approach. The point here that the richness, uniqueness and comprehensiveness of these media systems cannot be captured by models that were not designed to analyse these societies in the first place.

Nevertheless, in order to advance this discussion, we need to accept that despite Rugh's typology having been criticised by Arab media scholars (Kraidy, 2012, p. 180; Mellor, 2005, p. 51; Iskandar, 2007, p. 11), given the need to professionalise Arab journalism (Hafez, 2010, p. 10; Hamdy, 2013, p. 72), Rugh's typology is still valuable as a starting point.

As Rugh (2004, p. 59) pointed out, print media in Saudi Arabia and the UAE are loyal and supportive to their governments. Newspapers in the Arabian Gulf are primarily privately owned. While print media in Saudi Arabia are held in private ownership by law, the private ownership of newspapers is not mentioned in UAE printing law (Rugh, 2004, p. 63). Therefore, there are a few exceptions to the private ownership rule of most Arabian Gulf countries. For instance, the UAE government owns some newspapers, including *Alittihad, Emirates News and Al-Bayan,* while the daily newspapers in Saudi Arabia are entirely privately owned (Rugh, 2004, p. 64-65). The law also prohibits foreigners from owning newspapers in these countries (President of the United Arab Emirates, 1980; The Council of Ministers, 2001).

Newspapers in these countries are generally owned by individuals, families and establishments. For example, Article 3 of the Saudi *Journalistic Enterprise System* stipulates that any newspaper should be owned and issued only by a journalistic establishment, and the Minister of Culture and Information can issue an establishment license based on an application provided by a group of at least 30 citizens (The Council of Ministers, 2001). In the UAE, by law, individuals are allowed to own newspapers (President of the United Arab Emirates, 1980). However, as stated, the UAE government also owns a few newspapers, while the rest are owned by citizens (Rugh, 2004, p. 60).

It is worth mentioning that, while newspapers are privately owned in these countries -excepting the aforementioned government-owned newspapers- these newspapers are still dependent to some extent on their governments in terms of funding (Rugh, 2004, p. 65;76). ALzahrni (2015, p. 43) and Freedom House (2008) argued that despite the fact that these newspapers are privately owned, they do not have complete independence because they are required to support official positions, especially when discussing political issues.

The nature of the media in the Arabian Gulf, particularly in Saudi Arabia and the UAE, reflects the political environment, which plays a crucial role in determining the media's function in these countries (Rugh, 2004, p. 78). Despite the fact that the newspapers in Arabian Gulf states are generally privately owned, governments also still play a central role in controlling and censoring the press (Awad, 2010, p. 36). Rugh (2004, p. 71) emphasised that "the governments in these countries have certain rights and powers that they can use to influence the press even though it is in private hands".

Among the Arab states, press freedom remains restricted, despite the fact that a greater degree of press freedom has been granted in many developing countries in South America, Eastern Europe, Asia and Africa throughout the last few decades (Awad, 2010, p. 31-32). Nossek and Rinnawi (2003, p. 184) pointed out that "media structure and policy in most Arab states are determined by the political elite, where the mass media are directly centralized in the hands of the state regime leadership." Moreover, Sakr (2003, p. 35) emphasized that Arabian media should be given more freedom, stating the following:

> *It is important to recognize that censorship is achieved not only through direct suppression of content, but also by more fundamental and less visible means, including regulation of media ownership,*

> *regulation of entry to the profession of journalism and regulation of printing and distribution, as well as extra-judicial intimidation of media practitioners and bars on access to information.*

In her analysis of the changes in Arab media in Gulf Cooperation Council (GCC) countries, Sakr (2006, pp. 132-133) pointed out that censorship implemented by the government, or by commercial interests, affects the way that the news is framed. She added that the criteria for media regulation in GCC countries are considered vague, containing general terms that must be interpreted by specific laws (2006, p. 136).

In 2000, the Saudi Law of Press and Publication of 1982 was replaced by a new law issued by a royal decree (The Council of Ministers, 2000, p. 3). Only 11 of the decree's 46 articles are dedicated to the local press, while others cover general terms such as foreign publications, books and folders (The Council of Ministers, 2000, p. 6). Foreign newspapers are allowed by Saudi law to be printed in the kingdom after securing permission from the prime minister (The Council of Ministers, 2000, p. 11). The Saudi law allows the establishment of journalistic associations after permission has been granted by the Minister of Culture and Information (The Council of Ministers, 2000, p. 16).

However, analysing former Saudi law regarding the press reveals some ambiguities. The law suffered from the use of broad language, a lack of definitions and few details (Awad, 2010, p. 23). For instance, in Article 8, freedom of expression is guaranteed within the context of Islamic law and the state constitution (The Council of Ministers, 2000, p. 9). Nonetheless, it is not clear what, exactly, was meant by "Islamic law" or the "state constitution", as there could be many interpretations of these terminologies (Awad, 2010, p. 23). Consequently, it would be difficult to identify precisely which news stories can be articulated using this aspect of the law (Awad, 2010, p. 23). Another example of ambiguity is found in Article 24, which stipulated that local newspapers are not subject to censorship other than in exceptional circumstances (The Council of Ministers, 2000, p. 12). However, there are no details regarding the term what is meant by the term "censorship" or even about what may constitute "exceptional circumstances", and the Ministry of Culture and Information still censors local newspapers (Awad, 2010, p. 23).

Article 9, Clause 8, of the same law mentioned that newspapers should adhere to objectively constructive critiques built on facts and correct information to serve the public interest (The Council of Ministers, 2000, p. 9). However, the law used broad, general terminology that could be interpreted in various manners. In addition, there was no clear definition given of "objective constructive critiques" or "public interest" (Awad, 2010, p. 24). Article 36 awarded the Ministry of Culture and Information the prerogative to withdraw any issue of a newspaper, regardless of whether the newspaper transgressed Islamic law (The Council of Ministers, 2000, p. 14). Again, there were no clear or specific terms used to identify the contents or purview of "Islamic law". Moreover, Article 31 of the same law stipulated that the editor-in-chief of a newspaper is responsible for everything articulated in that newspaper, while, at the same time, journalists are deemed responsible for the contents of its news stories (The Council of Ministers, 2000, p. 13). This article also entirely contradicts Article 8, which provides for freedom of expression.

In his study on censorship imposed by the Ministry of Culture and Information on the local press, Awad (2010, pp. 24-25) argued that these ambiguities—such as the broad, general terms used in the Saudi Law of Press and Publication—give the Ministry of Culture and Information the ability to censor and control the press by allowing them to interpret these ambiguous terms in different ways. The Freedom House Report (2008) argued that "the Basic Law does not provide for press freedom, and certain provisions of the law allow authorities to exercise broad powers to prevent any act that may lead to disunity or sedition". Awad (2010, p. 25) pointed out that, in an attempt to bridge the gaps in the ambiguous law, the Ministry of Culture and Information regularly distributes its guidelines directly to newspapers, outlining what they are prohibited from stating.

Furthermore, the interplay between religion, culture and politics creates additional problems, hampering the ability of journalists to operate in Arabian Gulf countries. Indeed, Kraidy (2012, pp. 185-187) and Mellor (2005, p. 58) argued that while the political structure in Saudi Arabia affects journalistic practices, Islam has a strong influence as well. Al-Kahtani (1999, p. 215) pointed out that the pressure of religious leaders is an important factors in news selection. Najai (1982, p. 34) defined religious leaders as a "religious and very conservative group, traditionally conceived of by the government as the guardian of the Islamic orthodoxy in governmental-political decisions". As the relationship between the royal family of Al-Saud and religious leaders began in the mid-18th century, religious leaders have certainly had some influence over government decisions (AlMunajjed, 1997, p. 3).

Religious leaders' power to either legitimise or delegitimise the government's political acts is exercised through the issuing of fatwa "religious rulings" (Awad, 2010, p. 12). Najai (1982, p. 35) argued that "although [the] Kuran[3] and Sunna[4] together are the

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[3] The Kuran (more commonly spelled "Quran") is the holy book of Muslims.
[4] The Sunna is a source of Islamic legislation provided by the Prophet Mohammed.

absolute frame of reference for the Kingdom of Saudi Arabia, a fatwa is still highly sought after in cases of doubt as to the major legal enactments of the State in cases of constitutional decisions".

Awad (2010, p. 11) argued that Saudi Arabia's royal family has awarded religious leaders great authority at both the political and social level. As detailed by Najai (1982, p. 37), "the ruling traditions of the country may be seen as resting on three pillars: the King, his Council of Ministers, and the Ulema". Wilson and Graham (1994, p. 36) further argued that "the Kingdom of Saudi Arabia remains a theocracy with little distinction made between religion and politics. The country's constitution is the Sharia, or Islamic law, and the Al-Saud take care to couch all political decisions in religious terms".

Regarding ways in which this religious leadership is performed, Awad (2010, p. 35) noted that religious leaders influence different aspects of Saudi society by exerting huge pressure on government and local newspapers to hold to Islamic norms and values. For instance, General Mufti, who maintains the highest religious position in Saudi Arabia, criticised Saudi newspapers when a photograph of a Saudi woman who did not cover her face was published. General Mufti explained that this action is against Islamic rule and therefore should not have been published in a Saudi newspaper (Arab Press Freedom Watch, 2004).

Duffy (2013, p. 29) argued that while the new Saudi printing law led to a more liberal journalism environment, both traditional and social media have been restricted since the Arab Spring era by the Saudi government (p. 34). He explained that the Saudi government increased the penalties of any action could threaten its stability, including publishing offenses. This reaction came after a fatwa issued by religious leaders preventing participation in any protest deemed to be against Islamic law.

The Saudi Arabian press does not criticise Islam, the royal family or the government. However, since the 1990s, the government has allowed some freedom to the press to criticise social policies and governmental bodies through cartoons and editorials (Rugh, 2004, p. 66). While this is still a rare occurrence, the Saudi press has recently criticised the corruption of government officials more frequently than it has in the past (Rugh, 2004, p. 67). Moreover, Awad (2010, p. 4) found that, to some extent, criticism related to issues that had been taboo in the past, such as the government, religious leaders and women's rights, have become publishable since the Ministry eased its censorship laws. Rugh (2004, p. 67) argued that the amount of freedom in Saudi Arabia relies in part on editors' perceptions of what is acceptable to publish. These examples of a general trend toward greater press freedom in countries like Saudi Arabia present extraordinary opportunities for this study.

These openings do not, however, extend to media ownership in the case of some of these countries. Although Saudi Arabia opened its market to international firms in 2005, none of those firms secured permission to invest in the media industry (Awad, 2010, p. 25). Awad (2010, p. 25) pointed out that while the Saudi Arabian General Investment Authority (SAFIA) is excluded from the media industry, the Ministry of Culture and Information has the authority to control this sector. Furthermore, the Ministry rejected new licenses for national newspapers (Awad, 2010, p. 25). Consequently, some Saudi businessmen were compelled to obtain newspaper licenses from foreign countries, as in the case of the newspaper *Alriyady*, which is issued and printed in Bahrain and distributed in Saudi Arabia.

In the UAE, a new media content law was issued in 2010 by the National Media Council, which replaced the Ministry of Media and Culture in 2006. The first article of the law emphasised that media in the UAE must follow and respect the publication law of 1980 (National Media Council, 2010). The new media content law consists only of a few articles, characterised by general and broad terms. Article 2 of the law broadly requires that publications respect Islam and other Heavenly religions, the political system, domestic culture and the economic environment. Article 3 stipulates that every media outlet must respect the aforementioned norms and send monthly follow-up reports to the National Media Council, while Article 4 stipulates that, in case of a violation of these rules, the Council can implement various sanctions, beginning with a warning and culminating in the cancellation of the newspaper's license. Finally, Article 5 indicates that the Department of Media Content, which is under the authority of the National Media Council, must ensure that media outlets adhere to the preceding requirements.

The new media content law did not provide any details or specific information about the general terms used within the same law. Yet it is equally important to shed some light on the publication law of 1980, which is mentioned in the new media content law of 2010. Twenty-four articles out of the 101 included in the publication law of 1980 are dedicated to newspapers, periodicals and news agencies, while the other articles address printing presses, the import and export of newspapers and publications, and cinema. Sixteen of the articles stipulate forbidden content, and nineteen outline sanctions on publishing the forbidden content. Forbidden content includes that which criticises the president, Islam or government-friendly countries, and that which could damage the local currency or the economy. The consequences of breaching these sanctions range from a fine of 1000 United Arab Emirates Dirham (AED; 1 AED is equal to approximately 0.27 USD) to 20,000 AED, and prison sentences starting from one month to a maximum of six months.

Although the UAE's constitutional status has changed since the 1990s, this has had no tangible influence on press regulations in the early 21st century (Sakr, 2006, p. 142). However, in 1990s, "there was a modest trend in the UAE toward more open expression of opinion on subjects sensitive to the government" (Rugh, 2004, p. 67). At that time, the UAE government eased its use of control, and as a result, UAE newspapers have since become more liberal (Rugh, 2004, p. 74). Furthermore, the UAE established a free media zone, hosting foreign media institutions such as Reuters, CNN and Hill Publishing, and providing them with full operating freedom and exemption from fees and taxes, as well as encouraging the local media to secure more freedom (Mellor, 2005, p. 8). Importantly, Rugh (2004, p. 67) explained that in practice, the UAE press has not adhered to the publication law. For instance, the newspaper *Alittihad* published many articles that criticised the Ministry of Health and Education for its failure to provide adequate services. He also pointed out that while there has been a recent surge in independence among UAE newspapers in criticising ministries' work and in citing sensitive issues that are considered taboo, they have not attacked the essential policies of the rulers (Rugh, 2004, p. 67).

Saeed (2012, pp. 49-50) argued that journalism and politics are two parallel processes that rely and feed on one another. He added that the credibility of journalism relies on its political autonomy. Rugh (2004, p. 79) pointed out the following about that Saudi Arabia and the UAE:

> *[They] have no independent parliament, no institutionalized political opposition, and no fundamental public dissent is expressed publicly in any way. Some of these countries have created 'consultative councils', but they are appointed bodies which occasionally express some criticism of the government that is covered in the press, but it is generally very mild.*

He added that these countries have authoritarian governments supported by powerful groups who encourage some reforms to maintain the current status of the country. Moreover, he emphasised that censorship does not need to be frequently conducted by the government in these countries due to the existing self-censorship conducted by journalists that occurs as a result of the political environment: "newspaper editors in these countries conform more than they need to … it is difficult to know, however, whether or not editors in these countries could be bolder and more critical of the status quo than they are" (Rugh, 2004, p. 79).

Sakr (2007, p. 18) argued that it is difficult for journalists in the Arab world to practice their role as watchdogs under the current circumstances. She suggested that they “cannot be relied upon to act as a watchdog on government if the way they are regulated makes them subject to government control” (Sakr, 2007, p. 18). Many governments in the region play an essential role in identifying the media message, according to Rugh (2004, pp. 193-194): “the Ministry of Information provided the editors with guidance on political programming … instructing editors to ignore sensitive issues rather than to exploit certain themes for their propaganda value”.

In his book *Investigative Journalism in the Arab World*, Bebawi (2016, p. 4) pointed out that as the Arab Spring is still ongoing in some countries, such as Syria and Libya, its implications have not yet been clearly identified. However, he added, one of its implications is a political change in many Arab states. Moreover, Hamdy (2013), in his study entitled *Arab Investigative Journalism Practice*, analysed investigative journalism practices in the Arab states before and after the Arab Spring. He aimed to determine whether the political changes that happened after the Arab revolutions contributed to journalists’ ability to perform their role as the fourth estate. However, this was shown not to be the case for most of the participants. He argued that, although the amount of news coverage did increase at this time, this finding could be a result of journalists’ need to cover the revolutions. Interestingly, his results did not support the findings of Ayish (1998, p. 53) and Amin (2002, p. 133), whose studies outlined some of the concepts that hinder Arab journalists’ performance, such as censorship, self-censorship, a lack of freedom and limiting legal frameworks. Hamdy (2013) found that Arab journalists may be better able to practice their role as watchdogs if they have enough journalism experience and believe in the role of journalism as the fourth estate.

Analysing the media systems of Arab countries (e.g. Sakr, 2003; Rugh, 2004; Mellor, 2005; Sakr, 2006; Rugh, 2007; Mellor, 2007) has shown that certain conditions may affect the ways in which business journalists engage with and use statistics to articulate their news stories. The political systems of these countries are considered a substantial factor that can influence the way business news is framed. For example, such news is often shaped to be consistent with the government’s attitude (Zayani, 2005; Sakr, 2006; Sakr, 2007; Mellor, 2011), which can have an impact on how journalists use statistics in their business news stories. Moreover, Alkarni (2006, pp. 36-37) examined how the Saudi press addressed local issues, particularly those related to public services, based on the relationship between the press and government before and after 9/11. He found that around two-fifths of the content covering local issues was positive. However, there was a reduction in the amount of positive coverage after 9/11. He argued that this did not mean that the amount of negative coverage increased but rather that the amount to neutral coverage increased. Moreover, he indicated that the Saudi press began to provide more space for citizens to express their opinions and attitudes, and most negative coverage in Saudi newspapers comes from those citizens.

Looking at the situation as a whole, I would claim that despite the drawbacks, there are now some opportunities for this study to examine how the media system in these countries affects business journalists' level of journalistic professionalism. As stated, journalists who cover the business newsbeat in these countries may face conditions that affect their ability to maintain their journalistic professionalism but also allow them to enjoy spaces and a degree of leverage that others beats do not. However, the question remains whether these conditions do, in practice, affect this ability, as per Hamdy's (2013) study. As such, one of the aims of the current study is to examine the influence of the political context on how business journalists use statistics to articulate their news stories.

2.3.2 Source-related Factors

The significance of news sources in journalism derives from journalists' constant dependence on them to articulate their news stories. By accessing different news sources, journalists can then present different viewpoints to offer a variety of interpretations and contexts, with the aim of presenting thorough news stories that present the full picture of what is happening (Dimitrova and Strömbäck, 2009, p. 75). In using these sources, reporters also seek to comply with the standard practice of maintaining objectivity (Tuchman, 1972, p. 667). There are different ways in which journalists can access information, such as by attending an event, searching independently for facts and data, and/or contacting a source directly. However, in most cases, journalists must support or explain the stories they present, necessitating sources (Dimitrova and Strömbäck, 2009, p. 75). Thus, it is important to understand how sources can influence journalists' ability to maintain their journalistic professionalism.

A number of scholars have studied potential factors affecting business journalists' overreliance upon certain news sources (Starkman, 2014; Stiglitz, 2011; Li, 2014; Manning, 2013; Schiffrin, 2011). Starkman (2014, pp. 246-248) argued that external factors affect journalists' ability to critically audit every single source they use. Such factors include time pressures, a lack of funds—which can result in staff shortages and increased pressure on the remaining journalists—and technological changes.

Schiffrin (2011, p. 14) pointed out that journalists' inability to understand data explains their reliance on sources' own interpretations. This is even more evident when journalists lack financial or business degrees (Li, 2014, p. 3).

Manning (2013, p. 183) attempted to explain the relationships between business journalists and their sources. He argued that the nature of such relationships might have contributed to four trends that resulted in journalists' failure to predict the 2008 financial crisis. First, a dependency on public relation (PR), as a source of information diminishes the flow of information that might allow journalists to identify underlying patterns. Second, dealing with complicated and sensitive issues such as hedge fund derivatives increases the danger of misleading people in a way that affects the information and news stories. Third, the daily routine of business journalists, which involves a general dependence on news such as press releases, daily news events and company reports, may lead them to concentrate on micro issues while ignoring macro issues. Fourth, the relationship between these journalists and their sources may lead to uncritical news, as journalists try to avoid losing their sources.

Davis (2007, pp. 163-164) argued that PR and advertisements are the most influential aspects of financial journalism, more so than in any other beat. Because the majority of financial journalists do not have finance degrees or formative expertise in this area, they rely on external sources to interpret financial data (Li, 2014, p. 3). PR officers exploit this point to deliver the "news" that the public officials, firms and organisations they work for want to publish (Schiffrin, 2011, p. 14). Moreover, Stiglitz (2011, pp. 33-34) argued that sources who provide information to business journalists are not the only parties who attempt to distort data or control the flow of information. Media outlets also do this. He explained that the media typically seek a profit derived from advertisements and subscriptions. Neither audiences nor firms prefer negative, or "doom-and-gloom" news stories, and this preference can influence what gets published.

The most significant sources of information for business journalists are powerful figures at government, financial and business institutions, and the organisations to whom they report (Stiglitz, 2011, p. 25), often referred to as 'elites' (Mills and Wolfe, 2000, p. 289). All these sources have strong motivations to present distorted data (Stiglitz, 2011, p. 25), or to restrict the flow of information by deciding which parts of the information get published (Raphael et al., 2004, p. 177; 167).

Schiffrin (2011, p. 14) argued that there are two potential problems when business journalists rely too heavily on sources: the first is "the risk of being given incorrect information", and the second is "the risk of becoming dependent on access to sources". She suggested that such sources usually have particular agendas to fulfil. They want to benefit from being journalistic sources so that they can deliver their points of view. Moreover, Picard et al. (2014, p. 13) emphasised that dependence on only one kind of source -such as government sources or private organisation- without scrutinising and questioning what they say may result in the source's own agenda being carried out. Furthermore, Davis (2007, pp. 162-163) argued that when journalists rely only on one source, there is a lack of complete information, diversity and independence in the news content.

In their study of news coverage in the financial and banking sectors from 2007 to 2013, Picard et al. (2014, p. 28) found that business journalists failed to foresee the financial crisis. They assumed that this occurred for two potential reasons: either journalists reported news stories in a positive way regardless of the situation, or no sources raised questions about potential dangers in the economy. The idea here is that journalists should not concentrate only on positive news about the economy. They should also scrutinise the data collected and question sources in an effective manner. This will ensure information is accurate and will serve the public interest effectively (Picard et al., 2014, p. 17). Otherwise, journalists who specialise in certain beats would simply become "ambassadors" to the public, fulfilling their sources' agendas (Gans, 1979, p. 137). Moreover, this would allow sources to affect the setting of public agenda (Starkman, 2014, p. 144; Picard et al., 2014, p. 13; Doyle, 2006, p. 444). In this respect, Doyle (2006, pp. 438-439) argued that journalists should scrutinise corporate spin by relying on more than one source for every news story.

Some studies suggested that business journalists receive criticism due to their close relationships with business sources and that journalists have become conduits of information for sources by articulating their news uncritically (Picard et al., 2014, p. 6; Schiffrin, 2011, p. 3; Stiglitz, 2011, p. 25). This kind of relationship between business journalists and their sources often means that the reporters fails to fact-check their data, which is taken for granted and published without any critical evaluation or scrutiny (Manning, 2013, p. 183).

In addition to this, Maier (2003a, p. 58) explored the difference between reporters' and sources' perceptions of errors. He argued that while a source could generate accurate data, the source might misinterpret or misunderstand these numbers. These are substantial reasons for journalists to scrutinise sources' data independently. In relation to this, Stiglitz (2011, p. 25) argued that business journalists may struggle with two potential obstacles in their critical interpretation of the data used to articulate news. The first is that, to some extent, the nature of the relationship between journalists and their sources may lead journalists to become too close to their sources and, subsequently, to neglect to criticise their data, because they wish to retain access to them (Schiffrin, 2011, p. 16). The second problem is "cognitive capture", which means that business journalists may come to think and react in a way that is consistent with the wishes of the key persons and leaders of the financial and business they cover (Stiglitz, 2011, p. 26).

2.3.2.1 Business News in the Arab World

This review has thus far revealed that there are different ways in which sources in the developed world can influence business journalists' level of journalistic professionalism. However, there seems to be a lack of in-depth of investigation into the influence of news sources in the Arab media. This seems particularly true in relation to Arabian business journalism. Most of the authors who have studied business journalism in the Arab world have concentrated on identifying the types of sources that are most often used (e.g. AlHroub, 2012, p. 86; Younis and AlNaimi, 2006, p. 75; Babaker, 2014, p. 190). However, other studies have focused on the influence of advertisements on newspapers in general (e.g. Aljumaiahe, 2010, p. 182) and on business and economic journalism in particular (e.g. AlHroub, 2012, p. 98; Younis and AlNaimi, 2006, p. 92; Kirat, 2016, pp. 9-11; AlHumood, 2014, p. 9).

Alhroub's (2012, p. 86) study set out to explore how economic issues are handled by the Saudi press; interestingly, the study found that more than two-fifths (42.1 %) of the economic news is published without mentioning any sources. Further, news generated by journalists themselves makes up two-fifths (41.9%) of the economic news. AlHroub (2012) maintained that there are two reasons for these findings. First, the official sector usually presents significant economic information that is distributed to all newspapers, and due to the importance of these data, the newspapers publish it without mentioning the source. Second, newspapers present editorial services for companies in trade for advertisements. Abu Zeid (2011, p. 58) noted that this kind of news could be a major reason for perfunctory coverage in Arab economic journalism. In contrast to Alhroub's (2012, p. 86) study, a study of the UAE by Younis and AlNaimi (2006, p. 75) found that the majority of economic news is published with known sources. Similar to Alhroub's (2012, p. 86) study, they found that journalists generate a significant portion of the news, which represents more than two-thirds of the news (Younis and AlNaimi, 2006, p. 75).

Moreover, in addition to the dependence on official sources by Arab economic journalists, AlHumood (2014, p. 9) argued that economists and equity capitalists have controlled the Arab media. Babaker (2014, p. 179) found that most of the Arab public believes that when they read news about a company and see advertisements for the same company in the newspaper, that company might control the information being published and prevent any data from being published that could negatively affect its reputation or prices. Furthermore, Younis and AlNaimi (2006, p. 92) found that the majority of UAE economic journalists believe that when the content of economic journalism is affected by advertisements and capital influence, the result is negative news being avoided, positive news being exaggerated or only sources being chosen that do not affect the economy.

According to Babaker (2014, p. 190), the majority of Arab people believe that economic journalism relies on press releases and rarely corroborates corporate-released data with supplementary sources. Moreover, he argued that there is a need to implement laws and regulations in support of the right of access to data to avoid dependence on government press releases or spokespeople. Particularly, when more than half of Arab citizens do not believe that economic journalists have free access to economic information (Babaker, 2014, p. 171), this could open the door for rumours to be distributed widely (AlHumood et al., 2016, p. 49). Almalek, who is the chief editor of the newspaper *AlJazira*, criticised economic journalism for the role it played before and throughout the Saudi stock market crisis of 2006. He demonstrated how the weak regulation of economic journalism leads to people losing their money (Alheezan, 2010, p. 197).

Aljumaiahe (2010, pp. 182-183) examined the professional practice of journalism and the factors influencing it in Saudi Arabia. This study found that news sources in Saudi Arabia could influence journalists in different ways: by contacting only certain journalists and avoiding others; by blocking information from being shared; by concentrating on secondary issues; or by providing journalists with only certain information that leads to the achievement of specific goals that positively affect their institutions. Aljumaiahe (2010) assumed that these kinds of practices could lead journalists to search for secondary sources that are less trusted. In turn, this could lead them to write news stories that rely on exaggeration or are misleading (p. 330). Younis and AlNaimi (2006, p. 93) conducted a study on UAE journalism that supported these results. They found that official sources might block or omit certain information or news from journalists.

In addition, in relation to the last factor discussed above (i.e., sources providing journalists with only certain information to achieve a specific goal), Aljumaiahe (2010, p. 341) found that the political system, societal values and culture, and lobbyists often influence this process and affect journalists' practice in Saudi Arabia. Regarding the influence of lobbyists, he assumed that these findings could result from a lack of organisation in society and from the strong competition between the members of every lobby. This leads to a fragmentation of efforts in such a way that they sometimes become contradictory. However, he sorted lobbyists based on journalists' perceptions of their influence. This sequence was as follows: official lobbyists—who are the most influential lobbyists on journalists' professional practice—civic society, opinion leaders and business lobbyists (p. 343). Interestingly, Aljumaiahe (2010, p. 360) conducted interviews with ten editors-in-chief. They considered business lobbyists to be the threat with the greatest influence over journalism due to newspapers' need for advertisements.

Aljumaiahe (2010, p. 183) also identified various ethical issues related to sources. For example, some journalists work as consultants for news sources. Similarly, some of the PR staff in various private and government institutions work as part-time journalists. He added that the first aim of such journalists is to ensure positive coverage of their institutions and to prevent any negative critiques. In addition, he pointed out that some journalists do not mind accepting gifts, free trips and other privileges aimed given with the understanding that positive coverage would be given in return. These may include not only material gifts but also, in some cases, commercial or government transactions that serve the same purpose of rewarding the journalist for positive coverage (p. 254).

Overall, this section has given an account of journalists' dependency on sources and has provided some reasons for this dependency. The aim of this review was to understand the influence of sources on business journalists' ability to maintain journalistic professionalism in the Arabian Gulf. However, as stated, there seems to be a lack of in-depth investigation into this area in relation to the Arab media—a significant gap that can be considered in another study.

2.3.3 Journalist-related Factors

In a study conducted in Sudan, Saudi Arabia and the UAE, Babaker (2014) explored the perception of the Arab public regarding journalism's role in providing economic information. He found that most of the Arab public believes the economic content in the news does not provide enough information to help them in making investment decisions. The public believes that economic journalism does not reflect the real picture of the economy in the Arab countries and that it provides incomprehensive coverage of the economy, ignoring many important economic news stories (Babaker, 2014, p. 176). Moreover, the public believes that economic content tends to be exaggerated, concentrating more on positive news (Babaker, 2014, p. 176). These results support the findings produced by AlHroub (2012, p. 21), who demonstrated the failure of journalism in its concentration on issues that are not what relevant to the public and in leading citizens away from actively participating in society.

In their study, which set out to analyse the economic pages, Younis and AlNaimi (2006) asserted that, of the journalists and editors of UAE newspapers, more than half believe that they present enough analysis and interpretation of the economic news they publish. The finding of their content analysis provides evidence that UAE economic journalism relies more on covering economic news than on analysing or interpreting it (Younis and AlNaimi, 2006, p. 90). These findings are similar to those produced by Alhroub's (2012, p. 94) and Babaker's (2014, p. 191) studies, which found that Arab economic journalism focuses on presenting news without questioning or analysing the data and that there is a shortage of news reports. In an interview with Alzyani, who is the administrator of the economic department of the newspaper *Asharq Al-Awsat*, he argued that the reason for this lack of reporting is non-cooperation by government officials and the private sector in presenting the data required (AlHroub, 2012, p. 87). Alzyani offered no explanation of any attempts to bridge the gap or to avoid being completely dependent on such sources.

Babaker (2014, p. 191) asserted that due to the weaknesses in economic journalism practices, it could be important to explore how codes of ethics and editorial guidelines affect journalists' work. He also found that the majority of the Arab public believes that economic journalists do not adhere to codes of ethics or regulations. Data from several sources have identified bad practices in terms of journalism ethics (AlHroub, 2012, p. 93; Aljumaiahe, 2010, p. 316), such as publishing inaccurate data, writing stories without permission from the source, using records without permission from the source or publishing news to achieve a private benefit (AlHroub, 2012, p. 93; Aljumaiahe, 2010, p. 316). Alkhedr (2011, p. 669), who is a former chief editor of multiple Saudi magazines, maintained that these kinds of bad practices could affect the credibility of Saudi journalism.

Ibnrubbian (2016, p. 10), who is an economic academy member and a consultant to the economic department of the newspaper *Al-Hayat*, listed six reasons why Saudi economic journalism is weak. These included the lack of economic studies and economists working for the media, the weakness of the economic background of journalists, the lack of training, the loss of journalists who left the profession to look for better opportunities, chief editors' lack of concern about the economic department (which is often seen as a place to collect advertisements) and the transfer of journalists to the advertising department. Moreover, Ibnrubbian (2016, p. 13) reported that a sign of economic journalism weakness is that most of the significant news about the Saudi economy is published in foreign media outlets, such as Reuters and Bloomberg. However, Inbrubbian's (2016) paper would have been more useful if he had included more in-depth information based on his own experience, which extends over more than a decade.

An important result from Babaker's (2014, p. 177) study is that he found that less than four-fifths (76.1%) of the Arab public agrees, or agrees to some extent, that Arab economic journalism provides numbers without making an effort to question or analyse them. In accordance with Alheezan (2010, p. 196), Saudi economic journalism has been criticised as being inaccurate and non-objective. Furthermore, AlHroub (2012) examined the objectivity of economic news and found that approximately half of the content was considered weak. He assumed that this finding could be due to the media's interest in focusing more on positivity than accountability in the news (AlHroub, 2012, p. 191). He added that lobbyists can insist that specific data be published to their benefit, which can lead to a lack of neutrality in news stories. Moreover, official sources can cause a similar imbalance in how certain aspects of the news are covered if they refuse to present the necessary data or refuse to meet with journalists (AlHroub, 2012, p. 191).

Alheezan (2010, p. 198) contended that the main obstacles facing Saudi economic journalism are unspecialised journalists who analyse and interpret data incorrectly and who articulate information without questioning or verifying it. Furthermore, the majority of the Arab public believes that Arab economic journalism does not help investors in making economic decisions due to its lack of qualified and skilful economic journalists (Babaker, 2014, p. 172). Almqoshi (2010, p. 49) opined that Saudi journalism depends on unprofessional journalists and does not care to properly train them. Furthermore, it relies on journalists who work part-time, which means that journalism is not their first source of income (Almqoshi, 2010, p. 51). In accordance with AlHumood et al. (2016, p. 50), the lack of specialised economic journalists is considered a major obstacle within journalism that needs to be solved.

2.3.4 System of Education

One key aspect analysed in this work is the existing capabilities in the Arab world to engage with and use statistics to articulate business news. Hence, it is central to this analysis to review the educational provisions focused on improving such capabilities. In this sense, and for many decades, the curricula used in journalism education worldwide have been under close scrutiny and are continuously being revised (Franklin and Mensing, 2011). Within these curricula, learning related to data and statistics is only rarely included as a dedicated course; more often, it is integrated briefly into other courses or not at all (Nguyen and Lugo-Ocando, 2016). However, a key aspect of the curricula around which there has been wide agreement is the need to provide skills and knowledge particularly related to the gathering, production and dissemination of news content. According to Weiss and Retis-Rivas (2018, p. 2), "journalism schools have an obligation to provide the latest skills and techniques to make students competitive for the news market". Although there is still significant debate about what specific types of skills should be incorporated into syllabi, there seems to be increasing consensus about the specific knowledge areas -particularly relating to the liberal arts- that should be included (Deuze, 2006; Banda, 2013; Zelizer, 2017).

Until recently, knowledge about data and statistics did not feature in that consensus, despite significant debates and initiatives dating back to the 1970s to include such knowledge in journalism curricula. For example, discussions took place about the need for "precision journalism", which relates to the need to incorporate quantitative social science approaches in news reporting (McCombs et al., 1981; Dennis et al., 2002; Meyer, 2002). Regardless, not even the UNESCO proposal for a universal syllabus, which gathered important voices from around the world, managed to acknowledge this need (Banda, 2013).

Nevertheless, this situation is changing and already a growing body of literature has identified the need to teach data journalism in higher education (DeFleur and Davenport, 1993; Yarnall et al., 2008; Berret and Phillips, 2016; Griffin and Dunwoody, 2016; Nguyen and Lugo-Ocando, 2016; Gotlieb et al., 2017). Moreover, the Poynter Institute for Media Studies, one of the most influential schools in this area, now considers numeracy as one of ten basic competencies for journalists, stating that, "journalists need math skills to make sense of numbers the way they need language skills to make sense of words" (Poynter Institute, 1998, p. 8). Clearly, the Poynter Institute (1998, p. 8) is highlighting the need to teach statistics to media and journalism students as a matter of great importance (Yarnall et al., 2008; Nguyen and Lugo-Ocando, 2016; Griffin and Dunwoody, 2016).

Maier (2002), too, highlights that the misuse of numbers in professional practice has its roots in journalism education. Hence, journalism schools need to provide their students with intellectual tools and the ability to understand and manage numbers, as a lack of statistical reasoning is a major obstacle (Utts, 2003) and will probably remain as such until media houses and educational institutions begin to focus their attention on solving it (Brand, 2008).

2.3.4.1 Beyond the West

These challenges, however, are not restricted to the West. Arab countries face similar obstacles to the point that some scholars have argued that shortcomings in media and journalism education are a major issue facing Arab journalism (AlHroub, 2012; AlHumood, 2014; AlHumood et al., 2016; Babaker, 2014; Ibnrubbian, 2016). In this sense, a study by Hussain (2008) looked into the quality of education and academic accreditation in general as obstacles facing media education at Arab universities, despite key resources having been made available to universities in the recent past. The researcher, who conducted one of the few studies that have been done in this area, found that media education at universities, especially in the Arabian Gulf, faced important academic shortcomings and organisational challenges. He added that these obstacles affected the quality of the media education offered, as the impact of the obstacles was seen in students' educational outcomes. The main challenge is the inability of these universities to keep up with the modern media revolution; they cannot catch up with their counterparts in the Western world, especially in terms of media knowledge, media practice and the establishment of new media outlets relating to the information revolution (Hussain, 2008).

Furthermore, authors such as El-Nawawy (2007) identified an important gap between journalism practice needs and journalism education provision in Arab countries. This is because media schools in some of these countries do not seem to have a clear vision or description of what, specifically, should be taught and delivered to students in the absence of clear academic norms and agreement as to how universities should teach students to help them become successful journalists (Alheezan, 2007). As a result, calls have been made by public and media organisations to improve the outcomes of media schools in the region (Babaker, 2014). Some universities are embracing these recommendations at a quicker pace than are others, and in some cases, universities face both old and new obstacles within their limited realms of freedom (Al-Hasani, 2010).

However, and perhaps more important to notice, media education in the Arab world is not linked to a particular theory, nor does it strive to translate a particular school of thought in behavioural or social sciences to its own particular setting (AlJammal, 2004), as is the case in other places in the world. Instead, the overall theoretical framework in Arab countries often derives from a Western heritage -as many local frameworks have been excluded for a variety of reasons- and is deeply rooted in the epistemology generated by colonialism, which afterwards was subsequently shaped by the tensions of the Cold War.

Consequently, academic institutions delivering journalism education in the Arab world have improvised many of their pedagogical provisions without these being preceded or accompanied by a study of the needs of their own societies. They have also not incorporated their own heritage or critical traditions, as has occurred in other countries in the southern hemisphere, such as the Philippines, and in several countries in Latin America; these countries have developed important alternative models for and approaches to media and journalism education since the 1960s (Beltrán and de Cardona, 1980; Calderón et al., 2018; Quebral, 1988; Barbero, 1993).

In addition to these gaps, it is important to highlight that there is little tradition within the Arabian Gulf of more critical approaches in journalism studies. Learning such approaches fosters skills within future journalists that improve their ability to bring about greater transparency and accountability in their societies.

In this context, Alheezan (2007, p. 189) explored the reality of media education in Saudi Arabia by analysing and comparing the curricula taught in BA degree programs in all Saudi universities teaching journalism with those taught in three US media schools. The Saudi universities studied were King Saud University, King Abdul-Aziz University and Al-imam Muhammad Ibn Saud Islamic University. The three US media schools studied were California State University, the University of North Carolina and the University of Florida. He found that the Saudi media school curricula studied were very similar in content, focusing more on general curricula than did the American media schools, which concentrated more on specific curricula. For instance, the American media schools taught specific curricula in economic, medical and sports reporting, while only one specific course -about Islamic journalism -was taught at one Saudi university and another specific course- about specialised journalism- was taught at another Saudi university. More importantly, Alheezan (2007, p. 201) found that statistics were taught in only one Saudi media school and one American university, as an optional part of each school's curriculum.

Moreover, El-Nawawy (2007, p. 81) found that many journalism educators and practitioners did not believe in the importance of knowledge of statistics as a competency for journalists. Furthermore, little research has been published to date about educating and training journalists in the Arabian Gulf to develop critical thinking and practical skills related to the engagement and use of statistics and data. Only a few books from Arab authors have been published about this topic, and those that have focus on the practical aspects (Aliraqi, 2016) rather than the critical aspects of the topic.

The issue is not only limited to a lack of knowledge in statistics due to inadequate training in schools. Alheezan (2007, p. 226) demonstrated that, although it is important to include specific curricula about digital technology and data sources, technological developments in Saudi media schools have also been very limited. Alheezan's (2007) study was conducted a decade ago, when there were only eight Saudi universities and four Saudi media schools. Now, Saudi Arabia has more than 20 universities and double the number of media schools that existed at the time of the study (Ministry of Education, 2018b). Because of this, and because of the political changes and transitions taking place in Saudi Arabia, it is important to re-examine and expand our knowledge regarding the curricula taught in these schools and to analyse present and future challenges, particularly in relation to the use of statistics and data.

2.3.5 Conclusion

This section has discussed the possible casual factors that might affect the use of statistical data by journalists. It elaborated on the local context of this project, which is the business journalism in the Arabian Gulf states, particularly, Saudi Arabia and the UAE. In addition, it discussed the political, cultural and media systems within this context. These systems were outlined from three perspectives: that of news sources, that of journalists and that of the educational systems used in these countries.

2.4 Conclusion

This chapter has discussed journalistic professionalism and the possible causal factors that might affect journalists' ability when using statistical data to achieve a high level of professionalism. Journalistic professionalism has been identified as the core concept through which the use or misuse of statistical data in business journalism can be identified; therefore, improvements in the use of statistical data in terms of even one of these factors would aid journalists in accurately presenting data and, in turn, in achieving a higher level of professionalism.

As discussed, understanding journalistic professionalism has facilitated an understanding of why journalists make choices to fulfil their perceived roles. Furthermore, knowing that different countries define “journalistic professionalism” differently does not make any definition less valid; instead, these differences must be kept in mind when attempting to understand why journalists make certain choices when publishing data. In this sense, the level of journalistic professionalism in a country’s media is subject to how journalists practice their role in that country (Waisbord, 2013). As such, considering the possible causal factors (i.e., that might affect journalists’ ability to use statistical data within the Arabian Gulf) might provide a better understanding of how business journalists in Saudi Arabia and the UAE can improve their level of professionalism. This is seen in the principle of professional autonomy, which can affect the use of statistical data at different levels (e.g., external and internal influences), as has been supported by the findings of the current study (see Chapter 4). For instance, researchers argued that the main function of local Arab media is to support governments’ positions (Sakr, 2007, p. 18; Rugh, 2004; Mellor, 2005; Mellor, 2007), and censorship implemented by the government, or by commercial interests, affects the way in which the news is framed (Sakr, 2006, pp. 132-133). These discussions will be continued and explained further in the findings chapter (Chapter 4). The next chapter discusses the research methodology used in this thesis.

Chapter 3
Methodology

3.1 Introduction

The primary objective of this research was to study the uses of statistical data in the news coverage of business in the Arabian Gulf - particularly, in Saudi Arabia and the United Arab Emirates (UAE). To this end, this chapter introduces the research methodology used in this thesis and considers how the theoretical and conceptual frameworks are understood in the context of empirical evidence. In doing so, it elaborates on the several research strategies used and explains how they were adopted, including describing how the related data were gathered, organised and analysed. By outlining this process, the chapter demonstrates the epistemological and methodological assumptions of this study while examining the techniques used.

Choosing which research methodologies to use is a fundamental research procedure, as they determine the scope and quality of the acquired knowledge. The methods used by a researcher to answer a research question necessarily impact the result gained (Moscowitz, 2008). Therefore, a researcher should seek to use “the most appropriate method for the study of their chosen topic or problem” (Hansen et al., 1998, p. 1).

Research methods are considered a mirror of a research’s view, reflecting the philosophical foundation of the study, including its ontological and epistemological background. While *ontology* is defined as “the nature of reality”, *epistemology* refers to “how that reality may be known” (Lindlof and Taylor, 2017, p. 4). Further, within ontology, *objectivism* is defined as “an ontological position that asserts that social phenomena and their meaning have an existence that is independent of social actors” (Bell et al., 2018, p. 21); its opposing paradigm, *subjectivism*, concentrates on social events involving social activity. In other words, it concentrates on idealism, which is an unknown reality that is perceived by individuals in diverse ways (Sexton, 2003). Finally, *epistemology* is “the philosophy of how we can know reality” (Pickard, 2013, p. 6).

Several approaches can be applied within epistemology. The first is *positivism*, which concentrates on logical reasoning and neglects any relationships of interest between participants and experience or behaviour (Saunders et al., 2012). Second, *interpretivism* “can offer an understanding of the meaning behind the action of individuals” (Pickard, 2013, p. 13). Third, *pragmatism* is used to elucidate action; moreover, it can combine both positivism and interpretivism. This approach, which is preferred when conducting research, utilises mixed methods (Kelemen and Rumens, 2008; Creswell and Clark, 2017). The choice of which methodology to use is influenced by one's ontological and epistemological view of society (Moscowitz, 2008). The current study relies primarily on pragmatism and features the triangulation of quantitative and qualitative methods to provide a clearer answer to the research questions of this research.

The purpose of this chapter is to explain how this research was designed and explain the way in which it attempts to answer the research questions. Specifically, this chapter seeks 1) to justify the study's philosophical assumptions, 2) to clarify the data-gathering techniques and research methodology use, 3) to rationalise the selection of sources and interviews and 4) to account for and outline the research design.

3.2 Research Methodology

This study aimed to provide a comparative analysis of the coverage, interpretation and meaning of statistics-based reporting and of statistics related to business reporting. By investigating the ways in which business journalists gather, process and articulate statistics in their business news, this study aimed to provide a clearer understanding of the use of statistics by journalists and editors in the business beat in Saudi Arabia and the UAE.

Developing a nuanced understanding of how journalists engage with and use statistics to articulate their business news stories in the Arabian Gulf is achieved better through the use of a mixed-methods research design that combines both quantitative data and qualitative data, as this provides researchers with a better understanding of the problem studied than does a research design that relies on only one form of data (Creswell, 2014, p. 2). Therefore, this study combined quantitative and qualitative research methods.

Typically, research is delineated as either quantitative or qualitative, depending on the type of data that is collected. Quantitative data prioritises the collection of numerical information, often through the use of surveys designed to facilitate the expedient distillation of data through statistical analysis and to allow for conclusions to be drawn (Creswell, 2013, p. 34). This kind of research also seeks to identify the relationships between variables (Hesse-Biber and Leavy, 2010, p. 289), and it requires that these variables be measured (Wimmer and Dominick, 2013, p. 50). The essential goal of quantitative research is to demonstrate and predict the phenomena under examination. Hence, the quantitative approach is based on positivist research that calls for the stripping of all subjectivity in the pursuit of truth (Bryman, 2012, p. 40).

Qualitative research responds to this by highlighting that a quantitative framework can often lead to reductionism, or the oversimplification of nuanced and complex phenomena (Punch, 2013, p. 19). Furthermore, qualitative research is able to enhance a researcher's depth of understanding of the phenomenon under examination because it not only employs flexible questioning but also allows for "follow-up questions [to be] developed as needed" (Wimmer and Dominick, 2013, pp. 49-51). From the perspective of those who adhere to the principles of qualitative research, grappling with multiple interpretations is necessary because people perceive certain concepts or events in various ways (Sandelowski, 2015, p. 88).

The mixed-methods approach finds a common ground between these two research methods. That is, the design allows for qualitative and quantitative data collection and analysis methods to come together so that the researcher can obtain even richer insights and conclusions (Creswell, 2014, p. 2; Venkatesh et al., 2013, p. 37). The mixed-methods approach can "create a synergistic research project in which one method enables the other to be more effective" and may "assist the researcher in tackling highly complex problems involving several layers of understanding that may require different analytical techniques" (Hesse-Biber and Leavy, 2010, p. 279). Using both quantitative and qualitative methods, this study attempts to illuminate various aspects of reality—particularly related, in this case, to the use of statistics in journalism. Moreover, employing both quantitative and qualitative approaches helps "avoid the personal bias and superficiality that stem from one narrow probe" (Fortner and Christians, 1981, p. 354). To this end, this research relied on a mixed-methods approach.

In terms of the research scope, this study focused on business articles -specifically, those related to stock, housing, banking markets and oil prices- n the Arabian Gulf (particularly, Saudi Arabia and the UAE). The way in which quantitative and qualitative research were combined in this study followed the triangulation method used in similar work undertaken by other authors in the field of journalism who explored the use of statistics by journalists (Brandao, 2016; Lugo-Ocando and Faria Brandão, 2016; Cushion et al., 2017). As a result, four print newspapers were chosen as the main focus of this study; three of these are from Saudi Arabia- *Alriyadh*, *Aleqtisadiah* and *Asharq Al-Awsat* - and one is from the UAE - *Alittihad*. Of these, two are local newspapers, one is a pan-Arab newspaper and one specialises in economics news.

This study consisted of two main phases: 1) content analysis, 2) semi-structured interviews. The quantitative content analysis explored the use of statistical data by business journalists in the aforementioned newspapers based on the criteria developed in this research, thereby responding to research sub-questions 2, 3, 4 and 5, and, in part, to sub-questions 1 and 10 (listed below). The semi-structured interviews were conducted with three different groups of interviewees: 1) journalists and editors from the aforementioned newspapers, 2) Saudi news sources, and 3) heads of Saudi media and journalism schools, thereby responding to research sub-questions 6, 7, 8 and 9, and, in part, to sub-questions 1, 2, 3, 4, 5 and 10.

The first group of interviews was carried out with journalists to investigate the use of statistical data by business journalists and gain greater insight into their perspective on the subject. The second group of interviews, conducted with Saudi news sources, sought to investigate how they produce statistical data; the relationship between the new sources and the business journalists; and their perspective on the use of statistics by business journalists. The third group of interviews was carried out with heads of Saudi media and journalism schools to investigate the nature and reach of the education related to reporting statistical data in Saudi Arabia. For the third group, the interviews were followed up with a survey examining the curricula and syllabi at Saudi universities that teach journalism.

3.3 Research Questions

As stated previously, the aim of this study is to analyse the use or misuse of statistical data in business news media coverage. It endeavours to produce an innovative body of knowledge related to the use of statistical data in the coverage of business news stories, and to determine and understand the main challenges, issues and opportunities for journalism as a practice in Saudi Arabia and the UAE. Therefore, the main research question of this thesis is, “How do journalists use statistics in their coverage of business news in the Arabian Gulf, and what are the main challenges, issues and opportunities related to journalism as a practice in those countries?” However, this is also broken down into more specific subsidiary questions, as follows:

1. How do journalists in the Arabian Gulf access statistical business news sources?
2. How reliable are the statistics sources that journalists and editors use in their business news?

3. How valid is the use of statistics by journalists and editors in relation to the business news they report?
4. Do journalists and editors provide an interpretation of the statistics they use in a way that corresponds with the expected level of professional interpretation in terms of its clarity
5. How are statistics used by journalists to frame business issues in the news?
6. What is the level of knowledge (education and training) that journalists and editors hold regarding the use of statistics in business journalism?
7. What are the factors that boost/hinder journalists' and editors' use of statistics in business journalism?
8. What challenges and issues do business journalists in the Arabian Gulf face when accessing statistical news sources?
9. How do legal and ethical issues affect the use of statistics by business journalists in the Arabian Gulf?
10. What are the cross-national differences/similarities in terms of the use of statistics by business journalists in Saudi Arabia and the UAE?

3.4 Research Design

The research design of a study is the overarching plan for that study and includes a series of decisions concerning how the research will be carried out and how the data will be gathered, analysed and interpreted (Creswell, 2013). According to Denzin and Lincoln (2008), in order for a research design to be considered thorough and effective, the design should link to the theoretical and philosophical framework of the research. It also should have the dual aims of refining both practice and theory (Creswell, 2014). Therefore, although research designs might vary in complexity and length according to the scholar who conducts the research (De Vaus, 2001), the researcher must always specify the study problem, review prior research, identify any hypotheses and clearly describe the data collection and analysis methods.

According to Creswell (2013), quantitative designs are highly structured, while quantitative designs have the propensity to be flexible. The mixed-methods approach used in this study allowed me to find a common ground between these two research methods. That is, the design allowed for both qualitative and quantitative data collection and analysis methods to come together so that the researcher could gain even richer insights and conclusions (Creswell, 2014, p. 2; Venkatesh et al., 2013, p. 37). To this end, the study should be understood as having a broader "cross-sectional design" (Johnston and Brady, 2002) that allowed for the combination of quantitative and qualitative approaches (Figure 3).

Figure 3 The cross-sectional design of this research.

Central to the application of mixed-methods research is triangulation, which pertains to the way in which quantitative and qualitative data are combined in the study (Denzin, 2012, p. 81). For example, a semi-structured interview results in the collection of qualitative data, but this data can then be analysed in terms of the related quantitative data found through primary or secondary research. Another common way of integrating qualitative and quantitative information is through coding. As soon as the qualitative data is gathered, it is summarised, and the key themes and patterns are noted as codes. In doing this, one is able to translate the qualitative information into numerical data that can then be analysed using quantitative data for statistical analysis (Fielding, 2012, p. 126).

Some researchers have noted drawbacks to this approach, believing that it dilutes the supposed complexity that qualitative data provides; nevertheless, when carefully and diligently carried out, triangulation and coding can greatly help in giving a fuller perspective of the research topic (Guest, 2013, p. 146). In this study, the main purpose of using triangulation was to "use multiple approaches to allow the development of various pictures of the same phenomenon and provide a broader view" (Trumbo, 2004, p. 420).

This research used content analysis as its quantitative method. Krippendorff (2013, p. 18) defined *content analysis* as "a research technique for making replicable and valid inferences from texts—or other meaningful matter—to the context of their use". According to the United States Government Accountability Office (US GAO) (1996, p. 9), researchers who use content analysis can sift through considerable volumes of material in a systematic fashion with relative ease. In addition, content analysis enables inferences to be made that can then be corroborated using other methods (Stemler, 2001, p. 1).

As this research was designed to be cross-sectional, content analysis was not the primary method of this research. However, because of the lack of research into the uses of statistical data in Arab journalism, it was important to start by gaining background information about the subject, and content analysis was a suitable method for achieving this. As a quantitative method, the purpose of this study strategy was to reveal how statistics were used in business news stories. In addition, it aimed to provide further information on important aspects that prompt journalists and editors to use statistical data, what kind of statistical data they used, how they accessed business sources, how they used statistics to frame business issues in the news, and whether Saudi and UAE journalists used business statistics differently.

Semi-structured interviews were also used in this study, to enable greater and more in-depth comprehension of the ways journalists use statistics in their coverage of business news in the Arabian Gulf. The aim of conducting these interviews was to understand and identify the main challenges, issues and opportunities facing journalism as a practice in these countries.

3.5 Data Collection

Data collection is the systematic process of collecting and measuring information. As such, the methodology through which data are collected relates to which data will be gathered and how that data will be analysed and interpreted (Bryman, 2012, p. 10). In order to achieve this, my research combined both quantitative and qualitative approaches, based on three philosophical assumptions: First, a combination was used to provide better comprehension of the problem studied than could be gained using one form of data alone (Creswell, 2014, p. 2). Second, a combination helped the researcher to develop richer insights and draw more meaningful conclusions (Creswell, 2014, p. 2; Venkatesh et al., 2013, p. 37). And third, a combination helped the researcher to avoid personal bias (Fortner and Christians, 1981, p. 354) and to overcome any methodological weaknesses (Creswell, 2014, p. 15).

Indeed, the quantitative method I adopted allowed for an exploration of the uses of statistical data in business news stories through an examination of the precise variables related to the use of statistics in Arabian Gulf business journalism. At the same time, the qualitative method offered me an understanding of these variables and the other issues surrounding the articulation of statistical data - issues that would be difficult to identify through the quantitative method alone. Thus, by triangulating these approaches, I gained view of the research question that was both broad and deep. The value of such an approach was reviewed by Trumbo (2004), who conducted a review of the research methods that were used in eight mass communication journals from 1990 to 2000. He found that the number of studies employing a mixed-methods approach in this field had increased significantly during the decade.

Within these operationalisation processes, in this study, data from a total of 1321 news stories that contained business statistical data were collected. The use of business data in four daily Arabian Gulf newspapers—*Alriyadh*, *Aleqtisadiah* and *Asharq Al-Awsat* (from Saudi Arabia) and *Alittihad* (from the UAE)—was studied; specifically, the archives of these newspapers were accessed, and a manual search was conducted relating to four topics: 1) the stock market, 2) the housing market, 3) the banking market, and 4) oil prices. The articles reviewed were published within a span of three months, covering the period from August 2008 to October 2008, which was defined by the global financial crisis.

A total of 28 semi-structured interviews were also conducted in 2018 with three different groups. The first interviews were carried out with 14 journalists and editors from the aforementioned newspapers. The second set of interviews were conducted with 6 Saudi news sources. The third set of interviews were carried out with 8 heads of Saudi media and journalism schools; these interviews were followed up by the administration of a survey examining the curricula and syllabi at Saudi universities teaching journalism.

As a result of integrating the literature review with the empirical results, the significance of the triangulation of methods was validated by producing important answers to the main questions of this research. The mixed-methods approach conducted in this research facilitated the acquisition of an in-depth body of knowledge related to the use of statistical data in business journalism in the Arabian Gulf.

3.6 Data Analysis

Data analysis is the process of investigating the data gathered and converting it into useful information. In this study, the data analysis of the news stories was performed using SPSS software (v. 25, IBM SPSS). The body of 1321 data sets (n= 1321) was entered into the software, where descriptive analysis was carried out, including frequencies and cross-tabulations. In addition, chi-square statistical test was used for associations between variables.

For the analysis of interviews, a transcript of the interview was created after each one was conducted. While all the interviews were carried out in Arabic, each transcript was also translated into English, which is the language used for the analysis. Both the Arabic and English transcriptions were presented to an English language specialist for review, including verifying the accuracy of the data and ensuring that the English transcript matched the original Arabic version.

The translated transcripts were then read, reviewed and studied by the researcher to identify and group the data that was useful to the research. This significant step involved identifying the meaning of the data collected from the interviews in relation to the purpose of the research. Then, the transcripts were analysed to review, indicate and group the significant data related to the research questions.

3.7 Content Analysis

In this research, content analysis was used to review business news in printed newspapers of the Arabian Gulf through a quantitative perspective while exploring the frequencies of a range variables, such as the validity of statistics; reliability and accessibility of statistical sources; and interpretation of statistics. In particular, the content analysis explored how journalists use statistical data to frame their business news and examined the difference in the use of statistics between journalists in Saudi Arabia and the UAE. It aimed to answer the question of how statistical data is used by journalists to articulate business news in the Arabian Gulf.
According to Krippendorff (2013, p. 3), the first systematic analysis of text was conducted in the 17th century by the church; however, it became a well-established method in the 1940s and 1950s (Berelson, 1952). Because of its popularity, the term *content analysis* was listed in *Webster's Dictionary* of the English language in 1961 (Prasad, 2008). Berelson -who is one of the method's founders and is considered to be the first researcher to use content analysis in his dissertation, in 1941 (Kuckartz, 2014)- offered the most widely accepted definition of *content analysis* in his book, *Content Analysis in Communication Research*: "content analysis is a research technique for the objective, systematic and quantitative description of the manifest content of communication" (Berelson, 1952p. 18).

Nowadays, content analysis is a fundamental research method employed within social research. With the rise of media production of news, scientific enquiries into printed journalism and its ethical standards have emerged. These enquires, along with a somewhat simplistic notion of scientific objectivity, were first conducted with what was then called "quantitative newspaper analysis" (Krippendorff, 2013, p. 12).

Since that time, content analysis has become more popular and increasingly applied in social science studies, particularly media studies (Herring, 2004; Krippendorff, 2013). For example, Lovejoy et al. (2014), who examined 2534 articles from *Journalism & Mass Communication Quarterly* in the period of 1985 to 2010, found that around one-quarter (23%) of articles contained content analysis. Regarding the uses of numbers in journalism, Maier (2002, p. 507) carried out a mathematical audit of a US daily newspaper and used content analysis to examine the extent to which journalists relied on mathematics to articulate their news stories. In another article, Brand (2008, p. 218) used content analysis to produce a quantitative assessment of numerical accuracy in South African news reporting.

There is currently only a thin body of knowledge on how journalists and editors use and engage with quantitative data in newsrooms when articulating news stories related to business, particularly in the Arab context. The research strategies used in this study aimed to address this shortage and provide further information on how journalists and editors use statistical data in the reporting on business. Therefore, content analysis was chosen to explore the nature of statistical news characteristics. To obtain these data, a thorough collection of news stories -using collection methods similar to those used by Schifferes and Coulter (2012), Pham (2010) and Griggs (1963)- was conducted, focusing on the topics of the stock, housing and banking markets and oil prices from the newspapers *Alriyadh*, *Aleqtisadiah*, *Asharq Al-Awsat* and *Alittihad* in 2008.

The goal of the content analysis was to comprehend the use of statistical data and their representation in terms of their social construction. Thus, the rationale for using this method was to analyse the use of statistics in business news with regard to the ways in which business journalists articulate articles containing statistics and how they use these statistics to frame their news stories. As supported by previous research (e.g., Schifferes and Coulter (2012); Pham (2010); Knowles (2013); Knowles et al. (2015); Maier (2002); Brand (2008)), content analysis is the most convenient method for exploring the use of statistics in business journalism in the Arabian Gulf. The research design of this method is detailed below.

3.7.1 Sampling

Sampling, in media and communication research, is the process of gathering a subgroup of cases, or a sample, from a greater population (Neuendorf, 2016). Here, to understand the use of statistical data by journalists in the Arabian Gulf, the data used in the content analysis were collected through multistage sampling. According to Riff et al. (2014, p. 83), *multistage sampling* is “a description of a common practice that may involve one or several techniques at different stages”. Thus, the data collection for the content analysis in this study relied on a multistage sampling process of articles published in four newspapers during the global financial crisis of 2008.

The financial crisis of 2008 has been described as a cataclysm, not only for the world banking system and governments but also for ordinary people (Butterick, 2015), many of whom not only lost all they had but also went on to endure poverty in ways not seen since the Great Depression of the 1930s (Pham, 2010). The Arab world did not escape this, despite its enormous oil reserves and wealth funds. Hence, we cannot underestimate this period as a pivotal moment in the history of the financial world, which is why it was selected as the central period studied in this thesis. Moreover, the crisis is a defining moment for many authors writing about financial and business journalism, becoming a marker, of sorts, for defining time before and after (Doyle, 2006; Schiffrin, 2011; Knowles et al., 2015; Starkman, 2014; Butterick, 2015; Manning, 2013). The event is actually a very good benchmark that allows a conceptual, comprehensive and critical comparison across the globe given the simultaneous nature of the crippling effects upon the economy, the general public and the journalists producing news around the event. Furthermore, given its magnitude, the crisis provides a lens through which scholars can investigate the role of this newsbeat in this and similar events (Butterick, 2015; Merrill, 2015).

The post-financial crisis discussion is vital for underlining the results of previous studies; however, it also presents a partial clarification of the nature of business journalism (Merrill, 2015), particularly because of the current lack of research about business journalism in Arab countries, which hold important economic resources for the world and about which news stories are often covered by the global media (e.g., news about the oil and gas industries) (Kubursi, 2015). Despite the lack of investigation into the role of business journalism during the 2008 financial crisis, business journalism in the Arabian Gulf is not exempt from the same underlying reasons that might affect its quality (AlHroub, 2012; Alheezan, 2010; Babaker, 2014). Moreover, business journalists operate within a certain context (e.g., political and cultural) that can affect the media system in which they are based (Mellor, 2011; Rugh, 2004; Rugh, 2007; Sakr, 2007; Sakr, 2003).

Specifically, the sampling frame selected for this content analysis was from 01 August 2008 to 31 October 2008. This period of time includes the collapse of Lehman Brothers bank on 15 September 2008, which is considered to be the beginning of what is now referred to as the global financial crisis of 2008 (Bjerke and Fonn, 2015). It is worth mentioning that at the time of data collection, the only way to access business articles published by the studied newspapers was the newspapers' archives, as they were not provided by any electronic database of journalistic documents, such as LexisNexis.

At the beginning of this study, four daily newspapers from the Arabian Gulf States were selected.[5] The term *Arabian Gulf State* is reserved for a number of monarchical countries, including the Kingdom of Saudi Arabia, the UAE, Qatar, Kuwait, the Kingdom of Bahrain and the Sultanate of Oman, that were economically joined under the Gulf Cooperation Council (GCC) in 1981 (Al-Jaber, 2012, p. 40). Al-Jaber (2012, p. 42) pointed out that these countries share a regional culture and language (i.e., speaking a "Gulf dialect of Arabic") and similar styles of dress, cuisine and music. Any kind of communication research that compares countries should begin from a place of equality, and their common cultures and languages mean that these countries can be considered generally comparable (Rowe, 2011, p. 66). The countries focused on in this study, Saudi Arabia and the UAE, also fit that characterisation, as they are similar in many ways. At the same time, however, the differences between the countries—such as the gender segregation that occurs in Saudi Arabia and is seen as part of the country's traditional norms—must be taken into consideration.

With regard to the discrepancy in the number of newspapers chosen for analysis in this study (i.e., three from Saudi Arabia and two from the UAE), it is important to note that there were 13 printed newspapers in Saudi Arabia and 5 printed newspapers in the UAE in 2008, also see Table 2, below, which also highlights the large difference in the populations of the Arabian Gulf States. To reflect these differences, three newspapers were chosen from Saudi Arabia, and one newspaper was chosen from the UAE.

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[5] I had planned to include the newspaper *AlRayah,* from Qatar, in this study, and I completed all the documents required by the newspaper to start collecting the data. However, I could not complete data collection after the diplomatic crisis that occurred within the GCC in June 2017, when Saudi Arabia, Egypt, Jordan, the UAE, Bahrain, Mauritania, the Maldives, Djibouti, Senegal, the Comoros, Libya and Yemen boycotted their relationship with Qatar. Consequently, I excluded the Qatari newspaper from the study.

	UAE	Bahrain	Saudi Arabia	Oman	Qatar	Kuwait
Population	8,264,070	1,195,020	28,376,355	3,292,298	1,732,717	3,065,850

Table 2. GCC countries' populations (GCC statistics, 2010).

Alriyadh, *Aleqtisadiah* and *Asharq Al-Awsat*, of Saudi Arabia, and *Alittihad*, of the UAE, were selected for inclusion in this study based on a number of criteria. *Alriyadh* and *Alittihad,* which are local newspapers, have the highest circulation in their country, and *Asharq Al-Awsat,* which is a pan-Arab newspaper, has the highest circulation of any pan-Arab newspaper (see Table 3, below).

According to Bait-Almal and AlTayash (2003) in a study that investigated the readership of Saudi newspapers, the three Saudi newspapers chosen in this research were among the most popular newspapers in the state. *Alriyadh* was the first daily newspaper published in Arabic in the capital of Saudi Arabia, on 11 May 1965; its advertisement sales bring in approximately 140 million dollars a year, and it has around 1500 employees. It is owned by the Al-Yamamah Press Establishment, which was founded in 1963 and has more than 60 branches around the world (Alriyadh, 2015). In addition, it is the only Saudi daily newspaper with an external daily economic supplement, usually consisting of between eight and twelve pages.

Aleqtisadiah was launched in Riyadh in 1992. It is the only daily newspaper with an exclusive focus on economics and business news and analysis in Saudi Arabia (and in the Arabian Gulf), covering domestic, regional and international economic and business-related events. It was hoped that the inclusion of *Aleqtisadiah* would enrich this study, enabling a comparison between the use of statistics by a newspaper that specialises in economics and business with that of newspapers that do not specialise in one area. In particular, it was thought that business journalists writing for a specialised newspaper would be able to produce higher quality statistics-related news stories than would non-specialised newspapers. *Aleqtisadiah* also includes translated extracts from international business publications, such as the *Harvard Business Review*, the *Financial Times* and the *Frankfurter* (Saudi Research and Publishing Company, 2015). Alheezan (2010, p. 216) pointed out that investors usually rely on the *Alriyadh* and *Aleqtisadiah* more than any others in Saudi Arabia.

Finally, *Asharq Al-Awsat* was launched in London in 1987 and is printed every day in 14 cities throughout 4 countries. It is the only publication that owns syndication rights in Arabic for three renowned international publications: *USA Today*, *Global Viewpoint* and *The Washington Post* (Asharq Al-Awsat, 2015). *Asharq Al-Awsat* has diverse content, from economic and business news, to social issues and regional politics, to entertainment and sports. It has 21 specialised supplements; one of these specialises in the property market (Saudi Research and Publishing Company, 2015).

Asharq Al-Awsat was selected for inclusion to examine whether pan-Arab newspapers have less censorship and better access to data than do local newspapers in the Arab world, which may be reflected in their use of statistics. This examination was based on Mellor (2005) indication that external newspapers are better able to avoid censorship and difficulties in accessing data, which other publications are subject to in the Arab world. This publication could also be important in examining the role of the Arab environment on the use of statistics in business journalism, such as how it affects the journalism process when the newspaper is also distributed in the Western world.

Alittihad, the first Arabic newspaper in the UAE, was first published on 20 October 1969 (ALittihad., 2015). *Alittihad* is issued by Abu Dhabi Media, which manages and operates more than 20 market brands across various broadcast and publishing platforms (Abu Dhabi Media, 2015).

	Circulation estimates	Location
Saudi Arabian Newspapers		
Alriyadh	170,000	Riyadh
Okaz	147,000	Jidda
Al-Jazira	80,000	Riyadh
Al-Youm	80,000	Dammam
Al-Watan	65,000	Abha
Al-Madina	46,000	Jidda
Al-Bilad	35,000	Jidda
Aleqtisadiah	Not provided	Riyadh
AlNadwa	Not provided	Makkah
Umm Al-Qura	Not provided	Makkah
Shams	Not provided	Riyadh
UAE Newspapers		
Al-Khalij[6]	60,000	Sharjah
Alittihad	58,000	Abu Dhabi
Akbar Al-Arab	35,000	Abu Dhabi
Al-Bayan	35,000	Dubai
Al-Fajr	28,000	Abu Dhabi
Al-Wadah	20,000	Abu Dhabi
Pan-Arab Newspapers		
Asharq Al-Awsat	60,000	London
Al-Hayat	40,000	London
Al-Quds Al-Arabi	15,000	London
Al-Arab	10,000	London
Al-Zaman	5,000	London

Table 3. The estimated circulation figures of some Arab newspapers [7] (Rugh, 2004, pp. 61; 173).

All the business news included in this study related to four thematic areas: the housing market, the stock market, the banking market, and oil prices. These areas

[6] At the beginning of this research, the newspaper *Al-Khalij* was planned to be included, as that newspaper that has the highest estimated circulation level. Unfortunately, however, I could not get any response from this newspaper; as such, it was excluded from this sample.

[7] There are no official statistical figures that relate to the circulation of Arabian Gulf newspapers (Alzahrani, 2016, p. 18).

were chosen because of how directly they affect the citizens of the Arabian Gulf. First, the desire to own one's own home is very common in the Arabian Gulf and, as such, is frequently discussed in the media (Elasrag, 2016, p. 5). Second, as stated, more than half of Saudi families were affected by the Saudi stock market crisis (Alheezan, 2010, p. 196; AlHroub, 2012, p. 3; Babaker, 2014, p. 10). Third, banking is generally considered an important source of financing for different aspects of people's lives. Last, the oil revenues of Arabian Gulf countries constitute around 80% of the governments' revenues, approximately 70% of total exports and around 50% of the gross domestic product (GDP) (Nusair, 2016, p. 256), which, combined, create a dependency on it.

Using the aforementioned newspapers' archives, a selection of appropriate keywords was performed based on a review of the relevant literature and on the researcher's own experience as a journalist and a citizen of an Arabian Gulf country. A number of pilot tests took place to see which words yielded the most appropriate results in the newspapers' archives. These keywords needed to elicit a considerable amount of data that would enrich the collected data and needed to relate to the study's research questions (see Table 4).

Thematic area	**Keywords**
Housing market	Houses, Mortgage, Interest Rate, Rent
Stock market	Share Price, Financial Results, Dividends
Banking market	Banks, Results, Interest, Banking Systems, Risk Credit, Risk Market
Oil prices	Oil, Production, Demand, Exports, OPEC*, Fracking

Table 4. The selected keywords.
**Note: OPEC = Organization of the Petroleum Exporting Countries*

The sample text for this research included all business news stories in the aforementioned newspapers that contained the selected keywords from 1 August 2008 to 31st October 2008. This method is known as a census, which is defined by Krippendorff (2013, p. 123) as "a body of text that includes all of its kind". According to Riff et al. (2014, p. 46), "in some situations, sampling is not appropriate. If the focus is on a particular critical event (for example, a major oil spill) within a specified time period, probability sampling might miss key parts of the coverage".

Regarding the scope of this research, which aims to understand how journalists use statistical data to articulate business news in the Arabian Gulf, article selection relied on two criteria. First, the article needed to contain statistical data, so all business articles that did not contain statistical data were excluded. Second, the article needed to be produced by the newspaper itself, so any article produced by a foreign institution, such as national or international agencies or wires, were excluded.

In total, 2259 articles were collected; however, only 44 articles (1.9%) did not contain statistics, which gave a strong indication of the overwhelming use of statistical data in business news stories. Moreover, 894 articles (40.4%) were not produced by the newspaper itself, which gave an indication of the newspapers' dependence on business news stories coming from foreign institutions. Consequently, the sample for the content analysis in this research consisted of 1321 business articles that contained statistics and were produced by the newspapers themselves.

3.7.2 Coding

Coding establishes a bridge between observations and interpretations, and it is used as a means of building long-lasting records for short-lived phenomena (Krippendorff, 2013). Following earlier research (Miller, G.A., 1951; Janis, 1965), I made use of code in this research to group different components contained in the news stories and turn them into quantitative data that, in turn, drew attention to the most relevant characteristics of journalism practices and the representation of statistical data in business news.

I followed Miller, G.A. (1951, p. 95), who explained that, "in order to handle larger blocks of verbal materials in a statistical way, it seems necessary to reduce the variety of alternatives that must be tabulated". Hence, this study used codes related to a manageable body of 31 variables (see Table 5). Moreover, due to the nature of some of the variables included in the content analysis, the coding scheme allowed for open adjustments throughout the coding process. For example, it was difficult to set predictions to restrict all graph types that may be used in the business news before conducting and finishing the content analysis. As such, the definition of this variable remained open until the content analysis was completed, at which point the answers were categorised.

The purpose of this coding design was to facilitate the analysis. A number of procedures were undertaken to ensure its validity and reliability. To avoid poor validity in analysing the data, a code book defining all the variables was created, and a pilot study was carried out on a sample of the four newspapers, consisting of nearly 10% of the entire sample. This pilot study aimed to test and check the variables and to allow for any necessary amendments to be carried out during the main study.

In terms of reliability, I used inter-coder reliability as the standard of measurement. Inter-coder reliability is "used to assess the degree to which a result can be achieved or reproduced by other observers” (Wimmer and Dominick, 2013, p. 59). As a result of this assessment, 10% of the sample was coded by a PhD student who was trained to do so. For each of the 31 variables, the results of Krippendorff’s Alpha (Kalpha) inter-coder reliability test ranged from 0.79 to 1.00.

#	Variable	Related Questions
1	Newspaper name	What is the newspaper’s name?
2	Statistics’ status	Are statistics used in the content?
3	Appearance of stats	Are the statistics used implicitly or explicitly?
4	Journalist name	Is the name of the journalist presented?
5	Article producer	Is the news story written by the newspaper?
6	Journalist gender	What is the journalist’s gender?
7	Topic	What is the main topic of the article?
8	Size	What is the article’s size?
9	Genre	What is the journalistic genre of the article?
10	Statistics’ type 3	Does the article contain any graphs?
11	Statistics’ type 4A	How many graphs does the article contain?
12	Statistics’ type 4B	What types of graphs are used in the article?
13	Statistics’ type 5	What is the most common type of statistic used?
14	Verification	Is there any mentioning of missing data or partial data?
15	Source 2	What is the origin or source of the statistical data?
16	Source 3	How many statistical sources are cited?
17	Humans	What is the predominant news angle in the use of the statistics?
18	Validity	Is the usage of statistics coherent with the topic?
19	Reliability	Is the source of the statistics used in the article reliable?
20	Interpretation	Are the statistics in the article interpreted?
21	Interpretation 2	If the answer to 20 is “yes”, what is the level of interpretation provided?
22	Added value	Are the statistics managed/manipulated by the journalist?
23	Evaluation 1	Does the article contain any type of comment about the statistics used?
24	Evaluation 2	If the answer to 23 is “yes”, what type of comments are made?
25	Geog. coverage 1	What is the geographical context of the incident reported?
26	Geog. coverage 2	If the geographical context is international, is the geographical coverage limited to the Arabian Gulf region?
27	Criticality 1	Does the article contain any type of criticism?
28	Criticality 2	If the answer to 27 is “yes”, what type of criticism does the article contain?
29	Statistics’ claim	What is the statistical claim?
30	Timeliness 1	Time passed between the statistical release and the publication of the article
31	News value	Are the statistics used in the news story to: produce, substantiate or contextualise the story.

Table 5. The variables studied and related questions that guided the manual compilation of code sheets**.**

Quantitative Framing Analysis

The operational definition of *quantitative framing analysis* is related to tone and was developed based on previous studies on media bias and news slant (Kahn and Kenney, 2002; Druckman and Parkin, 2005; Dunaway, 2013; Douai and Wu, 2014). Concerning the use of statistics by business journalists to articulate their articles, the aim was to categorise news stories as *positive*, *neutral* or *negative*.

While news articles were the units of analysis, their tone was also coded depending on the direction of the interpretation of statistics (i.e., frame) in business articles, as follows:

1. *Positive*: the article was framed in a favourable direction; this category contains statistics used by journalists to frame business articles from an optimistic perspective (or view).
2. *Neutral*: the article's direction involved neither unfavourable nor favourable perspectives; this category contains business articles that include statistics that offer balanced coverage, articles that present statistics with no commentary or articles that contain statistics that present neither negative nor positive slants.
3. *Negative*: the article was framed in an unfavourable direction; this category contains statistics used by journalists to frame business articles from a pessimistic perspective (or view).

3.8 Semi-structured Interviews

The purpose of using semi-structured interviews was to explain and substantiate the results of the content analysis and to add to these an extra layer of explanation. By conducting this research strategy with three groups of interviewees -journalists and editors, news sources, and heads of media and journalism schools- I was better able to understand how business journalists use statistical data in their news stories and, specifically, how they access, manage and interpret them. In addition, the interviews highlighted key issues regarding the use of statistics in journalism and whether there were any differences in the use of statistics among journalists in Saudi Arabia and the UAE.

Saunders et al. (2012) argued there are three kinds of interviews: structured interviews, unstructured interviews and semi-structured interviews. While unstructured interviews allow interviewees to respond and speak freely in an interview, structured interviews involve a set of restricted pre-designed questions and the inflexible instruction that the interviewer must guide the conversation without asking for further details or clarifications (Bryman, 2012). Saunders et al. (2012) characterised semi-structured interviews as the convergence between structured and unstructured interviews because they allow the interviewer to follow the interview plan throughout the interview without being restricted to it. For example, the interviewer can ask the interviewee follow-up questions to seek clarification about his or her answers (Bryman, 2012). Similarly, according to Dunn (2005, p. 80), *semi-structured interviews* are “a form of interviewing that has some degree of predetermined order but still ensures flexibility in the way issues are addressed by the informant”.

As such, the current study conducted semi-structured interviews in 2018 with the three groups of interviewees (i.e., business journalists and editors, news sources, and heads of media and journalism schools). Efforts were made to reduce the influence of the disadvantages of personal interviews, which include anxiety on the part of the interviewee due to the discussion of sensitive issues and possible subtle pressures on interviewees that might influence their answers (May, 2011; Babbie, 2015). Indeed, the interview style was designed to begin with general questions before moving to specific questions; this technique was used to first draw out the interviewees to answer questions that did not relate to them personally and, through the course of the interview, to allow the interviewees to bring themselves and their own work into the conversation, in many cases through elaborating on their initial points.

Gray, D.E. (2013) emphasised that interviews should be conducted in a manner that ensures the results will be valid and reliable. Regarding the generalisability of the results of this research strategy to a wider population, the interviewer should ensure that additional indicators of credibility are obtained before the results are extrapolated to others (Gray, D.E., 2013). Gray, D.E. (2013) further pinpointed that qualitative researchers should ensure that the questions asked lead to the research objectives, but interview techniques should be employed to also allow interviewees to speak freely about their thoughts and opinions with a rapport and in a trusted environment (Arksey and Knight, 1999). Each of these points was considered in this research. For example, the researcher encouraged some of the interviewees to be truthful in answering the interview questions by reassuring them of their anonymity. In addition, I reframed some of the questions when the interviewees seemed not to understand them, which helped to improve the quality of the responses.

During the interviews, I made an effort to minimise the issue of “double attention”, which is “that you must be both listening to the informant’s responses to understand what he or she is trying to get at and, at the same time, you must be bearing in mind your needs to ensure that all your questions are liable to get answered within the fixed time at the level of depth and detail that you need" (Wengraf, 2001, p. 194). To help overcome this challenge, audio recording of the interviews was performed - which helped enable accurate transcription- and at the same time, the interviewer took brief notes, which helped the interviewer know whether further details were necessary and to check whether all the interview questions had been answered. It is worth mentioning that, before conducting these interviews, the interview questions were presented to academic arbitrators to ensure that the questions would lead to information relevant to the research questions and so that the arbitrators could judge the questions' clarity, linguistics and completeness.

3.8.1 Sampling

The semi-structured interviews were conducted based on different sample strategies for each group of interviewees (due to the aim of the interviews being different for each group of interviewees). For interviews with journalists and editors and with news sources, a purposive-sampling strategy was adopted. However, for interviews with heads of media and journalism schools, interviews were conducted based on a census.

Purposive sampling is a non-random form of sampling. The aim of this type of sampling is to ensure that the selection of interviewees is conducted in a strategic manner so that the interviewees are more relevant than their counterparts in the population to the research questions, based on their qualifications and the satisfaction of given criteria (Bryman, 2012). An important advantage of using the purposive sample is that one can ensure the selection of information-rich interviewees (Patton, 2002) who are able to address the research objectives (Bryman, 2012) and, therefore, are more likely to make an insightful and meaningful contribution to the study results.

For this reason, 14 journalists and editors who cover business news on a daily basis in Saudi Arabia and the UAE were identified for inclusion in the interview section of this research (see Table 6). It is worth mentioning that these interviews were conducted in 2018 with journalists and editors from the sample newspapers who participated in covering the chosen topics (i.e., the stock market, the housing market, the banking market and oil prices) during the period identified for study (i.e., 1 August 2008 to 31 October 2008). Furthermore, the journalists interviewed authored more than the half of the business news articles (51.7%) analysed in the content analysis.

Through conducting these interviews, besides answering the main research question of this thesis, it was possible to explore the changes in journalistic practices in the use of statistics over the past decade.

Code	**Newspaper name**
#INT01	*Aleqtisadiah*
#INT02	*Aleqtisadiah*
#INT07	*Aleqtisadiah*
#INT12	*Aleqtisadiah*
#INT06	*Asharq Al-Awsat*
#INT13	*Asharq Al-Awsat*
#INT14	*Asharq Al-Awsat*
#INT03	*Alriyadh*
#INT04	*Alriyadh*
#INT05	*Alriyadh*
#INT08	*Alittihad*
#INT09	*Alittihad*
#INT10	*Alittihad*
#INT11	*Alittihad*

Table 6. Codes used for the analysis of journalist interviews.

Similarly, in terms of the semi-structured interviews conducted with news sources, six Saudi Arabian news sources working in fields related to the studied topics were selected to be interviewed (see Table 7). It is worth mentioning that news sources in the UAE could not be interviewed due to the lack of resources and time.

Code	**Institution name**
#INT23	Private Saudi Bank
#INT24	General Authority for Statistics (GASTAT)
#INT25	General Authority for Statistics (GASTAT)
#INT26	Saudi Stock Exchange (Tadawul)
#INT27	Ministry of Housing
#INT28	Ministry of Energy, Industry and Mineral Resources

Table 7. Codes used for the analysis of Saudi news source interviews.

In contrast to the interviews with journalists and editors and with news sources, the semi-structured interviews with heads of media and journalism schools were conducted based on a census of Saudi media and journalism schools. There are 14 media and journalism schools in Saudi Arabia, and all of these were contacted.

However, two of these schools are under construction, one had not registered any students yet at the time of conducting the interviews and three did not respond. As such, a total of eight interviews with heads of Saudi media and journalism schools were conducted (see Table 8). It is worth mentioning that heads of UAE media and journalism schools could not be interviewed due to a lack of resources and time.

Code	Media/Journalism school name
#INT15	Mass Communication Department at King Saudi University
#INT16	Journalism and Electronic Publishing Department at Al-Imam Muhammad Ibn Saud Islamic University
#INT17	Journalism Department at King Abdul-Aziz University
#INT18	Media and Communication Department at King Khalid University
#INT19	Communication and Media Department at Taibah University
#INT20	Communication and Information Technology Department at Imam Abdulrahman Bin Faisal University
#INT21	Media Department at Islamic University of Madina
#INT22	Mass Communication Department at Umm Al-Qura University

Table 8. Codes used for the analysis of interviews with heads of Saudi media and journalism schools.

3.9 Quantitative Survey of Documents

A quantitative survey of the curricula and syllabi of the media and journalism schools at Saudi universities was also conducted. This survey quantified the statistical courses taught in these schools, whether these were taught as specialised courses for media and journalism students; as compulsory general statistics courses at the university, college or school itself; or as a part of the syllabus within another course. As supported by previous research (Martin, 2017; Splendore, 2016) a quantitative survey of documents was the most convenient method for examining the curricula and syllabi at the Saudi media and journalism schools to explore whether or not statistics courses were taught.

A code sheet was created for the following variables: 1) university, 2) academic entity (college or school of media or journalism, or journalism department), 3) statistics required (yes or no), 4) statistical course is offered by the journalism school itself (yes or no) and 5) if yes, statistical course is required by the journalism school itself, a larger entity (such as college or university) or within another course.

3.10 Cross-national Comparison

One key aspect of this work is that the research was performed in different countries, therefore providing a cross-national comparative dimension to the triangulation of the data. In this sense, the purpose of the cross-national comparison was to examine the differences and similarities in the use of statistics by business journalists in Saudi Arabia and the UAE. Specifically, it aimed to investigate the cross-national differences and similarities among business journalists in these countries in terms of how they access, manage and interpret statistics. In addition, it aimed to investigate the similarities and differences in terms of the aspects that might boost or hinder their use of statistical data. Hantrais (1996, p. 1) explained this type of research, arguing the following:

> When individuals or teams set out to examine particular issues or phenomena in two or more countries with the express intention of comparing their manifestations in different socio-cultural settings (institutions, customs, traditions, value systems, life style, language thought patterns), using the same research instruments either to carry out secondary analysis of national data or to conduct new empirical work. The aim may be to seek explanations for similarities and differences or to gain a greater awareness and a deeper understanding of social reality in different national context.

Further argued that any kind of communication research that compares countries should begin from a place of equality, which means that these countries should be considered generally comparable (Rowe, 2011, p. 66). In many broad dimensions, Saudi Arabia and the UAE fit that characterisation. At the same time, however, some differences between these countries must be taken into consideration, such as gender segregation in Saudi Arabia, which is seen as part of the country’s traditional norms.

Conducting this type of research can facilitate a deeper understanding of the topic at hand, as well as exciting insights (Bryman, 2012, p. 65); this is particularly true for the study of statistical data in business journalism in the Arabian Gulf, where there is a real lack of research at present. In fact, this type of research is common in the analysis of international affairs. For instance, Porlezza et al. (2012, p. 534) investigated the news accuracy of newspapers in Italy, Switzerland and the USA. In another study, Knowles et al. (2015, p. 5) presented the results of the media coverage of the Global Financial Crisis in the US, the United Kingdom (UK) and Australia using a longitudinal content analysis across three decades.

One of the disadvantages that affects cross-national comparisons is the lack of funding to conduct such research (Bryman, 2012). It is worth mentioning that in this study, cross-national comparison was applied only to the use of statistics by journalists and editors in Saudi Arabia and the UAE and was not conducted in relation to statistics education systems or the perceptions of heads of media and journalism schools or news sources toward the use of statistics in the Arabian Gulf. This was because of a lack of resources and time.

3.11 Ethical Considerations

This study was approved by the Ethical Committee of the University of Leeds (see Appendix 1). In light of this, participants were required to sign informed consent forms to take part. According to Brinkmann and Kvale (2008), “Informed consent entails informing the research participants about the overall purpose of the investigation and the main features of the design, as well as of any possible risks and benefits from participants in the research project” (p. 266). Because this study may contain some sensitive economic or political opinions, the respondents were made aware of the study’s procedures and of their rights to take part voluntarily, to refrain from participating and to withdraw at any time. Moreover, their names were anonymised, and their information was kept confidential. I transcribed the recorded interviews and then translated them into English. When the translation was complete, the original recordings and Arabic transcripts were destroyed. Moreover, data security was ensured for all participants, and the privacy of all respondents was also protected and respected. I secured the study’s data and documentation by storing them in independent folders on the M-Drive of the University of Leeds, which is password protected.

3.12 Conclusion

This chapter outlined the research foundation and practicalities of this project, including how it was designed, the methods used and the questions that drove the entire study. It rationalised the sampling, data collection and analysis techniques used, as well as the methodological approach employed in this research. Moreover, it explained how a triangulated approach that consists of quantitative content analysis and interviews was used to overcome methodological bias and weaknesses. Through the methods and tools described in this chapter, a response to the central question explored -how journalists use statistical data to articulate their business news stories in Saudi Arabia and the UAE- was obtained.

Chapter 4
Findings

4.1 Introduction

This chapter provides an analysis of the quantitative and qualitative data collected. This analysis is then followed by a discussion of the study findings that were gained from each method. The chapter elaborates upon the findings in detail with the aim of delineating the use, or misuse, of statistics in business journalism. As such, the purpose of this chapter is to answer the main research question of the study: how do journalists use statistics to articulate their business news stories in the Arabian Gulf, and particularly, in Saudi Arabia and the UAE?

Overall, the results reveal that journalists tend to use valid statistics, rely on reliable statistical sources and provide an interpretation of the statistical data they present. However, engaging with these statistics is the task in which journalists seem mainly ‘to be ticking the boxes of professionalism’. In other words, they follow the procedures set by the canons of professionalisation but without really exercising critical scrutiny of the subject in a way that would achieve a high level of professionalism. This is partly because journalists in these countries do not have professional autonomy over the reports they write, lack adequate training in how to deal with statistical data, over rely on official sources, and engage in unethical journalistic practices, which negatively affects the content of their news stories.

To analyse the results in detail, this chapter is divided into four sections: section **4.2** examines and describes the results derived from the content analysis of each variable through statistical analysis; section **4.3** concentrates on the analysis of semi-structured interviews with journalists and editors; section **4.4** focuses on the analysis of semi-structured interviews with news sources; section **4.5** explores the educational system in Saudi Arabia through a survey examining the curricula and syllabi at all Saudi universities teaching journalism and through interviews with heads of Saudi media and journalism schools. Each section is followed by a critical discussion of the results and its connection to the literature review, outlined in earlier chapters of this dissertation, to determine whether the data support or contradict the existing literature.

4.2 Content Analysis

This section presents the findings, in the form of tables and graphs, used to investigate the frequencies, percentages and correlations of most of the 31 variables analysed in this study (Table 5). SPSS software was used to analyse the data, which cover the following topics: the housing market, the stock market, the banking market and oil prices, as reported on in four printed newspapers. Three of these newspapers are from Saudi Arabia (*Alriyadh*, *Aleqtisadiah* and *Asharq Al-Awsat*), and one is from the UAE (*Alittihad*). The purpose of this method is to answer the main research question: how do journalists use, or misuse, statistics in their coverage of business news in the Arabian Gulf, and particularly, in Saudi Arabia and the UAE, and what are the main challenges, issues and opportunities for journalism as a practice in those countries?

The content analysis explores, in quantitative terms, how business journalists use statistical data through multiple variables. From the overall data, the following main points are worth highlighting: 1) journalists in these countries use valid statistics, relying on reliable statistical sources, and they seem to interpret statistics in an appropriate manner. However, 2) there is a lack of critical engagement with statistical data and 3) an over-reliance on government statistical sources, which might indicate a lack of critical engagement because of relying on one specific source, highlighting the difficulties that journalists face. 4) Moreover, the overall tone of Arab business news is mostly neutral (in relation to the judgments or comments made by the reporter). The variables examined were analysed in depth to shed light on some of the key issues for journalists when articulating business statistical data. In terms of reliability, I used inter-coder reliability as the standard of measurement, and 10% of the sample was coded by a PhD student who was trained to do so. For each of the 31 variables, the results of Krippendorff's Alpha (Kalpha) inter-coder reliability test ranged from 0.79 to 1.00.

4.2.1 Frequency of Articles

As established, the quantitative content analysis addressed 1321 business news stories produced by the newspapers themselves. Of the articles, all of which contained statistics, 430 (constituting 32.5% of the total) were published by *Alittihad* (UAE), 374 articles (28.31%) by *Asharq Al-Awsat* (Saudi pan-Arab), 289 articles (21.86%) by *Alriyadh* (Saudi local) and 228 articles (17.26%) by *Aleqtisadiah* (Saudi specialists in economic news) (Figure 4). These findings show that *Alittihad* articulated more articles -comprising almost one-third of the total analysed-containing statistics on business than did the rest of the newspapers, all of which are from Saudi Arabia. Moreover, *Aleqtisadiah* occupied the last position in terms of number of business articles printed containing statistics. A possible explanation for this might be the stylistic choices most commonly made in writing the articles in these newspapers. For example, of all the articles in *Alittihad* and *Asharq Al-Awsat*, only 8% and 8.8%, respectively, cover more than half the page; in contrast, *Alriyadh* and *Aleqtisadiah* tend to publish articles that are longer than half a page more often, at rates of 23.3% and 17.5%, respectively.

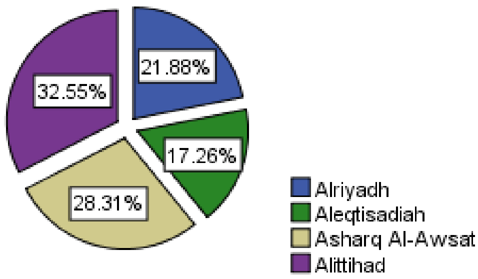

Figure 4. Frequency of business articles containing statistics.

Figure 5, below, illustrates the distribution of business topics in the sample. It is apparent from this table that news stories containing statistics relating to stock markets occupied the majority of the business coverage in the aforementioned newspapers, making up nearly three-fifths (57%) of the entire coverage. In terms of the banking and housing markets, the percentage of coverage was 18.7% and 14.8%, respectively. Unexpectedly, articles containing statistics relating to the price of oil accounted for the lowest percentage (9.5%) in the sample.

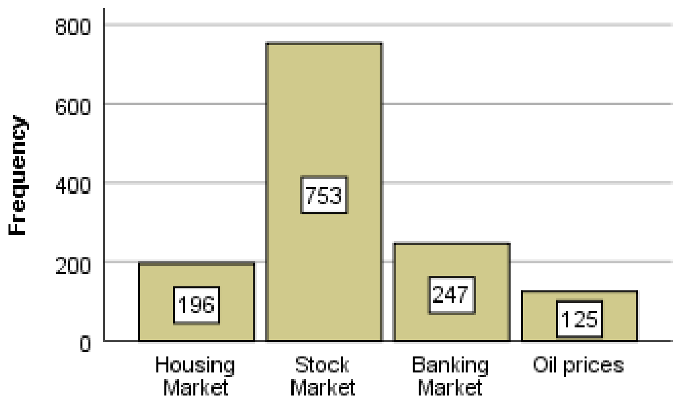

Figure 5. Topics of the articles published by all newspapers studied.

As can be seen in Figure 5, the findings suggest that news coverage of the stock markets dominates the business journalism in the studied newspapers. This is because data related to the stock market is accessible, transparent and made public to journalists and editors. In countries such as those studied here, reporters are more able to produce daily news about the stock market in a way that is reliable and newsworthy. In addition, it is easier for an editor to fill newspaper space with news about stock markets using statistics.

However, in terms of journalism as a public service, it should fulfil a “watchdog function”, bringing about transparency and providing access to information so that citizens can not only be better informed (Nielsen et al., 2013, p. 384) but also be more actively engaged with decision-making processes in the country. In spite of this, news relating to the banking and housing markets and to the prices of oil received less coverage. In addition, in terms of pedagogical information, these three areas are very poorly served when compared to articles relating to stock markets.

Another significant finding that can be seen in Figure 5 is that few of the articles produced contain statistics relating to oil prices. This finding is in agreement with Al-Twaim’s (2000) study, which investigated the factors influencing the prioritisation of economic issues in Saudi newspapers. He found that oil and energy issues receive little attention in the Saudi press; however, journalists consider them some of the most important topics in the country and believe that Saudi newspapers should put more effort into improving their journalists’ ability to deal with these topics (Al-Twaim, 2000, p. 325). This result may indicate the overwhelming reliance of these newspapers on foreign sources to cover crucial topics such as the price of oil in the countries in which these newspapers are published. Particularly, the majority of these countries’ revenue come from the oil sector (Nusair, 2016, p. 256). In addition, this finding may suggest the need for media organisations and universities in these countries to start training journalists in the area of oil and energy markets if they want to improve their role as watchdogs and bring about increasing transparency in this area. This might seem like a naïve suggestion given the limitations on professional reporting imposed by the political context of these countries, but as some authors have already highlighted (Rugh, 2004), there are spaces in which journalists can manoeuvre and fulfil a watchdog function, to a certain degree, in particular spaces and newsbeats.

To provide a closer examination of the specific areas of interest to each newspaper, the domains of “newspaper” and “topic” were cross-tabulated to determine the similarities and differences between the aforementioned newspapers in their use of statistical data to cover the studied topics (see Table 9). Through this analysis, it can be seen that statistical data relating to the stock market was used more in all the studied newspapers than were data relating to the other topics. However, there was a difference in the second most-covered topic using statistical data: the pan-Arab newspaper (*Asharq Al-Awsat*) and the economic newspaper (*Aleqtisadiah*) used statistics covering the banking market, while *Alittihad* (UAE) and *Alriyadh* (Saudi Arabia), both considered local newspapers, used statistics covering the housing market.

While articles relating to the stock market maintain first position in all newspapers, the data reveals that the local newspapers (*Alittihad* and *Alriyadh)* concentrate on the housing market, which is considered to be very important to the citizens of these countries (Albahussain, 2016; Elasrag, 2016). In contrast, the other newspapers in the sample concentrated on the banking market, covering the financial global crisis of 2008.

			Newspapers' Name				
			Alriyadh	Aleqtisadiah	Asharq Al-Awsat	Alittihad	Total
Topic	Housing Market	Count	70	42	18	66	196
		% within Newspapers' Name	24.2%	18.4%	4.8%	15.3%	14.8%
	Stock Market	Count	159	111	178	305	753
		% within Newspapers' Name	55.0%	48.7%	47.6%	70.9%	57.0%
	Banking Market	Count	40	55	110	42	247
		% within Newspapers' Name	13.8%	24.1%	29.4%	9.8%	18.7%
	Oil price	Count	20	20	68	17	125
		% within Newspapers' Name	6.9%	8.8%	18.2%	4.0%	9.5%
Total		Count	289	228	374	430	1321
		% within Newspapers' Name	100.0%	100.0%	100.0%	100.0%	100.0%

Table 9. Cross-tabulation of newspaper name and topic

4.2.2 Author of Articles

The author of a news story is an indicator of the origin of that news, as the byline determines whether the story was produced by a media outlet itself or whether the story came from a different news agency or was derived from a press release (Cooper, 2008). Conducting an examination of who wrote the articles studied will help in exploring the factors that might affect the production process of business news, such as the origin of the articles, and also helps to identify the existing capabilities (i.e., how dependent the news media is on news agencies and press releases as opposed to their own journalists). In addition, it can give further insight into the personal characteristics of the journalists, such as their gender.

As can be seen in Table 10, more than one-third (36.3%) of the business news stories produced by newspapers in the Arabian Gulf are published without the names of journalists. This finding further supports Alhroub's (2012, p. 86) study, which found that more than two-fifths (42.1%) of economic news is published without the mention of a journalist's name.

Journalists' names	Frequency	% of Total	Valid %	Cumulative %
Yes	842	63.7	63.7	63.7
No	479	36.3	36.3	100.0
Total	1321	100.0	100.0	

Table 10. Journalists' names: is the name of the journalist shown?

There are several possible explanations for this result. AlHroub (2012, p. 86) pinpointed two reasons for this: First, the governments in Arab countries usually provide significant economic information by means of press releases or packages that are distributed to all newspapers. This information is then considered in the newsrooms as closely aligned to governments and is therefore regarded as highly important and politically sensitive. Hence, newspapers tend to publish it without mentioning the source or altering the content too much. Second, according to AlHroub (2012, p. 86), at newspapers in Arab countries, the boundaries are commonly blurred between editorial prerogatives and paid services for companies in return of advertisements this is another reason why news stories may appear without a byline.

This high dependency upon public relations to fill an information deficit is not unique to Arab countries or the so-called Global South. Lewis, J. et al. (2008a), for example, in reviewing more than 2000 articles of the British press, found that despite normative claims made by journalists about being suspicious and sceptical of material sent by public relations professionals, in practice, a great number of their news stories were based on press releases. The reasons for this, also identified by other authors such as Davies (2011), is that newsrooms in the UK have faced important cuts in the number of journalists employed and in the resources available. As a result of this, there is an information deficit, and this is being filled by public relations. As such, although for different reasons -one because of ethical limitations and the other because of cuts -both Arab and European newspapers seem to be relying increasingly on public relations materials and press releases, without giving them sufficient critical review.

With regards to the frequency of business articles containing statistics, a key element of the central argument of this thesis, Table 11 illustrates that only in *Asharq Al-Awsat were* the majority of news stories published without quoting the names of journalists, while the news stories published in the other newspapers tended to show the names of the journalists. These results deserve further investigation and, as such, will be discussed in greater detail later in this thesis, in the interviews' findings (in section **4.3**).

			Newspapers' Name				
			Alriyadh	Aleqtisadiah	Asharq Al-Awsat	Alittihad	Total
Journalists' Name	Yes	Count	244	165	180	253	842
		% within Newspapers' Name	84.4%	72.4%	48.1%	58.8%	63.7%
	No	Count	45	63	194	177	479
		% within Newspapers' Name	15.6%	27.6%	51.9%	41.2%	36.3%
Total		Count	289	228	374	430	1321
		% within Newspapers' Name	100.0%	100.0%	100.0%	100.0%	100.0%

Table 11. Cross-tabulation of newspaper name and presence of journalists' names.

From a gender perspective, it is worth mentioning that, as shown in Table 12, only 12 business news stories containing statistics (0.9%) from the whole sample were written by women. This study produced results that corroborate the findings of a great deal of work previously done in this field, both globally (Romano, 2010; Byerly, 2011) and locally (Kirat, 2004; Kurdi, 2014). All these studies confirm that male journalists vastly dominate not only certain newsbeats but also hard news articles in general, when compared to their female counterparts; this is also the case in data journalism (Ausserhofer et al., 2017).

Journalists' gender	**Frequency**	**% of Total**	**Valid %**	**Cumulative %**
Male	830	62.8	62.8	62.8
Female	12	0.9	0.9	63.7
Unknown	479	36.3	36.3	100.0
Total	1321	100.0	100.0	

Table 12. Journalists' genders among the analysed articles.

4.2.3 Shaping the News

Tuchman (1978) suggested that hard news deals with the factual presentation of events or issues deemed newsworthy. The expectation is that business news statistics most frequently be published as hard news. This hypothesis is confirmed by the content analysis results (Figure 6), which found that more than three-fifths (61.8%) of the articles containing business statistical data was presented to the readers in the form of hard news. In contrast, around two-fifths (38.2%) of the articles were feature stories.

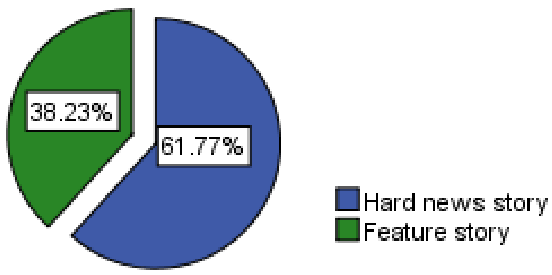

Figure 6. The genres of the analysed articles.

The predominant use of hard news as a platform for articulating business statistics makes apparent the role of such statistics in the media; as numbers play a vital role in representing an important aspect of an economic reality (Espindosa and Alarcon, 2016). Therefore, it can be said that business journalists use them as a way of representing factual data and underpinning their interpretation of the real world. This finding suggests that in business news, statistics are mostly presented as part of the articulation of 'hard news' because of their ability to convey accurate, unquestionable data, as perceived by business journalists (Curtin and Maier, 2001).

On closer examination, Table 13 shows that hard news was the dominating genre for all the topics analysed in the sample, with the exception of the housing market. This finding is in agreement with Albahussain's (2016) study, which explored the coverage of housing issues by the Saudi daily press. The author found that the majority of articles (81%) that covered housing market issues were presented to readers in the form of feature stories. She claimed that housing market issues, because of their importance to citizens, need more space to be discussed in depth by gathering different point of views and to be presented using a broad perspective.

			Topic				
			Housing Market	Stock Market	Banking Market	Oil price	Total
Genre	Hard news story	Count	91	469	171	85	816
		% within Topic	46.4%	62.3%	69.2%	68.0%	61.8%
	Feature story	Count	105	284	76	40	505
		% within Topic	53.6%	37.7%	30.8%	32.0%	38.2%
Total		Count	196	753	247	125	1321
		% within Topic	100.0%	100.0%	100.0%	100.0%	100.0%

Table 13. Cross-tabulation of genre and topic.

4.2.4 Visualisation

The use of visualisation has become a basic element of contemporary newspapers, particularly because of the amount of data that need to be dealt with and because visualisation can help readers understand complex data (Smit et al., 2014). Furthermore, visual data is especially relevant in business news stories because of their reliance on complex business data (Doyle, 2006, p. 442). According to Ng (2014), who examined the use of infographics in hard and soft news, visual data is used in business news more than it is in any other beat. Indeed, the use of visual data is another clear gap that can be observed in this study.

As can be seen in Figure 7 (below), around one-quarter (25.8%) of the business news stories reviewed contain graphs. This finding seems to be consistent with the study conducted by Brandao (2016), which examined the use of statistics by journalists in science news. She found that less than one-quarter of the science articles studied (13.3%) presented visual data (Brandao, 2016, p. 186). The current finding suggests that most business statistics in the Arabian Gulf press are not represented visually. This may be an important indicator of a clear gap, particularly, in the informative pedagogy. Visual data can help journalists to communicate with their audience to simplify difficult and complex business issues and terminologies (Utt and Pasternak, 2000, p. 62; Bekhit, 2009, p. 504; Brandao, 2016, p. 206). In addition, this result may be an indicator that data visualisation is still a very underused resource in the Arabian Gulf.

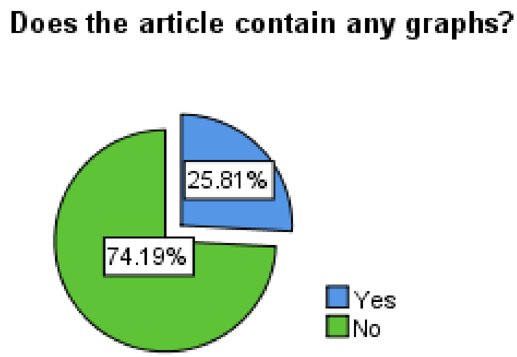

Figure 7. The use of visualisation in the reviewed articles.

A detailed examination of visualisation was conducted by analysing the articles containing graphs. This analysis showed that, of the business articles that contained graphs, more two-fifths (43.4%) contained more than two graphs (see Table 14).

Number of graphs used	Frequency	% of Total	Valid %	Cumulative %
One graph	115	33.7	33.7	33.7
Two graphs	78	22.9	22.9	56.6
More than two graphs	148	43.4	43.4	100.0
Total	341	100.0	100.0	

Table 14. How many graphs does each article contain?

The types of graphs most frequently used in business articles containing statistics are tables and time series graphs, appearing in 184 articles (54%) and 165 articles (48.4%), respectively. As can be seen in Table 15, pie charts are the least used type of graph in business news stories containing statistics, appearing in only 62 articles (18.2%). This is an interesting contrast with Hang's (2016) study, which examined the use of visualisation in business coverage in Western journalism. He found that in that other part of the world, time series graphs are instead the most common type of data visualisation used in business news. The current finding suggests that the reason tables are used more frequently than are other graphs might be that they are easy to produced (Quispel and Maes, 2014).

	1	2	3	Total
Time series	59	62	44	165
Table	102	34	48	184
Bar Chart	48	37	23	108
Pie chart	47	6	9	62

Table 15. How many of each type of graph does each article contain?

4.2.5 Timeliness

The variable "timeliness" refers to the time period in which journalists and editors make use of business statistical reports. Business reports are usually issued publicly by official sources in the form of periodicals, and reporters may use these immediately or in a particular time period after that. In business journalism, which often relies on new information daily, timeliness plays a crucial role in delivering news in this beat (Doyle, 2006; Knowles, 2013; Manning, 2013).

In this sense, the timeliness variable was evaluated in terms of the time that passed between the statistical data being released and the publishing of the news story. As can be seen in Table 16, more than three-fifths (66.7%) of the studied articles make use of business statistical data that are one day old. This result corroborates the findings of a great deal of the previous studies on business reporting (Doyle, 2006; Knowles, 2013; Knowles et al., 2015; Manning, 2013; Starkman, 2014; Tambini, 2010b). However, interestingly, the data from the same table show that more than one-quarter (26.3%) of the articles make use of business statistical data that is of an unknown age. This finding suggests that there is a lack of transparency toward the audience about the age of the data being presented. Another possible explanation might be that these statistical data are used only to contextualise or substantiate the news story.

Timeliness		Frequency	% of Total	Valid %	Cumulative %
	One day	881	66.7	66.7	66.7
	Two days	43	3.3	3.3	69.9
	3 days and more	50	3.8	3.8	73.7
	Unknown	347	26.3	26.3	100.0
	Total	1321	100.0	100.0	

Table 16. Timeliness: Time elapsed between the statistical release and the publication of the article.

To review this more closely, the variables of "newspaper name" and "timeliness" were cross-tabulated to explore the differences among the studied newspapers related to the time that elapses between the statistical release of data and the publishing of business news. As can be seen in Table 17, the UAE newspaper *Alittihad* and the pan-Arab newspaper *Asharq Al-Awsat* published business articles that contained statistical data that are one day old in 84% and 74.6% of cases, respectively. In contrast, the newspaper specialising in economics, *Aleqtisadiah*, and the Saudi newspaper *Alriyadh* published articles without mentioning the date of the statistics' release in 46% and 36.3% of cases, respectively. These findings suggest that *Alittihad* and *Asharq Al-Awsat* provided more transparency for their audience than did *Aleqtisadiah* and *Alriyadh.*

			Newspapers' Name				
			Alriyadh	Aleqtisadiah	Asharq Al-Awsat	Alittihad	Total
Timeliness	One day	Count	146	95	279	361	881
		% within Newspapers' Name	50.5%	41.7%	74.6%	84.0%	66.7%
	Two days	Count	13	9	19	2	43
		% within Newspapers' Name	4.5%	3.9%	5.1%	0.5%	3.3%
	3 days and more	Count	25	19	5	1	50
		% within Newspapers' Name	8.7%	8.3%	1.3%	0.2%	3.8%
	Unknown	Count	105	105	71	66	347
		% within Newspapers' Name	36.3%	46.1%	19.0%	15.3%	26.3%
Total		Count	289	228	374	430	1321
		% within Newspapers' Name	100.0%	100.0%	100.0%	100.0%	100.0%

Table 17. Cross-tabulation of newspaper name and timeliness.

Another important finding indicates that in the stock market newsbeat, journalists make use of statistical data that are one day old in the majority of their articles (85%) (see Table 18). This finding shows the daily basis on which most journalists in this beat work. In contrast, housing market news articles contained the highest rate of statistics of an unknown age, which appear in a large proportion of the news stories (58.2%). This finding indicates that there is a lack of transparency in this beat.

			Topic				
			Housing Market	Stock Market	Banking Market	Oil price	Total
Timeliness	One day	Count	60	640	114	67	881
		% within Topic	30.6%	85.0%	46.2%	53.6%	66.7%
	Two days	Count	11	9	13	10	43
		% within Topic	5.6%	1.2%	5.3%	8.0%	3.3%
	3 days and more	Count	11	20	14	5	50
		% within Topic	5.6%	2.7%	5.7%	4.0%	3.8%
	Unknown	Count	114	84	106	43	347
		% within Topic	58.2%	11.2%	42.9%	34.4%	26.3%
Total		Count	196	753	247	125	1321
		% within Topic	100.0%	100.0%	100.0%	100.0%	100.0%

Table 18. Cross-tabulation of topic and timeliness.

Indeed, the lack of transparency with regard to timeliness might damage business articles' credibility by failing to provide up-to-date and complete information through the statistical data (Frost, 2015). This is because, "time plays an important part in any news-gathering operation both in terms of getting the story and in terms of when the event became newsworthy. An event must be topical within the period of publication" (Frost, 2015, p. 25). Providing complete information about the statistical data, including the date when it was released, increases transparency and enhances the news' credibility (Usher, 2011).

4.2.6 Accessibility

The news reporting process, through which journalists identify and select business news stories for coverage, starts with the selection of information sources (Dunwoody and Griffin, 2013, p. 530). This selection is especially important at the information-gathering stage of the journalism process because it can help determine the extent to which a business news article is reliable and objective (Lewis, J., 2010, p. 163) while helping journalists avoid critiques (Tuchman, 1972, p. 667). One of the key normative claims in journalism during this process is that of balance, and in this sense, the use of more than one source to report news is an essential value of the trade. Organisations such as CNN, BBC and the Associated Press (AP) make it mandatory that their reporters use at least two different sources for each story in order to fulfil this normative claim.

Hence, to analyse this factor, I examined the number of statistical sources cited in each article and subsequently investigated the type and nature of each source. This follows other studies that also explored the nature of news sources and their use by reporters (Franklin and Carlson, 2011; Manning, 2013). In so doing, I sought to discover the extent to which business journalists in the Arabian Gulf use statistics in relation to their transparency and accountability. In addition, such an analysis partly elucidates the cross-referencing process used by the journalists themselves.

Table 19 and Figure 8 (below) illustrate that the majority of the business articles studied (78.3%) rely only on one source. From this result, there is a clear trend towards a lack of variety in the statistical points of view presented and a lack of cross-checking. This also brings into question any normative claim of balance and accountability made by the newspapers. Indeed, this result suggests instead that business journalists in the Arab countries studied are dependent on only one source, which is often an official (government) or corporate (private) source that offers a single version and interpretation of the events or issues being reported.

Number of sources cited	Frequency	% of Total	Valid %	Cumulative %
One source	1034	78.3	78.3	78.3
Two sources	136	10.3	10.3	88.6
More than two sources	151	11.4	11.4	100.0
Total	1321	100.0	100.0	

Table 19. How many statistical sources are cited in each article?

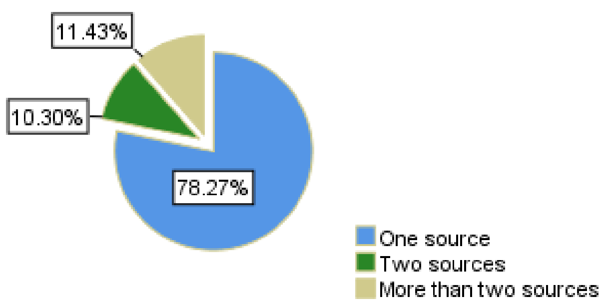

Figure 8. How many statistical sources are cited in each article?

It is widely accepted in the literature that one source of information or data is not enough to verify and corroborate a business news story (Doyle, 2006, pp. 438-439; Knowles et al., 2015, p. 14). Consequently, business journalists should conduct a series of discussions or interviews with more than one source to gain a fully informed understanding of a business situation or event (Davis, 2006, p. 607). Furthermore, Hamilton (2009, p. 4) reported that cross-checking with information sources outside the organisation, that provided the data, is of central importance in developing an independent understanding and interpretation of the information.

As argued by Schiffrin (2011, p. 14), there are two potential problems when business journalists rely too much on specific sources. The first is “the risk of being given incorrect information” and the second is “the risk of becoming dependent on access to sources”. She suggested that such sources usually have particular agendas to fulfil and therefore frame the events in a particular way - one that favours their own narratives and interpretations. This is because these sources want to benefit from their ability to control what is said and the facts being presented to the news audiences, allowing them to deliver their points of views in a particular manner. In this sense, Davis (2007, pp. 162-163) argued that when journalists rely on only one source, this often translates into a lack of diversity and independence in news content. Although the problems are generalised across the board, there are some differences among the studied newsbeats, as shown in Table 20.

			Topic				
			Housing Market	Stock Market	Banking Market	Oil price	Total
Number of statistical sources cited	One source	Count	160	623	174	77	1034
		% within Topic	81.6%	82.7%	70.4%	61.6%	78.3%
	Two sources	Count	20	50	40	26	136
		% within Topic	10.2%	6.6%	16.2%	20.8%	10.3%
	More than two sources	Count	16	80	33	22	151
		% within Topic	8.2%	10.6%	13.4%	17.6%	11.4%
Total		Count	196	753	247	125	1321
		% within Topic	100.0%	100.0%	100.0%	100.0%	100.0%

Table 20. Cross-tabulation of topic and number of statistical sources cited.

Looking at the number of sources used based on the topic of the article, Table 20 (above) illustrates that the number of statistical sources cited in all topics included is compatible with the general finding, which is that the overwhelming majority of business articles rely primarily on a single source. However, it is clear from the same table that, more than any beat, news stories about oil prices relied on more than one source (with around two-fifths of the analysed articles relying on more than one source). This might be a result of the fact that the coverage of oil prices can rely on many types of sources, such as governmental sources and international sources (e.g., the Organization of the Petroleum Exporting Countries [OPEC]), which sometimes contradict national governments' production claims.

At the newspaper level, as can be seen from Table 21, the dependence on statistical sources differs from one newspaper to another. The pan-Arab newspaper *Asharq Al-Awsat* comes first, with 152 articles (40.64%) relying on more than one source. In contrast, the UAE newspaper *Alittihad* shows the fewest number of articles (28) citing more than one source (6.5%). It is difficult to explain this result relying only on the content analysis, but it will be better explained the findings of the interviews undertaken as part of this study in section **4.3**.

			Newspapers' Name				
			Alriyadh	Aleqtisadiah	Asharq Al-Awsat	Alittihad	Total
Number of statistical sources cited	One source	Count	236	174	222	402	1034
		% within Newspapers' Name	81.7%	76.3%	59.4%	93.5%	78.3%
	Two sources	Count	43	24	55	14	136
		% within Newspapers' Name	14.9%	10.5%	14.7%	3.3%	10.3%
	More than two sources	Count	10	30	97	14	151
		% within Newspapers' Name	3.5%	13.2%	25.9%	3.3%	11.4%
Total		Count	289	228	374	430	1321
		% within Newspapers' Name	100.0%	100.0%	100.0%	100.0%	100.0%

Table 21. Cross-tabulation of newspaper name and number of statistical sources cited.

In addition to the number of sources used in each article, it is equally important to understand the nature of the sources used. Hence, there is a need to explore which types of statistical sources journalists rely upon in order to articulate their business news stories. As shown in Table 22, the majority of business articles depend on government sources (836 articles, consisting of 63.3% of the total sample). Private organisations are the second most used statistical sources, with 310 business articles referencing their data (23.5%). This is in agreement with Stiglitz's (2011) finding, which showed that government and business institutions are the most significant sources of data for business journalism.

Types of sources cited	Frequency	% of Total	Valid %	Cumulative %
Government source	836	63.3	63.3	63.3
International organisations	60	4.5	4.5	67.8
Non-governmental organisations (NGOs)	4	.3	.3	68.1
Academic independent / Analysts	36	2.7	2.7	70.9
Private organisations	310	23.5	23.5	94.3
Not mentioned	75	5.7	5.7	100.0
Total	1321	100.0	100.0	

Table 22. Source types relied upon by business journalists.

Furthermore, and more critically, Stiglitz (2011) mentioned that all these sources have strong motivations to present distorted data (Stiglitz, 2011, p. 25) or to restrict the flow of information by deciding which parts of the information they decide to publish (Raphael et al., 2004, p. 177; 167; Fink and Anderson, 2015, p. 476). Moreover, Picard et al. (2014, p. 13) emphasised that dependence on only one kind of source -such as the government or corporations- without scrutinising and questioning what they say may result in the news coverage carrying out the source's agenda. This result requires further investigation to explain why journalists rely too heavily on sources.

By examining the distribution of statistical sources versus topic covered, Table 23 shows that there is remarkable difference in the accessibility of statistics based on the topic of the news article. Business journalists rely too greatly on government sources to gain their data in all topics except for that of the housing market. Within this topic, business journalists instead rely too heavily on private organisation sources to access their data, doing so for 118 articles (60%).

Type of statistical source referenced			Topic: Housing Market	Stock Market	Banking Market	Oil price	Total
	Government source	Count	47	634	112	43	836
		% within Topic	24.0%	84.2%	45.3%	34.4%	63.3%
	International organisations	Count	9	4	16	31	60
		% within Topic	4.6%	0.5%	6.5%	24.8%	4.5%
	NGOs	Count	2	1	0	1	4
		% within Topic	1.0%	0.1%	0.0%	0.8%	0.3%
	Academic independent / Analysts	Count	1	20	8	7	36
		% within Topic	0.5%	2.7%	3.2%	5.6%	2.7%
	Private organisations	Count	118	67	93	32	310
		% within Topic	60.2%	8.9%	37.7%	25.6%	23.5%
	Not mentioned	Count	19	27	18	11	75
		% within Topic	9.7%	3.6%	7.3%	8.8%	5.7%
Total		Count	196	753	247	125	1321
		% within Topic	100.0%	100.0%	100.0%	100.0%	100.0%

Table 23. Cross-tabulation of topic and type of statistical source used.

In terms of the newspapers themselves, as can be seen from Table 24, government sources are the main statistical source for business articles in all the studied newspapers. However, in the case of *Aleqtisadiah*, the percentage of government sources and private organisations sources used are very similar, being used for 96 and 91 articles, respectively.

Type of statistical source referenced			Newspapers' Name: Alriyadh	Aleqtisadiah	Asharq Al-Awsat	Alittihad	Total
	Government source	Count	170	96	259	311	836
		% within Newspapers' Name	58.8%	42.1%	69.3%	72.3%	63.3%
	International organisations	Count	10	17	26	7	60
		% within Newspapers' Name	3.5%	7.5%	7.0%	1.6%	4.5%
	NGOs	Count	0	2	1	1	4
		% within Newspapers' Name	0.0%	0.9%	0.3%	0.2%	0.3%
	Academic independent / Analysts	Count	11	10	6	9	36
		% within Newspapers' Name	3.8%	4.4%	1.6%	2.1%	2.7%
	Private organisations	Count	64	91	72	83	310
		% within Newspapers' Name	22.1%	39.9%	19.3%	19.3%	23.5%
	Not mentioned	Count	34	12	10	19	75
		% within Newspapers' Name	11.8%	5.3%	2.7%	4.4%	5.7%
Total		Count	289	228	374	430	1321
		% within Newspapers' Name	100.0%	100.0%	100.0%	100.0%	100.0%

Table 24. Cross-tabulation of newspaper name and type of statistical source used.

Another important result revealed by examining accessibility is that 75 business articles (5.7%) were published based on unnamed statistical sources. Articulating unattributed statistical sources adversely affects the reliability of content (Carlson, 2011, pp. 38-39). Instead, Tuchman (1978, p. 90) suggest that news stories should “intermesh fact and source”. To be sure, a considerable amount of literature has been published on the use of unnamed sources (Ewart et al., 2004; Stenvall, 2008; Kimball, 2011; Carlson, 2011). These studies highlight the adverse effect on the reliability of content caused by the use of unattributed sources (Carlson, 2011, pp. 38-39).

An interesting finding, demonstrated in Table 25, is that the majority of the unnamed statistical sources (72%) were used in feature stories as opposed to hard news stories. A possible explanation for this finding might be that journalists rely on unreliable statistics to support their business articles and that in the context of Arab countries, few sources are willing to speak openly or be identified by reporters.

			Type of statistical source referenced						
			Government source	International organisations	NGOs	Academic independent	Private organisations	Not mentioned	Total
Genre	Hard news story	Count	596	27	1	8	163	21	816
		% within Source	71.3%	45.0%	25.0%	22.2%	52.6%	28.0%	61.8%
	Feature story	Count	240	33	3	28	147	54	505
		% within Source	28.7%	55.0%	75.0%	77.8%	47.4%	72.0%	38.2%
Total		Count	836	60	4	36	310	75	1321
		% within Source	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 25. Cross-tabulation of genre and type of statistical source used.

4.2.7 Human Interest

One of the main characteristics of business news is that is often detached from human interest stories (Butterick, 2015; Hayes, 2014). The Arab press is not exempt from this trend and, as Table 26 (below) shows, business journalism in these countries does not seem to create narratives that are engaging for most citizens, remaining a newsbeat that mainly addresses elites among the audiences. In fact, the overwhelming majority (98.9%) of news stories did not integrate business statistics and arguments with human-interest issues. Only 15 of the 1321 articles studied (1.1%) involved human-interest news stories. At least in the context of the Arabian Gulf states, this result does not support the argument made by Doyle (2006, p. 438), who argued that the business pages “regularly” report about corporate leaders’ lives.

Human interest	Frequency	% of Total	Valid %	Cumulative %
Social context	15	1.1	1.1	1.1
Corporate context	1226	92.8	92.8	93.9
None	80	6.1	6.1	100.0
Total	1321	100.0	100.0	

Table 26. What is the predominant news angle in the use of statistics?

The lack of human interest stories is problematic despite the fact that such stories have also been criticised (Figenschou and Thorbjørnsrud, 2015). More specifically, it has been suggested that while using a personal angle might encourage an audience to engage with an article (Graber, 1988, p. 784; Keeter, 1993, p. 198; Jebril et al., 2013, p. 206), it might also make citizens less interested in the details of the issue itself. Regardless of this, my observation that human interests stories are largely absent in the contextualization of business statistics remains a valid observation.

4.2.8 Validity

Using accurate data in news stories is considered one of the most important dimensions of high-quality journalism (e.g. Rosenstiel and Mitchell, 2003; Bogart, 2004; Kim, K.-H. and Meyer, 2005). Generally speaking, for any data to be accurate, it must also be valid (Nguyen and Lugo-Ocando, 2016, p. 6). In contrast, data that lack validity in the context of news stories distorts news content (Snyder and Kelly, 1977) and its quality (Barranco and Wisler, 1999).

As discussed in the methodology chapter (see chapter **3**), certain criteria are used in this study to assess the use or misuse of statistics by journalists when writing business news in the Arabian Gulf. The first criterion is “validity”, which I define as the ability to use numbers that communicate what is appropriate to the issue being discussed (e.g., using average house prices to indicate the status of the house market). According to Franzosi (1987), the most important obstacle with regard to data published in media is its validity. He argued that data are more likely to be used improperly rather than to be misrepresented entirely. According to Kilbane (2018), there are two reasons for using invalid data in the news: 1) the nature of the article, which is selected by the newspaper, not matching the available data, and 2) journalists’ inability to identify the valid data that represents the issue in question.

Table 27 illustrates that the vast majority of the business articles studied (92%) use valid statistics. Although this might be a strong indicator of journalists’ awareness and understanding of the validity of statistics, it is equally possible that this is due to the fact that journalists defer to the ‘official’ statistics providers (i.e., the news sources) and that these are only valid representations of what the source intended to communicate. In any case, this result indicates that, in the great majority of cases in the sample -and contrary to some common assumptions-, the business journalists do indeed use the appropriate statistics to inform the public about the issue in question.

Validity		Frequency	% of Total	Valid %	Cumulative %
	Yes	1215	92.0	92.0	92.0
	No	106	8.0	8.0	100.0
	Total	1321	100.0	100.0	

Table 27. Validity: Is the usage of statistics coherent with the topic?

More importantly, the data suggest that reporters convey information in a pertinent way, as the statistics used were relevant to the idea they represented in most cases. This matches similar findings in other parts of the world (Martinisi, 2017; Cushion et al., 2017; Ahmad, 2016) and refutes widespread claims that journalists 'mostly get it wrong' when it comes to reporting statistics (Nguyen and Lugo-Ocando, 2016; Martin, 2017). In other words, Arab journalists almost always achieve the valid use of business statistics in their journalism.

As shown in Table 28, the UAE newspaper (*Alittihad*) came first, citing the highest percentage of valid statistics among 420 articles (97.7%). In contrast, *Aleqtisadiah* (specialists in articles relating to the economy) came last, citing valid statistics in 266 articles (81.1%) of all the business articles published by the newspaper.

			Newspapers' Name				
			Alriyadh	Aleqtisadiah	Asharq Al-Awsat	Alittihad	Total
Validity	Yes	Count	266	185	344	420	1215
		% within Newspapers' Name	92.0%	81.1%	92.0%	97.7%	92.0%
	No	Count	23	43	30	10	106
		% within Newspapers' Name	8.0%	18.9%	8.0%	2.3%	8.0%
Total		Count	289	228	374	430	1321
		% within Newspapers' Name	100.0%	100.0%	100.0%	100.0%	100.0%

Table 28. Cross-tabulation of validity and newspaper name.

When reviewing the validity of data use in relation to the topics covered, Table 29 shows that the housing market is the topic that most contained statistics that lack validity in the context of news stories with 32 articles (16.3%) written on this topic contained invalid data. The stock market, in contrast, is the newsbeat with the lowest use of statistics that lack validity in the context of articles with only 28 news stories (3.72%) written on this topic containing invalid data. This is partly associated with the fact that in the stock market, journalists tend to use fewer sources and rely more on governmental sources (see Table 23), while having some restriction on what they can add to the story because of time pressure. In addition, it could also be because housing market coverage is more dependent on unofficial sources (see Table 23).

			Topic				
			Housing Market	Stock Market	Banking Market	Oil price	Total
Validity	Yes	Count	164	725	210	116	1215
		% within Topic	83.7%	96.3%	85.0%	92.8%	92.0%
	No	Count	32	28	37	9	106
		% within Topic	16.3%	3.7%	15.0%	7.2%	8.0%
Total		Count	196	753	247	125	1321
		% within Topic	100.0%	100.0%	100.0%	100.0%	100.0%

Table 29. Cross-tabulation of validity and topic.

To explore which type of genre used statistics that lack validity in the context of news stories the most, the domains “validity” and “genre” were also cross-tabulated (Table 30). Interestingly, as can be seen from Table 30, two-thirds of the statistics that lack validity in the context of articles were used in feature stories. A possible explanation for this result could be that journalists did not pay as much attention to the statistics in these types of stories.

			Genre		
			Hard news story	Feature story	Total
Validity	Yes	Count	780	435	1215
		% within Genre	95.6%	86.1%	92.0%
	No	Count	36	70	106
		% within Genre	4.4%	13.9%	8.0%
Total		Count	816	505	1321
		% within Genre	100.0%	100.0%	100.0%

Table 30. Cross-tabulation of validity and genre.

To examine this result further, the news value of using statistics in business articles was analysed by cross-tabulating the domain of “validity” with those of “genre” and “news value” (see Table 31). For feature stories, the data suggests that more than three-quarters (77.1%) of the statistics that lack validity in the context of the articles were used to substantiate and contextualise the news stories. That means these statistics were not the main data presented in the articles. This indicates that, where journalists sought to add to the main content of a story, they tended to make mistakes about which statistics to use. It also suggests a greater need to educate reporters in selecting and analysing statistics in their stories.

Genre				Validity Yes	Validity No	Total
Hard news story	**News Values**	Produce	Count	653	11	664
			% within Validity	83.7%	30.6%	81.4%
		Substantiate	Count	83	6	89
			% within Validity	10.6%	16.7%	10.9%
		Contextualise	Count	44	19	63
			% within Validity	5.6%	52.8%	7.7%
	Total		Count	780	36	816
			% within Validity	100.0%	100.0%	100.0%
Feature story	News Values	Produce	Count	301	16	317
			% within Validity	69.2%	22.9%	62.8%
		Substantiate	Count	88	28	116
			% within Validity	20.2%	40.0%	23.0%
		Contextualise	Count	46	26	72
			% within Validity	10.6%	37.1%	14.3%
	Total		Count	435	70	505
			% within Validity	100.0%	100.0%	100.0%
Total	News Values	Produce	Count	954	27	981
			% within Validity	78.5%	25.5%	74.3%
		Substantiate	Count	171	34	205
			% within Validity	14.1%	32.1%	15.5%
		Contextualise	Count	90	45	135
			% within Validity	7.4%	42.5%	10.2%
	Total		Count	1215	106	1321
			% within Validity	100.0%	100.0%	100.0%

Table 31. Cross-tabulation of news value, validity and genre.

To investigate the main source of the statistics that lack validity in the context of the news stories, the domain “validity” was cross-tabulated with “type of statistical sources referenced” (see Table 32). Private organisations were the statistical sources from which invalid data was most often cited in news stories, with invalid data from these sources found in 48 articles (45.3%).

			Validity		
			Yes	No	Total
Type of statistical source referenced	Government source	Count	811	25	836
		% within Validity	66.7%	23.6%	63.3%
	International organisations	Count	56	4	60
		% within Validity	4.6%	3.8%	4.5%
	NGOs	Count	3	1	4
		% within Validity	0.2%	0.9%	0.3%
	Academic independent / Analysts	Count	28	8	36
		% within Validity	2.3%	7.5%	2.7%
	Private organisations	Count	262	48	310
		% within Validity	21.6%	45.3%	23.5%
	Not mentioned	Count	55	20	75
		% within Validity	4.5%	18.9%	5.7%
Total		Count	1215	106	1321
		% within Validity	100.0%	100.0%	100.0%

Table 32. Cross-tabulation of validity and type of statistical source referenced.

Indeed, the current finding suggests that the very act of deferring to government sources provides journalists' reporting with validity. In other words, government sources are more likely than private sector sources to provide data that are coherent with the topic at hand. This, in turn, enhances the professional practices of journalists in terms of their use of valid statistics when articulating business news.

4.2.9 Reliability of Statistical Sources

The second criterion for assessing the use, or misuse, of statistics by journalists to articulate their business news in the Arabian Gulf is the reliability of the statistical sources. This criterion means that the statistics were produced, assessed and provided by news sources that are both credible and legitimate. As discussed in section **1.5.1**, a number of standards were relied upon in the examination of the reliability of statistical sources, such as who produced the statistical data and the source's relationship to these data. Indeed, news sources have a strong influence on news content reliability (Carlson, 2011). As such, it is necessary to ask whether the source of statistics in an article is reliable. The data shows that approximately three-quarters (72.8%) of the business articles studied here used reliable statistical sources (see Table 33).

Reliability		Frequency	% of Total	Valid %	Cumulative %
	Yes	962	72.8	72.8	72.8
	No	359	27.2	27.2	100.0
	Total	1321	100.0	100.0	

Table 33. Reliability: Is the source of statistics in the article reliable?

The current finding suggests that journalists often relied on statistical sources that have a high degree of reliability to articulate their business news stories. This result might be explained by journalists tending to rely on sources that are widely regarded as reliable (Reich, 2010) to avoid challenges related to access, time, routine and epistemology (Franklin, 2005a; Gans, 1979).

In relation to the frequency of the use of reliable statistical sources at the newspaper level, the analysis shows remarkable differences. Table 34 illustrates that *Alittihad* published business articles based on reliable statistical sources more often than did the rest of the studied newspapers, with 347 (80.7%) articles being published using reliable sources. In contrast, around half of the business articles (47.8%) published in *Aleqtisadiah* relied on unreliable statistical sources. A possible explanation for this result might be that the majority of the business news published in *Alittihad* related to the stock market beat, which relied on official statistical sources (see table no. 17). In contrast, *Aleqtisadiah* published more coverage of the housing market, relying on unofficial sources. I believe that these results deserve further investigation and will be discussed later in this chapter in the section presenting the findings of the interviews.

			Newspapers' Name				
			Alriyadh	Aleqtisadiah	Asharq Al-Awsat	Alittihad	Total
Reliability of statistical sources	Yes	Count	192	119	304	347	962
		% within Newspapers' Name	66.4%	52.2%	81.3%	80.7%	72.8%
	No	Count	97	109	70	83	359
		% within Newspapers' Name	33.6%	47.8%	18.7%	19.3%	27.2%
Total		Count	289	228	374	430	1321
		% within Newspapers' Name	100.0%	100.0%	100.0%	100.0%	100.0%

Table 34. Cross-tabulation of newspaper name and reliability of statistical source.

Another important finding can be seen in Table 35, which shows that the stock market newsbeat employs the most use of reliable statistical sources, with 662 articles (87.91%) containing reliable sources. By contrast, the housing market newsbeat employs reliable statistical sources the least, with 78 articles (39.8%) containing reliable sources. It is worth mentioning that the housing market beat is perhaps the most relevant newsbeat to journalists (Elasrag, 2016) and the one for which they produce more content that is original; however, it is also the beat in which mistakes are made the most. This is a sign that there is a real need for training and education for journalists, particularly in covering the housing market.

Topic	Total

			Housing Market	Stock Market	Banking Market	Oil price	
Reliability	Yes	Count	78	662	152	70	962
		% within Topic	39.8%	87.9%	61.5%	56.0%	72.8%
	No	Count	118	91	95	55	359
		% within Topic	60.2%	12.1%	38.5%	44.0%	27.2%
Total		Count	196	753	247	125	1321
		% within Topic	100.0%	100.0%	100.0%	100.0%	100.0%

Table 35. Cross-tabulation of reliability of statistical source and topic.

On closer examination, to explore further the association between the reliability of statistical sources and the type of statistical sources used in business news stories, the domains "type of statistical sources referenced" and "reliability of statistical source" were cross-tabulated. All the statistical sources, except government sources, have been unreliable statistical sources in the majority of the business articles published relying on these types of statistical sources, as can be seen Table 36.

			Type of statistical source referenced						
			Government source	International organisations	NGOs	Academic independent	Private organisations	Not mentioned	Total
Reliability	Yes	Count	807	25	1	10	119	0	962
		% within Source	96.5%	41.7%	25.0%	27.8%	38.4%	0.0%	72.8%
	No	Count	29	35	3	26	191	75	359
		% within Source	3.5%	58.3%	75.0%	72.2%	61.6%	100.0%	27.2%
Total		Count	836	60	4	36	310	75	1321
		% within Source	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 36. Cross-tabulation of reliability of statistical source and Type of statistical source referenced.

The information in Table 36 (above) reveals that of the total 359 (27.2%) unreliable statistical sources referenced, the majority were private organisations (appearing in 191 articles, 53.2% of the total). After this came "unnamed statistical sources" and international organisations that supplied unreliable statistical sources, appearing in 75 articles (20.9%) and 35 articles (9.7%), respectively. Furthermore, the chi-square analysis of reliability by type of source was statistically significant (X^2 [Fisher's exact] = 746.468, d.f. = 5, $p < 0.005$). This result indicates that there is an association between reliability and the type of source used. Some of the news sources tend to have greater reliability than do others, such as government sources (96.5%) and private organisations (38.4%). Obviously, one of the problems with this assessment, statistically speaking, is that this might be due to the fact that government sources are so predominant in certain newsbeats, while other sources, such as those from the private sector, are less present in the reporting.

The current finding also revealed that private organisations providing statistical data accounted for the majority of the unreliable sources used. This finding suggests that one of the reasons housing market news articles use more unreliable statistics than do those of other beats is because they came from private sector sources (see Table 23).

An example of business a news story that relies on unreliable statistical sources is the article titled “Al-Balawi: There is no system that prevents women from renting, and we are considering introducing a project for them: Fear of non-payment pays 70% of real estate offices to refuse renting to women”, published in *Aleqtisadiah* on 2/8/2008. In this article, the journalist articulates statistics in the title of the news story without providing any source or writing anything about this isolated statistic in the content of the article.

Equally important is to asses is in which type of journalistic genres reliability is more or less present. To do this, the domains “reliability or statistical source” and “genre” were cross-tabulated. Interestingly, as can be seen from Table 37, around two-thirds of the unreliable statistical sources were used in feature stories. This is perhaps an expected result, given the discussion earlier in this chapter about added value in journalistic work in relation to genre. Feature articles are, by definition, longer stories characterised by far more commentary from the reporters (Steensen, 2011). Not only must they write longer stories but they must also produce more original content while enjoying the additional freedom to create this content. Unreliable sources are used, however, when journalists have not received enough training and preparation to manage statistics in their reporting.

			Reliability		
			Yes	No	Total
Genre	Hard news story	Count	692	124	816
		% within Reliability	71.9%	34.5%	61.8%
	Feature story	Count	270	235	505
		% within Reliability	28.1%	65.5%	38.2%
Total		Count	962	359	1321
		% within Reliability	100.0%	100.0%	100.0%

Table 37. Cross-tabulation of genre and reliability of statistical sources.

To investigate the current finding more deeply, the news value when using statistics in business articles was evaluated by cross-tabulating the domain “reliability of statistical source” with those of “genre” and “news value” (Table 38). For feature stories, the data suggest that nearly three-fifths (62.1%) of the unreliable statistical sources were used to substantiate and contextualise the news stories. Again, it is not the data supplied by official sources but those that journalists themselves pick and choose that tend to cause reliability problems.

Genre				Reliability Yes	Reliability No	Total
Hard news story	**News Values**	Produce	Count	593	71	664
			% within Reliability	85.7%	57.3%	81.4%
		Substantiate	Count	65	24	89
			% within Reliability	9.4%	19.4%	10.9%
		Contextualise	Count	34	29	63
			% within Reliability	4.9%	23.4%	7.7%
	Total		Count	692	124	816
			% within Reliability	100.0%	100.0%	100.0%
Feature story	News Values	Produce	Count	228	89	317
			% within Reliability	84.4%	37.9%	62.8%
		Substantiate	Count	32	84	116
			% within Reliability	11.9%	35.7%	23.0%
		Contextualise	Count	10	62	72
			% within Reliability	3.7%	26.4%	14.3%
	Total		Count	270	235	505
			% within Reliability	100.0%	100.0%	100.0%
Total	News Values	Produce	Count	821	160	981
			% within Reliability	85.3%	44.6%	74.3%
		Substantiate	Count	97	108	205
			% within Reliability	10.1%	30.1%	15.5%
		Contextualise	Count	44	91	135
			% within Reliability	4.6%	25.3%	10.2%
	Total		Count	962	359	1321
			% within Reliability	100.0%	100.0%	100.0%

Table 38. Cross-tabulation of news value, reliability of statistical source and genre.

4.2.10 Interpretation

As one of their duties, journalists should provide interpretation of the data included in their stories for their audience (Cushion et al., 2017; Rafter, 2014); this is particularly true in business coverage, "with its complexities and obscure language" (Schifferes and Coulter, 2012, p. 20), which make it difficult for general audiences to understand. Meanwhile, journalists should also have the ability to interpret statistical data in isolation from their sources to ensure the sources do not provide an interpretation that serves their own agendas (Schiffrin, 2011), as this could result in an unbalanced interpretation of data that distorts the news content (Snyder and Kelly, 1977).

Providing a proper explanation of data is considered a long-standing normative goal for reporters when articulating statistics (Meyer, 1973), and it is important to understand how journalists interpret business statistical data.

As discussed in section **1.5.1**, the third criterion for assessing the use, or misuse, of statistics by journalists to articulate their business news in the Arabian Gulf is "interpretation". This criterion means providing a sense of clarity and detail about the statistics in printed newspapers (Cushion et al., 2017, p. 1204). In terms of the present study, interpretation is core to adding value to a story and occurs when journalists develop the part of the story that is newsworthy, helping others see a particular angle.

The aim in assessing this criterion is to audit whether or not journalists/editors provide an interpretation of statistics that reflects a particular meaning. To measure this criterion, this research follows the methodology of Cushion et al. (2017), who explored the relationship between journalism and statistics. They examined journalistic interpretation by establishing three categories. As such, in this study, it was first asked whether the statistics provided in the news story were interpreted or not. A lack of interpretation is defined by the presence of only "vague or passing reference to statistical information" (Cushion et al., 2017, p. 1204). Second, if it was concluded that the statistics were interpreted, it was asked whether the interpretation of statistics provided proper clarity and details—or, in other words, "a clear reference with some context provided" (Cushion et al., 2017, p. 1205). If this was not provided, meaning the statistics' interpretation did not provide proper clarity or details, and only "a clear reference but with little or limited context" (Cushion et al., 2017, p. 1205) was given, this was also classified as an improper interpretation.

As can be seen in Table 39, business statistics in around three-quarters of the articles studied (73.7%) received some sort of interpretation by reporters. This is an indicator not only of the journalists' critical engagement with statistics but is also a clear sign that they do not only reproduce the numbers but also try to add some sort of explanation of them. However, this still leaves a great chunk of statistics, in more than one-quarter (26.3%) of the news stories that were presented without any interpretation. This finding is in agreement with that of Cushion et al. (2017), who found that nearly one-quarter (23.5%) of the statistical data articulated in different UK broadcasting and online outlets were mentioned only in passing or were vague. The fact that one out of every four news articles with statistics in the business newsbeats has no interpretation is very telling about the challenges ahead and the degree of a critical deference towards certain numbers on the part of journalists.

Interpretation	Frequency	% of Total	Valid %	Cumulative %
Yes	973	73.7	73.7	73.7
No	348	26.3	26.3	100.0
Total	1321	100.0	100.0	

Table 39. Interpretation: Are the statistics in the article interpreted?

To investigate the difference between the newspapers in the interpretation of statistics, the domains of “interpretation” and “newspaper name” were cross-tabulated (Table 40). The expectation was that *Aleqtisadiah,* which specialises in economics, would be the newspaper in providing the most proper interpretation of the statistical data articulated. However, it was *Alriyadh* that came first. Table 40 illustrates that there is a remarkable difference in the interpretation of statistics among the studied newspapers. The Saudi newspapers seem interested in interpreting statistics to a greater extent than is the UAE newspaper; *Alriyadh* is the highest-ranked newspaper in terms of the interpretation of business statistics, with 242 articles (84%) providing interpretation. *Aleqtisadiah* and *Asharq Al-Awsat* came second and third, with 181 (79.4%) and 295 (78.9%) articles, respectively. *Alittihad* published the most business statistics without interpretation, with 175 articles (40.7%). This finding is consistent with those of Younis and AlNaimi (2006, p. 90), who found that UAE economic journalism relies more on the descriptive coverage of economic news than on analysing or interpreting it. However, in that same study, more than half of UAE economic journalists believe that they present enough analysis and interpretation of the economic news, which confirms the gap in the region between normative claims and practices on the ground.

			Newspapers' Name				
			Alriyadh	Aleqtisadiah	Asharq Al-Awsat	Alittihad	Total
Interpretation	Yes	Count	242	181	295	255	973
		% within Newspapers' Name	83.7%	79.4%	78.9%	59.3%	73.7%
	No	Count	47	47	79	175	348
		% within Newspapers' Name	16.3%	20.6%	21.1%	40.7%	26.3%
Total		Count	289	228	374	430	1321
		% within Newspapers' Name	100.0%	100.0%	100.0%	100.0%	100.0%

Table 40. Cross-tabulation of newspaper name and interpretation.

Equally important to examine is the topic in which statistical data is most and least interpreted. As can be seen from Table 41, oil prices is the topic that contains the most statistics published with interpretation, with 110 articles (88%). This is followed by the stock market and banking market in second and third places, with 559 (74.24%) and 177 (71.66%) articles, respectively. The housing market is the lowest-ranked topic in terms of the interpretation of statistics, with 127 articles (64.80%).

			Topic				
			Housing Market	Stock Market	Banking Market	Oil price	Total
Interpretation	Yes	Count	127	559	177	110	973
		% within Topic	64.8%	74.2%	71.7%	88.0%	73.7%
	No	Count	69	194	70	15	348
		% within Topic	35.2%	25.8%	28.3%	12.0%	26.3%
Total		Count	196	753	247	125	1321
		% within Topic	100.0%	100.0%	100.0%	100.0%	100.0%

Table 41. Cross-tabulation of topic and interpretation.

A closer examination of whether the statistics that were interpreted received a sufficient level of clarity and detail was also performed. Table 42 shows that approximately four-fifths of the business statistics that were interpreted (78.5%) were given proper clarity and detail, while around one-fifth of the statistics interpreted (21.5%) were provided with only little or limited context. These findings contrast sharply with those of Cushion et al. (2017) in Britain, who found that around one-third (35.2%) of statistical data articulated in different UK broadcasting and online outlets provided some context and rich detail relating to the statistics, while approximately two-fifths (41.3) of the statistical data provided only limited or little context.

Level of interpretation	Frequency	% of Total	Valid %	Cumulative %
Proper clarity and detail	764	78.5	78.5	78.5
Little or limited context	209	21.5	21.5	100.0
Total	973	100.0	100.0	

Table 42. Level of interpretation provided.

4.2.11 Quantitative Framing

One of the objectives of this research is to examine whether the tone of interpretation of statistics used by business journalists to articulate their news stories in the Arabian Gulf is positive, negative or neutral. The aim of examining how journalists use statistical data to frame business issues in the news is to determine whether this framing is related to the use or misuse of statistics. All the business news stories examined contained statistics relating to the aforementioned topics; they were reviewed, assessed and coded based on the tone of the interpretation of statistics in each news story by identifying the tone's direction, as discussed in the methodology chapter (see chapter **3**).

Rugh (2004, pp. 66-67) argued that the Arabian Gulf newspapers included in the study belong to the loyalist press, which tends to cover government activities in an uncritical manner but can, from time to time, be critical of certain issues, including economic policies. This is particularly significant to this thesis given that economic policy and finance are the focus of this study and given the assumption that business is a newsbeat that can, to some degree, be open to criticism. Taking this into consideration, the following three hypotheses were formulated:

> **Hypothesis 1**: Statistics used in national/local business news in Saudi newspapers will more frequently be interpreted positively than are statistics used in international business news in Arabian Gulf newspapers.
>
> **Hypothesis 2**: Statistics used in national/local business news in the UAE newspaper will more frequently be interpreted positively than are statistics used in international business news in Arabian Gulf newspapers.
>
> **Hypothesis 3**: Statistics used in business news about Saudi Arabia and the UAE in Arabian Gulf newspapers will more frequently be interpreted positively than are statistics used in business news about countries outside the Arabian Gulf.

To examine these hypotheses, the geographical coverage of the business news stories in the studied newspapers was first explored, including whether the newspapers cover national or international issues. Specifically, the following question was asked: "What is the geographical coverage of the news?" As can be seen in Figure 9, approximately one-third (33.8%) of the business news covered international issues.

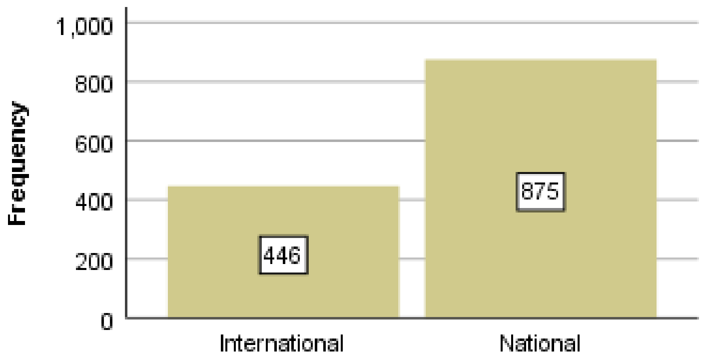

Figure 9. Geographic coverage of the studied newspapers.

Turning now to the findings related to the tone of the interpretation of statistics provided, as shown in Table 43, more than one-third of the statistics used in the business articles (34.9%, 460 articles) were interpreted negatively, while 439 articles (33.2%) were framed positively and 422 articles (31.9%) were framed in a neutral manner. According to this finding, statistics were used to frame the business news stories in a balanced manner. The findings of the current research do not support Alkarni's (2006) study, which found that around three-fifths of the content covering local issues was positive. A possible explanation for this contradiction may be the time period on which the current study focuses (i.e., the global financial crisis of 2008), had the study been conducted using articles from a different period of time, the tone of the coverage might have been different (e.g., more positive).

Evaluation	Frequency	% of Total	Valid %	Cumulative %
Positive	439	33.2	33.2	33.2
Neutral	422	31.9	31.9	65.2
Negative	460	34.8	34.8	100.0
Total	1321	100.0	100.0	

Table 43. Evaluation of the tone of the interpretation of statistics.

In term of the topics studied, Table 44 shows that there is a remarkable difference in the tone of the interpretation of statistics among the topics. Only in the stock market newsbeat was the tone of the interpretation of statistics primarily negative (354 articles; 47. %), while in the banking market and oil prices newsbeats, the tone was neutral, with 108 articles (43.7%) and 67 articles (53.6%), respectively, presenting neutral interpretations. The housing market was the only topic in which the tone of the interpretation of statistics was largely positively, with 100 articles (51.02%) of the coverage of this newsbeat providing a positive interpretation. This finding indicates that certain newsbeats are subject to more openness and tolerance for criticism than are others. For example, the stock market newsbeat provided the most negative interpretations, while the housing market newsbeat provided the most positive interpretations. An overreliance on unofficial and private sector sources to cover the housing market beat might explain its positive tone despite the coverage occurring in a time of crisis.

			Topic				
			Housing Market	Stock Market	Banking Market	Oil price	Total
Tone of Evaluation	Positive	Count	100	220	89	30	439
		% within Topic	51.0%	29.2%	36.0%	24.0%	33.2%
	Neutral	Count	68	179	108	67	422
		% within Topic	34.7%	23.8%	43.7%	53.6%	31.9%
	Negative	Count	28	354	50	28	460
		% within Topic	14.3%	47.0%	20.2%	22.4%	34.8%
Total		Count	196	753	247	125	1321
		% within Topic	100.0%	100.0%	100.0%	100.0%	100.0%

Table 44. Cross-tabulation of topic and tone of evaluation.

When looking at the frequency of how statistics are framed at the newspaper level, the data suggest that there is no significant difference in the tone of interpretation of statistics among the studied newspapers (Table 45). However, when analysing the difference in the tone of interpretation of statistics between international and the national coverage, there were some interesting findings. As can be seen from Table 52, for international coverage, the tone of the interpretation of statistics tended to be neutral or negative, with 174 neutral articles (39. %) and 151 negative articles (33.9%).

			Newspapers' Name				
			Alriyadh	Aleqtisadiah	Asharq Al-Awsat	Alittihad	Total
Tone of evaluation	Positive	Count	97	82	111	149	439
		% within Newspapers' Name	33.6%	36.0%	29.7%	34.7%	33.2%
	Neutral	Count	103	74	132	113	422
		% within Newspapers' Name	35.6%	32.5%	35.3%	26.3%	31.9%
	Negative	Count	89	72	131	168	460
		% within Newspapers' Name	30.8%	31.6%	35.0%	39.1%	34.8%
Total		Count	289	228	374	430	1321
		% within Newspapers' Name	100.0%	100.0%	100.0%	100.0%	100.0%

Table 45. Cross-tabulation of newspaper name and tone of evaluation.

Within the national coverage, the tone of the interpretation of statistics tends to be mostly positive or neutral, with 318 positive articles (36.34%) and 248 neutral articles (28.34%) (Table 46). This suggests that the tone of interpretation of statistics by business journalists in the Arabian Gulf is influenced by the difference between national and international news coverage. Some authors have speculated that censorship implemented by government or commercial interests affects the way in which news is framed (Sakr, 2006, pp. 132-133), not only by imposing limits on what journalists can say but also by fostering a culture of self-censorship in the region.

			Geographical Coverage		
			International	National	Total
Tone of Evaluation	Positive	Count	121	318	439
		% within Geographical Coverage	27.1%	36.3%	33.2%
	Neutral	Count	174	248	422
		% within Geographical Coverage	39.0%	28.3%	31.9%
	Negative	Count	151	309	460
		% within Geographical Coverage	33.9%	35.3%	34.8%
Total		Count	446	875	1321
		% within Geographical Coverage	100.0%	100.0%	100.0%

Table 46. Cross-tabulation of tone of evaluation and geographical coverage.

In addition to this, it is important to explore differences in the tone of interpretation of statistics between different types of statistical sources. Interestingly, Table 47 illustrates that statistics provided by government sources were portrayed negatively (345 articles; 41.27%), while statistics provided by private organisations were portrayed positively (141 articles; 45.48%).

			Tone of evaluation			
			Positive	Neutral	Negative	Total
Type of statistical source referenced	Government source	Count	251	240	345	836
		% within Evaluation	57.2%	56.9%	75.0%	63.3%
	International organisations	Count	19	28	13	60
		% within Evaluation	4.3%	6.6%	2.8%	4.5%
	NGOs	Count	0	1	3	4
		% within Evaluation	0.0%	0.2%	0.7%	0.3%
	Academic independent / Analysts	Count	6	18	12	36
		% within Evaluation	1.4%	4.3%	2.6%	2.7%
	Private organisations	Count	141	109	60	310
		% within Evaluation	32.1%	25.8%	13.0%	23.5%
	Not mentioned	Count	22	26	27	75
		% within Evaluation	5.0%	6.2%	5.9%	5.7%
Total		Count	439	422	460	1321
		% within Evaluation	100.0%	100.0%	100.0%	100.0%

Table 47. Cross-tabulation of tone of evaluation and type of statistical source.

In fact, literature has emerged that offers contradictory findings about the influence of the political systems of these countries upon news coverage, which has often been considered a substantial factor affecting the way in which business news is framed (Zayani, 2005; Sakr, 2006; Sakr, 2007; Mellor, 2011). Those scholars argued that while news is often shaped to be consistent with the government's attitude, deviation from this norm is also often found in the media landscape, contrary to widespread assumptions. The current findings also indicate that the presence of private organisations as news sources and suppliers of data, independent from governments, might effectively influence the way in which statistics are used to frame business news articles, giving leverage to journalists to report more freely and critically about key issues in business. Indeed, these findings indicate that in these countries, governments might be giving more freedom to business journalism now than they have in the past, a trend that has been also observed in China (King et al., 2013; Hadland, 2015).

Additional data suggest that using more than one source helps journalists achieve a more critical tone. As such, this study also evaluated whether there is a difference in the tone of interpretation of statistics according to the number of statistical sources cited in each article. To evaluate this, the domain "number of statistical sources used" was cross-tabulated with "tone of evaluation". Table 48 illustrates that articles that cited more than two statistical sources tended to be negative in tone. Moreover, the correlation between source and evaluation was significantly positive (correlation = 0.071; p value = 0.010), indicating that using more sources was somewhat linked to a negative evaluation, although the resulting correlation was very low. A possible explanation for this finding is that when journalists tend to use only one statistical source, they tend to be positive, and when they use more than one statistical source, they tend to be negative or more critical. It seems that one of the ways in which to improve the coverage of statistics in business news is to ensure that journalists compare statistics by citing more than one source.

			Tone of evaluation			
			Positive	Neutral	Negative	Total
Number of statistical sources cited	One source	Count	362	321	351	1034
		% within Evaluation	82.5%	76.1%	76.3%	78.3%
	Two sources	Count	43	56	37	136
		% within Evaluation	9.8%	13.3%	8.0%	10.3%
	More than two sources	Count	34	45	72	151
		% within Evaluation	7.7%	10.7%	15.7%	11.4%
Total		Count	439	422	460	1321
		% within Evaluation	100.0%	100.0%	100.0%	100.0%

Table 48. Cross-tabulation of the number of statistical sources used and tone of evaluation.

4.2.12 News Value

Before starting this part of the discussion, it is important to clarify the difference between the terms 'news value' and 'news values' and to operationalise some of the variables used in this thesis. In this sense, 'News value' refers to the value of an event or story in terms of newsworthiness (Franklin, 2005a). This means that there is an intrinsic value in terms of relevance, proximity and urgency (Harcup and O'Neill, 2001) –to cite some aspects- that renders a particular study important enough as to be considered for publication or to be broadcast by those in the newsroom. On the other hand, 'news values' are the deontology that reporters follow when gathering and producing news. In the West, for example, fundamental news values include notions of objectivity, impartiality, balance and fairness, among others (Allan, 2010). In this section, I will be working with the former rather than the latter (i.e., news value), as this section highlights the argument that statistics can underpin the newsworthiness of a story or make the story newsworthy in itself (Lugo-Ocando and Faria Brandão, 2016).

As can be seen in Table 49, statistics are used in 99.17% of business news stories in these countries. This result is an empirical finding relating to the newsworthiness of statistics in business news stories. These findings further support Maier (2002, p. 512), who found that the majority of business news contains statistical data. The use of statistics in business journalism leads to the question, "What is the news value of statistics in business journalism?"

Statistics' status	Frequency	% of Total	Valid %	Cumulative %
Yes	1321	99.17	99.17	99.17
No	11	0.83	0.83	100.0
Total	1332	100.0	100.0	

Table 49. Statistics' status: Are statistics used in the content?

According to Franklin (2005a, p. 173), "news values, and the notion of newsworthiness that they are derived from, are meant to be the crystallized reflection of, or ground rules for deciding, what an identified audience is interested in reading or watching". Moreover, a number of scholars (Galtung and Ruge, 1965; John, 1982; Harcup and O'Neill, 2001; Fowler, 2013) who have attempted to identify and classify news values argue that these values play a significant role in the process of news selection and presentation. For example, Galtung and Ruge (1981), in their innovative research, offer 12 news values: frequency, intensity, unambiguity, cultural proximity, predictability, unexpectedness, continuity, composition, references to elite peoples, references to elite nations, personification and negativity.

Business stories fulfil many of these values. Furthermore, it has been argued that numbers are used to enhance these values by exaggerating their influence (Seale et al., 2006, p. 34). According to Allan (2010, p. 38), “the news values of newspapers were thus being recast by a new language of dailiness, one which promoted a peculiar fascination for facts devoid of ‘appreciation’ to communicate a sense of an instantaneous present”. Consequently, in the current research, the following question is posed: “Are statistics used in a news story to produce, substantiate or contextualise the news story?”

As can be seen in Table 50, statistics were presented in almost three-quarters (74.3%) of the articles reviewed to produce the news stories. The statistics used in the remainder of the articles were used to substantiate and contextualise the news stories, at levels of 15.5% and 10.2%, respectively. These findings show the importance of statistical data in business beats, particularly, as such a high proportion of data is used to produce news stories (74.3%).

News values	Frequency	% of Total	Valid %	Cumulative %
Produce	981	74.3	74.3	74.3
Substantiate	205	15.5	15.5	89.8
Contextualise	135	10.2	10.2	100.0
Total	1321	100.0	100.0	

Table 50. News value: Are statistics used in the news story to produce, substantiate or contextualise news?

According to Table 51, there is no remarkable difference in the news values of the sampled newspapers; the number of news stories employing each news value studied was approximately the same for each newspaper studied.

			Newspapers' Name				
			Alriyadh	Aleqtisadiah	Asharq Al-Awsat	Alittihad	Total
News Values	Produce	Count	225	140	270	346	981
		% within Newspapers' Name	77.9%	61.4%	72.2%	80.5%	74.3%
	Substantiate	Count	28	61	65	51	205
		% within Newspapers' Name	9.7%	26.8%	17.4%	11.9%	15.5%
	Contextualise	Count	36	27	39	33	135
		% within Newspapers' Name	12.5%	11.8%	10.4%	7.7%	10.2%
Total		Count	289	228	374	430	1321
		% within Newspapers' Name	100.0%	100.0%	100.0%	100.0%	100.0%

Table 51. Cross-tabulation of newspaper name and news values.

Table 52 illustrates that there is no remarkable difference in the news values of the studied topics; the number of news stories employing each news value studied are was approximately the same for each topic studied.

			News Values			
			Produce	Substantiate	Contextualise	Total
Topic	Housing Market	Count	117	53	26	196
		% within News Values	11.9%	25.9%	19.3%	14.8%
	Stock Market	Count	672	45	36	753
		% within News Values	68.5%	22.0%	26.7%	57.0%
	Banking Market	Count	105	79	63	247
		% within News Values	10.7%	38.5%	46.7%	18.7%
	Oil price	Count	87	28	10	125
		% within News Values	8.9%	13.7%	7.4%	9.5%
Total		Count	981	205	135	1321
		% within News Values	100.0%	100.0%	100.0%	100.0%

Table 52. Cross-tabulation of topic and news values.

4.2.13 Challenging Data

To assess whether the statistical data used in the studied articles had been challenged (i.e., to ensure accuracy), two main concepts in the field of journalism were examined: verification and criticality (Ruminski and Hanks, 1995, p. 4). For business journalism, the fundamental goal is to fulfil the objectives and provide unbiased coverage (Doyle, 2006, p. 444). To achieve this, journalists should have the ability to verify their sources as a part of the journalistic ritual (Shapiro et al., 2013, p. 657), and they should present in their stories critical examination of the included complex business data (Doyle, 2006, p. 442); such an examination will result in the statistical sources of the data being either supported or refuted in the story (Dunwoody, 1982, p. 196). Indeed, journalism is seen as “a discipline of verification” (Kovach and Rosenstiel, 2014, p. 100). As such, the following question is asked in the current study: “Is there any mention of missing/partial statistical data in the news article?” This question is asked to examine whether the journalist verified the data given by the statistical sources.

As shown in Table 53, there is no evidence that business reporters questioned their sources regarding the statistical data provided, with a lack of such verification occurring for more than four-fifths (83%) of the articles reviewed. This finding is in agreement with Alheezan’s (2010, p. 198) result, which showed that journalists are not able to verify their data.

Verification		Frequency	% of Total	Valid %	Cumulative %
	Yes	224	17.0	17.0	17.0
	No	1097	83.0	83.0	100.0
	Total	1321	100.0	100.0	

Table 53. Verification: Is there any mention of missing data/partial statistics?

The current result should be discussed from two angles. On one hand, when a source mentions a set of statistics, the journalist should question their source regarding the data. According to Kovach and Rosenstiel (2014), what differentiates journalism from propaganda, entertainment or even fiction is seeing journalism as “a discipline of verification” (p. 100). Furthermore, Tuchman (1972, p. 660) emphasised the idea that objectivity constitutes a “strategic ritual” that is used to protect news people from critique. She pointed out that news people should be keen on developing strategies to support their news stories and avoid valid criticism (Tuchman, 1972, pp. 667-675). However, on the other hand, the current result seems to be a major ethical issue. According to Keeble (2008, p. 13), the commitment to achieving accuracy is “a strong ethical commitment among many journalists toward truthfulness”.

As already mentioned in Chapter **3**, criticality is split in this thesis into three categories: factual, practical and scholarly criticism (Richards, 2017). The first type of criticality, *factual criticism*, refers to an objection raised about information because of inconsistency with the known experience related to it (Collett, 1989). In business news, facts may be affected or hidden by different interested groups, even government and private sources (Doyle, 2006; Lugo-Ocando and Faria Brandão, 2016). The second type, *practical criticism*, refers to an objection related practical experience (Craig, 1984; Feighery, 2011) in the use of statistics among the public. For this type of criticism, journalists usually rely on experts to catch errors and inconsistencies (Bjerke and Fonn, 2015). Finally, *scholarly criticism* attempts to be as neutral as possible while thoroughly investigating an obstacle (Klaehn, 2003; Shirley, 2011). Identifying the type of criticism used by journalists helped in differentiating and assessing the ways in which statistical data were used and interpreted in the business articles reviewed.

As can be seen in Table 54, the most common type of criticism used in business articles is practical criticism, being found in 228 articles (or 72.6% of all articles containing criticism). This finding suggests that the majority of the criticism of statistical data in business articles relies too heavily on foreign experts, who might be not impartial. The risk associated with this issue might be equal to that of an over-reliance on one type of source for the statistical data in a story (Dyck and Zingales, 2003; Lashmar, 2011). According to Jonathan Weil of *The Wall Street Journal*, “financial journalists outsourced their critical thinking skills to Wall Street analysts, who are not independent and, by definition, were employed to do nothing but spin positive company news in order to sell stock. There was hardly a Wall Street analyst covering the stock whose firm was not getting sprinkled with cash in some form or another by Enron” (Dyck and Zingales, 2003, p. 10).

Criticality		Frequency	% of Total	Valid %	Cumulative %
	Factual	46	3.5	14.6	14.6
	Practical	228	17.3	72.6	87.3
	Scholarly	40	3.0	12.7	100.0
	Total	314	23.8	100.0	
Missing	System	1007	76.2		
Total		1321	100.0		

Table 54. If criticism appeared, what type of criticism was employed?

It is equally important to explore the types of statistical sources that are criticised more than others. It can be seen in Table 55 that around one-quarter (24.64%) of government sources are criticised, while around one-fifth (20%) of private organisation sources are similarly criticised. We can see from the data that while the amount of statistical data criticism employed is not what might be expected in journalism globally, it can nevertheless be said that it is fairly well distributed between government and private organisation sources.

			Type of statistical source referenced						
			Government source	International organisations	NGOs	Academic	Private organisations	Not mentioned	Total
Criticality	Yes	Count	206	21	2	12	62	11	314
		% within Source	24.6%	35.0%	50.0%	33.3%	20.0%	14.7%	23.8%
	No	Count	630	39	2	24	248	64	1007
		% within Source	75.4%	65.0%	50.0%	66.7%	80.0%	85.3%	76.2%
Total		Count	836	60	4	36	310	75	1321
		% within Source	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 55. Cross-tabulation of type of source referenced and whether the source was criticised.

The expectation was that journalists, despite normative claims, would be uncritical of official sources, given what we know from scholars who have examined this in a diversity of contexts (Franklin and Carlson, 2011). The findings of the current study do support the previous expectation and underpin the idea of Rugh (2004, p. 65), who argued that the newspapers that belong to the loyalist press do not attack the basic doctrines of national policy in their countries as prescribed by the government; they avoid critiquing the leaders at the top of the government, and they display little diversity of opinion on significant issues. In these countries, editors openly claim to support the head and official line of the government on all the fundamental principles while disregarding critical news coverage as a Western imposition. However, Rugh (2004) also mentions that newspapers in the loyalist category can, on occasion, criticise government services that are unsatisfactory to their citizens, and these newspapers may cover the news of officials in a negative light.

4.2.14 Statistical Claim

To help citizens make informed decisions and pursue their individual goals (Keeble, 2005, p. 22), journalists should include data in their news stories for their audience (Zelizer, 1993). By using statistical data, journalists have the ability “to turn moral claims to empirical claims” (Ettema and Glasser, 1998, p. 71). Therefore, statistical data should allow greater interaction and civic engagement with news stories.

When exploring how statistical claims are used in business news stories, the current study relies on Abelson’s (2012) classification. According to Abelson (2012) in his book *Statistics as Principled Argument*, journalists usually collect and present statistical claims in different ways, or cases. These cases are summarised as follows: 1) stand-alone statistics, which are isolated figures; 2) simple comparisons, which present differences between observations and experts’ opinions or other statistical reports; 3) standard of comparison, where reporters might give a single statistic along with various observations, which might be utilised as standards of comparison and compared with the potential fundamental effects on the query presented and the answer given; and 4) choosing among candidate explanations.

The majority of the business news stories analysed (68.4%) use simple comparison as the preferred way of verbalising data (see Table 56). This type of statistical claim aims to make news stories easier to understand (Abelson, 2012). The second most common way of presenting data is through stand-alone statistics, which appeared 22.3% of the articles. According to Abelson (2012), this type of statistical claim is an isolated figure, so, it does not do as much to ensure the information is more easily understood by the public. In other words, when journalists use stand-alone statistics, they use them without putting the numbers into a context that can help the public assess the meaning of the data (Abelson, 2012).

Statistical claim	Frequency	% of Total	Valid %	Cumulative %
Stand-alone statistics	295	22.3	22.3	22.3
Simple comparison	904	68.4	68.4	90.8
Standards of comparison	16	1.2	1.2	92.0
Among candidates explanations	95	7.2	7.2	99.2
No clear claim	11	0.8	0.8	100.0
Total	1321	100.0	100.0	

Table 56. Statistical claim: What is the statistical claim?

These findings are in agreement with those of Abelson's (2012), which showed that stand-alone statistics and simple comparison statistics are the most commonly used statistical narrative tools. In addition, the current findings suggest that business journalists not only inform audiences but also, in the majority of their news stories, put effort into providing comparison statistics to improve public comprehension of the issues they cover.

To provide a closer examination, the differences in the use of statistical claims between the studied newspapers were also examined. As can be seen from Table 57, *Aleqtisadiah*, which specialises in economics, used stand-alone statistics more than the other newspapers did, with 97 articles (42.5%) using stand-alone statistics as the preferred way of verbalising data-driven business news stories. In contrast, *Alittihad*, which is from the UAE, relied most heavily on simple comparison, with 367 business news stories (85.3%) using simple comparison statistics as the preferred way of verbalising data-driven articles. These findings suggest that the newspaper specialising in economics news, *Aleqtisadiah*, puts less effort into including comparison statistics in order to improve public comprehension of the issues they cover.

			Newspapers' Name				
			Alriyadh	Aleqtisadiah	Asharq Al-Awsat	Alittihad	Total
Statistics' Claim	Stand-alone statistics	Count	78	97	68	52	295
		% within Newspapers' Name	27.0%	42.5%	18.2%	12.1%	22.3%
	Simple comparison	Count	143	98	296	367	904
		% within Newspapers' Name	49.5%	43.0%	79.1%	85.3%	68.4%
	Standards of comparison	Count	3	3	7	3	16
		% within Newspapers' Name	1.0%	1.3%	1.9%	0.7%	1.2%
	Among candidates explanations	Count	61	25	1	8	95
		% within Newspapers' Name	21.1%	11.0%	0.3%	1.9%	7.2%
	No clear claim	Count	4	5	2	0	11
		% within Newspapers' Name	1.4%	2.2%	0.5%	0.0%	0.8%
Total		Count	289	228	374	430	1321
		% within Newspapers' Name	100.0%	100.0%	100.0%	100.0%	100.0%

Table 57. Cross-tabulation of newspaper name and statistical claim.

To investigate the difference between the topics included in this research, the domains of “topic” and “statistical claim” were then cross-tabulated. As can be seen in Table 58, the housing market ranked first in terms of using stand-alone statistics, with 95 articles (48.5%) using stand-alone statistics as the preferred way of verbalising data-driven news stories. By contrast, the stock market ranked first in terms of using simple comparison statistics, with 618 news stories (82.1%) including these. This finding shows that around the half of the housing market news articles used isolated and stand-alone figures to verbalise data-driven news, without putting them into context, which might not help the public to assess the meaning of this data (Abelson, 2012).

			Topic				
			Housing Market	Stock Market	Banking Market	Oil price	Total
Statistical Claim	Stand-alone statistics	Count	95	53	119	28	295
		% within Topic	48.5%	7.0%	48.2%	22.4%	22.3%
	Simple comparison	Count	82	618	114	90	904
		% within Topic	41.8%	82.1%	46.2%	72.0%	68.4%
	Standards of comparison	Count	2	0	10	4	16
		% within Topic	1.0%	0.0%	4.0%	3.2%	1.2%
	Among candidates explanations	Count	12	79	1	3	95
		% within Topic	6.1%	10.5%	0.4%	2.4%	7.2%
	No clear claim	Count	5	3	3	0	11
		% within Topic	2.6%	0.4%	1.2%	0.0%	0.8%
Total		Count	196	753	247	125	1321
		% within Topic	100.0%	100.0%	100.0%	100.0%	100.0%

Table 58. Cross-tabulation of topic and statistical claim.

4.2.15 Summary of the Findings

By analysing the variables outlined above, it was observed that the engagement of business journalists with statistics is one in which journalists seem mainly to be "ticking the boxes" of professionalism; in other words, they appear to be following procedure without really maintaining journalistic professionalism and brining about accountability. The statistics used by journalists in these countries are valid and tend to come from reliable sources. Furthermore, journalists in these countries seem to interpret statistics in an appropriate manner. However, the overall data also suggests that the majority of business statistical data is neither questioned nor verified.

Analysing the following variables allowed for an assessment of how journalists use statistics and for an exploration of the nature of the shortcomings related to the use of statistical data in business journalism in Saudi Arabia and the UAE. A full discussion of the results is included at the end of this chapter (see section **4.6**). Here, a summary of the findings is given.

Author of Articles

In relation to the author of the news stories, investigating who wrote a news story can be a significant indicator of news origins. This is concerned with whether the journalist's name is present as well as with the gender of the journalist and other personal characteristics. The data suggests that more than one-third of the articles produced by newspapers are published without the names of journalists being shown. As discussed, there are several possible explanations for this result, such as the impact of press releases and advertisements; however, this will be examined in greater detail later in this chapter, during the analysis of the interviews with journalists (see section **4.3**).

The data also shows that female journalists produced only 12 business news stories containing statistics (0.9%) from the whole sample, while almost 64% of the articles (from the whole sample) were written by men. This finding corroborates the results of work previously done in this field, which also confirm that male journalists vastly dominate not only certain newsbeats but also the writing of hard news in general.

Validity of Statistical Data

As the literature in the area of business journalism suggests, using accurate data in news stories is one of the most important dimensions of high-quality of journalism. Journalists should have the ability to use appropriately numbers that communicate an idea that is relevant to the issue being discussed. In this sense, the results show that the vast majority of articles (92%) produced by journalists use valid statistics. This may be a strong indicator of journalists' awareness and understanding of the validity of statistics. This matches similar findings from other parts of the world (Martinisi, 2017; Cushion et al., 2017; Ahmad, 2016) and refutes widespread claims that journalists 'mostly get it wrong' when it comes to reporting statistics (Nguyen and Lugo-Ocando, 2016; Martin, 2017). In other words, when it comes to validity in the use of statistics, Arab journalists almost always get it right.

With regard to statistics that lack validity in the context of the articles, the housing market is the topic in which such invalid statistics most often appear (in 16% of the articles). This is partly associated with the fact that housing market coverage is more dependent on unofficial sources, and most of these sources are private organisations. Indeed, private organisations are the statistical sources that most often lack validity in the context of news stories, being shown as invalid in 45% of the articles.

Reliability of Statistical Sources

This study confirms that, as suggested in the literature in the area of business journalism, news sources have a strong influence on news content reliability. The analysis shows that the majority of the business articles (72.8%) use statistical sources that have a high degree of reliability. This result is tempered by the fact that most of the news stories contain only one source, and most of the news stories come from government sources. This result might be a result of journalists tending to rely on sources that have been seen as reliable (Reich, 2010) to avoid constraints related to access, time, routine and epistemology (Franklin, 2005a; Gans, 1979).

The data also suggests that the statistical sources referred to, except government sources, have had a low degree of reliability in the majority of business articles published that rely on such statistical sources. Moreover, statistical sources coming from private organisations occupied the majority of unreliable sources. As such, one of the reasons why news relating to housing markets uses more unreliable statistics than dose news in any other beat is that most of the statistics it employs come from private sector sources.

Interpretation

As discussed, *interpretation* means providing sufficient detail and a sense of the clarity about the statistical data in printed newspapers. In this study, the data shows that business statistics in the majority of the articles (74%) received from reporters some sort of interpretation. This is an indicator not only of the journalists' interaction with statistics but is also a clear sign that they do not only reproduce the numbers but also attempt to add an explanation of them. However, this still leaves a great chunk of statistics -those in almost 26% of the news stories- that were provided without any interpretation. The fact that one out of every four news articles with statistics in the business newsbeats includes no interpretation is very telling about the challenges ahead and the degree of critical deference to statistics on the part of journalists.

Accessibility

Data accessibility was investigated by looking at the number of business statistical sources cited in each article and the nature of these sources. The data shows that the majority of the articles (78%) rely on only one source. Furthermore, the majority of the articles (63%) depend on government sources and private organisation sources (23.5%). These findings suggest that there is a lack of variety in the statistical points of view presented and in cross-checking; they also bring into question any normative claim of balance and accountability made by journalists. Among the newspapers studied in the research, *Asharq Al-Awsat* used more than one source of statistical data the most often, citing more than one source data in almost 41% of articles. This might be a result of a claim, mentioned by an interviewee working for the newspaper, that the editorial policy of *Asharq Al-Awsat* newspaper requires at least two sources for any news story. This finding will be discussed later in this chapter, during the analysis of the interviews (see sections **4.3** and **4.4**).

Challenging Data

As the literature in the area of business journalism suggests, journalists should verify data and present them with a high level of critical thinking. However, the data shows a lack of data verification among the majority of the business articles (83%). The data also suggests that around one-quarter of government sources are criticised, while around one-fifth of private organisation sources are criticised. The expectation was that journalists in the Arabian Gulf, despite normative claims, would be uncritical of official sources, given what we know from scholars who have examined this in a diversity of contexts (Franklin and Carlson, 2011). The findings of the current study do support the previous expectation and underpin the idea of Rugh (2004, p. 65), who argued that newspapers that belong to the loyalist press do not attack the basic doctrines of national policy in their countries as prescribed by the government; they avoid critiquing the leaders at the top of the government, and they display little diversity of opinion on significant issues. In these countries, editors openly claim to support the head and official line of the government on all the fundamental principles while disregarding critical news coverage as a Western imposition. However, Rugh (2004) also mentions that newspapers in the loyalist category can, on occasion, criticise government services that are unsatisfactory to their citizens and cover the news of officials in a negative light.

Quantitative Framing

In relation to the framing of business news, the data confirms that statistics are used by journalists in Arab countries to frame business news stories in similar ways to the journalistic practices in the West; specifically, they were balanced between positive, neutral and negative tones in the aftermath of the world financial crisis of 2008. During the crisis, the overall tone of the Arab business news was mostly neutral, resembling the way newspapers in New York and London covered the same events (Van Dalen et al., 2017; Schiffrin, 2011). However, the data shows that there was a difference in the tone of the interpretation of statistics of international and national coverage. While the tone of the interpretation of international coverage tended to be neutral or negative, the tone of the interpretation of national coverage tended to be neutral or positive. These findings suggest that the tone of interpretation of statistics used by business journalists in the Arabian Gulf is affected by the difference between whether their coverage relates to national and international news.

In addition, statistics provided by government sources were portrayed negatively in almost 41% of the articles, while statistics provided by private organisations were portrayed positively in almost 45% of the articles. Literature has emerged that offers contradictory findings about the influence of the political systems of the studied countries, which had been considered a substantial factor that can affect the way business news is framed (Zayani, 2005; Sakr, 2006; Sakr, 2007; Mellor, 2011). These scholars argued that news is often shaped to be consistent with the government's attitude but that deviation from this norm is also often found in the media landscape, contrary to widespread assumptions. The current findings indicate that the presence of private organisations as news sources and suppliers of data, independent from governments, might have a more effective influence on the way in which statistics are used to frame business news articles, giving leverage to journalists to report more freely and critically about key issues. Indeed, these findings indicate that in Saudi Arabia and the UAE, governments might be starting to give more freedom to business journalists, something that has been also observed in China (King et al., 2013). It is equally important to bear in mind that if the current study were conducted on articles from a different period of time, rather than those published during the world financial crisis of 2008, the tone of the coverage might have been different (i.e., more positive).

Finally, the data suggest that certain newsbeats are subject to more openness and tolerance for criticism than are others. For example, the stock market newsbeat portrayed statistics negatively more often than did any other newsbeat (47% of the time). In contrast, the housing market newsbeat portrayed statistics positively more than did any other newsbeat (51% of the time). The overreliance on unofficial sources and the private sector in reporting on the housing market might be an explanation for the generally positive tone in its coverage, even in a time of crisis.

Timeliness

The findings show that statistical data often come from business statistical reports that are only one day old. This result corroborates the findings of previous works in the field of business reporting, which have found that journalists are under time pressure when handling business issues. The findings also suggest that business journalists publish statistical data that is of an unknown age in more than one-quarter of articles, which might affect the credibility of the articles by reflecting a lack of transparency. As already suggested, this result might be due to statistics being used to substantiate or contextualise news stories.

Visualisation

As the literature in the area of business journalism suggests, visual data is used in business news more than in any other beat. However, the data suggests that most business statistics in the Arabian Gulf press (74%) are not represented visually. In addition, this finding suggests that journalists did not utilise visual data to communicate with their audience to simplify difficult and complex business issues and terminologies. Finally, within the business articles that contained graphs, tables were the most-used type, appearing in almost 54% of the articles that contained graphs. Some have suggested that tables might be used more than other graphs because they are easy to produce (Quispel and Maes, 2014).

Human Interest

As the literature in the area of business journalism suggests, one of the main characteristics of business news is that is often detached from human-interest stories. However, the analysis shows that the overwhelming majority (98.9%) of news stories did not integrate business statistics and arguments with human-interest issues, regardless of the topic. At least in the context of the Arabian Gulf states, this result does not support the argument made by Doyle's (2006, p. 438) study, which argued that the business pages "regularly" report on corporate leaders' lives.

News Value

As discussed, news values play an important role in the process of news selection and presentation. In this sense, the data show that statistics were used in 99.17% of the business news stories analysed in these countries. Further, business statistics were used in the majority (74%) of articles to produce these news stories, rather than to simply substantiate or contextualise them. These findings further support the importance of statistics' in business reporting.

Statistical Claim

Statistical claims were also examined to explore how they were used in business news stories. The data show that the majority of the articles (68%) used simple comparison statistics as the preferred way of verbalising data-driven business articles. This finding indicates that business journalists are not just informing but also strive, in the majority of their news stories, to include comparison statistics in order to improve public comprehension of the issues being covered.

4.3 Interviews with Journalists and Editors

This section provides an explanatory framework of the results from the semi-structured interviews with journalists and editors who cover business news, which were developed using the findings of the content analyses. This section provides the result of these interviews, which can be summarised in two main findings, as follows:

1) The first key result highlights two essential internal issues that can affect the use of statistical data by business journalists: the awareness of statistics' importance, and statistical innumeracy. For the former, journalists seem aware of the importance of statistics for the production of news stories and for the public, although there is a gap between what they understand and how they use statistics in their articles. It seems that other factors affect their use of statistics in practice. For the latter, journalists' educational background and shortcomings in the statistical training they receive are influential factors that might hinder journalists in their use of statistics, negatively influencing the news production cycle.

2) The second key result highlights also two essential external issues that can affect the use of statistical data by business journalists: statistical accessibility and ethical system. In the first case, when journalists struggle to access statistical reports, it can prevent them from delivering news in a timely fashion. In addition, the ethical issues that confront business journalists can affect how statistical data is presented in the final news story.
These interviews were designed to elucidate the results of the previous methods and to answer the main question of this research: how do journalists use, or misuse, statistics to articulate their business news stories in the Arabian Gulf, and particularly, in Saudi Arabia and the UAE? Furthermore, this method helps explain how journalists and news editors understand their information, as well as the reasoning behind their use, or misuse, of statistics. The use of this method allows research sub-questions 6, 7, 8 and 9 to be answered, as well as parts of sub-questions 1, 2, 3, 4, 5, and 10.

To accomplish these goals, I carried out interviews with fourteen (n = 14) journalists and news editors from the sample newspapers. Three of these newspapers are from Saudi Arabia - *Alriyadh, Aleqtisadiah* and *Asharq Al-Awsat*- and one is from the UAE- *Alittihad*. The participants' general backgrounds are summarised in Table 59.

	Journalist or Editor	Full- or Part-Time	Education and Major	Training
Aleqtisadiah	Editor	Full-Time	MA: Journalism & Marketing	Reading financial numbers, and other training programs from the US and UK, particularly those of Reuters
	Journalist	Full-Time	BA: Banking and Financial Sciences	No training
	Journalist	Full-Time	BA: Public Relations	No training
	Journalist	Part-Time	High School	No training
Alriyadh	Editor	Full-Time	MA: Media	No training
	Journalist	Full-Time	BA: Media & Journalism	No training
	Journalist	Full-Time	BA: Sociology	Specialised economic reports
Alittihad	Journalist	Full-Time	BA: Business Administration & Political Science	No training
	Journalist	Full-Time	BA: International Politics	Financial markets, Banks, Joint-stock companies
	Journalist	Full-Time	BA: Journalism & Media	No training
	Journalist	Full-Time	BA: International Politics / Political Science	No training
Asharq Al-Awsat	Editor	Full-Time	MA: Journalism	Financial analysis and writing economic reports (Reuters)
	Journalist	Full-Time	MA: International Political Economy	No training
	Editor	Full-Time	BA: Management and Economy	Governmental statistics

Table 59. Summary of the participants' general backgrounds.

4.3.1 First Finding: Internal Factors - Awareness of Statistics' Importance, and Statistical Education

The content analysis conducted to develop a database for the semi-structured interviews in order to triangulate the data and enhance the examination of the topic. The purpose of the interviews is to explain the results from the database in order to answer the main research question of this study: how do journalists use statistics to articulate their business news stories in the Arabian Gulf?

Based on this database, I interviewed journalists and editors who routinely deal with statistical data to understand how they use and engage with statistics when writing an article. First, I wanted to assess their awareness of the importance of statistics, including whether they had a foundational understanding of why statistics are important for business articles and why statistical data can allow the public to make better decisions.

Overall, there is broad agreement in terms of the way the journalists perceive and engage with business statistics. Only one of the journalists considered that statistics are not vital to reporting business news:

> *No, they are not always necessary … The use of numbers and statistics is only appropriate in certain contexts and should serve the news story to give it accuracy and clarity but should not be the centre of it. (#INT12)*

It is worth mentioning that #INT12 is the only respondent who has a high school degree, and #INT12 did not get enrol in any training course throughout her/his 10- to 15-year career in journalism. As such, it seems possible that this finding is due to the respondent's educational shortcomings.

However, most of the other respondents do think that statistics are essential for business reporting. One of the participants argued the following:

> *From my point of view, reports and economic analyses should contain statistics and figures to provide the information in an integrated manner.… [O]f course there cannot be any understanding or analysing of economic indicators without the numbers. In general, these figures and statistics usually come in the main headline and are highlighted in bold. (#INT03)*

These findings further support Maier (2002, p. 512) who found that the majority of business news contained statistical data. Furthermore, the data gathered from the content analysis is in agreement with this result, as statistical data is used in almost 99% of the business articles (see section **4.2**).

The majority of journalists and editors interviewed believe that using business statistics is a way to add credibility to a news story. As one of the participants pointed out when asked whether statistics should be used in business reporting, "Yes, so [the news story] becomes more credible. In the business news, figures and statistics are necessary" (#INT07). Journalist #INT07 makes a link here between statistical data and news credibility, an important link that has been well conceived in the journalistic profession (e.g. Usher, 2011; Frost, 2015). According to Usher (2011), using statistical data in news increases transparency, which in return enhances the news' credibility.

The analysis also indicates that the majority of journalists see numbers as a central element in providing information to their readers and the actors involved, as #INT05 mentioned: "without statistics we could not build news that would benefit the reader or the decision-makers". In fact, there is agreement between the vast majority of the interviewees that business statistics generally offer the public the information they need to make better decisions. According to #INT06:

> *These statistics reflect the reality of the financial and economic sector, which is desirable to enable decisions to be made from the data. In other words, a person will be aware about some aspect related to the sector which is interesting and therefore can make the appropriate decision as to whether or not to make an investment based on the statistics.*

Continuing on the same theme, #INT10 argued the following:

> *Yes, because the public is interested in these figures. For example, in the real estate sector when articulating a news report that includes information on increasing prices of real estate in a particular area … I have the data and accurate statistics that prove this information. It is very possible that the reader could benefit from this information if they were making a decision to buy or sell property.*

However, the majority of the journalists mentioned that the nature of statistics makes it difficult for them to be understood by the public. As such, some of the journalists argued the following:

> *Statistics and financial and economic data themselves are not expected to provide the public with the information they need, because the statistics and data produced by the sources are often rigid and incomprehensible. Hence, the role of the economic press becomes important to simplify and explain this information and communicate it in a way the public can understand it. Its role also includes providing a historical account of the nature of these statistics and putting them in their natural context. Here, these modified statistics certainly will help the public to make their decisions or at least give them an informed background on important topics. (#INT02)*
>
> *There are many benefits. However, I think that the public will not be able to read the statistics correctly because in general they are specialised in nature, complex and difficult to understand by the ordinary reader. However, journalists can simplify these statistics and convey them to the public in a way that is easy to understand. (#INT04)*

In the quotes above, #INT02 and #INT04 highlight important points relating to the public's difficulty with understanding statistics. First, they argue that statistical sources usually produce statistics in a way that is "rigid", "complex", and difficult for an ordinary audience to understand. This point highlights the role that statistical sources play when producing statistics and releasing their statistical reports and analyses. This issue will be discussed later, in section **4.4** of this chapter. Second,

#INT02 and #INT04 also highlight the role that journalists play when they produce their news stories, interpreting statistics to help the public understand the statistics. Indeed, the data gathered from the content analysis shows that statistical data were interpreted in almost 74% of the business articles.

However, the same data gathered from the content analysis also showed that there is a deficiency the use of visual data in business news articles by journalists. Visual data can help journalists to communicate with their audience and simplify difficult or complex data (Engebretsen et al., 2018, p. 11; Kennedy et al., 2016, p. 719); however, the content analysis indicated that journalists do not use any visual data in almost 75% of the articles reviewed. This is particularly related to journalists' level of education and the training that they have, as education and training assist journalists in their use of statistical data to make information more understandable and to help the public make better decisions.

In fact, literature in the area of the use of statistical data in journalism indicates a general shortcoming in the statistical training received by journalists (Nguyen and Lugo-Ocando, 2016). Therefore, in the interviews, business journalists and editors were asked how education could have enhanced their own experience and ability to deal with statistical data. None of the journalists and editors interviewed agreed that their local universities prepare students of media and journalism to work with statistics. On the contrary, their own experience and their experience in working with others have led them to recognise the existing gaps in specialised knowledge in statistics. #INT01 indicated the following:

> *Zero. To the best of my knowledge, Saudi universities have not yet provided any link between statistics and the economic press in their curricula. However, there are individual efforts and personal judgments from some bodies such as foreign media institutions or local institutes.*

This view coincides with the results of a number of studies, which have found that schools teaching students media and journalism in the Arab world concentrate on theoretical aspects and do not necessarily prepare them for the real world; these studies further warn that students are ill-prepared to perform well as a part of the media's labour sector when they graduate (El-Nawawy, 2007; Saleh, 2011; Tahat et al., 2017).

Another editor touched on the debate about whether journalists should specialise in certain types of journalism. This refers to the question of whether it is better to appoint a journalism/media graduate and then provide them with training specific to the field of financial journalism or whether it is better to hire a financial graduate and then provide them with media courses (Reich, 2012). Within this debate, #INT11 stated the following:

> *Media students often only focus on general journalism rather than on learning financial and economic news. You need a good economic and financial background to work in the press and media in the financial and economic sectors.*

Continuing with this theme, another journalist described further:

> *There are many theories that speak about this aspect. Are we supposed to employ media graduates in the economic press after giving them an economics course or economics graduates in the economic press after giving them a media course? Local and international experiences combine both. But from my point of view, the person working in the economic press is one who is capable of developing themselves to understand the economics and to be able to read economic figures and reports. Saudi universities are a long way off from reading the economic scene. (#INT03)*

This echoes previous discussions in academia, such as that of Weiss and Retis-Rivas (2018, p. 11), who highlighted that, "when journalism students nowadays are required to learn the latest skills in digital, social and multimedia technology, the focus on data journalism could be an afterthought and just not make the list of courses they need to take before they graduate". This idea was expanded on by another of the interviewees:

> *Based on my experience, I found the first newspaper where I worked depended on economic, finance and management graduates, and their experience was largely based on their academic record and the number of accounting and financial courses they completed. It is difficult to find a student specialised in media and train them on statistics, economics and finance to work in a newspaper specialising in money and economics, whereas it is easier to train graduates of economics and finance and accounting and statistics on the editing of media. From my point of view, I think the university has many shortcomings, starting with how to read ratios to how to deal with the Excel programme. (#INT02)*

Other interviewees confirmed this view, clarifying:

> *I am a journalist and I have a BA, but I did two years of practical training in a newspaper and I think this training is what made me a journalist. I found that the university gave me the theoretical side, but I was only trained by the newspaper to be a journalist and the university has nothing to do with it. (#INT04)*

It is perhaps important to clarify around this discussion that the majority of the interviewees hold a BA degree; of these, only two have degrees in media and journalism and just one in public relations. The rest of who hold a BA degree graduated instead from disciplines such as banking and financial science, management and economy, international politics and political science, and sociology. More interestingly, while the vast majority of them believed that training would be very helpful, most had not actually undertaken any training. In addition, all of those who graduated did so at least ten years ago or more, so their views might reflect the previous setting of the media and journalism education landscape. It is true that this sample is not representative of the Arabian Gulf nor can universal assumption or generalisations be made from it; nevertheless, the sample highlights important aspects of the composition of this professional body.

In any case, these findings suggest that there is an important gap between what the media industry expects and claims to need from new graduates and the knowledge and skills on offer. This is not a problem exclusive to Saudi Arabia and the UAE, or even to the Arab world in general. It is, in fact, a more global problem that has been widely recognised around the world (Reese and Cohen, 2000; Deuze, 2006; Nguyen and Lugo-Ocando, 2016).

4.3.2 Second Finding: External Factors – Accessibility and the Ethical System

The second finding is related to the external factors that affect business journalists' ability to deal with statistical data -namely, those of accessibility and the ethical system in the Arabian Gulf.

There is broad agreement among the respondents about the difficulty they face when accessing business statistics. A handful of them said they find it easy to access statistics; for example, according to #INT08, "yes, they [the statistics] can be obtained. Many organisations publish them on their websites and sometimes, as journalists, we request them". However, the vast majority of journalists do believe that it is very difficult, or problematic to some extent, to access business statistics, particularly in 2008 but also, to some extent, even now. According to #INT01:

> *In that time [2008], there was difficulty in reaching some figures for reasons of bureaucracy or mismanagement; however, it has improved now. For example, the make-up of the Statistics Authority changed from one type of organisation to another*[8]*, and as a result of that change, the new organisation started issuing more statistics than the old one did.… I imagine that if anyone is looking for statistics in any field now, he will find it, but the journalist has to do more.*

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[8] A royal decree was issued in 2015 to transfer the General Statistics and Information Department to a public body called the General Organization for Statistics, which enjoys legal personality and financial and administrative independence.

While #INT01 argued that accessibility to statistical data improved since 2008, #INT01 also believed that it is still difficult, to some extent, to access business data. This view is in agreement with Kirat (1987) and Babaker's (2014) studies, which found that difficulty in accessing data is among the obstacles facing Arab journalists. Babaker (2014) argued that there is a need to implement laws and regulations to support the right of access to data.

On the same theme, another journalist explained that it does not matter if the source is a government or private source, as difficulty in accessing business statistics is consistently an issue with both sources. #INT13 mentioned the following:

> *In the Middle East, it is difficult to get information for many reasons such as bureaucratic regulations and laws, irrespective of whether the source was governmental or private.*

In fact, the interviewed journalists stated various reasons for the difficulties in accessing business data, including that the data does not exist, is incomplete or is very old, and that the sources do not respond to their requests. One journalist stated the following:

> *[S]tatistics were sometimes not available. For example, sometimes we contacted the government agency and it took a month to get the statistics. On other occasions, we got old statistics or received only half of the information needed. (#INT05)*

In fact, #INT05 mentioned that some news sources take a long time to provide the statistics required, and the majority of participants confirmed that they already feel time pressure when working with statistical data:

> *I feel a lot of time pressure when dealing with statistics because I am tied to deadlines for the delivery of press material. Usually, the production of an article goes through multiple stages from the definition of the idea, searching for data and then processing and analysing it before writing the report. Normally, this should be done within a maximum of eight hours. If I had more time, I would expect to do better with numbers. (#INT02)*

> *Yes, because usually dealing with the statistics needs some time and as part of our work, we need data quickly due to time constraints; also, the statistics need interpretation and simplification for our readers, and this requires more time. If more time is available, we would definitely handle the statistics better. (#INT10)*

> *Sure, because statistics need to be compared with other statistics and then analysed to be understood. In addition, it needs other sources to be verified. Journalists work to tight deadlines, often against demanding deadlines, on a daily basis. Often, they have just four hours to prepare an article. In contrast to journalism, in*

> *magazines such as The Economist, the time factor helps them to come out with journalistic material that contains highly professional statistics. (#INT14)*

Indeed, the data gathered from the content analysis confirm these results, showing that the majority of the articles (67%) make use of business statistical data that are one day old.

The analysis also indicates that one of the crucial aspects of the data is the confidence of journalists in government sources to provide reliable and valid statistical data. For example, 13 out of the 14 journalists interviewed said that they rely on government sources in their stories and stated that they find them to be reliable. As one of them argued:

> *Unfortunately, … the government sectors are the only that can be trusted, in the sense that they are figures issued by official bodies. As for statistics from research centres, I do not trust them because of many previous experiences. This is based on personal experience. Many of these reports are not 100% accurate, and some may simply be feasibility studies prepared for specific parties and may help one party or the other and therefore I cannot trust it. As for the financial statements of companies in the private sector, they are audited under the umbrella of the Capital Market Authority, so the figures cannot be manipulated; therefore, we can trust them. However, in respect of figures published by some research centres, I currently do not rely heavily on them, to protect our credibility for our readers.… Here, I am talking about the local studies and research centres in Saudi Arabia, but globally, when there is a study published by Bloomberg, for example, I will certainly trust it. (#INT03)*

In fact, this attitude might explain the result of the content analysis of the current study, which shows that the majority of the business articles (78.3%) rely on one source, depending primarily on government sources for business articles (63.3%). It is very clear that journalists justify their over-reliance on government sources due to their belief that they are reliable sources. Moreover, the majority of interviewed journalists stated that they used the reliability of news sources to overcome the difficulty of cross-reference statistical data:

> *I believe that verifying the credibility of statistics is very difficult, so it is preferable to rely on official bodies to get those statistics, and to act with caution. (#INT12)*

> *Statistics issued by official bodies are accepted as being reliable, and there is no way to verify them. (#INT11)*

However, a considerable amount of literature has been published on the need to quote from more than one source in journalism (Doyle, 2006; Davis, 2007; Stiglitz, 2011; Manning, 2013). Schiffrin (2011, p. 14) argued that there are two potential problems when business journalists overly rely on sources: “the risk of being given incorrect information” and “the risk of becoming dependent on access to sources”. She suggested that such sources usually have particular agendas to fulfil. They want to benefit from being journalistic sources so that they can deliver their own points of view. Moreover, Picard et al. (2014, p. 13) emphasised that the dependence on only one kind of source - such as governments or private organizations- without scrutinising and questioning what they say may result in the source’s agenda being carried out. Furthermore, Davis (2007, pp. 162-163) argued that when journalists rely on only one source, there will be a lack of complete information and diversity, and a possible presence of bias in the news content.

Moreover, Aljumaiahe (2010, pp. 182-183) found that in Saudi Arabia, relying on sources can influence journalists in different ways. For example, sources may contact certain journalists while avoiding others. Sources may also block information, concentrate on secondary issues or give only specific information that leads to the fulfilment of certain goals (i.e., that have a positive impact on their institutions). Moreover, Younis and AlNaimi (2006, p. 93) found that official sources in the UAE may block some information or omit some news. Indeed, this over-reliance on sources might be reflected in the quality of the news, particularly when journalists only depend on official sources (Choi, 2009, p. 527).

Certainly, from the interviews one could suggest that there is a trend among the respondents to trust international organisations when it comes to business statistics in particular, and business news more generally. As #INT05 succinctly put it:

> *Sometimes I see economic reports on the BBC and international electronic newspapers, and I feel more influenced by them than I am by local news because of the transparency and good work they provide, so we are supposed to follow suit. For example, in our existing statistics, which talk about any topic, you find more than one piece of information for the same subject and it is difficult to determine from them which is the main source of information. In addition, the statistics that we receive from the West are acceptable to us even if they are related to local news in the Kingdom of Saudi Arabia, which we are supposed to be the source of, not the West.*

Another significant finding related to accessibility that the content analysis in the current study showed is that more than one-third (36.3%) of the business news stories produced by newspapers in the Arabian Gulf are published without the names of the journalists being shown (see Table 10 in the content analysis section **4.2**). When I asked the journalists about this result, the vast majority of them believed that press releases, whether from the government or the private sector, were the main reason for articles to be published without the name of its writer. As one of the journalists argued:

> *Because the news is usually issued in the form of press releases by the body, as is custom in the Gulf press, … in this case, the press statements do not put a journalist's name. (#INT10)*

Another reason for this practice mentioned by the journalists is the sensitivity of the statistical data itself. They claimed that some data might be sensitive, so the journalist or the source did not want to be known. As #INT02 claimed:

> *Usually it contains sensitive data. For example, when the information is taken from sources that do not want to mention their name for the sensitivity of the subject for the party concerned, the name of the source of the information, or the journalist, is not mentioned. Instead of quoting a name, we say 'according to economic sources'.*

These results are in agreement with Alhroub's (2012, p. 86) findings, which showed that there are two reasons for this result. First, the official sector usually presents significant economic information that is distributed to all newspapers, and due to the importance of this data, the newspapers publish it without mentioning the source. Second, newspapers present editorial services for companies in return for advertisements. Abu Zeid (2011, p. 58) noted that this kind of news could be a major reason for perfunctory coverage in Arab economics journalism.

Interestingly, a handful of interview participants pointed out that the main reason for this result is malicious practices from the journalists themselves. They believe that in such instances, the journalist might have worked for the same party as the information source, and that is why the journalist would not want his/her name to be published on the article. One of the participants argued the following:

> *[B]asically, they work for the same official body that the report speaks about and work for the newspaper as a collaborator. And that's the only logical reason I see for having news without the author's name being shown. (#INT03)*

There are similarities between the attitudes expressed by #INT03 in this research and those described by Aljumaiahe (2010, p. 183), who found unethical practices were committed by Saudi journalists. He found that some journalists work as consultants for news sources and that some public relations staff from various private and government institutions work as part-time journalists. As a result, they insist on the news stories they write about the other parties they represent (i.e., where they also work) being published without their name in the by-line (Aljumaiahe, 2010, p. 183). Indeed, unethical practice seems to negatively affect the use of statistical data by journalists; as #INT01 stated, “statistics can be manipulated and misrepresented, and this is due to the level of professionalism of the newspaper”.

To explore further how the ethical system in the business newsbeat might affect the use of statistics to cover related issues, I asked journalists about the most unethical practices that affect the use of statistical data in business news. The overwhelming majority of participants (13 of the 14 journalists and editors) agree that many ethical issues that arise when journalists and editors dealt with statistics. They believe that statistical data can be misused in different ways, such as manipulating, misrepresenting or simply ignoring specific statistics and focusing on others to serve specific goals. They stated that advertisers, news sources and personal benefits are the main reasons for these unethical practices.

The vast majority of interviews agree that advertisers are the main reason for unethical practices, but that their influence has recently decreased. As one of journalists argued:

> *Advertisers have an impact on newspapers in general, whether the journalistic material has to do with numbers or not. But in recent years, with the decline in newspaper advertising, the impact of advertisers on the nature of the materials and published figures has also declined. The impact of advertisers may extend to blocking an entire story or hiding specific numbers for certain reasons—for example, company statements, financial statements and quarterly or annual financial results, where there is a profit declared by a company in the fourth quarter but there is a decline in its profits for the whole year. The impact of the advertiser may be highlighted by the newspaper—and here I am not talking about the Aleqtisadiah newspaper; in the main headline, it may be stated that the results of the last quarter showed the company achieved a 20% increase in profits, whilst within the text of the article, the numbers may reveal an annual loss of 7%. (#INT01)*

These results are in agreement with Aljumaiahe’s (2010) and Younis and AlNaimi’s (2006, p. 93) findings, which showed that advertisers may block information or exert pressure to reduce the negative impact of bad news affecting their business.

Journalist #INT04 explained that advertisers or public relations departments utilise their advertisements to publish data that serve their companies, which in turn affects journalists’ integrity and the accuracy of the data:

> *Honesty and accuracy. So, no specific information is provided before other specific information. For example, some companies are keen to provide selected information to influence readers whilst marginalising other information for the benefit of the company. … As*

> *for advertisers, newspaper regulations allow advertisers to publish their news but do not interfere with the publication of other news that does not concern their business. For example, when talking about a negative topic in the banking sector, I do not care about the opinion of banks, even if they were advertising with us, especially if the subject is referring to the banking sector in general rather than to a specific bank. If it does refer to a specific bank, the advertisement will affect what is published. The quality of the article will be impacted, for example, by not publishing the negative news about the specific bank.*

This result supports the findings of AlHroub (2012, p. 86), which indicated that newspapers present editorial services for companies in return for advertisements. Stiglitz (2011, pp. 33-34) argued that the media sometimes turns a blind eye to inaccurate data in order to seek profit derived from advertisements.

Indeed, #INT04 concentrated on “honesty” and “accuracy” in the discussion of unethical practices, which, in fact, “are covered by general journalism ethics codes, and some are contained within specialist codes such as the Press Complaints Commission [PCC] 2005 Best Practice Note on Financial Journalism” (Tambini, 2010b, p. 163). However, it seems that there is a real deficiency in ethics codes in both Saudi Arabian and the UAE. All the Saudi journalists interviewed confirmed that no ethics codes have been issued by their newspapers or by the Saudi Journalists Association.[9] While the UAE Journalists Association established its own ethics code that emphasises these values (UGE, 2008), all the UAE journalists interviewed indicated that they do not know anything about the code; this might be a result of a lack of concern on the part of the newspaper to follow through on its commitment to follow this ethical code.

The data also indicates that advertisers may offer benefits to journalists, incentivising them to publish specific data to serve their goals:

> *Some advertisers ask to publish editorial news for commercial companies for direct money, which I have already been offered and rejected, because I believe that the impartiality of the journalist is essential in press work. If an advertiser communicates directly with the newspaper itself, this relies on the newspaper to follow their regulations and undertake a careful review of procedures. It is difficult for the journalist to try to publish some editorial news because the news has to be reviewed more than once before it is published by the editorial department to ensure that it is appropriate and does not exceed its brief. (#INT02)*

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[9] The Saudi Journalists Association was established in 2000 by a royal decree; however, it encountered real criticism because of its failure to provide any help to Saudi journalists (Sakr, 2006, p. 145).

> *Unfortunately, these types of journalists exist and are usually paid. Journalists know that statistics are an important source and attract the reader, so they exaggerate them in a way that serves the advertiser. (#INT07)*

These results are consistent with those of Aljumaiahe (2010, p. 316) and AlHroub (2012, p. 93), who found that some journalists do not mind accepting gifts, free trips and other privileges in return for providing positive coverage. These may include not only material gifts but also, in some cases, commercial or government transactions that serve the same purpose of rewarding the journalist for positive coverage (Aljumaiahe, 2010, p. 254). Accepting gifts to publish specific data or affect the way in which data is presented is a serious ethical issue facing journalists (Onyebadi and Alajmi, 2016). In fact, this is considered one of the most important ethical facing journalists at the news-gathering stage (Ward, 2005). Ward (2005) further emphasised that ignoring these ethical issues, besides being a malicious form of journalistic practice, also threatens the credibility of the coverage provided.

Another journalist stated that there is sometimes direct intervention from sources, both government and private, when publishing specific news:

> *The most important moral issue, in my opinion, is not to ignore any statistical data for specific purposes, such as only selecting part of the statistical data whilst ignoring other pertinent available data that may be more important. For example, when a company's earnings declined and their profits collapsed, some journalists were instead interested in [the company's] high revenue or operating profits. This behaviour is completely immoral because what has been done here ignores an important part of the truth in a desire to only show the positive aspects of the figures. This is often because of editorial policy that is imposed by the press establishment itself, because some official newspapers are forced to ignore the negative results of some government companies when losses are reported. Editors are either forced to ignore such figures or to place the information less prominently, such as in the bottom line of an article, which is unimportant, whilst all the headline talks about is the revenue, sales or any other positive figures. And sometimes, the relationship that has formed between the journalist and the source has influenced such behaviour. (#INT10)*

It is worth noting that journalist #INT10 is the only one who indicated that instructions directing newspapers to ignore negative news can come specifically from government sources. In contrast, the majority of the journalists' and editors' examples related to the business reports of private organisations and how they could be misused by ignoring negative data and focusing on positive data. One of them argued the following:

> *In terms of ethical issues and professional dealing with the news, it is necessary to highlight the financial results accurately, especially, for example, [those of] public shareholding companies. For example, if a company is recording financial losses or losing profits, the news title should refer to these based on the quarterly results. The moral challenge is to be honest by presenting, for example, a title that accurately presents the truth of the statistics. (#INT11)*

According to Stiglitz (2011, p. 25), government and private sources are the most significant sources for business journalism. Both these sources may have strong motivations to present distorted data (Stiglitz, 2011, p. 25) or to restrict the flow of information by deciding which parts of the information they decide to give to the press (Raphael et al., 2004, p. 177; 167). However, the data gathered from the content analysis suggested that statistical data received by private sources tends to be positively framed, while data received by government sources tends to be negatively framed (see Table 47 in section **4.2**). This might mean that in business news reporting, the private sector exerts greater influence, and this is a possible explanation why the majority of journalists' examples related to the influence of the private sector on the accurate reporting of statistical data in the news.

Interestingly, there is a clear trend indicating that the coverage of the housing market suffers more than any other topic studied in this research (i.e., the stock market, the banking market and oil prices) in terms of the improper use of statistical data. For example, some of the journalists point out the following:

> *It is difficult to build a report or a news story based on wrong statistics. This happens in reality; for example, in the real estate sector, we discovered it was a two-sided sector. The first claims that real estate prices are falling and presents statistics without a source or simply with an unreliable source. The second side says that the price of real estate is stable and does not change and is based on sale and purchase numbers, which does not reflect reality. The Ministry of Housing and the Ministry of Justice and the authorised system, which officially record all sales and purchases, are authorised to reflect the reality and should present accurate and reliable statistics. What is happening is that both sides in the sector are exploiting the statistics by modifying them to suit their interests. Specifically, if sales for a particular month are low, the side that claims real estate values are declining will rely on the statistics of the Ministry of Housing and the Ministry of Justice and will interpret them as a strong indicator of the decline; however, if the number of sales increased the next month, the same side will ignore these statistics. (#INT12)*

> *Unfortunately, some institutions and companies are manipulating the numbers in accounting to produce certain results and thus mislead*

> *the audience and give them incorrect information. For example, there is talk of falling property prices in a certain place, and on the ground, this talk is incorrect. (#INT13)*

The data gathered from the content analysis supports the present finding from the interviews that the housing market is the topic most covered using statistics that lack validity in the context of the news story, that rely on unreliable statistical sources and that are not interpreted by the journalist. Moreover, in the housing market newsbeat, the majority of statistical data used is found in feature stories, the tone of the interpretation of statistics is more positive than it is in any other beat and there is an over-reliance on private organisation news sources. Finally, housing market news articles contain the highest rate of statistics of an unknown age. All these findings might be an indicator of the ethical system within which journalists on this beat are working.

4.3.3 Summary

The interviews above develop the results gain earlier in the study about the use, or misuse, of business statistics by journalists and editors in the Arabian Gulf. Despite a clear awareness of the significance of statistics both for the production of business news stories and for the benefit of the general public, three essential obstacles can still influence the use of statistics in business journalism. One issue is related to journalists' education and training, as only handful of the journalists in the present sample have a statistical background; it is clear from this analysis that this shortcoming in journalists' statistical education and training can negatively influence their use of statistics. In addition, given the obstacles in accessing and validating statistical data, the traditional mechanism of validation and verification is often not conducted by business journalists when dealing with statistical data. The second issue is concerned with the over-reliance on government statistics and the lack of ability to cross-check the data. The third issue is related to the unethical practices that affect the use of business statistical data.

4.3.4 Discussion

To answer the main research question of how business journalists use statistics to articulate their news stories, this study found two main factors that negatively affect journalists' ability to deal with statistical data and that, in turn, affect their level of professionalism: 1) internal factors, which include journalists' awareness of the importance of statistics, and shortcomings in their statistical education and training, and 2) external factors, which are mainly caused by journalists' access to statistical data and the limitations imposed by unethical practices.

It is important to bear in mind that numbers play a vital role in representing an important aspect of an economic reality (Espindosa and Alarcon, 2016), which is also confirmed by the current research. However, there is a gap between how journalists seen statistics' importance in business news and how they utilise them during the data manipulation process, which is obviously influenced by the use of statistical data in this newsbeat. Indeed, this gap raises concerns about business journalists' ability to describe the role of statistical data in business news. Therefore, there is reasonable doubt related to how journalists use statistical data to write their business news stories. It seems that other important factors might affect the final product of journalists' business news stories to a greater degree, such as their level of education and training, the accessibility of data and the ethical system in which they are working.

Most business journalists have never done any statistical training. This core finding is of concern because the literature related to business journalism suggests that journalists should be given adequate training in how to use independent and accurate data and how to present it to the public in an effective manner (Brand, 2008; Tambini, 2010b; Knowles et al., 2015). Undergoing adequate training helps journalists better fulfil their role and interact with their audience as a member of the "interpretive community" (Berkowitz and TerKeurst, 1999). This issue was also discussed by Zelizer (1993), who described journalists as representatives of the interpretive community – that is in this case, those who not only present statistics but also provide the context to interpret them and draw meaningful insightful for their readers

Business journalists work in a professional collective that interprets business issues using the interpretative tools of statistical analysis. However, statistical accessibility and the necessity of relying on news sources introduce debate related to the credibility of the statistical data official sources provide, as there is no practical method by which to verify if such data are true or false. This indicates that it is up to editors and journalists to come to a conclusion about whether to believe what official sources report. However, the proper verification of statistical data seems to be beyond anyone's capability, particularly because of the time pressure under which journalists must work on a daily basis.

The last factor affecting the use of statistical data in business news, as described in the findings, is the ethical system in which the journalists work. The data suggest that ethical issues confronting newspapers in these countries, particularly in Saudi Arabia, are structural, giving sources and advertisers room to interfere with the presentation of statistical data in the news. Moreover, there is a deficiency in procedural ethics at the Saudi newspapers studied, such as the absence of self-regulatory systems and press codes, which, in turn, affect the professionalism values of transparency and accountability.

Indeed, these results do not match the concept of professional journalistic autonomy, which relies on “the willingness of journalists to face attempts to instrumentalize the press in favour of commercial, political, and managerial goals” (Waisbord, 2013, p. 70). Both external and internal autonomy for business journalists face real challenges. For the former, it is widely accepted that authoritarian regimes impose control by regulating or censoring the media (Mellor, 2007; Rugh, 2004; Sakr, 2003; Sakr, 2006), affecting its external autonomy. As an example, from the interviews conducted in this study, one journalist directly stated that “newspapers are forced to ignore the negative results of some government companies when losses are reported” (#INT10). In terms of internal autonomy, the results of this research confirm that advertisers place powerful constraints on the internal autonomy, through means such as companies requiring positive coverage in return for advertisements (McManus, 2009).

Business journalists, particularly during a financial crisis, should not be passive conduits of information. Journalists actively shape public discourse through their editorial choices. That is, in deciding that certain aspects of the business or financial world deserve investigation, they orient the collective landscape of the society towards these topics (Nielsen et al., 2013, p. 389). The level of journalistic professionalism in a country’s media is subject to how journalists practice their role (Waisbord, 2013); this role is established through the struggle between the needs of journalists and the needs of actors in society, such as politicians and the private sector. Under these circumstances, journalists sometimes struggle to adequately fulfil their role of analysing business statistical data; instead, statistics are reported in a way that lacks critical thinking -what Franklin (2003) refers to as standardised “McJournalism”: “while market theorists claim diversity and quality as essential products of competition, the reality is McJournalism and McPapers with similar stories” (Franklin, 2005b, p. 148) are often published by newspapers. As a result of this, the audience tends to receive data that is not produced to a high level of journalistic professionalism.

4.4 Interviews with Saudi News Sources

This section provides an explanatory framework of the results of the semi-structured interviews with Saudi Arabian news sources that usually deal with business statistical data. These interviews were developed using the findings of the content analysis and semi-structured interviews with business journalists. This section provides the result of these interviews, which can be summarised in two key findings:

1) The first key result highlights news sources' perceptions of themselves, including their awareness of the importance of statistics and the instructions that affect their decision of whether to publish statistical data. In terms of the first issue, news sources seem to be aware of the importance of statistics for the public. However, in relation to the second issue, it was concluded that the instructions that affect publishing decisions were more influential role than sources' awareness of the importance of statistics; this, in turn, might affect negatively journalists' ability to use business statistical data in their news stories.

2) The second key result highlights new sources' perceptions of how journalists cover business news, including two important issues. First, news sources believe that journalists do not have the ability to deal with business statistical data in a proper manner. Consequently, news sources believe that publishing press releases as they are "is the best of a bad solution" (#INT23). Second, the commitment by newspapers to publish press releases is due to number of reasons, including the good relationship between news sources and journalists, advertisements, a lack of resources and a lack of journalists who specialise in business issues.

The interviews with news sources were designed to elucidate the results of the previous research methods and to answer the main question of this research: how do journalists use, or misuse, statistics to articulate their business news stories in the Arabian Gulf. Particularly, they were designed to assist in answering the following sub-questions of this research: How do journalists in the Arabian Gulf access statistical business news sources, and what are the factors that boost/hinder journalists' use of statistics in business journalism? The findings of this research confirm that news sources play an important role in business journalists' use or misuse of statistical data; more specifically, because of the lack of studies in the Arab context with regard to the influence of news sources on business journalism, this method helps in determining how news sources affect the use or misuse of statistical data by journalists in business news.

To achieve this, I carried out interviews with six (n = 6) news sources working in fields related to the sample topics (i.e., the housing market, the stock market, the banking market, and oil prices). All of the news sources interviewed were from Saudi Arabia; the researcher tried to interview news sources from the UAE but could not do so due to a lack of resources and time. The general backgrounds of the news source interview participants are summarised in Table 60.

ID	Institution Name	Nationality	Experience	Education and Major	Training in Media and Statistics
(#INT23)	Private Saudi Bank	Saudi	10 years	BA in Chemical Engineering	"Yes, in media, I attended many courses. In the field of statistics, I completed the university's statistics courses as part of the requirements for obtaining a bachelor's degree".
(#INT24)	General Authority for Statistics (GASTAT)	Saudi	16 years	BA and MA in Media	No training.
(#INT25)	General Authority for Statistics (GASTAT)	Saudi	16 years	BA in Arabic Language; Diploma in Public Relations & Marketing	"Yes, I have taken many courses in both fields".
(#INT26)	Saudi Stock Exchange (Tadawul)	Saudi	14 years	BA in International Politics	"In media, yes; in statistics, no".
(#INT27)	Ministry of Housing	Saudi	10 years	BA in Journalism; MA in Electronic Press	"Yes, I have taken many courses in both fields".
(#INT28)	Ministry of Energy, Industry and Mineral Resources	Saudi	14 years	BA in Business Administration	"Yes, I have taken many courses in both fields".

Table 60. Summary of the news sources' general backgrounds.

4.4.1 First Finding: News Sources' Perceptions of Themselves

So far, the research findings (i.e., from the content analysis and interviews with journalists) have shown that there is an over-reliance on official and corporate news sources used by journalists when dealing with statistical data to articulate business news stories. Although the interviews with journalists explained why journalists rely so heavily on news sources, it is also very important to understand how news sources understand their own role in the journalistic process and how they assess journalists' ability to deal with business statistical data. Therefore, I contacted news sources that routinely deal with business statistical data to understand how they use these data when writing press releases. I first wanted to assess their awareness of the importance of statistics, including whether they had a basic understanding of why statistics are important for business articles and how statistical data can help the public to make better decisions.

Overall, all the news sources interviewed agree that business statistics offer the public the information to help them make better decisions:

> *Certainly, these financial and economic reports issued by the financial and business sector are among the most important on which any person relies concerning their studies, decisions, hopes, ambitions, and investment developments. However, in my opinion, the main problem is the difficulty in reading these statistics. All statistics issued by all parties still face, and struggle with, the language of numbers and the language of economists and financiers. The dry language presented in these statistical reports is difficult for others to understand, even investors in multiple sectors. (#INT23)*

Indeed, the above quote supports the data gathered from the content analysis (see section **4.2**), which indicated that statistical data is used in almost 99% of business articles. Moreover, the quote underpins data gathered from the interviews with journalists (see section **4.3**), who also believed in the importance of statistical data in the business newsbeat. In addition to this, the quote supports the belief, shared by both news sources and journalists, that statistics are usually produced in a way that makes them difficult for the general population to understand.

#INT25, who works in the public administration of information and statistical awareness department of the General Authority for Statistics (GASTAT) in Saudi Arabia, explained why statistics tend to look dry and are difficult for the public to read and understand without the assistance of specialists:

> *[A]ll the statistics that we provide through the General Authority for Statistics target decision-makers and not the general public, and as a result, we write in a language that is understood only by specialists and not by the public. … I agree with the criticism that the statistics are presented in difficult language. Therefore, we in the General Organization for Statistics are working on the development of statistical awareness, because statistics can only be written in their specific language, as it is important to provide statistics designed for decision-makers to allow them to make decisions or to draw up*

> *policies; this cannot be satisfied with information that has been simplified or written in more general language. (#INT25)*

The analysis of the journalist interviews (see section **4.3**) showed that reporters agree that they need to simplify statistical data to make it easier for ordinary people to understand; however, from the current finding, news sources suggest that the complex language used when presenting statistics is necessary, as they are targeting specialists. Furthermore, the quote above is in agreement with Maier's (2003a) study, which found that news sources and journalists usually have a different view of how data should be published in the media. This result might explain why it is so important for journalists to explain and simplify statistical data, to ensure the complex statistics presented by news sources can be understood by ordinary people.

The analysis also indicates that all the interviewed news sources usually receive help and guidance when producing press releases that contain business statistical data:

> *There is no doubt that I am instructed by the senior management to write economic reports with correct and reliable content and that this is supported by all available evidence. You can have a look at one of these reports, which has been revised and modified more than once to verify the validity of the information and its accuracy and to make sure that, even if the report presents a negative picture, it cannot be considered to be an exaggeration of the facts. We can only talk about news honestly because transparency is required by the regulatory authorities. These regulatory bodies are subordinate to the government, such as the Capital Market Authority (CMA), and review economic reports before they are issued. (#INT23)*

In fact, when #INT23 showed me the report, I noticed that a number of the statistical ratios relating to the number of points of sale (POS) of a company had been modified. When I asked #INT23 the reason for these amendments, the first answer given was vague and not related to the numbers. As such, I again tried to clarify why the number of POS had been modified from 3.7% to 41%, especially taking into consideration that in the same period the previous year, it had been modified from 9% to 10%. News source #INT23's answer was that "there was a typographical error"; however, it seems to me that #INT23's answer is not convincing, as the amendment did not look like a typographical error. This means that, from my own perspective as a researcher, this might be a misuse of statistical data to portray the company's result in a positive way. Indeed, some of the news sources stated that they need clear approval from their management before publishing press releases:

> *Depending on the type of statistics, some may not be useful to disclose for several considerations related to national, social and economic issues. If the statistics are sensitive, it is necessary to*

> *return them to the senior management of the establishment to decide whether to publish them. If the statistics are not sensitive, our department [the public relations department] has the authority to publish them directly. (#INT27)*

> *When issuing a press release, the numbers are checked by the relevant departments of the Authority and reviewed by the decision-maker at the Authority before publication. (#INT28)*

Because of the difference between the role of news sources and the role of journalists identified above and the discrepancy about the level of transparency in presenting data, the interviews with news sources also looked into whether the sources had previously worked as journalists and how this might affected their new role as news sources. All the news sources interviewed, except #INT26, had worked as journalists in the past. All of those who had worked as journalists report that they gained a different view of statistical data after working as a news source. Some of them mentioned that when they worked as journalists, they strove for sensationalism regardless of whether the data was correct:

> *When I was working as a journalist, we were looking for statistics because that is what builds the news story, and in all honesty, we were not careful and we were not quite sure [about the statistics] … [T]he excitement overshadowed the credibility and concern for the sources of the information. I expect that this practice still exists for journalists. Currently, my perception of this has expanded, and I now understand more about the importance of credibility and the extent of its impact on the citizen and the state. (#INT24)*

> *I see it completely differently. In the past, we did not know much about the details, and we sought the excitement and the title that attracts the most readers. We were unaware of the negative effects of sensationalism. However, through our work in the government sector and the proximity of decision-makers and government agencies, we are [now] aware of information that is not seen by the journalist. We are also aware of the importance of balance in the dissemination of information and the extent of its impact on the public -or even on the negative image of our country. (#INT25)*

News sources #INT24 and #INT25 confirm that sensationalism plays an important role in the way journalists use statistical data to articulate their news stories. According to Meyer (2002, p. 207) and Cohn and Cope (2011, p. 5), professional bias leads editors to publish headline news that includes distorted data. It has been empirically shown that journalists selectively use statistical data to address deteriorating trends in regard to social issues in their news stories, while other trends that lead to improving social conditions are ignored (Berger, 2000, p. 49). Indeed, some of the news sources believe that the misuse of statistical data is still exists nowadays; this point will be further developed in the description of the second key finding.

4.4.2 Second Finding: News Sources' Perceptions of Business Journalists

As seen in the last key finding, some of the news sources believe that business journalists misuse statistical data; as such, I next asked them how they perceive journalists' ability to deal with business statistical data. The overall data suggest that most of the news sources believe statistical data is not used in the media in an appropriate manner:

> *I still think that there is a loophole. Journalists who cover financial news may not specialise in economics and finance, so I think that reporting economic reports 'as it is' is the way to make the best of a bad solution, as it is better than a journalist misrepresenting information. Only a professional journalist, capable of simplifying these statistics into easy language, can be understood by the public; I believe that is what is required at this stage. (#INT23)*
>
> *Many journalists do not specialise in statistics, so they take the information and publish it 'as it is', without understanding it or trying to simplify the data in a way that makes it easier for the public to understand. Journalists also do not explain specialised terms, which are difficult for the public to understand. (#INT24)*

News sources #INT23 and #INT24 believe that statistical data is not used in the media in an appropriate manner due to a lack of specialisation on the part of journalists in the business newsbeats who deal with these data. This point of view is in agreement with studies by Alheezan (2010, p. 198) and AlHumood et al. (2016, p. 50), which found that the primary obstacle facing Saudi economic journalism is unspecialised journalists. Indeed, the data gathered from the interviews with journalists (see section **4.3**) might also support this point of view, as the majority of business journalists were found not to have a degree in media or journalism and they had not undertaken any training courses.

It is perhaps important to clarify in this discussion that the majority of the news sources interviewed hold a bachelor's degree, only two of which are in media and journalism. The rest of the news sources interviewed instead graduated in the disciplines of engineering, international politics and business administration. However, all the interviewed news sources, except one, had taken a number of training courses in media and/or statistics. This result might be an indicator of the advantage of news sources over journalists in appropriately handling business statistical data.

While the news sources interviewed believe journalists are not able to deal with statistics in a proper manner, they do believe their own press releases are published accurately in the media, as they tend to be published without any amendments or modifications by the journalists. According to one of the news sources:

> *Often, the press release is published as it is. In other words, the press release is published without any alteration or amendment. (#INT26)*

Another news source explained the reasons he believes press releases come to be published without any modifications:

> *I think that they [press releases] are published accurately, because press institutions are now publishing all the information they receive from any official body without modification, for fear of making mistakes if they make an amendment to the text or because they don't have enough staff resources to read everything they receive unless the sender is unofficial or unrecognised. (#INT27)*

In the above quote, news source #INT27 mentions two reasons for press releases being published by newspapers without amendment: 1) an inability to deal with statistical data, which explains their reliance on the sources (Schiffrin, 2011), and 2) a lack of resources -which is a problem now affecting newspapers around the world caused by a lack of funds and subsequent staff shortages -making newspapers unable to critically audit every single news story (Starkman, 2014).

Continuing with the same theme, #INT23, who works for a private Saudi bank, mentioned the good relationship between private organisations and journalists but also noted that advertisements play an important role in the publishing of press releases as they are, arguing the following:

> *[N]inety percent of all press releases and reports are presented by newspapers in a similar way [to the original report]… The commitment of press organisations to publish data [as it is] is due to several factors, including that we work with media organisations that have a good relationship with the company and that journalists have a good relationship with us -we are keen to develop this relationship continuously. Throughout the year, we hold work meetings and attend special events, with special invitations to cover company events. Also, advertising has an active role in the media organisations' interest to publish. (#INT23)*

#INT23 mentions two important reasons that lead media outlets to be committed to publishing press release as they are: 1) the fact that private organisations have cultivated a good relationship with journalists, and 2) advertisements. Both these reasons might affect journalists' ability to deal with statistics. Regarding the first reason, the good relationship between news sources and journalists might lead journalists to become mere conduits of information for these sources articulating their news uncritically (Picard et al., 2014, p. 6; Schiffrin, 2011, p. 3; Stiglitz, 2011, p. 25), or taking data for granted and publishing it without any audit (Manning, 2013, p. 183). Journalists might also do this to ensure that they continue to have access to information and to avoid losing the organisation as a source (Schiffrin, 2011, p. 16).

Regarding the second reason, in accordance with findings by Stiglitz (2011, pp. 33-34), sources that provide information to business journalists are not the only parties that attempt to distort data or control the flow of information. Media outlets also do this. Stiglitz (2011) explained that the media typically seek profits derived from advertisements. Furthermore, AlHroub (2012, p. 86) found that Saudi newspapers present editorial services for companies in return for advertisements. Moreover, Younis and AlNaimi (2006, p. 92) found that the majority of UAE economic journalists believe that the content of economic journalism is affected by advertisements. Indeed, this finding is further support by the results of the interviews with journalists (see section **4.3**), which found that advertisements influence the use of statistical data in business news and that, in spite of the decline in advertisement revenue in recent years, its impact remains to a certain extent.

4.4.3 Summary of the Findings

The interviews above expand on the result of the previous research methods and further clarify our understanding of the use, or misuse, of business statistics by news sources in Saudi Arabia. Despite sources' clear awareness of the importance of statistical data for ordinary people, and despite almost all of them having worked as journalists before, two main problems can still impact the use of statistics in business journalism. One main issue relates to the instructions that sources follow when deciding whether to publish statistical data, as these can, in turn, negatively affect journalists' ability to use business statistical data in their news stories. The second main issue is concerned with the commitment by newspapers to publish press releases, a commitment which may be made for a number of reasons, including the good relationship between news sources and journalists, the presence of advertisements, the lack of resources and the lack of journalists specialising in business issues. In fact, all these reasons might affect negatively journalists' ability to deal with statistical data.

4.5 Challenges and Opportunities for Teaching Data and Statistics within Journalism Education in Saudi Arabia: Fostering New Capabilities in the Region

4.5.1 Introduction

Journalism education is pivotal for the development of professional standards, as envisaged by Joseph Pulitzer when he advocated for and helped to establish journalism schools (Banning, 2000). Furthermore, education is considered an important dimension of journalism as a profession (Singer, 2003, p. 144). As such, this section provides an explanatory framework of the results of the semi-structured interviews with heads of Saudi media and journalism schools. These interviews were developed using the findings of the content analysis and semi-structured interviews with journalists and editors who cover the business newsbeat. This was followed by an examination of the curricula and syllabi of Saudi universities teaching journalism. These methods were designed to elucidate the results of the previous research methods and to answer the following sub-question of the research: what is the level of knowledge (i.e., education) that journalists and editors hold regarding the use of statistics in business journalism? The overall data suggest that, contrary to common assumptions that claim exceptionalism, Saudi Arabia's journalism schools -despite operating within a particular political system and cultural/religious context- not only tend to follow similar normative approaches and aspirations to those of their counterparts in Western liberal democracies but have also developed a very similar rationale to justify the teaching of data and statistics to aspiring journalists.

As in other parts of the world, journalism education in *Saudi Arabia* is facing important challenges, derived from a combination of factors. These challenges are a direct result of a set of important changes in the media landscape that are eroding the ability of traditional media outlets to hire news people on the same scale as they have in the past. There are also trends that are shifting the industry as a whole towards a series of new operational and market pathways.

These changes in the media industry are underpinned, among other issues, by technological changes, the fragmentation of audiences, declining advertisement revenue and important transformations in the patterns of consumption related to the media (Lugo-Ocando, 2015, p. 371). On top of all this, there is a profound process of individualisation and depoliticisation taking place that sees citizens less engaged with, and committed to, participation in public life (Lugo-Ocando, 2015, p. 374).

However, one of the most important changes in relation to these challenges relates to the way 'datification' is irremediably transforming our entire society (Carillo, 2017;

Saracino, 2017) and how this reflects the larger trend of mathematisation in which everything in society seemingly needs to be counted and measured in order to register in the public imagination as a legitimate topic for debate (Martišius and Martišius, 2008; Nikolakaki, 2010). For journalists and prospective journalists, this challenge is rapidly translating into very tangible and timely demands for skills related to data gathering (mining), statistical awareness, data visualisation and the ability to generally analyse and communicate this data.

Indeed, beyond any formal criticism that we might make against this process, the fact remains that it is now at the centre of journalism, which is rapidly redefining itself as a profession that deals with *Big Data* (Borges-Rey, 2016; Anderson, C.W., 2018). It is in this context that the teaching of statistics and data has started to register as a priority among many schools of journalism around the world. Furthermore, it sees this particular branch of knowledge and expertise, which is able to evolve with the field, as a possible pathway to be a viable and sustainable subject area in times of rapid change (Nguyen and Lugo-Ocando, 2016; Lugo-Ocando, 2017b).

In this sense, this section aims to explore the nature and reach of the education in data and statistics provided at media and journalism schools in Saudi Arabia. It allows for a better understanding of how these schools equip, or do not equip, future journalists with the tools they need to engage and work with an increasingly datified news environment. The purpose of this section is to understand whether the education system sufficiently prepares media and journalism students in Saudi Arabia to gather, engage, use, interpret, analyse and manage statistics. In so doing, it assesses the extent to which this branch of journalism education provides journalists with the capabilities necessary to fulfil the professional normative expectations of bringing about accountability and transparency to public policy in general and the business markets in particular.

The broad context

Journalism education and its curricula from around the world has been, for many decades, under close scrutiny and continued revision (Franklin and Mensing, 2011). However, one of the key aspects where there has been some agreement is in the need to provide particular skills and knowledge related to the gathering, production and dissemination of news content. According to Weiss and Retis-Rivas (2018, p. 2), “journalism schools have an obligation to provide the latest skills and techniques to make students competitive for the news market”. Although there is still ample debate around what type of skills should be incorporated into the syllabus, there seems to be increasing consensus around specific knowledge areas that should be included - particularly those relating to the liberal arts (Deuze, 2006; Banda, 2013; Zelizer, 2017).

However, data and statistics, at least until recently, did not register as part of that consensus, despite important debates and initiatives dating back to the 1970s contending the importance of such study areas. There were discussions about '*Precision Journalism'*, which saw the need to incorporate quantitative approaches from the field of social science into news reporting (McCombs et al., 1981; Dennis et al., 2002; Meyer, 2002). Furthermore, not even the *UNESCO* proposal for a universal syllabus, which gathered important voices from around the world, managed to acknowledge this need (Banda, 2013).

Nevertheless, this situation is changing, and already a growing body of literature has identified the need to teach data journalism at a higher education level in J-school (DeFleur and Davenport, 1993; Yarnall et al., 2008; Berret and Phillips, 2016; Griffin and Dunwoody, 2016; Nguyen and Lugo-Ocando, 2016; Gotlieb et al., 2017). Moreover, the *Poynter Institute* for Media Studies, one of the most influential in this area, now considers numeracy as one of ten basic competencies for journalists and states "journalists need math skills to make sense of numbers the way they need language skills to make sense of words" (Poynter Institute, 1998, p. 8). Without doubt, the Poynter Institute (1998, p. 8) considers statistics as one of ten basic competencies for journalists while others have made important calls to strengthen the teaching of statistics for media and journalism students (Yarnall et al., 2008; Nguyen and Lugo-Ocando, 2016; Griffin and Dunwoody, 2016).

Maier (2002), for example, highlighted that the misuse of numbers in professional practice has roots in journalism education. Hence, journalism schools need to provide their students with the intellectual tools and abilities they need to access and understand these numbers, as a lack of statistical reasoning remains a major obstacle (Utts, 2003) and will probably continue to do so until media houses and educational institutions begin to focus their attention on solving it (Brand, 2008).

Beyond the West

These challenges, however, are not restricted to the West. Arab countries face similar obstacles to the point that some scholars have argued that shortcomings in media and journalism education are a major issue facing Arab journalism (AlHroub, 2012; AlHumood, 2014; AlHumood et al., 2016; Babaker, 2014; Ibnrubbian, 2016). As such, a study by Hussain (2008) looked into the quality of education and academic accreditation in general as obstacles facing government-provided media education at Arab universities, despite the many key resources that were made available to them in the recent past.

Hussain (2008), who conducted one of the few studies that has been done in this area, found that media education at these universities, especially in the Arabian Gulf, face important academic shortcomings and organisational challenges. He added that these obstacles hindered the chance to improve the quality of media education and reflect on its outcomes. The main challenge is the inability of these universities to keep up with the modern media revolution. They cannot catch up with their counterparts in the Western world, especially in the areas of media knowledge, media practice and the establishment of new media outlets relating to the information revolution (Hussain, 2008).

Furthermore, authors such as El-Nawawy (2007) found an important gap between journalism practice needs and journalism education provision in Arab countries. This is because media schools in some of these countries do not seem to have a clear vision or specific description of what should be taught and delivered, particularly in the absence of clear academic norms and agreement as to how universities should teach students and lead them to become successful journalists (Alheezan, 2007). As a result, calls have been made from public and media organisations to improve the outcomes of media schools in the region (Babaker, 2014), and while some are embracing these recommendations at a greater pace than are others, in some cases these schools muse face both old and new obstacles within their limited realms of freedom (Al-Hasani, 2010).

However, and perhaps more important to note, is the fact that media education in the Arab world is not linked to a particular theory nor does it manage to translate a particular school of thought in behavioural or social sciences into its own particular setting (AlJammal, 2004), as is the case in other places in the world. Instead, the overall theoretical framework in Arab countries often derives from a Western heritage - as many local frameworks have been excluded for a variety of reasons - and is deeply rooted in the epistemology generated by colonialism, which was subsequently shaped by the tensions of the Cold War.

Consequently, academic institutions delivering journalism education in the Arab world have improvised many of their pedagogical provisions without these being preceded or accompanied by a study of the needs of their societies. Further, they have not incorporated their own heritage and critical traditions, as has occurred in other countries in the southern hemisphere (e.g., the Philippines and in several countries in Latin America, which have developed important alternative models and approaches towards media and journalism education since the 1960s (Beltrán and de Cardona, 1980; Quebral, 1988; Barbero, 1993).

In addition to these gaps, it is important to highlight that there is little tradition in the Arab Gulf of more critical approaches being taken in journalism studies. This includes, incorporating skills that improve the ability of future journalists to bring about more transparency and accountability in their societies.

In this context, El-Nawawy (2007, p. 81) found that many journalism educators and journalism practitioners did not believe in the importance of knowledge of statistics as a competency for journalists. Furthermore, there has been little to no research published to this day about educating and training journalists in the region to develop critical thinking and practical skills related to the engagement with and use of statistics and data. Only a few books from Arab authors have been published with regards to this topic, and these mostly focus on the practical aspects (Aliraqi, 2016) rather than on the critical aspects of this issue. It is precisely here that this section intends to start a debate that will hopefully trigger further research and discussion on the topic. This last point is particularly pertinent in relation to countries such as Saudi Arabia that are facing important challenges and undergoing great transformations.

Journalism education in Saudi Arabia

Journalism education in Saudi Arabia is, relative to Western countries such as the US, a new endeavour. It only emerged as a discipline in 1972, when the first school of media was established at King Saudi University. This was followed by three more schools: King Abdul-Aziz University (KAU) in 1976, Al-Imam Mohammed Ibn Saud Islamic University (IMAMU) in 1981 and Umm Al-Qura University (UQU) in 1984, (Alhabib, 2007). However, during the last ten years, this number has increased to 14 in total (Ministry of Education, 2018b). Today, there are currently more than 27,000 students undertaking undergraduate studies in media, with almost 800 studying at a postgraduate level in this discipline (Ministry of Education, 2018a). They all undertake education at higher education institutions and all media schools operate in government-run institutions.

Alheezan (2007) is one of the few authors to explore media education in Saudi Arabia. He found that the curricula studied at Saudi media schools are very similar to each other and focus more on general curricula than do US media schools, which concentrate more on specific curricula. More importantly, Alheezan (2007) found that statistics were taught in only one Saudi media school, although quantitative methods associated with media research were taught in all schools (Alheezan, 2007).

However, Alheezan's (2007) study was conducted a decade ago, when there were only eight universities and four Saudi media schools. Therefore, because of the significant increase in the number of media schools and the political changes and transitions taking place in Saudi Arabia, it is important to re-examine and expand our knowledge regarding the curricula taught in these schools and analyse present and future challenges, particularly in relation to the use of statistics and data.

More recently, Alomir (2016) examined the experience of teaching statistics in Saudi universities. According to his research, the majority of those who teach statistics courses for non-specialist students at Saudi universities, are not themselves specialist in teaching statistics (Alomir, 2016, p. 165). This highlights, in my view, the lack of training and resources in this area. Moreover, he found that: “most statistics teachers adopt a lecturing approach in teaching statistics courses to non-specialist students in Saudi universities despite evidence-based recommendations from a diversity of pedagogical bodies to use instead student-centred and interactive methods of teaching at universities” (Alomir, 2016, p. 174).

Another important finding of his study was that many students in several colleges found statistics courses ’irrelevant’ to what they aspire to be, professionally speaking, and this in itself has created problems in terms of students’ pedagogical engagement with this type of knowledge and skills in the classroom. As a consequence, according to this author, “the issue has exacerbated a distinct lack of enthusiasm among the students towards undertaking statistics as a course. This lack of enthusiasm caused further difficulties for the statistics teachers dealing with many absent students and groups of unmotivated students” (Alomir, 2016, p. 176).

Although students are still relatively new to this specific area, there are already important elements in place to help determine the key gaps and areas that need further research. One, of course, is a general update in the inventory of resources and experiences related to the delivery of this subject. Another is the need to examine the particular elements that drive J-schools to modernise and adapt their curricula to the demands of the 21st century. This is precisely the task I attempt to undertake in the subsequent section of this work.

4.5.2 Methodology

This section is based on the triangulation of several qualitative methods. These included semi-structured interviews with two different groups. The first group of interviews was carried out with eight heads of media and journalism schools to explore their perceptions of and approaches towards providing knowledge and skills in relation to the use of data and statistics. The second group was made up of ten journalists and editors who cover the business newsbeat. They allowed me to examine their levels of education, preparation and knowledge in relation to the use of statistical data, while exploring their perceptions of media and journalism schools in Saudi Arabia.

The interviewees included journalists and editors from three Saudi newspapers: *Alriyadh, Aleqtisadiah and Asharq Al-Awsat*. Altogether, six journalists and four editors were interviewed, seven of whom were male and three, female. The interviews explored their perceptions about statistical education in media and journalism schools in Saudi Arabia. Their identities have been anonymised following the recommendation of the Ethical Committee at the University of Leeds. Although I recognise that, this number of interviews might seem small, when compared to studies conducted in other regions of the world, I believe that the interviews are not only representative but also insightful, given the current changes taking place in Saudi Arabian society.

These interviews were followed up by a survey examining the curricula and syllabi at all Saudi universities teaching journalism. All these methods were conducted between April and July of 2018. The triangulation of methods followed similar work undertaken by other authors in the field (Dunwoody and Griffin, 2013; Nguyen and Lugo-Ocando, 2016; Splendore et al., 2016; Martin, 2017) who explored journalism education related to the use of statistics by journalists.

4.5.3 Findings and Discussion

Overall, the findings indicate that, contrary to common assumptions that claim exceptionalism for Saudi Arabia’s journalism education system (given its political system and cultural/religious context), journalism education in the country tends instead to follow similar approaches and normative aspirations to those of their counterparts that operate in the context of traditional Western liberal democracies. The findings also suggest that these media and journalism schools have developed a very similar rationale for justifying the teaching of data and statistics to future journalists in these schools.

Furthermore, heads of Saudi media schools seem to be very aware of the importance of and need to engage with data and statistics to improve the transparency and accountability of governments in modern society. Indeed, most heads of schools interviewed thought that these skills are crucial to improve transparency and efficiency in public policy design, its implementation and, more broadly, the decision-making process. As one of the interviewees mentioned:

> *There is no doubt that the availability of statistical information, whether economic or social, would have helped the decision-making process …. Therefore, any decision taken by an institution must be based on statistical information, and the more accurate the information, the closer the decision will be to the truth. (#INT15)*

In fact, these heads of school saw statistics as a central element in business news stories. According to one of the heads:

> *There is no doubt that the economic press relies heavily on the language of numbers where data and statistics are at the heart of the financial press and through which the full picture of the event will become clear and highlight the places of interest. The statistics are indispensable in the news, reports, and investigative journalism. It constitutes a cornerstone of the success of the specialised article and the fullness of its content. (#INT17)*

Another head of a media and journalism school confirmed this view with the following argument:

> *Certainly, financial and economic journalism is mainly based on figures and statistics. The economic issues related to the movement of capital, inflation, the stock exchange … shares, bonds and other financial instruments all depend on data, statistics and figures. (#INT16)*

These findings further support the idea of Vollmer (2016), who argued that business numbers represent an important aspect of constructing economic reality - an idea that is widely accepted in economic discourse.

Equally important for these heads of media schools is the role that statistics and data play as tools to enhance a newspaper's ability to bring about improved transparency, accessibility and engagement in relation to the public (Utt and Pasternak, 2000; Bekhit, 2009). One of the heads of media schools pointed out the following:

> *[Statistics help] the reader to understand huge amounts of information quickly. In my opinion, infographics help journalists move from plain text to visual content and thus help the reader to understand numbers and statistics faster and easier than plain text.… [R]eaders get bored by plain text news, especially longer articles, whilst they find news that includes infographics more attractive. Therefore, the press would help itself a lot if it made more use of infographics. (#INT18)*

Some of the heads interviewed, who believe in the significance of teaching statistics for business journalists, tried to diagnose the current situation, not only by acknowledging the lack of provisions in their own institutions but also by highlighting the gaps in the news organisations themselves. These heads mentioned, for example, the need to develop within news organisations information centres and/or the provision of specialised knowledge that could help news media outlets to process and analyse data with greater effectiveness:

> *The lack of advanced information provisions and support makes it challenging for journalists to obtain information within their pressing deadlines or when an editor requests information at short notice. If these centres existed within news organisations, they would be able to provide the information needed. (#INT18)*

This echoes similar claims made in the West by journalists who complained about the lack of options available to them in getting support to access and analyse business numbers (Doyle, 2006; Manning, 2013). As one school head argued:

> *Of course [statistics] are very important. However, the problem is that the economic press does not have research facilities or resources within the organisation to help [journalists] gather and access statistics and support them in dealing with these numbers in order to disseminate them among the public. Apparently, the press in the Arab world as a whole does not rely on statistics and studies. In fact, there is supposed to be a reliance on statistics to guide public opinion, and if you look in the newspapers, you will not find any reference to statistics or research centres. (#INT22)*

However, other heads of schools think that teaching statistics in their courses will only help a small and specialised cohort of professionals within news organisations, thereby illustrating the limited impact of these efforts in relation to employability and transferable skills. These voices also raised concerns about the limited impact of learning statistics on the wider public:

> *It can be useful [to teach statistics] to those who think they can benefit from it or who are interested in numbers. However, I do not think it benefits the wider public or the ordinary reader because what these numbers are about does not concern them at all. (#INT21)*

Despite this disagreement among some heads of media schools, the views that teaching statistics is not necessary was only held by a few of those interviewed. The vast majority of the heads of school of media and journalism interviewed believed instead that teaching statistics is crucial. One of the heads of media and journalism schools interviewed mentioned:

> *I believe that the teaching of statistics to media and journalism students is very important and crucial, although many of the media*

> *departments in the Kingdom do not include a special course for statistics. In my opinion, I think this is a mistake and that failing to teach statistics is not the right path to follow. I believe that the teaching of the principles of statistics for undergraduate students is necessary. As for master's students, their studies depend on statistics so they must have a course in statistics, especially because they also have a course in research methods, which in turn depends on statistics, particularly in the quantitative aspect. (#INT15)*

Another head of a media and journalism school interviewed explained the significance of applying the teaching of statistics to journalism students in a theoretical and practical way.

> *It is very important to teach statistics to media students, especially as they develop their skills and knowledge in multi-variable analysis and knowledge to understand and apply statistical standards and tests in the public opinion survey. They also play an important role in analysing the statistical data needed for reporting and investigative reporting. It also helps them to conduct studies and media research, especially quantitative ones, which are based mainly on the employment of statistical transactions. (#INT16)*

In fact, one of the heads of media schools went further in explaining the significance of teaching statistics to media students and how it is important to develop statistical education for students of media and journalism.

> *I think it is a very important course.… Media professionals in many Arab newspapers are not able to use the information and turn the figures into a newspaper article. And we, in the media department, have statistics as an obligatory course and believe this is important, and we also added a course on basic science -physics, chemistry and biology. Whilst this may be a burden to some students, we believe in the importance of educating them in the fundamentals of media and science so that they have the basic knowledge and skills needed to handle scientific subjects when they encounter them or wish to discuss them. Students need these qualifications to keep pace with the evolution of the press. Also, we in the media department, are keen to reflect modern trends in our curricula.… In the new direction, we try to adopt this approach through our curricula. In short, we are trying to become a digital technology department. (#INT18)*

Data from the ground

In addition to the heads of schools' perceptions about the teaching of statistics, I also examined evidence from the documents related to current journalism courses offered at Saudi Arabia schools by surveying their syllabi. One of the key findings was that all students are, in fact, taught -at some level and in some sort of way- statistics during their undergraduate degree. However, the way in which they are taught is different to what one might expect and varies according to each school and department (see Table **61** below).

In the majority of these schools, statistics is taught as a compulsory course of the university or the college. On other occasions, statistics is taught as part of the syllabus of research methods courses or integrated into basic science courses. Only in a minority of cases, statistics taught as a course option in itself, with a specialised emphasis within the schools' curricula.

In contrast to earlier studies (Alheezan, 2007; Alhabib, 2007), which found a real lack of statistical pedagogical provision in Saudi J-schools, the current results show instead far greater and more comprehensive options. This result may be explained by the increase in the number of J-Schools from only four when the previous studies were conducted to 14 schools at the present time (Ministry of Education, 2018b). Another possible explanation is that there has been a global increase in the provision of data and statistics education within media and journalism courses overall (Treadwell et al., 2016); a trend that might have motivated higher education institutions in the southern hemisphere to follow suit.

However, most of these J-schools do not offer specialised statistical courses that are designed particularly for media and journalism students. Instead, some teach just the basics of statistics and how to use statistical software (mainly SPSS), even among those who deliver these courses within their own curricula and not as part of wider provisions of the university. In other words, in most cases there are no courses, that take into account the needs and expectations of this particular field (i.e., being far more instrumental in helping journalists use statistics to carry out investigative reporting, analyse polls, etc.).

Some heads of schools interviewed thought that the current offerings are far from sufficient and believe that just providing basic statistics skills and knowledge is not enough for their students if the purpose is to prepare them well for the future. As one of them said:

> *[T]here is a general course of statistics that is mandatory, but it does not meet the needs of media students because it is taught in general terms and not in depth regarding its application to the analysis they will need to carry out as professionals. (#INT20)*

#	University name	College name	Department name	Teaching statistics for undergraduates:		
				… as a specialised course	… within a different course	… as a compulsory course for the college or university
1	King Saud University	Art	Mass Communication			1
2	King Abdul-Aziz University	Communication and Media	Journalism		Research Methods	1
3	Al-Imam Muhammad Ibn Saud Islamic University	Media and Communication	Journalism and Electronic Publishing	1		
4	Umm Al-Qura University	Social Sciences	Mass Communication		Research Methods	1
5	Taibah University	Art and Humanities	Communication and media		Research Methods	
6	Islamic University of Madina	Da'wa "Islamic Call" and Fundamental of Religion	Media			1
7	King Khalid University	Humanities	Media and Communication	1	Science	
8	Imam Abdulrahman Bin Faisal University	Art	Communication and Information Technology			1

Table 61: The current status of teaching statistics in Saudi media and journalism schools.

These voices are not surprising and are not only present in Saudi Arabia. As Franklin and Mensing (2011) pointed out this view and position is very present in many J-schools around the world:

> *One of the criticisms of established newsrooms and journalism education programs is that they can be rigid and resistant to significant change. Defending the values of journalism can be conflated with defending the practices of journalism. Academic processes can be startlingly unresponsive to external needs. However, the scale of change and the need for revised curriculum and educational methods is now so stark in some places that the impetus is sufficient to open up new possibilities for reconfiguration.*

> *Journalism education programs can take this opportunity to remake themselves into learning organizations, communities of practice or other structures that foster the innovation and responsiveness necessary for future success. As universities find themselves under increasing pressure to update their own practices and relevance, journalism programs could be well positioned to become leaders by virtue of necessity. (Franklin and Mensing, 2011, p. 6)*

Another head went on to explain why it is not enough to teach statistics as a compulsory course of the university or college:

> *[I]t does not meet the needs of media students. This is because there are different disciplines in statistics… The basis of statistics in our department is the use of statistics in research and media studies with a focus on the principles of descriptive and applied statistics, and variables and attributes separate from other types of statistics that have nothing to do with the study of journalism and media. (#INT16)*

However, not all heads of schools are on board with this and many thought that the existing 'general' provision is more than sufficient to deal with the needs and expectations of the media industry and the journalistic profession. This point was clearly illustrated by one of the heads, who said that he did not believe in teaching statistics as a specialised course within the school's curricula:

> *Teaching statistics actually exists in the bachelor's degree as a university requirement and exists within the curriculum of the research methods in the Department of Media as well... However, I do not recommend creating an independent course of statistics for the bachelor's degree programme. A student wishing to study advanced statistics can select this course as an optional or free subject. (#INT17)*

An analysis of the feedback gathered from some the interviewees revealed that their own views on whether there is a need for specialised courses are perhaps anchored in their belief that managing statistics is a subject that they themselves can teach and perform. Indeed, for the majority of heads of schools interviewed, the limitations in the teaching of statistics within schools' curricula are not due to issues related to human resources; many held the view that *"this has nothing to do with the lack of qualified faculty to teach this course" (#INT15)*. This view was shared by most of the heads of schools interviewed.

In fact, only one of them saw human resources as a key pedagogical limitation. In this sense, the interviewee pinpointed the following:

> *There is already a shortage of faculty members specialised in the field of media statistics, so we may resort to relying on faculty members of associated disciplines such as sociology and psychology. (#INT17)*

Ten journalists and news editors cover the business newsbeat at three Saudi newspapers (*Alriyadh, Aleqtisadiah, and Asharq Al-Awsat*). This group, all of whom were interviewed in the current study, included six journalists and four editors, seven of whom were male and three female. The interviewees were selected from those journalists and news editors who covered the Global Financial Crisis of 2008 to explore their own experiences in dealing with statistics during that events and to determine how education could have enhanced their own capabilities.

The data suggests in this case that none of the journalists and editors interviewed agreed that Saudi universities prepare students of media and journalism to work with statistics. On the contrary, their own personal experience, plus their experience in working with others, has led them to recognise the existing gaps in the teaching of specialised knowledge related to statistics. As one editor explained when asked how much specialised statistical education he/she had received:

> *Zero. To the best of my knowledge, Saudi universities have not yet provided any link between statistics and the economic press in their curricula. However, there are individual efforts and personal judgments from some bodies such as foreign media institutions or local institutes. (#INT01)*

This view coincides with a number of studies, which have found that teaching students of media and journalism schools in the Arab world does not necessarily prepare them for the real world; they warn that students are ill-prepared to perform well as part of the media's workforce when they graduate (El-Nawawy, 2007; Saleh, 2011; Tahat et al., 2017).

Another editor touched on the debate around business and other specialised types of journalism. This refers to the question of whether it is better to appoint journalism/media graduates and then to provide financial courses for them, or whether it is better to hire financial graduates and then provide media courses for them:

> *There are many theories that speak about this aspect. Are we supposed to employ media graduates in the economic press after giving them an economic course or economics graduates in the economic press after giving them a media course? Local and international experiences combine both. But from my point of view, the person working in the economic press is one who is capable of developing themselves to understand the economics and to be able to read economic figures and reports. Saudi universities are a long way off from reading the economic scene. (#INT03)*

This, in fact, echoes previous discussions in academia, such as that put forth by Weiss and Retis-Rivas (2018, p. 11), who highlighted that: "when journalism students nowadays are required to learn the latest skills in digital, social and multimedia technology, the focus on data journalism could be an afterthought and just not make the list of courses they need to take before they graduate". This idea was expanded on by another of the interviewees, who stated the following:

> *Based on my experience, I found the first newspaper where I worked depended on economic, finance and management graduates, and their experience was largely based on their academic record and the number of accounting and financial courses they completed. It is difficult to find a student specialised in media and train them in statistics, economics and finance to work in a newspaper specialising in money and economics, whereas it is easier to train graduates of economics, finance, accounting and statistics on the editing of media. From my point of view, I think the university has many shortcomings, from teaching how to read ratios to teaching how to deal with the Excel programme. (#INT02)*

Another interviewee confirmed this view, clarifying the following:

> *I am a journalist and I have a BA, but I did two years of practical training in a newspaper, and I think this training is what made me a journalist. I found that the university gave me the theoretical side, but I was only trained by the newspaper to be a journalist and the university has nothing to do with it. (#INT04)*

It is perhaps important to clarify in relation to this discussion that only half of the interviewees held a BA degree, with only two holding a degree in journalism-related field -one in media and journalism and another in public relations. The remainder of those interviewed working in this beat who had a BA degree graduated instead from disciplines such as banking and financial science, management and economy, and sociology. More interestingly, while the vast majority believed that training would be very helpful, the majority of those had not actually undertaken any training. In addition, all of those who graduated did so at least ten years ago or more, so their views might only reflect the previous setting of the media and journalism education landscape.

In any case, these findings suggest that there is an important gap between what the media industry expects and claims to need from new graduates and the knowledge and skills on offer. This is not a problem exclusive to Saudi Arabia or even to the Arab world as a whole. It is, in fact, a more global problem that has been widely recognised and debated in many forums and conferences around the world.

4.5.4 Conclusion

The overall data presented in this section suggest that, contrary to common assumptions that claim exceptionalism, Saudi Arabia's J-schools -despite the political system and cultural context in which they operate- tend instead not only to face similar challenges to those faced by their counterparts in Western liberal democracies but also to follow similar approaches and normative aspirations in relation to the teaching of statistics and data to journalists.

This is not to say that I am somehow equating the journalism education provided in a Western liberal setting with that taking place in Saudi Arabia; I rather seek to pinpoint that some of the similar challenges and limitations might have grounds for common actions and responses. In other words, based on my data, I suggest that, far from dismissing Saudi Arabia's journalism education attempts to modernise in the past few years, we should instead recognise them as part of the important transformations taking place in that region.

It is clear from this research that there is awareness and expectation among journalism educators and practitioners that more transparency and accountability must brought to their own societies. One of the ways to achieve this, it seems, is to develop particular provisions that can deliver critical knowledge and skill sets related to the use of data and statistics in news reporting.

Although my study is limited to the business newsbeats, it is possible to see that there are other areas that have similar experiences and views. The teaching of data and statistics to journalism students is, in fact, a shared need across all areas of journalism, not only in terms of providing transferable skills to increase employability among these students but also –and more importantly- as part of orchestrated efforts to support the changes taking place in the region and to allow journalism to make an effective contribution to the enhancement of transparency and accountability in the society.

In this sense, I argue that it is necessary to understand these educational efforts as part of a wider approach to building 'capabilities' in the region –an approach that refers to a framework that allows interventional efforts from educational organisations to provide the means to fostering the wellbeing of primary moral importance. According to this view, these capabilities exist to offer real opportunities for individuals to do and be what they have reason to value most (Nussbaum, 2001; Sen, 2002). In other words, the efforts to teach statistics and data in Saudi Arabia's J-schools need to be contextualised within more global educational efforts to offer knowledge and particular skills that can help individuals and communities advance transformational agendas for the benefit of society at large. That is, I think, our true challenge.

4.6 Conclusion

This chapter has served to elucidate the empirical results of the content analysis, interviews with journalists and editors, interviews with news sources and interviews with heads of Saudi media and journalism schools. Through a triangulation of these methods, the chapter aimed to explain how journalists use statistical data to articulate business news stories in the Arabian Gulf. Within this study framework, articulating business statistical data appears to be one of the means through which journalists aspire to achieve a high level of journalistic professionalism.

This research suggests that there are both internal and external factors that affect journalistic professionalism in relation to journalists' use of statistical data in their articles. They also highlight the distinction between achieving professional standards from a skill-based technical point of view and achieving goals set by the normative aspirations of being comparable to 'professionals' who operate with a higher level of autonomy in liberal democracies.

These factors can be categorised into three levels of stratification: 1) the political system that guides news sources and journalists, whether directly or indirectly, 2) the statistical agencies that control the flow of information by deciding which data can be released and 3) newsrooms, which are affected by the political system (e.g., printing laws) and are the setting in which journalists use statistical data to articulate their business news stories (see Figure **10**). Each of these levels affects journalists' ability to achieve high levels of professionalism; therefore, improvements in the use of statistical data at even one of these three levels (e.g., in terms of the proper interpretation of statistics and journalists' criticality and verification of data received from news sources) would aid journalists in accurately presenting data and, in turn, in achieving a higher level of professionalism.

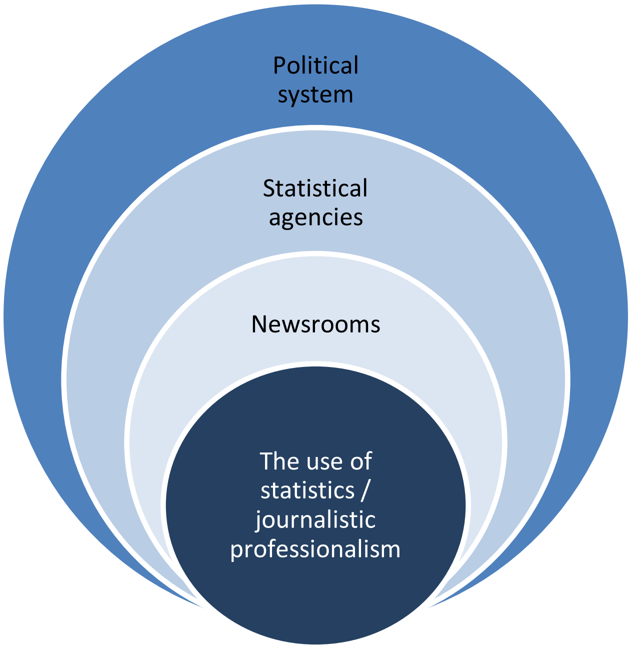

Figure 10. The ecosystem of journalistic professionalism, which is made of up three levels of stratification.

As shown in Figure 10, achieving a high level of professionalism in the use of statistical data by journalists in business news stories lies at the centre of what is here termed the "ecosystem of journalistic professionalism". As such, the achievement of a high level of professionalism is subject to the extent to which these internal and external factors affect journalists' ability to use business statistical data in their news stories.

From what was seen in the interviews with journalists and the articles analysed in this research, the normative professional aspirations of business journalists in the Arabian Gulf are similar to those of their counterparts in the West. This result, of course, is not surprising, as similar findings about journalists' normative aspirations have been found in other regions of the world, despite the fact that many of these journalists operate in non-democratic and even authoritarian regimes. Indeed, one of the most remarkable findings from the Worlds of Journalism Study (WJS) research project (2016) is the overall convergence in the normative claims and deontological aspirations related to news values and journalistic ethics among journalists from all over the world.

Although there are important caveats to be made about these claims of the universality of news values and the deontology of journalistic practices, the evidence from the WJS suggests important overlaps regarding journalistic ethical aspirations and stances worldwide. The cornerstone of these convergent views is the ideal of professional autonomy (Singer, J.B., 2007; Hanitzsch et al., 2010; Deuze, 2005). This ideal seems closely connected to the notion of objectivity, which despite criticism continues to be paramount in the conceptualisation of journalism as a professional and independent field (McNair, 2009; Ward, 2015; Maras, 2013).

The overall data reveals that journalists tend to use valid statistics, rely on reliable statistical sources and to provide an interpretation of the statistical data they present. However, engaging with the statistics is the task in which journalists seem mainly 'to be ticking the boxes of professionalism'. In other words, they follow the procedures set by the cannons of professionalisation but without really exercising critical scrutiny of the subject in a way that would achieve a high level of professionalism.

The evidence underpinning the lack of critical engagement with statistics (i.e., in ways that the normative models of journalistic professionalism would demand) is robust. An overdependence on official sources and a lack of criticality only serve to highlight the difficulties that these journalists face. While the current results echo those of other scholars (Sakr, 2007, p. 18; Rugh, 2004; Mellor, 2005; Mellor, 2007) who also argued that it is difficult for journalists in the Arab world to enjoy political autonomy and practise their role as watchdogs within their particular contexts (that is, the political and media systems), the reasons for this lack of fulfilment of professional expectations seem to differ between those in Arab countries and those in the West. Some particular differences include the ability and willingness of journalists to engage with statistics from other sources and the lack of professional training and specialisation.

Furthermore, a shortage in statistics-related education at media and journalism schools in Saudi Arabia has contributed with the gap between what the media industry expects and the skills and knowledge new graduates actually possess. This is one of the main obstacles facing journalists in their use of business statistics. However, this gap was much less prominent for news sources, who tended to have been trained in how to properly manage statistics.

The analysis also confirms that statistics are used by journalists in Arab countries to frame business news stories in a similar way to the standard journalistic practices in the West; specifically, they were balanced between positive, neutral and negative tones in the aftermath of the world financial crisis of 2008. During the crisis, the overall tone of the Arab business news was neutral, resembling the tone with which newspapers in New York and London covered the same events (Van Dalen et al., 2017; Schiffrin, 2011). Equally important is the fact that the main provider of statistics in these Western newspapers was the government, and to a lesser degree the private sector, which were also the most trusted sources among Arab journalists.

However, the overall data suggests that there is also a gap between the ethics standards to which journalists claim to be committed in their use of statistics and those to which they really adhere when writing business articles. The ethical issues confronting newspapers in these countries, particularly in Saudi Arabia, seem to be structural, which gives news sources and advertisers room to interfere with the data; this, in turn, enables them to affect the use of statistical data in business news. Moreover, a lack of procedural ethics by the Saudi newspapers included in this study was observed in the form of insufficient self-regulatory systems and press codes. This deficiency can also affect the level of journalistic professionalism at the newspapers. However, in addition to overcoming these political and cultural challenges, newspapers must also allot more time and resources to providing training and strengthening the code of ethics to achieve their own normative professional expectations.

Chapter 5
Conclusion

5.1 Introduction

This research highlighted the inconsistency between the professional and normative aspirations of business journalists in the Arabian Gulf, specifically in terms of the use of statistics by journalists. According to Mellado and Van Dalen (2014, p. 859), performative gaps are unavoidable due to a number of factors that restrict journalists' ability to meet their "normative standards". These factors vary from one country to another and from one context to another; however, professional autonomy, political and economic factors are considered the most influential factors that can either hinder or boost journalists' ability to maintain their journalistic professionalism (Waisbord, 2013). The context of the Arabian Gulf is not exempt from being affected by these factors (AlHroub, 2012; Alheezan, 2010; Babaker, 2014); indeed, Freedom House classified Saudi Arabia and the UAE as "not free" (Freedom House, 2016, pp. 24-26), which could certainly influence journalists' ability to meet their normative standards. While the watchdog role has been considered the defining feature of journalism globally since the 1970s (Mellado and Van Dalen, 2014, p. 872), journalistic practices often reflect, rather than challenge, the power structure of the country in which they are applied (Donohue et al., 1995, pp. 118-119); as such, it might be misleading to use only the "normative ideals of journalism as a way of understanding its reality" (Mellado and Van Dalen, 2014, p. 872).

The use of statistics is considered an important element of journalistic content generally but is especially relevant for business journalists, who often use data to convey business issues to the public. In this sense, this thesis investigated the issues and challenges facing the articulation of business statistical data in journalism in Saudi Arabia and the UAE.

This study aimed to explore the use of statistics in business journalism in the Arabian Gulf, and particularly, in Saudi Arabia and the UAE. The topics under analysis were the stock market, the housing market, the banking market and oil prices. The results of this analysis show that the method by which journalists use statistics makes data a vital part of the construction of business news articles; it further highlights how this construction might affect the way in which the public receives and understands business issues. Moreover, this thesis sought to highlight some of the normative procedures within professional journalism by exploring how journalists and editors engage with business statistical data. At the core of this discussion was the link between the articulation of statistical data and the ability to produce business news stories with a high level of professionalism. In doing so, this study emphasised professionalism as a central concept in journalism.

The significance of the thesis is that it is the first study of its kind to investigate the use of statistical data in business journalism in the Arabian Gulf. To achieve this, it explores the gaps between the normative claims, ethical expectations and actual practices of journalism. In so doing, this research underscores the significance of examining the use of statistical data by journalists who cover business issues in Saudi Arabia and the UAE, one of the primary newsbeats, particularly since the financial crash of 2008 and in the aftermath of austerity programs around the world.

Indeed, aside from a book by Aliraqi (2016) that focuses on the general practical aspects of data journalism (written in Arabic), no research has thus far examined the use of statistics by journalists in Saudi Arabia and the UAE. No research has examined the role of statistics in Arabian Gulf journalism, and therefore, we know very little about the existing capabilities, practices and standards in relation to the use of statistics within journalism in this region. To fill this research gap, this study presented empirical findings related to the use of statistical data by journalists who cover business newsbeats in the Arabian Gulf, focusing on the inconsistency between the normative professional aspirations and the actual practices of business journalists in the Arabian Gulf. This data was then analysed using a theoretical explanatory framework developed within this research that allowed for the interpretation of the results within the context of particular theories and approaches.

The originality of the current study also lies in its criteria for assessing the use of statistics by journalists that I developed, and particularly for the study of journalistic content. Generally, each criterion treats one of the following aspects: 1) validity, which, in this research, was used to examine whether the statistics included in an article were used to measure what they were supposed to measure; 2) reliable statistical sources, which as used to examine the reliability of statistical sources; and 3) interpretation, which was used to audit whether journalists' interpretations of statistical data corresponded to a more general professional interpretation of their meaning.

Overall, this research found that the notion of professionalism seems to be admired by journalists, despite the common assumptions that journalists in that part of the world hold different views on the topic. On the contrary, as also found by the World of Journalism Study (2016), journalists in the Arabian Gulf make similar claims and have similar expectations to their counterparts in the West; this is also in spite of the fact that they practice their profession in 'close regimes' (Kalathil and Boas, 2010). I found that journalists in these countries -as well as their editors and university teachers- expect that news reporting is practiced according to the highest standards.

However, the fieldwork also showed that their use of statistical data does not reflect the expectation of a high degree of professionalism to which they aspire. In particular, journalists' use of statistics often does not support their main argument when covering business issues. This, according to the findings and the analysis, is due to both external and internal factors that affect their use of business statistics. For instance, the results show that there is often a lack of critical engagement with statistical data and the impact of government and private sector statistical sources; this reflects not only the wider issue of a lack of professional autonomy when practicing journalism in the region (as expected) but also a lack of current capabilities (i.e., knowledge and skills) to allow journalists to perform such a task.

This study did not identify only flaws, of course, and as seen in the current research findings, in the majority of the business articles analysed, journalists did use valid statistics, used reliable statistical sources, and in many cases, the interpretation of statistics provided did correspond with the expected level of professional interpretation in terms of its clarity. However, few of the articles included a challenge to the data presented, and criticality was widely absent, which is one of the key expectations related to the function of journalism. This is problematic because, in spite of living within a less liberal system, people in Arabian Gulf countries also require high-quality journalism. Alheezan (2010) highlighted the fact that some of these countries also suffered from the collapse of the stock market and lost money because of banking malpractices and the abuses of corporations and the business sector, pinpointing the lax regulations of the government as a contributing factor.

Indeed, the content analysis findings showed that in around only one-fifth of the business news stories did journalists engage critically with statistical data. Furthermore, the data gathered from the interviews with journalists confirmed that the traditional mechanism of validation and verification is not conducted by business journalists when dealing with statistical data; instead, they tend to defer to statistical sources to verify the accuracy of data. This underscores that news reporting in these country lags behind that of other countries and that there is a need for more transparency and accountability in this sector.

As confirmed by the various research methods used in this study, there is a clear trend among journalists to overlook the verification of data and cross-checking of statistics. In this sense, the content analysis findings showed that the majority of business articles (78.3%) rely on only one source, and 63.3% of business articles rely on government sources. The data gathered in the interviews with journalists and editors could explain this result, as the interviewees believed government statistical sources to be the most 'reliable' sources. While it is logical and reasonable to rely on the source that produces the data to provide the data, this does not, however, mean that journalists can or should ignore the necessary process of verifying and challenging the data, particularly because it is the government itself that would be interested in putting appositive spin on the statistics. By over relying on one government source, journalists end up underpinning narratives of power rather than challenging them.

However, and without making excuses for this lack of criticality, this is not unique to Arabian Gulf countries. Study after study, both in the West and in other countries around the world (e.g., Brandao (2016)) consistently show that, when it comes to the use of statistics, journalists continue to rely on one single source and assign too much credibility to it. The current study, therefore, highlights a wider issue not only within the countries in question and their political systems, but also in relation to the way journalists in general approach data. Underscoring this is the fact that journalists act as an interpretative community and, as such, see themselves producing knowledge in the same way that science does (i.e., by achieving truthfulness). Hence, numbers seem, to them, to be the ultimate universal element providing an objective account of events.

Another important finding revealed by the content analysis was the fact that more than one-third of business articles (36.3%) were published without the reporters' names. The majority of the journalists and editors interviewed believed that this was because the articles were press releases, whether from the government or the private sector. Furthermore, the interviews with journalists and news sources showed that newspapers feel obliged to publish what they receive from the government. This is an interesting finding in light of what is occurring in journalism in the West, where news media outlets increasingly seem to be publishing press releases and relying on news packages produced by PR departments (Lewis, J. et al., 2008b; Franklin and Carlson, 2011; Davis, 2007) to fill the gap left by resource cuts in newsrooms. While in Arabian Gulf countries there seems to be an obligation to publish such reports and in the West there is a need, the result is the same: more spin and less critical journalism.

In addition to the publishing of press releases and the control of the government over newspapers, this study also revealed advertisers' impact on the use of statistical data by journalists. By placing direct advertisements in newspapers, advertisers -and particularly corporate advertisers- seem to gain leverage over newspapers. Some of the journalists and editors interviewed pinpointed that some newspapers offer editorial services for companies in return for their advertisements. The journalists and editors interviewed revealed another influence of advertisers, as they stated that even if the impact of advertisers has declined from the level it was at in 2008, advertisers nevertheless still have an impact on the nature of the data published in news stories (e.g., by hiding negative data or exaggerating positive data). In addition, they sometimes have the power to block an entire article from being published.

Indeed, these results are not in line with the concept of professional journalistic autonomy, which relies on “the willingness of journalists to face attempts to instrumentalize the press in favour of commercial, political, and managerial goals” (Waisbord, 2013, p. 70). Both external and internal autonomy are of real concern for business journalists. For the former, it is widely accepted that authoritarian regimes impose control by regulating or censoring the media (Mellor, 2007; Rugh, 2004; Sakr, 2003; Sakr, 2006), which, in turn, affects journalists’ external autonomy. Furthermore, one of the journalists interviewed stated directly that “newspapers are forced to ignore the negative results of some government companies when losses are reported” (#INT10). In terms of internal autonomy, the results of this research confirmed that advertisers place powerful constraints on the internal autonomy of journalists, exerting strong influence over what is and is not printed (McManus, 2009).

Another important findings is journalistic deontology in the Arabian Gulf, as there is wide concern that unethical practices affect the way in which statistical data is articulated in the news in these countries. Malpractice may be committed by various parties, including journalists, newspapers, news sources and advertisers. The data suggest that the ethical issues confronting newspapers in these countries, particularly in Saudi Arabia, are structural, which gives news sources and advertisers room to interfere with the data and the data publishing process; this, in turn, enables them to affect the use of statistical data in business news. Moreover, a deficiency in the procedural ethics of the Saudi newspapers studied was identified, in the form of a lack of self-regulatory systems and press codes; this, too, can affect the professional values of transparency and accountability most newspapers strive to uphold.

Capabilities

Beyond the external factors that affect journalists’ performance, there are also important internal factors associated with their capacity (i.e., skills and knowledge) as well as their capabilities (i.e., their freedom to choose a particular path to knowledge) when practicing news reporting in this region. Hence, another important factor affecting journalists' ability to use statistical data is their level of education and training. To assess this, I interviewed the heads of Saudi media and journalism schools[10] and followed up on this by carrying out a survey examining the curricula and syllabi at all Saudi universities teaching journalism. This analysis showed that all students are taught principles related to the use of statistics within their undergraduate education. However, the ways in which they are taught are different to what one might expect and vary according to school and department.

Nevertheless, it is also worth noting that substantial improvements have been made from the past; this became evident in the comparison of the results of the current study with the results of Alheezan (2007) study, which identified only one media school that taught general statistics as a compulsory course required by the university. When considering the incorporation of key elements in journalism syllabi and the expansion in the number of courses in media and journalism available, it becomes clear that there has been an attempt to professionalise journalism in these countries, particularly in Saudi Arabia.

This improvement, however, has not yet reached the area of statistics in journalism, and journalism education is still a long way from being able to build the necessary capabilities in this area. To be sure, none of the journalists or editors interviewed thought that Saudi universities (as this was the country focused on in this research stage) sufficiently prepare students of media and journalism to work with statistics. More interestingly, while the vast majority of the journalists and editors interviewed believed that training would be very helpful, the majority of them had not actually undertaken any training, according to the survey. This is an important finding, as journalism education has been described as a pathway to improving the standards and professional practices of journalism (Deuze, 2006). It also highlights a wider problem with journalism education around the world. In the UK, for example, there are very few journalism degrees that incorporate statistics as part of the core syllabus (Nguyen and Lugo-Ocando, 2016), nor does the UNESCO-proposed Model Curricula for Journalism Education include the teaching of statistics or any numeric skills (UNESCO, 2007).

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[10] The researcher was not able to investigate the nature of journalists' education related to data and statistics use in the UAE due to a lack of resources.

Content and transparency

With respect to the topics covered in this study, the data collected showed a number of notable findings. First, there is a clear lack of articles produced that contain statistics relating to oil prices, despite the fact that this is at the centre of the economy and politics in that region. This result may indicate an overwhelming reliance by newspapers on foreign sources to cover crucial topics, such as the price of oil in the countries to which these newspapers belong; this is of particular concern because within the countries studied, the majority of their revenue comes from the oil sector (Nusair, 2016, p. 256). However, it might also highlight the fact that in many countries, there is a general lack of understanding about oil and oil culture among the general public.

Another important finding is that, of all the topics studied in this research, coverage of housing market contains the most inaccurate use of statistical data, a finding that is concerning because it is one of the datasets that has been shown in the past to most directly affect people. This is evidenced by the following findings of the content analysis: 1) the housing market is the topic that most often contains statistics that lack validity in the context of the articles (in 16.3% of the housing market articles); 2) the housing market is the topic that includes reliable statistical sources the least often (accounting for just 39.8% of the housing market articles); and 3) the housing market is the topic that contains the most statistics presented without interpretation (occurring in 35.2% of the articles).

Within the topic of the housing market, business journalists were shown to have an overdependence on private organisations as data sources, with private sector data used in 71% of the articles. It was also the only topic in which the tone of the interpretation of statistics was positive, with 100 articles (51.02%) being presented in a positive light. Furthermore, feature stories containing statistics, rather than hard news stories, dominated the housing market coverage, and 9 of the 15 articles that contained human-interest issues were published about the housing market.

Finally, it ranked first among the topics studied in terms of the use of stand-alone statistics as the preferred way to verbalise data-driven news stories, with 95 such articles in total in the housing market coverage (48.47%). In fact, the semi-structured interviews also showed a clear indication that coverage of the housing market suffers more than other topic studied in this research (i.e., the stock market, the banking market and oil prices) in terms of the misuse of statistical data. As one of the journalists stated the following:

> *It is difficult to build a report or a news story based on wrong statistics. This happens in reality; for example, in the real estate sector, we discovered it was a two-sided sector. The first claims that real estate prices are falling and presents statistics without a source or simply with an unreliable source. The second side says that the price of real estate is stable and does not change and is based on sale and purchase numbers, which does not reflect reality. The Ministry of Housing and the Ministry of Justice and the authorised system, which officially record all sales and purchases, are authorised to reflect the reality and should present accurate and reliable statistics. What is happening is that both sides in the sector are exploiting the statistics by modifying them to suit their interests. Specifically, if sales for a particular month are low, the side that claims real estate values are declining will rely on the statistics of the Ministry of Housing and the Ministry of Justice and will interpret them as a strong indicator of the decline; however, if the number of sales increased the next month, the same side will ignore these statistics. (#INT12)*

Chapter 1 presented an introduction to this study, including an overview of the research background, a statement of the problem, the research rationale, the aims and objectives, definitions of main terms and an overview of the structure of the thesis.

Chapter 2 consists of two sections. The first section examined journalistic professionalism, including its guiding principles and ethics, and journalists' perceptions of these, in an effort to identify the core principles of journalistic professionalism. This chapter also discussed professional autonomy and its role in supporting journalistic professionalism. In addition, it discussed international perspectives of journalistic professionalism, challenging the principles of journalistic professionalism that have been identified to determine the extent to which these can be found globally. The second section provided the possible causal factors that might affect the use of statistical data by journalists. It explained the local context of the research—business journalism in the Arabian Gulf states, particularly Saudi Arabia and the UAE as well as the political, cultural and media system within this context. It also discussed source-related factors and journalist-related factors, as well as the educational systems in these countries.

Chapter 3 elaborated on and rationalised the chosen research methodology, including the triangulation of quantitative and qualitative methods. It described the data collection process and how data would be analysed in detail.

Chapter 4 presented the original contribution of this research in the study of the use of statistical data in business journalism in Saudi Arabia and the UAE. The main findings in this chapter were organised according to the research methods used. The first method used was a quantitative content analysis, which examined the content of 1321 (n = 1321) business articles from the newspapers *Alriyadh*, *Aleqtisadiah*, *Asharq Al-Awsat* and *Alittihad* to investigate how statistics are used in business news stories published in the daily press of Saudi Arabia and the UAE. The second method used was semi-structured interviews with three different groups of participants: fourteen (n=14) journalists and editors from the sample newspapers; six (n= 6) Saudi news sources; and eight (n= 8) heads of Saudi media and journalism schools.

5.2 General Discussion

This thesis has bridged some of the research gaps in the areas of statistics in journalism, business journalism and journalism in the Arabian Gulf. Moreover, it has explored and questioned the use of statistical information as a means to deliver business issues, particularly in relation to the stock market, the housing market, the banking market and oil prices. In addition, this thesis has brought attention to the role that statistics play in the production of daily business articles -particularly as a means of constructing social reality- and how these data might be used inappropriately. In examining the current results more closely, professionalism emerged as a vital concept within this study.

However, by looking at the use of statistics in business and business reporting, the research has allowed us to explore the wider issues relating to journalism practices in more general terms in this part of the world. Consequently, it has allowed for an analysis and better understanding of the challenges, limitations and opportunities that journalism, as a profession, faces in the Arabian Gulf, particularly in relation to professionalism, deontology and professional autonomy in the way journalists perform the roles that are expected of them. This, in turn, has allowed for the development of a more comprehensive explanatory framework related to the way journalists operate in parts of the Global South that are not characterised by liberal democracies or institutional protections for reporters.

Indeed, from the early stages of this thesis, the aim of this study was always to use the subject of statistics as a rhetorical excuse to explore and understand how business journalists use and engage with statistical data in the Arabian Gulf. In other words, the purpose was to understand how -and whether- journalists practise their duty as watchdogs for society in an accountable and transparent manner. However, after analysing the data and obtaining the results of this thesis, it has become apparent that treating this subject as a democratic issue is not the most important angle here—the answer to the fundamental question of the research lies elsewhere.

In saying this, I am not suggesting democracy is not important for the Arab world; I believe democracy is of great importance worldwide and especially so in the Arab world. Instead, I mean that when analysing the use of statistical data by business journalists, it is more helpful to use professionalism, rather than democracy, as the lens through which to view the issue, given the context in which they operate. This is because, as seen in the findings, a news report may be accurate and may use statistics appropriately and still serve the interests of the government and the ruling elite.

The current analysis was not conducted in a naïve manner, and it revealed that it is sometimes necessary to blur one's expectations of what journalism should be in that part of the world. Journalism is what it is and operates within the existing contexts. If we truly want to de-Westernise media and journalism studies, as proposed by so many scholars (Curran and Park, 2000; Wasserman and de Beer, 2009; Waisbord and Mellado, 2014), the first task is to recognise the limitations we face in trying to applying Western paradigms and models to non-Western settings. Because Saudi Arabia and the UAE are classified by Freedom House as "not free" (Freedom House, 2016, pp. 24-26), attention should accordingly be focused on whether journalists are achieving journalistic professionalism rather whether they are achieving Western ideals of journalism.

Consequently, it is legitimate to comprehend statistical data in journalism practice in the Arabian Gulf as a primary means by which most journalists cover business news and to conclude that they relate and perceive these numbers as a means by which to articulate news. Hence, in the majority of the business articles analysed, journalists used valid statistics, referenced reliable statistical sources and interpreted statistics in a way that corresponded to a more general professional interpretation of their meaning.

This is not to say that all journalists in these countries use data in exactly the same way. Instead, a few journalists were identified who verified, scrutinised and criticised the data they presented, challenging the narratives of power. Nevertheless, the majority of the business articles analysed (90.8%) used stand-alone statistics and simple comparison statistics as the most common statistical narrative tools.

The results showed, overall, a gap between expectations and practice as, for the most part, journalists in this part of the world seemed to be ticking the boxes of professionalism' when reporting business and business numbers. In fact, the results appear to be a practical example of the conclusions of a study by Pintak and Ginges (2009), who found that while Arab journalists esteem and value journalistic professionalism in the US and believe that they share some professional values with their Western counterparts, in practice, they did not. Indeed, there is a general belief among reporters that they are achieving a high level of professionalism, which they consider one of the main issues facing Arab journalists (Pintak and Ginges, 2009, p. 172). Regardless of this, however, an absence of critical engagement with data still exists.

A closer examination of the weaknesses affecting the level of journalistic professionalism in Saudi Arabia and the UAE revealed also a number of other issues such as a lack of statistical education and training, the impact of advertisers and statistical sources (both government and private) on data reporting, ethical system. These issues -independently, but even more so taken together- challenge journalists' ability to truly achieve professionalism (let alone professional autonomy). While the notion of journalistic professionalism generally in academia is still contested and ambiguous (Waisbord, 2013), there is agreement that it refers to a number of issues including: 'specific quality standards', 'accreditation', 'technical specialised knowledge', and 'organisational discipline' (Waisbord, 2013, p. 15). In the case of the Arabian Gulf, some advancements have been made with regard to achieving professionalism, despite many setbacks in achieving the goal of professional autonomy. However, the latter is a topic for a future study - one which I hope both I and others can one day develop.

5.3 Future Research

The current study is not only the first step toward a better comprehension of the articulation of statistical data in business journalism in the Arabian Gulf but is also a door to a future project of understanding better what is it to be a journalist in Arabian Gulf societies. Therefore, it is my hope that my future research will include the following topics: 1) ethical considerations when using business statistical data, such as the possible manipulation that might occur by journalists and news sources and its implications in relation to journalistic professionalism; 2) the consumption of statistical data in business news (as, while the current study focused on the production of news containing statistics, an investigation of how the public understands and receives these statistics should be carried out); 3) production practices related to data visualisation (a topic of which I have just begun to scratch the surface in the current study); and 4) a comparative analysis to measure differences in the use of statistics by business journalists in different periods and in different countries in the region.

The first issue outlined above relates to data ethics, and the discussion could be directed toward how ethical considerations might affect the use of business statistical data by journalists and news sources in the Arabian Gulf. The current research has confirmed that there are currently issues related to journalistic deontology, particularly in relation to how reporting is conducted between journalists and their news sources throughout the journalistic process. Moreover, there is a lack of a code of ethics at all the Saudi newspapers studied in this research, a topic that should be given more attention in future studies. More importantly, under the umbrella of journalistic professionalism, it is widely accepted that journalists around the world use ethics to justify their decisions when gathering and reporting data in remarkably different manners (Waisbord, 2013, p. 1); however, as I hope to further examine, it is also a mistake to think that ethics is the only rationale used within news gathering in this region.

The current study has concentrated on exploring the ethical considerations that might boost or hinder business journalists' ability to use statistical data in the Arabian Gulf, but in doing so, it has also opened up countless routes for future research through the realisation that journalism, as a practice, cannot be only conceptualised through a Western lens. In this sense, this research has thrown up many questions that need further investigation, particularly relating to deontological expectations. It would be interesting to start by investigating the ethical framework used in the Arabian Gulf, including the efforts made by journalistic associations in the Arabian Gulf and the codes of ethics produced by some newspapers in the region. This means better understanding how individuals can produce their work in a way that is meaningful and helpful to the public.

More importantly, we need to have a proper debate about data ethics in the production of news in this region. We can no longer study journalism in the region or challenge existing practices in the comfort of the Western paradigm that what is not 'free' is not journalism. "Data ethics" as "the branch of ethics that focuses on the relationship between the creation, organization, dissemination, and use of information, and the ethical standards and moral codes governing human conduct in society" (Reitz, 2004) is becoming more and more relevant to all people, not only to journalists. Hence, to remain relevant, journalism in the Arabian Gulf must also create its own code of ethics and improve the level of professionalism of its business journalists, regardless of the context in which operates.

The second issue outlined above relates to a crucial goal in my future research in the region: that of data literacy in general. Indeed, the consumption of business statistical data by news audiences in the Arabian Gulf and how they use and engage with these data are central parts of my agenda. It would be beneficial, therefore, to explore the consumption of statistical data in business. There are already some scholars working in this topic (Babaker, 2014), who have explored the perception of the public in relation to journalism's role in providing economic information. However, there are no studies which have examined the consumption of statistical data by news audiences in the Arabian Gulf itself. This is particularly relevant as more studies relating to audiences in the Middle East are emerging in the field (Tessler, 2011; Gunter et al., 2016).

The third issue that must be addressed focuses on journalists' use of and readers' engagement with data visualisation. While there are a considerable number of studies published on data visualisation (Cairo, 2012), none have examined how the public in the Arabian Gulf use and engage with visual data in business news, aside from (Bekhit, 2009), who explored the use of infographics in UAE newspapers. If the debate is moving forward, a better understanding of how the level of journalistic professionalism of business journalists might affect the way news audiences receive and understand statistical data is required.

Regarding the fourth issue, one of the limitations of the current study -which is perhaps better described as a difficulty (see Chapter of Methodology)- is its scope, as it was conducted using a small sample. This thesis relied on only four newspapers: two local newspapers, one pan-Arab newspaper and one specialising in economics. Three of these newspapers were from Saudi Arabia and only one was from the UAE. This sample size provides only an initial glimpse of the use of business statistical data in the Arabian Gulf, and in Saudi Arabia and the UAE in particular. This study offers the methods and structure that future scholars could use to study different newspapers or newsbeats in different countries in order to investigate further the use of statistics in business journalism. Moreover, using the methods and structure of the current study, a comparative analysis of the use of statistics in business journalism could be conducted; for example, while the content analysis of this study focused on the period of the global financial crisis of 2008, other time periods could be reviewed and compared.

Similarly, there is space to carry out further research about different business topics and different types of journalistic content. In analysing the use of statistics in the sample newspapers, this research considered only articles produced by the newspapers themselves (e.g., news articles, reports and investigations). This decision was made because the current study sought to concentrate on journalists' use of statistics. It also covered only four topics: the stock market, the housing market, the banking market, and oil prices. Future studies might include different types of journalistic content, such as essays and opinion pieces, as well as coverage of different topics related to business issues. I will also take this opportunity to say that there are currently no other scholars working on this topic in the Arabian Gulf. Therefore, I intend to open the area to others and welcome, hopefully, a future critical mass of scholars who make the subject increasingly important in our field, particularly in this region.

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Appendix 1
Ethical Approval

Research & Innovation Service
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UNIVERSITY OF LEEDS

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Faculty of Arts, Humanities and Cultures Research Ethics Committee

University of Leeds

03 May 2017

Dear Fisal

Title of study	**The use of statistics among journalists in the Arabian Gulf: Issues around the use of statistics in business news in the Saudi Arabian and United Arab Emirates media**
Ethics reference	**PVAR 16-052**

I am pleased to inform you that the above research application has been reviewed by the Faculty of Arts, Humanities and Cultures Research Ethics Committee and following receipt of your response to the Committee's initial comments, I can confirm a favourable ethical opinion as of the date of this letter. The following documentation was considered:

Document	Version	Date
PVAR 16-052 Consent Form for Research Project- Fisal Alaqil.docx	2	29/03/2017
PVAR 16-052 Participant Information Sheet.docx	2	29/03/2017
PVAR 16-052 (R1) Fieldwork Assessment Form low risk - Fisal Alaqil.pdf	2	29/03/2017
PVAR 16-052 (R1) New_ethical_review_form_v1_5 - Fisal Alaqil.pdf	2	29/03/2017

Please notify the committee if you intend to make any amendments to the information in your ethics application as submitted at date of this approval as all changes must receive ethical approval prior to implementation. The amendment form is available at http://ris.leeds.ac.uk/EthicsAmendment.

Please note: You are expected to keep a record of all your approved documentation and other documents relating to the study, including any risk assessments. This should be kept in your study file, which should be readily available for audit purposes. You will be given a two week notice period if your project is to be audited. There is a checklist listing examples of documents to be kept which is available at http://ris.leeds.ac.uk/EthicsAudits.

We welcome feedback on your experience of the ethical review process and suggestions for improvement. Please email any comments to ResearchEthics@leeds.ac.uk.

Yours sincerely

Victoria Butterworth

Research Ethics Administrator, Research & Innovation Service

On behalf of Dr Kevin Macnish, Chair, PVAR FREC

CC: Student's supervisor

Appendix 2: A. Code Sheet

Headline: ____________________________

____

Byline:_______________________________

____

Number of Article	0
Date of Publication	0 0 2008

1. Newspapers' Name

What is the newspaper's name?

{1} Alriyadh {2} Aleqtisadiah
{3} Asharq Al-Awsat {4} Alittihad

2. Statistics' status

Are statistics used in the content?

{1} Yes {2} No

3. The appearance of statistics

Does the statistics used implicitly or explicitly?

{1} Explicit {2} Implicit

4. Journalists' Name

Is the name of the journalist presented?

{1} Yes {2} No

5. News Story Producer

Is the news story written by the newspaper?

{1} Yes {2} No

6. Journalists' Gender

What is the journalist's gender?

{1} Male {2} Female
{3} Unknown

7. Topic

What is the main topic of the article?

{1} Housing Market {2} Stock Market
{3} Banking Market {4} Oil price

8. Size

What is the article's size? (In pages)

{1} > 0.25 {3} 0.5 > 0.75
{2} 0.25 > 0.5 {4} 0.75 > 1

9. Genre

What is the journalistic genre of the article?

{1} Hard news story {2} Feature story

10. Statistics' Type 3

Does the article contain any graph?

{1} Yes {2} No

11. Statistics' Type 4A

How many graph does the article contain?

{1} One graph {2} Two graphs
{3} more than two graphs

17. Humans

what is the predominant news angle in the use of statistics?

{1} Social context {2} Corporate context
{3} None

18. Validity

Is the usage of statistics coherent with the topic?

{1} Yes {2} No

19. Reliability

Is the source of statistics in the article reliable?

{1} Yes {2} No

20. Interpretation

Is the statistics in the article interpreted?

{1} Yes {2} No

21. Interpretation 2

If the answer to 20 is "yes", what is the level of interpretation provided?

{1} Yes (to provide a proper clarity and details
{2} No (to provide only a clear reference but with little or limited context)

22. Addvalue

Is the statistics managed/manipulated by the journalists?

{1} Yes {2} No

23. Evaluation 1

Does the article contain any type of comments about the statistics used?

{1} Yes {2} No

24. Evaluation 2

If the answer to 23 is "yes", what type of comments aremade?

{1} Positive {2} Neutral
{3} Negative

25. Geographical Coverage

What is the geographical context of the incident reported?

{1} International (Foreign)
{2} National (Local orDomestic)

12. Statistics' Type 4B

How many of each type of graph does each article contain?

{1}	Time series	{2}	Table
{3}	Bar Chart	{4}	Pie Chart

13. Statistics' Type 5

What is the most common type of statistics used?

{1}	Probabilities	{2}	Percentages
{3}	Percentage 'differences'	{4}	Index value
{5}	Index value 'differences'	{6}	Confidence interval
{7}	Count in Number		

14. Verification

Is there any mentioning of missing data or partial data?

{1}	Yes	{2}	No

15. Source 2

Source provenance

{1}	Government source
{2}	International organisations
{3}	NGOs
{4}	Academic independent
{5}	Private organisations
{6}	Not mentioned

16. Source 3

How many statistical sources are cited?

{1}	One	{2}	Two
{3}	more than two		

26. Geographical Coverage 2

If the geographical context is international, is it limited to the Arabian Gulf region?

{1}	Yes	{2}	No

27. Criticality 1

Does the article contain any type of criticism?

{1}	Yes	{2}	No

28. Criticality 2

If the answer to 27 is "yes", what type of criticism does the article contain?

{1}	Factual	{2}	Practical
{3}	Scholarly		

29. Statistics' Claim

What is the statistical claim?

{1}	Stand-alone statistics
{2}	Simple comparison
{3}	Standards of comparison
{4}	Among candidates explanations
{5}	Systematic vs. chance explanations
{6}	exaggeration of systematic factors
{7}	No clear claim

30. Timeliness 1

Time passed between the statistical release and the publication of the article

{1}	One day	{2}	Two days
{3}	Three days and more	{4}	Unknown

31. News value

Are the statistics used in the news story to … the story?

{1}	produce
{2}	substantiate
{3}	contextualise

Appendix 2: B. Code Book

Code Book

1. **Newspaper name:** Tick the number of the newspaper in which the article was published:
    1) Alriyadh
    2) Aleqtisadiah
    3) Asharq Al-Awsat
    4) Alittihad

2. **Statistics' status:** After reading the article, please identify if statistics are used in the content or not, by choosing one of the following:
    1) Yes
    2) No. If no, the article will be excluded.

3. **Appearance of stats:** After reading the article, please identify if the statistics used in the article, implicitly (e.g. using words such as increase or decrease) or explicitly (e.g. using numerical data) are used, by choosing one of the following:
    1) Explicit.
    2) Implicit

4. **Journalist name:** After reading the byline, identify if the name of the journalist presented or not. Please, choose one of the following:
    1) Yes
    2) No

5. **Article producer:** After reading the byline, identify if the article was produced by the newspaper itself or not. Usually, the newspapers wrote its name in the byline to mention that it was produced by the newspaper, whether its name combined with the writer's name or not. In some cases, the name of the writer will be written alone, even in this case, the article will be considered as an article produced by the newspaper itself. In the case of publishing an article produced by a foreign party, the newspaper will not write its name, instead it must write the foreign party's name (e.g. Reuters, BCC or CNN). Please, choose one of the following:
    1) Yes
    2) No

6. **Journalist gender:** After reading the byline, identify if the writer's gender from its name. If the name of the journalist is not mentioned in the byline, choose Unknown. Please, choose one of the following:
    1) Male
    2) Female
    3) Unknown

7. **Topic:** Tick the number of the topic in which the article is about (see below the main four topics). This is the main event or issue that the article concerns. If it is challenging to determine the main topic, for each potential main topic, count the number of paragraphs that deal with the topic you have identified. The topic with the most paragraphs about it is the main topic.
    1) Housing Market
    2) Stock Market
    3) Banking Market
    4) Oil price

8. **Size:** Approximate size of the article as following:
    1) > 0.25: if the article equal one-quarter of page or less.
    2) 0.25 > 0.5: if the article equal half page or more than one-quarter of page.
    3) 0.5 > 0.75: if the article equal three-quarter of page or more than half page.
    4) 0.75 > 1: if the article equal one page or more than three-quarter of page.

9. **Genre:** After reading the article, identify the genre of the article if it is a hard news story or feature story. Hard news story usually is about a current issue or event that influence the public. In contrast, feature story usually is longer and more in-depth (e.g. financial reports or stock exchange analysis). Please, choose one of the following:
    1) Hard news story
    2) Feature story

10. **Statistics' type 3:** After looking at the article, please identify if it contained any graphs. Any picture that will not contain data will be excluded. Please, choose one of the following:
    1) Yes
    2) No

11. **Statistics' type 4A:** After looking at the article, please identify how many graphs does the article contain? Please, choose one of the following:
    1) One graph
    2) Two graphs
    3) More than two graphs

12. **Statistics' type 4B:** After looking at the article, please identify how many of each type of graph does each article contain? Please write the number of graphs beside each one of the following:
    4) Time series ( )
    5) Table ( )
    6) Bar Chart ( )
    7) Pie Chart ( )

13. Statistics' type 5: After reading the article, please identify what is the most common type of statistics used. Please, choose one of the following:
   1) Probabilities (e.g. p-value).
   2) Percentages (e.g. 5% tax).
   3) Percentage 'differences' (e.g. Consumer Price Index (CPI) increased by 0.2% in May 2016).
   4) Index value (e.g. Saudi Stock Market (Tadawul) = 6825).
   5) Index value 'differences' (e.g. Tadawul increased by 100 units).
   6) Confidence interval (e.g. the mean inflation for next year will be in (0.001, 0.05) w.p. 95%).
   7) Count in Number (e.g. There were 3 million transactions in the stock exchange in a day ...).

14. Verification: After reading the article carefully, please identify if there any mentioning of missing data or partial data by the writer, by choosing one of the following:
   1) Yes
   2) No

15. Source 2: After reading the article, please identify what is the source of the statistical data (in case if there are more than one source of the data, please choose the first one of them) by choosing one of the following:
   1) Government source
   2) International organisations
   3) NGOs
   4) Academic independent
   5) Private organisations
   6) Not mentioned

16. Source 3: After reading the article, please identify how many statistics source are cited in the article by choosing one of the following:
   1) One source
   2) Two sources
   3) More than two sources

17. Human: After reading the article carefully, please identify what is the predominant news angle in the use of statistics, by choosing one of the following:
   1) Social context (e.g. articles that involved human-interest issues)
   2) Corporate context (e.g. articles that involved corporate context such)
   3) None

18. Validity: After reading the article carefully, please identify if numbers were used to communicate what is appropriate to the issue being discussed (e.g., using average house prices to indicate the status of the housing market). Please, choose one of the following:
   1) Yes
   2) No

19. **Reliability:** Reliability here refers to the reliability of statistical sources, which means that that the statistics were produced, assessed and provided by news sources that are both credible and legitimate. After reading the article carefully, and identify the statistical source (in case if there are more than one source of the data, please choose the first one of them), you need to answer the following question to determine the level of statistical source's reliability: 1) Does the source of the statistics being reported is mentioned? If the source of the statistics is not mentioned, then statistics reported without a source is classified as statistical data with low degree of reliability. If the statistical source is mentioned, then if the same source who was produce the data then the statistics is said to have a high degree of reliability as well. If the statistical source is not reliable (e.g. when statistical data was mentioned without identifying its source or statistical source is not the party who able to produce it), the statistics is deemed to lack reliability. Please, choose one of the following:
    1) Yes
    2) No

20. **Interpretation:** Interpretation is audited in terms of whether journalists' interpretations of statistical data provide proper clarity and details. After reading the article carefully, please answer the following question: Do the statistics provided in the news story were interpreted or not. A lack of interpretation is defined by the presence of only "vague or passing reference to statistical information". If it was concluded that the statistics were interpreted whether with providing proper or improper interpretation, it will be considered interpreted (it will be identified in the next variable). Please, choose one of the following:
    1) Yes
    2) No

21. **Interpretation 2:** If the answer to 20 is "yes", what is the level of interpretation provided? After reading the article carefully, please answer the following question: does the interpretation of statistics provided proper clarity and details—or, in other words, "a clear reference with some context provided". If this was not provided, meaning the statistics' interpretation did not provide proper clarity or details, and only "a clear reference but with little or limited context" was given, this was also classified as an improper interpretation. Please, choose one of the following:
    1) Yes (proper interpretation)
    2) No (improper interpretation)

22. **Added value:** After reading the article carefully many times, please identify if the statistics managed or manipulated by the writer (this variable was excluded). Please, choose one of the following:
    1) Yes
    2) No

23. **Evaluation 1:** Read the article, including the headline carefully many times to identify if the article contains any type of comments or not. Please, choose one of the following:
    1) Yes
    2) No

24. **Evaluation 2:** Evaluation here refers to quantitative framing, which was assessed to examine whether the tone of interpretation of statistics used by business journalists to articulate their news stories in the Arabian Gulf is positive, negative or neutral. The article is the unit of analysis, and the quantitative framing analysis is related to the tone which should be coded depending on the direction of the interpretation of statistics in business articles. Read the article including the headline carefully many times to choose one of the following:
    1) Positive: the article was framed in a favourable direction; this category contains statistics used by journalists to frame business articles from an optimistic perspective (or view).
    2) Neutral: the article's direction involved neither unfavourable nor favourable perspectives; this category contains business articles that include statistics that offer balanced coverage, articles that present statistics with no commentary or articles that contain statistics that present neither negative nor positive slants.
    3) Negative: the article was framed in an unfavourable direction; this category contains statistics used by journalists to frame business articles from a pessimistic perspective (or view).

25. **Geographical coverage 1:** Read the article carefully to identify if the newspapers cover national or international issues (the geographical should be determined based on the country of origin of the newspaper). Please, choose one of the following:
    1) International (Foreign)
    2) National (Local or Domestic)

26. **Geographical coverage 2:** Read the article carefully to identify if the geographical context is international, is the geographical coverage limited the Arabian Gulf region? Please, choose one of the following:
    1) Yes
    2) No

27. **Criticality 1:** Read the article carefully to identify if the article contains any type of criticism. Please, choose one of the following:
    1) Yes
    2) No

28. Criticality 2: Read the article carefully. If the answer to 27 is “yes”, identify what type of criticism does the article contain based on the following:

1) Factual. It refers to an objection raised about information because of inconsistency with the known experience related to it.
2) Practical. It refers to an objection related to practical experience in the use of statistics among the public. For this type of criticism, journalists usually rely on experts to catch errors and inconsistencies.
3) Scholarly. This type of criticism attempts to be as neutral as possible while thoroughly investigating an obstacle. For this type of criticism, journalists usually rely on scientists or academic stuff to consult them.

29. Statistics’ claim: Journalists usually collect and present statistical claims in different ways or cases. Read the article carefully to choose one of the following:

1) Stand-alone statistics. It which are isolated figures.
2) Simple comparisons. They present differences between observations and experts’ opinions or other statistical reports.
3) Standard of comparison, where reporters might give a single statistic along with various observations, which might be utilised as standards of comparison and compared with the potential fundamental effects on the query presented and the answer given.
4) Choosing among candidate explanations.

30. Timeliness 1: This variable refers to the time period in which journalists and editors make use of business statistical reports. Read the article carefully to identify the time passed between the statistical release and the publication of the article. Please, choose one of the following:

1) One day
2) Two days
3) Three days and more
4) Unknown

31. News value: Read the article carefully to identify if the statistics used in the news story to produce, substantiate or contextualise the article (in case if there are more than one statistics, please choose the first one of them). Please, choose one of the following:

1) Produce
2) Substantiate
3) Contextualise

Appendix 3
Close Reading

1. Close Reading Rhetorical Structure Analysis

The second method applied in this study is that of ‘close reading’, which concentrates on interpreting the meaning of what is reported and understanding how specific events are represented in the language used. This approach employs various techniques, including “analytical, deconstructive, emancipatory, or critical narratives” (Krippendorff, 2013, p. 23). In this study, the close-reading method is used to perform a rhetorical analysis, and the Aristotle model is applied to explore the use of statistics by business journalists when articulating news stories. This research strategy offers an overview of the news stories’ text organisation, specifically in terms of its use of statistical data, through the evaluation of textual relationships and coherence; in addition, the research criteria of validity, reliability of statistical sources, and interpretation of statistics in the text are evaluated. Tree diagrams are used here to visualise the connections between the texts’ parts. This method is used to answer, in part, the following research sub-questions: 1) How do business journalists in the Arabian Gulf access statistical business news sources? 2) How reliable are the statistical sources that journalists and editors use in their business news? 3) How valid is the use of statistics by journalists and editors in relation to the business news they report? 4) Do journalists and editors provide an interpretation of statistics corresponding with the expected level of professional interpretation in terms of clarity?

Findings from the methods used in this suggest two things: 1) Coherence between the statistical arguments and the texts’ parts cannot be guaranteed by the presence of more structural levels in a news story. This is especially noticeable in *Aleqtisadiah* and *Alriyadh*, which sometimes do not coherently support the statistical arguments in the text; *Asharq Al-Awsat* and *Alittihad*, in contrast, link the texts’ parts together more cohesively. 2) With regard to the Aristotle model, statistical data is used differently in stock market and oil price news stories, whereas stories related to the banking market and housing market focus on ethos and pathos, respectively. This means the banking market newsbeat concentrates on the credibility of statistical sources to convince readers of their statistical arguments, whereas the housing market newsbeat focuses on producing an emotional reaction in the audience to persuade them of the statistical argument. Furthermore, *Asharq Al-Awsat* and *Alittihad* focus on ethos and logos, respectively. This means *Asharq Al-Awsat* journalists concentrate on the credibility

of statistical sources to convince readers of their statistical arguments, whereas journalists working for *Alittihad* use statistical data as evidence to convince their reader of the arguments they are presenting.
Close-reading analysis was performed on a chosen group of articles taken from the same sample of articles used in the quantitative content analysis. Hence, a close-reading analysis on Arabian Gulf-related news stories was carried out on eight (n = 8) articles from the newspapers *Alriyadh, Aleqtisadiah, Asharq Al-Awsat and Alittihad*. This method of analysis concentrates on written and visual language, and particularly on the use of statistics in business news stories. As part of a qualitative method, the close reading performed on the sample does not claim to be representative but is only used to illustrate the argument being made here.

2. Methodology

In this research, close-reading rhetorical structure analysis was used to investigate in greater depth how journalists use statistics to articulate their business articles. This analysis method sought to assess how statistical data was used in business news based on the criteria developed in this research: validity, the reliability of statistical sources and interpretation. Furthermore, the Aristotle model—which analyses the persuasion modes of logos, ethos and pathos—was applied to further explore the use of statistics by business journalists when articulating their news stories.

Close-reading analysis was performed on a select group of articles taken from the same sample of articles used in the quantitative content analysis. Hence, a close-reading analysis of a systematically selected sample of eight business articles (n = 8) was performed, two related to each topic, with two from each newspaper (see Table 62 for a list of the articles analysed through close reading). This method of analysis concentrated on written and visual language, particularly, but as a qualitative method, the close-reading analysis performed on the sample does not claim to be representative and was only used to illustrate the argument being made here.

	Topic	Newspaper name	Date	Article title	Byline
1	Stock market	*Asharq Al-Awsat*	26/9/2008	The Egyptian Stock Exchange intends to change the listing rules	CAIRO: Asharq Al-Awsat
2	Oil prices	*Asharq Al-Awsat*	21/8/2008	Goldman Sachs says it expects the price of a barrel of oil to be US $149 by the end of the year	London: Jamal al-Din Talib
3	Banking market	*Aleqtisadiah*	13/8/2008	A prominent Gulf banker for Aleqtisadiah confirmed that most of its assets are concentrated in property	Mehdi Rabee from Manama
4	Housing market	*Alriyadh*	19/10/2008	"Al Oula Development" announces 20,000 housing units during the next five years in the main areas of the Kingdom	Abdul Aziz Al-Jarallah
5	Housing market	*Aleqtisadiah*	2/8/2008	Al-Balawi: There is no system that prevents women from renting and we are considering introducing a project for them	Amal al-Hamdi
6	Oil prices	*Alittihad*	9/8/2008	Caution and calm dominate the oil markets after a year of gains	Mohamed Abdel Rahim
7	Banking market	*Alriyadh*	5/10/2008	Internal pressure on the SAMA to reveal the size of Saudi losses from the global financial crisis	Alriyadh - Abdul Aziz Al-Qarari
8	Stock market	*Alittihad*	2/8/2008	With the release of liquidity held in the Drake & Scull IPO. A financial analyst expects liquidity to return to the markets	-

Table 62. Details of articles analysed in the close-reading section.

According to (Brummett, 2018, p. 2), "close-reading is the mindful, disciplined reading of an object with a view to deeper understanding of its meaning". Moreover, "close-reading is an effective humanities-based methodology with a long pedigree. It is a versatile approach which has been applied under a variety of labels against a number of works across a variety of media. It can incorporate a range of analytical perspectives, and yield results in various conceptual directions" (Bizzocchi and Tanenbaum, 2011, p. 286). Therefore, this research investigated the relationship between sections of text from the Arabian Gulf newspapers and how business statistical data were articulated in the articles.

Mann and Thompson (1986), who are the authors of RST, emphasised that reports and different types of text (with the exception of certain types of text, such as law text) have a rhetorical structure that can be analysed. Furthermore, textual analysis has become a significant tool, particularly in media studies (Fürsich, 2009), and "text-based methods can continue to make … contributions to the understanding of media and culture" (Phillipov, 2013, p. 211).

RST is a tool through which written text is analysed by distinguishing between the parts of the text that are central to the author's essential purpose and the parts that are supplementary. In doing this, RST assumes that all components of the text have a hierarchically connected structure reflecting the degree of the coherence of the text, and usually, this structure is represented in the form of a tree diagram. In media, journalists tend to organise their news reports according to a conventional news schema (Van Dijk, 2013, p. 2), which is indicated by an inverted pyramid structure in journalism. The significance of this analysis method will be further examined through the investigation of how statistical data was structured in business articles.

The Aristotle model is around 2500 years old (Dolan and Naidu, 2013) but continues to be a well-known technique of rhetorical persuasion that consists of appealing to ethos, logos and pathos (Luhtala and Whiting, 2018). *Logos* is defined as "having logically and understandably explained reasons with valid evidence which the audience can agree on" (Larson, 2012, p. 11). For the evidence to be valid, it should be presented with "consistency of the information by providing facts and values" (Murthy and Ghosal, 2014, p. 251). In contrast to this, *pathos* is rather an "appeal of using the audience's state of mind to gain benefit from the persuasion" (Luukkonen, 2014, p. 24). In other words, this persuasion technique seeks to invoke the emotional side of the audience (Murthy and Ghosal, 2014, p. 250). Last, *ethos* means *credibility*, or how the reader perceives the credibility and authority of the person who provides the information (Murthy and Ghosal, 2014).

The purpose of using the Aristotle model was to shed light on how journalists used statistical data specifically to persuade the public when articulating their business news stories, especially when the use of statistics "helps writers to engage their audience, signal relationships, apprise readers of varying certainty and guide their understanding of a text" or when the journalist "pursues persuasive objectives" (Hyland, 2005, p. 63).

3. Analysis

i. First Article

Article number	1
Newspaper	*Asharq Al-Awsat*
Title	To increase market liquidity the Egyptian … Stock Exchange intends to change the listing rules
Author	-
Date	26 September 2008
Words	293
Sentences	15
Keyword density	Companies (2.59%)
Main statistical source	The vice president of the Egyptian Stock Exchange (Government)
Sentence structure	1. The Egyptian Stock Exchange intends to change the listing rules. 2. Egypt plans to change stock rules to require all companies to have a minimum share of 10 per cent available for trading 3. in order to increase market liquidity, the vice-president of the Egyptian Stock Exchange said. 4. This amendment to the listing rules will give new companies coming to the market a period of three months in order to raise at least 10 per cent of their shares 5. or the restriction will be cancelled," Mohamed Imran told Reuters. 6. He added that companies already listed on the stock exchange would have a one-year transitional period in order to comply with the same condition. 7. The number of listed companies stood at 376 in August compared with 523 a year earlier.
Rhetorical elements	- Logos: Unit 2 - Ethos: Units 3 and 5 - Pathos: Unit 3

Table 63. Breakdown of *Asharq Al-Awsat* stock market article (translated by the researcher).

As we can see in the tree diagram below (Figure 11), the first seven sentences of the articles each have three levels. The first level (the title of the article) shows that satellite 1 establishes a preparation for units 2-7. In the second level, basic and additional information are given to elaborate on unit 1. The third level shows that, in the second and third points of the sentence structure outlined in the table above, the journalist begun to clarify the reason for the Egyptian Stock Exchange’s decision to introduce the change. Then, at the same level in units 4-5, the journalist indicates what might happen if companies fail to comply with the condition. Finally, in units 6-7, the journalist gives more information about the current situation of the listed companies using a simple statistical comparison.

The journalist used unit 2, “Egypt plans to change stock rules to require all companies to have a minimum share of 10 per cent available for trading”, to serve as the logos. However, an obstacle arises here, as it seems that the journalist chose not to criticise the government source or to include another opinion (e.g., from a different stakeholder). This last point reinforces the quantitative findings that journalists tend to use numbers to ‘tick the box’ but that simply including statistics does not necessarily bring accountability or transparency to a news story. Unit 3 represents pathos: “in order to increase market liquidity, the vice president of the Egyptian Stock Exchange said”. There is an effort here to present the Egyptian Stock Exchange as an authority that is keen to protect the Egyptian stock market. Apart from the pathos demonstrated in the previous unit, there is also an element of ethos demonstrated by quoting from a credible source and by declaring the source’s position in such a way as presents him as someone who is capable of managing the market. In unit 5, ‘or the restriction will be cancelled,’ Mohamed Imran told Reuters”, the reporter repeats the same technique of quoting from a credible source; however, this time, he mentions the name of the source. These techniques add to the element of ethos (Murthy and Ghosal, 2014).

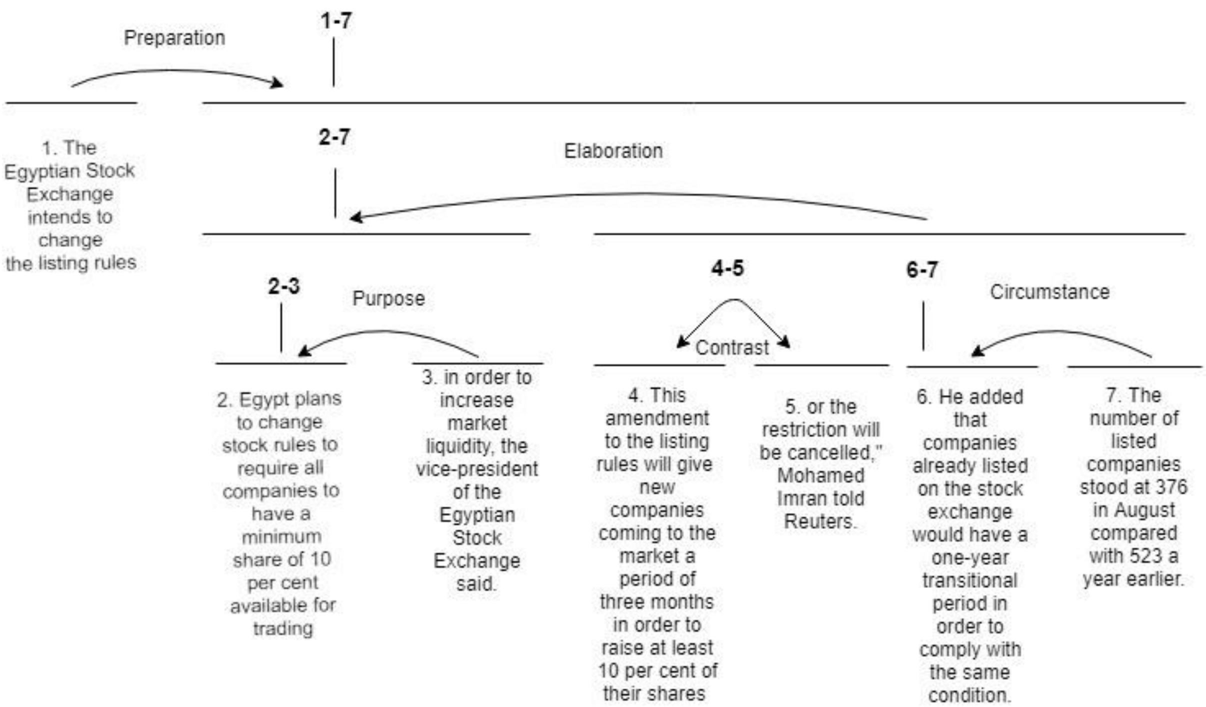

Figure 11. Close-reading structure of article 1.

Furthermore, while the reporter uses valid statistical data in the text to communicate what is appropriate to the issue, the article contains a table that includes statistics that lack validity in the context of the news story. In other words, the table attached to the article, which was produced by the newspaper itself, is not coherent with topic. This table includes statistics about the Arab financial markets, excluding Egypt, which is the specific country the article is about; as such, they cannot be considered valid statistics. This finding is in agreement with Maier's (2002, p. 514) study, which showed that "story–chart inconsistency" is one of the ways in which journalists misuse numbers.

Moreover, in this article, journalists rely on official statistical sources and, thus, rely only on the interpretation provided by these sources. Again, this analysis confirms the previous findings in relation to overdependence on 'official sources' which was highlighted in the previous section. In addition, at the end of the article, the reporter contextualises the news story by including statistical data about the Egyptian Stock Market in general. However, it is worth mentioning that no effort is made to criticise, challenge or question this source; this is particularly important because only one source is used and the journalist does not present an alternative point of view. For example, in the middle of the article, the journalist only provides the source's own interpretation about what the companies should do: "If the companies do not need a transfer, they should cancel their listing on the stock exchange". The journalist continues to provide the source's justification, adding, "There are currently between 180 and 200 companies listed on the stock exchange with less than ten per cent of their shares available for trading", without any commentary from the journalist to question the source.

Overall, the three-level structure in this article seems generally coherent and cohesive, which suggests professionalism in the practice of journalism. In addition, with regard to the rhetorical elements, it seems that there is a focus on logos and ethos to convince the reader of the argument made by the news story, aspects that tend to be facilitated by pre-developed narratives that support official sources and hence denote 'loyalist press' behaviour.

ii. Second Article

Article number	2
Newspaper	*Asharq Al-Awsat*
Title	Goldman Sachs says it expects the price of a barrel of oil to be US $149 by the end of the year. Bush's Predictability of the Middle East: Everything Is Possible
Author	-
Date	21 August 2008
Words	669
Sentences	26
Keyword density	Prices (2.3%)
Main statistical source	Bank of Goldman Sachs
Sentence structure	1. Investment bank Goldman Sachs said yesterday it expects the price of US crude to reach US $149 a barrel at the end of this year 2. and said the strength of supply and demand factors was more important than the US dollar's appreciation. 3. The bank confirmed its expectations in a research note circulated yesterday. 4. Goldman Sachs is the most influential financial institution in commodity markets. 5. Earlier this year, Goldman Sachs analyst Arjun Murthy predicted oil prices would rise to between US $150 and US $200 a barrel before the end of 2009 6. due to rising global demand and supply stalling.
Rhetorical elements	- Logo: Unit 1 and 2 - Ethos: Units 1-5 - Pathos: -

Table 64. Breakdown of *Asharq Al-Awsat* oil prices article (translated by the researcher).

The beginning of this article presents a three-level structure (Figure 12). At the first level, units 1-2 are set out as a preparation for the next four sentences (units 3-6). At the third level, in unit 4 “Goldman Sachs is the most influential financial institution in commodity markets”, more information is given to support unit 3 “the bank confirmed its expectations in a research note circulated yesterday”. Furthermore, in unit 6, “due to rising global demand and supply stalling”, we note a clarification about the prediction of a rise in the price of oil, which is mentioned in unit 5: “earlier this year, Goldman Sachs analyst Arjun Murthy predicted oil prices would rise to between US $150 and US $200 a barrel before the end of 2009”.

In this article, unit 1 “Investment bank Goldman Sachs said yesterday it expects the price of US crude to reach US $ 149 a barrel at the end of this year” and unit 2 “the strength of supply and demand factors was more important than the US dollar's appreciation" served as the logos. Moreover, the beginning of this article also contains an element of ethos. The reporter repeatedly states the name of Goldman Sachs in a way that reflects its importance in units 1-5. Furthermore, in unit 4, the reporter states that "Goldman Sachs is the most influential financial institution in commodity markets", an indication of its credibility.

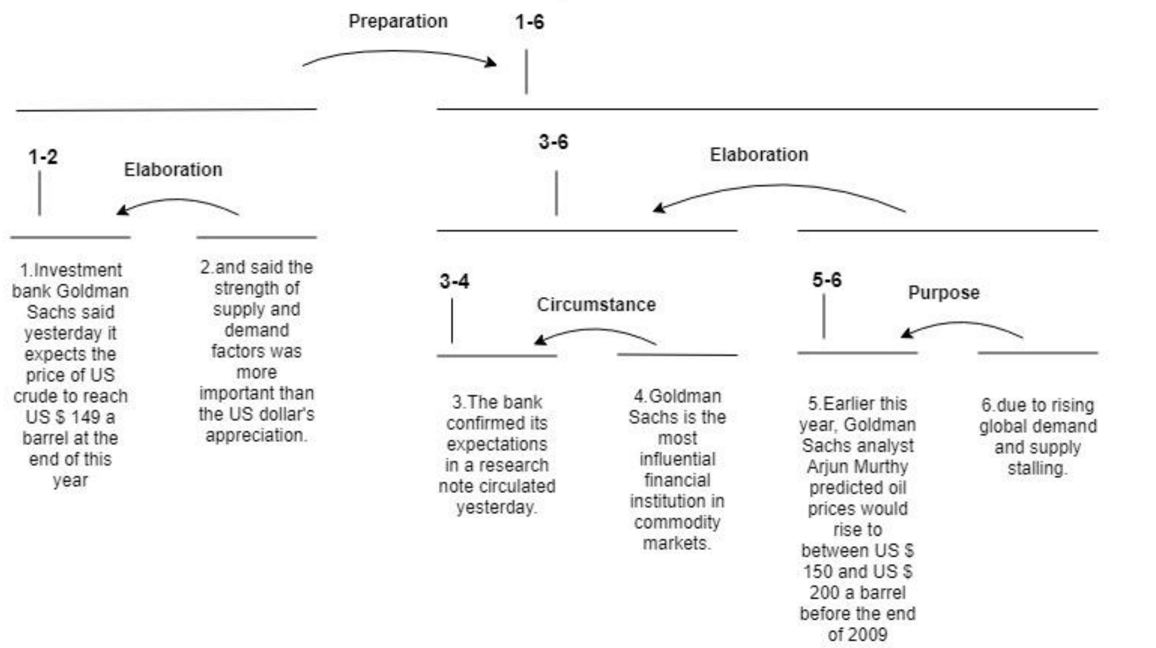

Figure 12. Close-reading structure of article 2.

In this article, the journalist uses valid statistics. However, all of these statistics are from unreliable sources. This is because the reporter does not use any official statistical source from the main producers' or consumers' countries or from a reliable international source, such as the OPEC, which provide statistics related to oil production and consumption but instead makes reference to unofficial sources. While this article includes more than two sources, the general tone of the article supports the main source of the article (i.e., Goldman Sachs), which predicted an increase in oil prices. However, I note there is a shortcoming in the challenging of the sources used, which remains important despite the fact that the article offers a speculative prediction.

All in all, the three-level structure in this article seems generally coherent and cohesive. Furthermore, with regard to the rhetorical elements, it seems that there is a constant focus on ethos to convince the reader of the argument presented in the news story.

iii. Third Article

Article number	3
Newspaper	*Aleqtisadiah*
Title	A prominent Gulf banker confirmed to *Aleqtisadiah* that most of its assets are concentrated in property. Islamic banks in the Gulf do not anticipate a setback … and it is not a reason for rising property prices
Author	Mehdi Rabee
Date	13 August 2008
Words	1,217
Sentences	29
Keyword density	Banks (3.01%)
Main statistical sources	Jamal Hajras, vice president of Sakana Integrated Real Estate Solutions, and the founding co-ordinator of Gulf Islamic Bank for Investment (Private Organisations)
Sentence structure	1. Islamic banks in the Gulf do not anticipate a setback 2. and it is not a reason for rising property prices. 3. A prominent Gulf banker said most of the assets of Gulf Islamic banks were concentrated in property, 4. but he defended them on charges of involvement in speculation that led to higher prices, 5. denying it was the reason for the rise. 6. “They are just real estate investors”.
Rhetorical elements	- Logo: Unit 1 and 2 - Ethos: Unit 3 - Pathos: Unit 6

Table 65. Breakdown of *Aleqtisadiah* banking market article (translated by the researcher).

The beginning of this article presents two simple levels (Figure 13). The first level shows that units 3-6 are set out as a concession to support the main argument of the article’s source, which seems to be clear in unit 1, “Islamic banks in the Gulf do not anticipate a setback”, and unit 2, “and it is not a reason for rising property prices”. Both previous phrases serve as the logos. Unit 3 “a prominent Gulf banker said most of the assets of Gulf Islamic banks were concentrated in property” shows that the journalist emphasises the credibility of the source at the beginning of the article (e.g., using the word “prominent”, which serves as the ethos. Furthermore, in unit 6, by the use of the “they are just real estate investors”, there is an effort made to portray the real estate investors as normal and simple people, which represents the pathos.

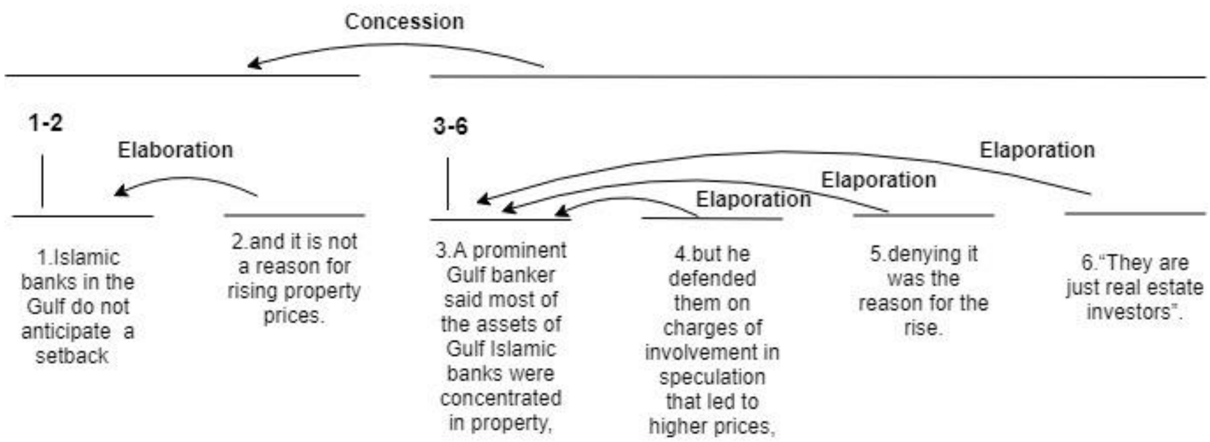

Figure 13. Close-reading structure of article 3.

Units 1-5 contain implicit statistics and make reference to terms such as “setback”, “rising”, “concentrated”, “higher”, and “the rise”. These terms are used by the article’s source; however, the statistical data itself is not mentioned. Furthermore, while the first six sentences analysed do not contain any explicit statistics, the statistics appear later in the article to substantiate the news story, although some are quoted without mention of, or reference to, their source.

All in all, it is worth mentioning that the structure of this article is different from that those of the rest of the article structures analysed, which appear coherent and cohesive. In addition, this article focuses on ethos as a rhetorical element.

iv. Fourth Article

Article number	4
Newspaper	*Alriyadh*
Title	'Al Oula Development' announces 20,000 housing units during the next five years in the main areas of the Kingdom
Author	Abdul Aziz Al-Jarallah
Date	19 October 2008
Words	773
Sentences	20
Keyword density	Company (3.82%)
Main statistical sources	Abdul Aziz Abdullah Al-Duelij, Chief Executive Officer of Al Oula Development Company (Private Organisation)
Sentence structure	1. Al Oula Development Company has announced plans to develop a number of real estate projects across the Kingdom, 2. specifically, Riyadh, Makkah, the eastern province and Qassim, with a total of 20,000 residential units. 3. Abdul Aziz Abdullah Al-Duelij, chief executive officer of Al Oula Development Company, said during a press conference held on the sidelines of the Islamic Investment and Real Estate Conference organised by the Council of Chambers of Commerce and Industry in the Kingdom that 4. the sponsorship of the conference came to support the real estate market through organising such conferences and forums, 5. organised by meeting market makers with government officials, 6. unifying views to support the real estate market and thus furthering the development of the Kingdom.
Rhetorical elements	- Logo: Units 1 and 2 - Ethos: Unit 3 - Pathos: Unit 6

Table 66. Breakdown of *Alriyadh* housing market article (translated by the researcher).

As can be seen in the tree diagram below (Figure 14), this article presents three levels. At the first level, units 1-2 are set out as a preparation for the subsequent sentences (units 3-6). In addition, unit 1“Al Oula Development Company has announced plans to develop a number of real estate projects across the Kingdom” and unit 2 “specifically, Riyadh, Makkah, the eastern province and Qassim, with a total of 20,000 residential units” serve as the logos. In units 3-6, basic and additional information is given to elaborate on units 1 and 2, including the purpose behind setting up the conference. In unit 3 “Abdul Aziz Abdullah Al-Duelij, chief executive officer of Al Oula Development Company, said during a press conference held on the sidelines of the Islamic Investment and Real Estate Conference organised by the Council of Chambers of Commerce and Industry in the Kingdom that", the journalist presents the source in a trustworthy (credible) light, which indicates the use of ethos. In addition, in unit 6, "unifying views to support the real estate market and thus furthering the development of the Kingdom", which serves as the pathos, the journalist makes an effort to portray the work done by the company sponsoring the conference as a part of its social responsibility.

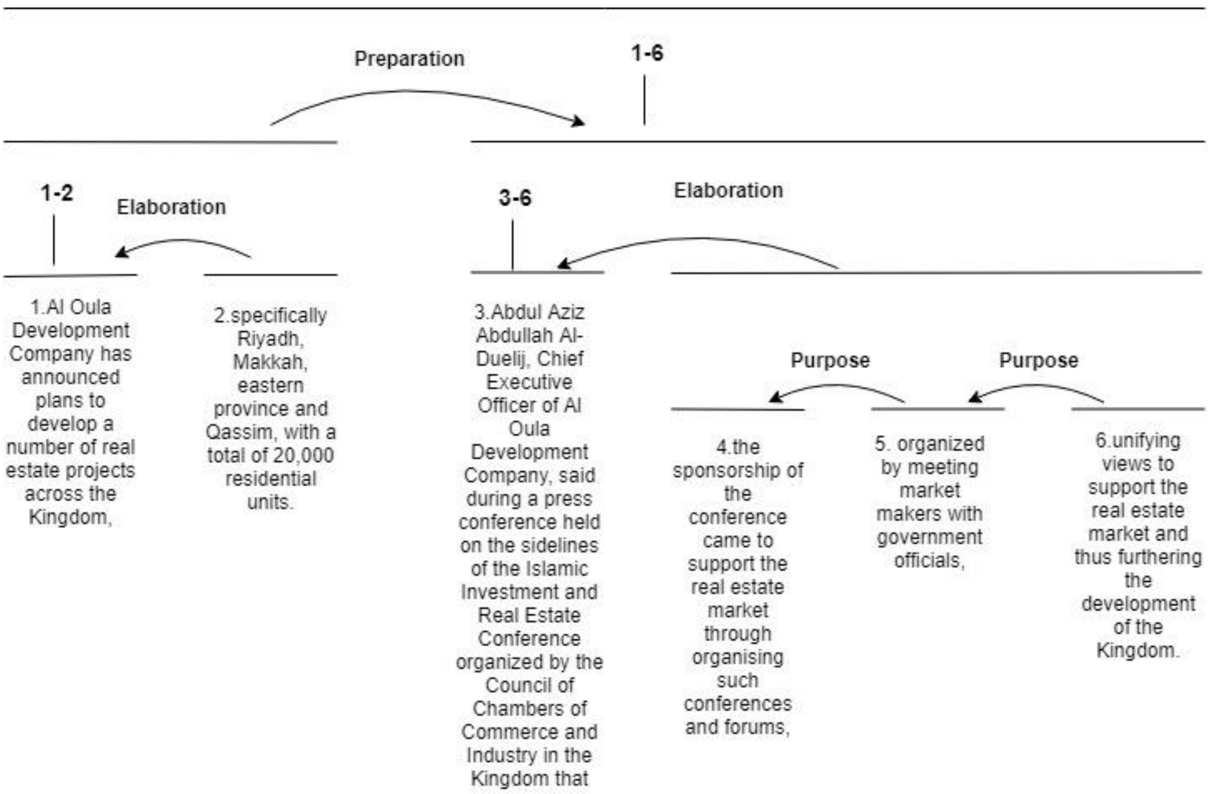

Figure 14. Close-reading structure of article 4.

In this article, the statistics used are valid and reliable statistics; however, it seems that the journalist does not question or challenge the source. Moreover, the majority of the information is supporting the company's achievements, and its future plans which are presented in a positive manner.

Interestingly, this article seems to act as a corporate editorial –that is, essentially, as an advertisement for the company, as outlined by AlHroub (2012). It can be seen that, while this article occupies less than a quarter of a page in size, the rest of the page is devoted to an interview with the same source as that used the article—the CEO of the company. More importantly, it was noticed that the same news story was published in a different newspaper on the same day (in *Asharq Al-Awsat*). This result may be explained by the fact that newspapers sometimes present editorial services for companies in exchange for advertisements (AlHroub, 2012, p. 86). Abu Zeid (2011, p. 58) noted that this kind of news could be a major reason for the perfunctory business coverage in Arab business journalism. Furthermore, a question might be raised here about the role of advertising affecting the use of statistics by business journalists in Arabian Gulf newspapers.

Overall, the three-level structure in this article seems generally coherent and cohesive. In addition, with regard to the rhetorical elements, it seems that there was focus on ethos to convince the reader of the argument in the news story.

v. Fifth Article

Article number	5
Newspaper	*Aleqtisadiah*
Title	Al-Balawi: There is no system that prevents women from renting and we are considering introducing a project for them Fear of non-payment pays 70% of real estate offices to refuse renting to women
Author	Amal al-Hamdi
Date	2 August 2008
Words	847
Sentences	19
Keyword density	Women (5.84%)
Main statistical sources	Unknown
Sentence structure	1. Al-Balawi: There is no system that prevents women from renting 2. and we are considering introducing a project for them. 3. Fear of non-payment … pays 70% of real estate offices to refuse renting to women 4. A number of Saudi women were surprised by the fact that they were not allowed to rent housing, 5. although they did have the right to rent in hotels and to own real estate, 6. and expressed their fears that this phenomenon could develop to include all properties from renting commercial shops to others.
Rhetorical elements	- Logo: Unit 3 - Ethos: Unit 1 and 4 - Pathos: Unit 3

Table 67. Breakdown of *Aleqtisadiah* housing market article (translated by the researcher).

The beginning of this article shows a three-level structure (Figure 15). The first level, units 1–3 (the title of the article) acts as a preparation for units 4-6. In the second level, units 1 and 2 show that the journalist starts by introducing the main source of the article, offering a statement and a solution for the topic: “Al-Balawi: There is no system that prevents women from renting” and “and we are considering introducing a project for them”. Hence, the reporter tries to introduce the story by quoting from the source directly, which serves as the ethos.

In unit 3, the journalist articulates the following: “Fear of non-payment … pays 70% of real estate offices to refuse renting to women”. This unit presents the central argument that lead the reporter to write the article (i.e., the logos), particularly by including statistics that support that there is a real problem; however, the source used by the journalist is not mentioned. At the same time, in the same unit, there is also the use of an emotional element (i.e., the pathos) through the use of the word “fear”. At a first glance, unit 3 seems as though it was written to support the main idea of the article; however, after analysing the whole article, this unit seems isolated. The idea presented is mentioned only once in the article, without mentioning its source and without even providing any commentary. Finally, in units 4-6, the journalist presents general information about the article subject.

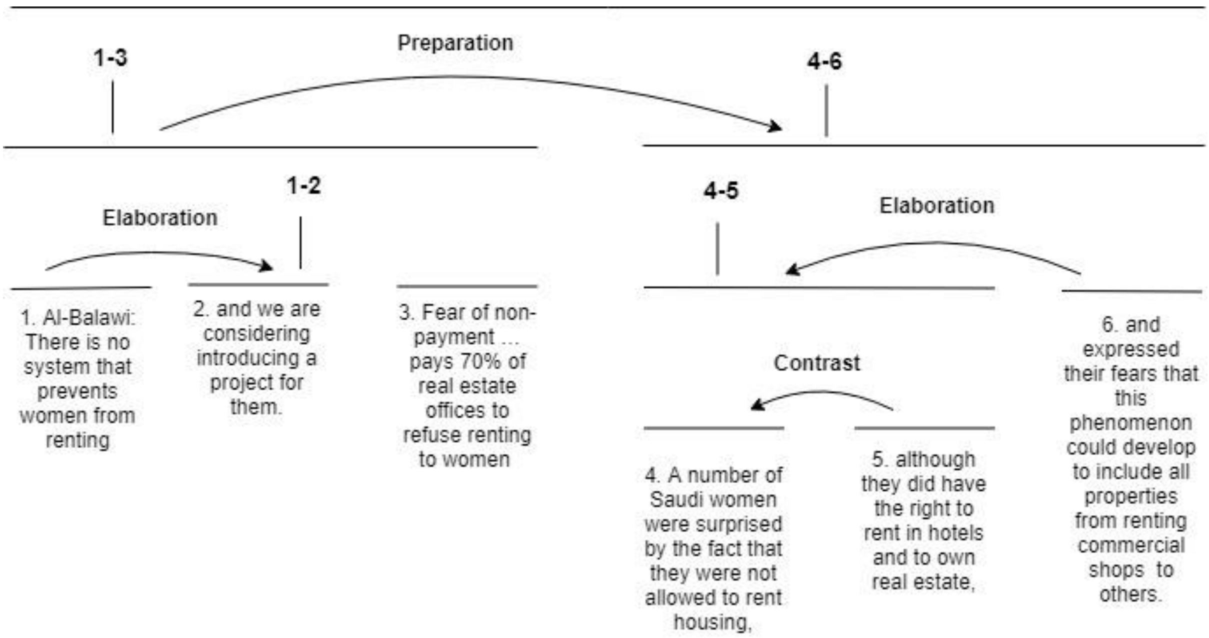

Figure 15. Close-reading structure of article 5.

While the journalist provides statistics that seem coherent with the topic, their source is nevertheless unknown. I assume the journalist will practise his or her role as being a watchdog for society and act as the “fourth estate”. However, it seems that the journalist relies only on stand-alone statistics in the article, failing to provide any commentary about or context for the isolated statistics.

Overall, this news story is weak in terms of coherence; therefore, it is potentially misleading in relation to how the statistical data are presented. In addition, with regard to the rhetorical elements, it seems that there is a focus on pathos to convince the reader of the argument presented in the news story.

vi. Sixth Article

Article number	6
Newspaper	*Alittihad*
Title	The decline in demand led to lower prices Caution and calm dominate the oil markets after a year of gains
Author	Mohamed Abdel Rahim
Date	9 August 2008
Words	907
Sentences	36
Keyword density	Oil (3.52%)
Main statistical sources	OPEC
Sentence structure	1. Caution and calm dominate the oil markets after a year of gains 2. The sharp fall in energy prices over the past month seems to have turned into a bright spot in the overheated economic climate. 3. Up to this moment, fears of a prolonged energy shock seemed to have faded and eased. 4. Crude oil prices fell below US $120 a barrel for the first time in three months on Monday 5. amid growing concerns about slowing global economic growth 6. and the frequency of signs of rising supplies from OPEC.
Rhetorical elements	- Logo: Unit 4 - Ethos: - - Pathos: Units 1 and 5

Table 68. Breakdown of *Alittihad* oil price article (translated by the researcher).

As we can see from the tree diagram below (Figure 16), the first six sentences present a four-level structure. At the first level, unit 1 is used as a preparation for units 2–6, while at the second level, units 4–6 are used as evidence to support units 2 and 3. In addition, at the third level, unit 3 and units 5 and 6 are used to elaborate on the content of units 2 and 4, respectively.

In this article, unit 4 “Crude oil prices fell below US $ 120 a barrel for the first time in three months on Monday”, serves as the logos. In addition, units 1 and 5 “Caution and calm dominate the oil markets after a year of gains” and “amid growing concerns about slowing global economic growth” are set out to reflect anxiety and worry (i.e., emotion) about global economic growth, therefore serving as the pathos.

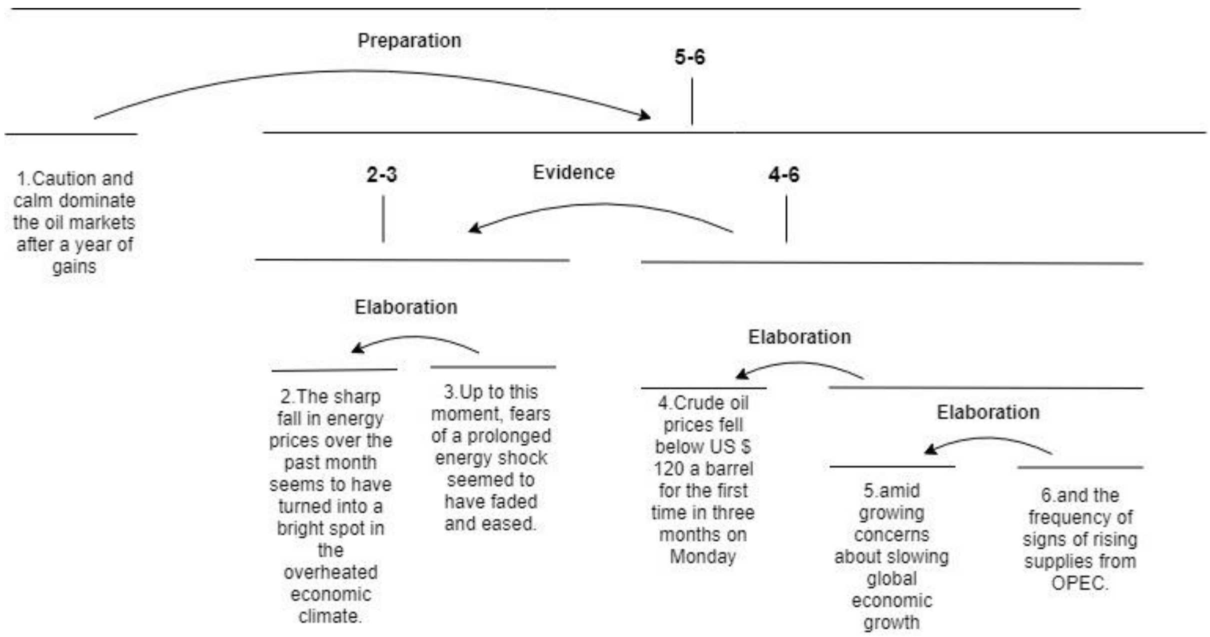

Figure 16. Close-reading structure of article 6.

In terms of using statistics in this article, the statistics used are valid, and there is variety in the use of statistical sources. Furthermore, this article might be considered an indicator of the over-reliance on foreign services or sources in the coverage of the oil sector, which is a crucial sector for the budgets of many countries, particularly where their budgets come from the oil sector (Nusair, 2016, p. 256). It is worth mentioning that, while the by-line of the article indicates that it is written by Mohammed Abdel Arahim, a journalist for the *Alittihad* newspaper, the end of the article indicates that it is “From the *International Herald Tribune*”. As mentioned previously, a number of Arabian newspapers have made exclusive agreements with Western newspapers that give them permission to translate and use their articles (Almashadani, 2014, p. 108).[11] Furthermore, the data gathered from the content

[11] The sole purpose of this research is to explore how journalists use or misuse statistics when they articulate their business news in the Arabian Gulf, particularly in Saudi Arabia and the UAE. As a result of this, all the articles produced by foreign institutions, such as wires or other newspapers, were excluded. However, in this article, the name of a journalist working for the newspaper itself is mentioned in the by-line, which means that he made an effort to contribute to the article, and that is why this article was not excluded from this study.

analysis shows that *Aittihad* produced only 17 articles (3.95%) covering oil prices. This finding suggests a need for Arabian newspapers to rely on themselves—rather than foreign sources—to produce these types of news stories by educating and training business journalist to specialise in oil journalism.

Overall, the three-level structure in this article seems generally coherent and cohesive. In addition, with regard to the rhetorical elements used, it seems that there is a focus on logos to convince the reader of the argument made in the news story.

vii. Seventh Article

Article number	7
Newspaper	**Alriyadh**
Title	Internal pressure on the SAMA to reveal the size of Saudi losses from the global financial crisis. The lack of transparency increases the confidence crisis in the funds of banks investing abroad.
Author	Abdul Aziz Al-Qarari
Date	5 October 2008
Words	492
Sentences	16
Keyword density	Saudi (5.93%)
Main statistical sources	Unknown
Sentence structure	1. Saudi bankers and economists called on SAMA and the Saudi Ministry of Finance to break their silence and announce the magnitude of the direct effects of the global financial crisis. 2. They warned the Saudi Monetary and Financial Corporation of not paying attention to transparency, 3. stressing the need to announce the volume of Saudi direct investments 4. either through businessmen themselves or companies or through Saudi banks or specialised investment funds for foreign investment. 5. Their demands are focused on the need to uncover the extent of the direct losses suffered by Saudi Arabia and indirectly, 6. while showing ways of dealing with these losses, 7. pointing out that these clarifications will close the door on any speculation.
Rhetorical elements	- Logo: Unit 1 - Ethos: Unit 1 - Pathos: Unit 2

Table 69. Breakdown of *Alriyadh* banking market article (translated by the researcher).

The beginning of this article shows a four-level structure. At the first level, satellite 1 provides preparation for units 2-7. At the second level, units 5-7 are set out to facilitate an understanding (i.e., background) of units 2-4. Units 3 and 4 and units 6 and 7, at the third level, give basic and additional information to elaborate on the content of units 2 and 5, respectively. Finally, at the fourth level, in units 4 and 7, more information is provided to interpret units 3 and 6, respectively.

The journalist used unit 1 “Saudi bankers and economists called on SAMA and the Saudi Ministry of Finance to break their silence and announce the magnitude of the direct effects of the global financial crisis” to serve as the logos. However, a problem arises here: there is a shortcoming in the article affecting its quality due to the ignoring of official data. The reporter in this article did not consult any official source or present any official data to verify or criticise the sources used.

Apart from the logos in the previous unit, the element of ethos is also used by portraying that there is a consensus of opinion among Saudi bankers and economists. Moreover, unit 2 “they warned the Saudi Monetary and Financial Corporation of not paying attention to transparency” serves as the pathos, particularly through the use of the word “warned,” which may play a role in affecting readers’ emotional responses.

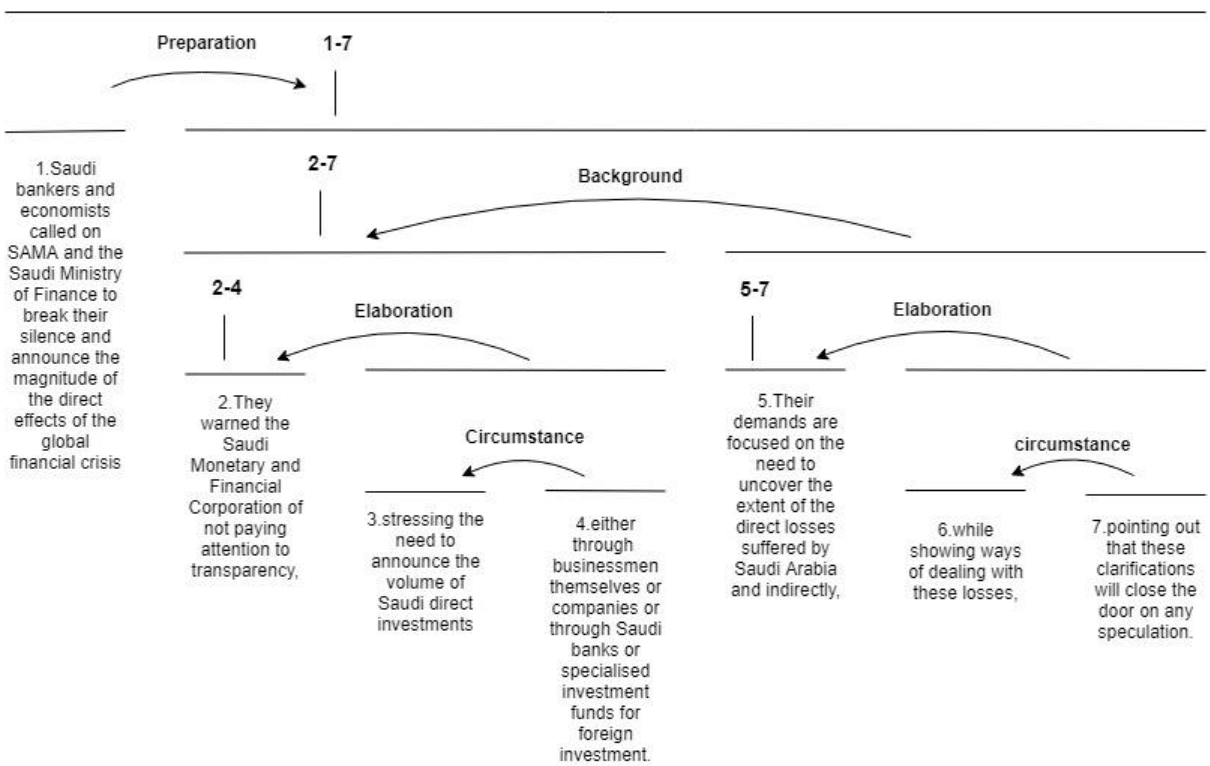

Figure 17. Close-reading structure of article 7.

In fact, the first seven sentences analysed do not contain any explicit statistics; however, statistical data appears in unit 8: "[t]he US economy accounts for about 70 per cent of the global economy and naturally has a major impact on the global economy". Despite the fact that this statistic is articulated without mentioning its source (i.e., it is unreliable), it seems that this statistic was included to substantiate the news story. Moreover, the statistic used lacks validity within the context of the news story. The mistake comes in using the economic terminology "the US economy" without clarifying which part of the economy is being discussed. For example, the reporter could instead use gross domestic product (GDP) or identify other specific economic terminology. In addition, the statistics articulated here appear to be incorrect because, if the reporter meant to reference the US GDP when mentioning this statistic, the GDP of the US did not reach this percentage (The World Bank, 2017). Furthermore, Spirer and Spirer (1998), in their book titled *Misused Statistics*, mentioned that the misuse of terminology is considered a major misuse of statistics, affecting the way that statistic is displayed.

However, interestingly, the journalist did put the intended role of journalists into practise in criticising governmental procedures—specifically, those of the Saudi Arabian Monitory Authority (SAMA) and the Saudi Ministry of Finance—regarding the global financial crisis of 2008 and clearly demanded transparency (transparency was repeated five times, representing 1.98% of the keyword density).

All in all, the three-level structure in this article seems generally coherent and cohesive. With regard to the rhetorical elements used, there is a focus on ethos and pathos to convince the reader of the argument made in the news story.

viii. Eighth Article

Article number	8
Newspaper	*Alittihad*
Title	With the release of liquidity held in the Drake & Scull IPO a financial analyst expects liquidity to return to markets
Author	-
Date	2 August 2008
Words	488
Sentences	36
Keyword density	Liquidity (2.3%)
Main statistical sources	Dr Mohammed Afifi, Director of Research and Studies at Al Fajer Securities (Private Organisation)
Sentence structure	1. A financial analyst predicted that local equity markets will witness a return of liquidity during the new trading week 2. with part of the liquidity held in the Drake & Scull IPO 3. and the end of the open coverage season at the end of July 4. The Emirates Securities Market Index (ADX) rose by 0.82% 5. to close at 6001.03 points.
Rhetorical elements	- Logo: Unit 1 - Ethos: Unit 1 - Pathos: -

Table 70. Breakdown of *Alittihad* stock market article (translated by the researcher).

As can be seen from the tree diagram below (Figure 18), the first five sentences of the article have two simple levels. The first level shows that, in units 4-5 (“the Emirates Securities Market Index (ADX) rose by 0.82%” and “to close at 6001.03 points”), statistical data are given to support units 1-3. At the second level, in units 2 and 3, it is clarified that if these cases happen, unit 1 will occur.

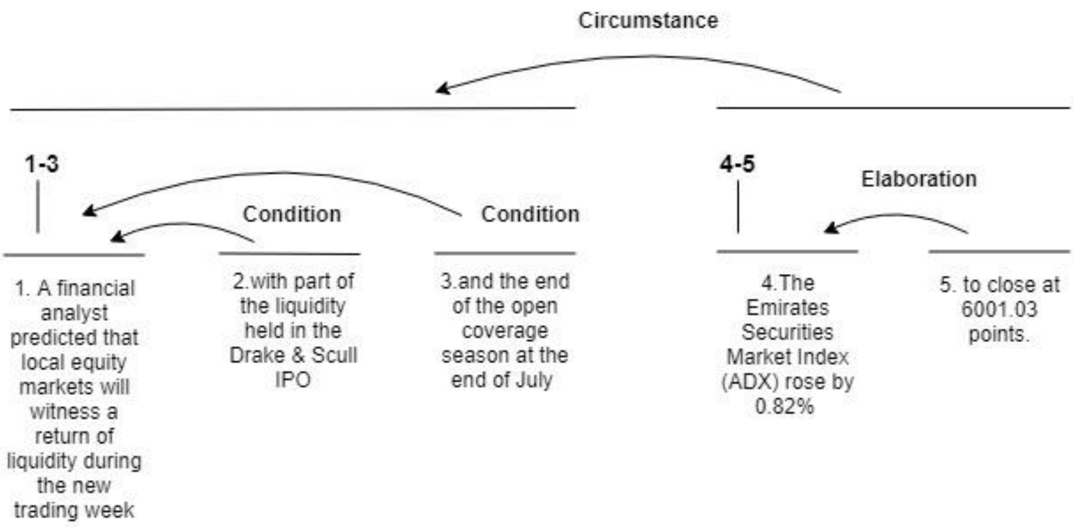

Figure 18. Close-reading structure of article 8.

The reporter used unit 1 “A financial analyst predicted that local equity markets will witness a return of liquidity during the new trading week” to serve as the logos. However, a problem arises here: the journalist did not challenge the private source or even present another opinion—for example, from a different stakeholder. Apart from the logos in the previous unit, there is also the use of an element of ethos by the quotation of the source and a declaration of the source’s position in such a way that presents the journalist as a source that is capable of analysing the market. Furthermore, the writer uses valid statistics from a reliable statistical source (ADX). However, the reporter uses the explicit statistics to support the news story but did not use them to challenge or question the source. For example, the sources mention that “local equity markets will witness a return of liquidity during the new trading week, with part of the liquidity held in the Drake & Scull IPO”, and the journalist does not clarify the Drake & Scull IPO statistics. By including these statistics and providing a clarification, readers could better understand how this liquidity might affect the market.

Overall, the two-level structure in this article seems generally coherent and cohesive. In addition, with regard to the rhetorical elements used, it seems that there is a focus on logos and ethos to convince the reader of the argument made in the news story.

4. Summary

The close reading performed in this study was a rhetorical analysis method used in addition to content analysis. As a qualitative approach, this method helps cast further light on how business journalists use statistics to articulate news stories in the

Arabian Gulf. Moreover, along with close reading, the Aristotle model was applied, which evaluates logos, ethos and pathos to explore important patterns in the news stories. In so doing, this method responds, in part, to the following research sub-questions: 1) How do business journalists in the Arabian Gulf access statistical business news sources? 2) How reliable are the statistical sources that journalists and editors use in their business news? 3) How valid is the use of statistics by journalists and editors in relation to the business news they report? 4) Do journalists and editors provide an interpretation of statistics corresponding with the expected level of professional interpretation in terms of clarity?

Generally, the close-reading analysis suggests that statistical data is articulated using many structural levels, which eventually influences the overall coherence of a news story. Articles 1, 2, 4 and 5 were articulated using a three-level structure, while articles 3 and 8 made use of a two level-structure and articles 6 and 7 used a four-level structure. This means that the statistical data in the studied articles is articulated differently, and there is no consistency among newspapers or topics.

With regard to the rhetorical elements used (i.e., logos, ethos and pathos), there was a focus on ethos (see articles 1, 2, 3 and 7) to convince readers of the arguments made in the news stories. Using this dimension, the sources referenced in these articles were used to establish ethos by being portrayed as credible and trustworthy (Van Staden and Van Niekerk, 2018). Furthermore, in articles 6 and 8, the focus was on logos. Argyropoulou (2017, p. 11) mentioned that appeals to logos can be achieved by “using credible supporting material like … statistics”. In addition, pathos as an element of rhetoric was used in articles 4 and 5. Both these articles covered the housing market newsbeat, and the reporters clearly appealed to pathos by establishing an empathetic and emotional dimension to their stories (Murthy and Ghosal, 2014).

However, there were shortcomings in terms of verification and criticality in the majority of the articles analysed. For example, in articles 1, 2, 3, 4 and 8, the journalists were content with their sources’ statistical data and interpretations of the data, and they did not question or challenge the source; when they quoted from other sources, these sources supported the main source of the article in positive way (e.g., see article 2). This lack of criticality might affect the quality of these articles by producing news stories without transparency, which in turn may influence journalists’ ability to fulfil their role as watchdogs. In this sense, this additional data confirms some of the assumptions derived from the previous set of data according to which we are witnessing ‘professionalism’ being practised without professional autonomy.

In other words, journalists attempting to exercise their work in accordance to a set standards but without actually fulfilling a normative expectation of brining power into accountability.

In addition, this data also suggests that statistics were sometimes used poorly by the journalists. For example, in article 5, the journalist mentioned statistical data only in the title of the article, without providing a source or explanation: "*Fear of non-payment … pays 70% of real estate offices to refuse renting property to women".* Maier (2002, p. 509) showed that the misuse of numbers in news stories does not seem to be related only to ignorance or mistakes. For instance, Huff and Geis (1954, p. 101) stated that the misuse of data in journalism can sensationalise by exaggerating or minimising certain aspects: "as long as the errors remain one-sided, it is not easy to attribute them to bungling or accident". Meyer (2002, p. 207) and Cohn and Cope (2011, p. 5) emphasised the point that professional bias leads editors to make headline news that includes distorted data. It has been empirically shown that journalists selectively use statistical data to address deteriorating trends with regard to social issues in their news stories, while other trends that lead to the improvement of social conditions are ignored (Berger, 2000, p. 49). According to David Murray,

> *Journalists often reduce complexity to certainty. Sometimes that's because of deadline pressures; you can't overestimate the effects of time constraints and ignorance. But journalists also don't mind overstating things if they think it's for a good cause. And if scare stories help sell more papers, that's a bonus. (Gillespie, 2001, p. 21)*

Finally, there was only one article that included a graph (article 1); however, it contained statistics that lack validity in the context of the news story. Maier (2002) mentioned that the misuse of statistical data in graphs seems to be a constant in business journalism.

5. Discussion

It is widely accepted in economic discourse that business numbers represent an important aspect of constructing economic reality (Vollmer, 2016). Indeed, this study confirms this through the content analysis conducted, which shows that statistical data have been used in almost 99% of the articles studied. Therefore, it is equally important to understand how these statistical data have been used by journalists to tell stories about business issues. The use of these data shows interesting but also problematic insights.

Using valid statistics that are based on reliable statistical sources, and providing proper interpretation of these statistical data, seem to be both a goal and a concern of business journalists who strive for professionalism. These criteria are particularly concerned with the use of statistics by journalists, and they reveal that statistical data is a key aspect of the articulation of business news. These criteria were further developed through the close-reading analysis performed here, which found that the statistical data used sometimes lacked validity in the context of the news story, relied on an unreliable statistical source or was either not interpreted or was provided with an improper interpretation for the purpose of exaggerating certain aspects within heavily structured sentences. Indeed, this exaggeration of statistical data, particularly data that focus on prompting an emotional effect in the audience (i.e., pathos), leads to professional bias (Cohn and Cope, 2011; Meyer, 2002).

The research results also show that it cannot be assumed that using statistical data will automatically create enough accountability and transparency in the news coverage of business issues. Although journalists use valid statistics, rely on reliable sources and interpret the statistics they use, they struggle to challenge that data, which in turn results in a lack of accountability and transparency. Indeed, the findings of this research have challenged the general assumption that accountability and transparency are achieved simply by the extensive use of data and show instead that the use of statistics can become part of a 'tick box' exercise through which journalists appear to demonstrate professionalism without actually complying with the normative expectation of being a professional journalist (as this is rather linked with autonomy). Statistical data can be used as an essential tool to promote data-driven arguments and legitimise news stories, but an assessment of how statistics are used by journalists showed that they lack verification and criticism and in many cases, that they end up supporting the 'official' version of events. In the case of the Arab Gulf, this deficiency of journalists in properly applying and challenging statistical data negatively affects their journalistic professionalism (Waisbord, 2013) not because they do not comply with the technical skills and standards relating to statistics but because, as a tool, statistics are not actually used to question the accounts of those in power but instead to reinforce them.

Finally, while a close-reading analysis highlights a snapshot of the use of business statistical data in a few articles, it provides little insight into the underling dynamics that lead journalists to make certain decisions about their use of statistics. Therefore, the next section, which presents the findings of the interviews, will provide an additional analysis of this subject, along with an in-depth discussion and a general conclusion of the research results.

Appendix 4
Gender

Gender is another central element in the context of this study, given its relevance to the many factors outlined above. However, few studies have been conducted about female journalists in the Arabian Gulf states. Although some scholars have addressed Arab women journalists' status in specific Arabian countries (AlMunajjed, 1997; Kirat, 2004; Mellor, 2010; Al-Malki et al., 2012; Kurdi, 2014), most of this research "dealt with the representation of conditions in earlier centuries, or applied a Western feminist perspective, which has proved distorting" (Kurdi, 2014, p. 28). Furthermore, almost no investigation has been carried out into the use of statistics by female journalists in the Arab world, particularly in countries in the Arabian Gulf.

In fact, some media researchers have posited that in liberal Western states, the number of female journalists increased in parallel with the feminisation of newsrooms (Melin-Higgins, 1996; Djerf-Pierre and Löfgren-Nilsson, 2004). Furthermore, feminist media researchers have claimed that an influx in the number of women in newsrooms would foster equality at all levels (Gallagher, 1995). As a result, these researchers expected that female journalists would work to the same standard as that of their male colleagues, articulating prestigious hard news articles about politics, finance and economics and having an equal chance to progress in their careers in the field of the media and press. It was, accordingly, also expected that female journalists would rise to higher editorial decision-making positions. However, these ambitions have not been achieved (North, 2016, p. 369). Moreover, globally, a number of studies (Romano, 2010; Kirat, 2004; Kurdi, 2014; Byerly, 2011) have found that male journalists vastly dominate the field of hard news journalism when compared to female journalists, including in the data journalism beat (Ausserhofer et al., 2017).

It is widely accepted that, particularly in print media, gender equality is given less attention than is other issues (e.g., racial equality). Furthermore, it is widely believed that female journalists are better equipped to deal with soft news reporting than are their male counterparts (De Beer and Steyn, 2002, p. 41); the belief that women tend to be better able to connect with their emotions might explain why female journalists are more likely to be assigned to this category of news than are male journalists (North, 2016, p. 357). Another explanation might be the predominance of men in editorial decision-making roles, as they may be more likely to assign men to hard news reporting roles (North, 2016).

In fact, North (2016, p. 359) argued that globally, female journalists have suffered from decision-making role segregation both vertically and horizontally—vertically, by women's difficultly to achieve parity in decision-making roles in newsrooms that are predominantly occupied by men, and horizontally, by the existence of the "gendered division of tasks assigned, and at a micro-level, gendered divisions in the types of stories reporters are assigned" (North, 2016, p. 359). Robinson and Saint-Jean (1998, p. 371), who studied female Canadian journalists, concluded the following:

> *We are certain, however, that [the] continued professional integration of women will depend on the commitment of employers to equal opportunity and of the federal government to antidiscrimination policies. Only well-established, nationally mandated policies will counterbalance the unequal manner in which economic "downsizing" has traditionally affected female workers in the workplace.*

Indeed, journalism in the Arab world is not exempt from this phenomenon, and women continue to be under-represented in the media (Ayish, 2001). For example, Hijab and Shalabieh (1999) studied the status of female journalists working in Jordanian media outlets. They found that discrimination between female and male journalists does exist, manifesting in the areas of foreign assignments, responsibilities, job advancements and training.

Additional studies, including those by Kurdi (2014) and Kirat (2004)—who explored the status of female journalists in Saudi Arabia and the UAE, respectively—concluded that male journalists continue to dominate the media in those countries. In the study by Kirat (2004, p. 66), it was found that female journalists represented only 20% of journalists in the UAE. Moreover, 85% of those female journalists were expatriates. Interestingly, he argued that women journalists' status in the UAE is not related to their qualifications, finding that more than 75% of students registered in media and journalism schools were female. Despite this, the overwhelming majority of such female students do not work in these fields; instead, they work in fields such as teaching or public relation for example (Kirat, 2004, p. 59). Kirat (2004, p. 59) suggested that this is due to a number of cultural and social reasons: "a large proportion of the population completely rejects the idea of a woman working for a news organisation—mixing with various people and working with men for long hours, sometimes late at night in various places and sometimes in various countries" (Kirat, 2004, p. 60).

In fact, the segregation of male and female journalists, which occurs in some countries, is most obvious in a few select countries, one of which is Saudi Arabia. Kurdi (2014, p. 142) argued the following:

> *The press in Saudi Arabia could be seen as a symbol of the segregation of sexes that exists in Saudi Arabia. Looking at the*

newspapers in this country, you can see that segregation very clearly by just reading the headlines. Most of the female journalists in the kingdom report on stories that are about women. They investigate women's issues, women's contribution to society, women's participation in sport or science or economy, women's role models, and women's interest in general whether these stories are located inside women's homes, women's centres, or women's schools.

Furthermore, Nora Ahoiti—a female Saudi journalist—highlighted the influence of segregation and how this affects the quality of her job:

We women journalists are treated like the readers in the sense that we write our articles and lose contact with them until after publication when we first set eyes on them like any other person reading the newspaper. We are unable to follow the production or editing stages done in the men journalists' section. We are shocked sometimes with how our articles were changed after publication, such as changing the headline or deleting some interviews made with some sources. Such changes break the trust between us and our sources. (Kurdi, 2014, p. 14)

Kurdi (2014, p. 83) also stated that male Saudi journalists still dominate the field of hard news reporting. She found around only 5% of news covering the economic sector is written by women. Furthermore, the need to increase the number of female journalists in Saudi Arabia is very important given that segregation also restricts male journalists' ability to cover women's issues (AlMunajjed, 1997).

The content analysis findings of the current study showed that, from a gender perspective, it is worth mentioning that, as shown in Table A, only 12 business news stories containing statistics (0.9%) from the whole sample were written by women. This study produced results that corroborate the findings of a great deal of work previously done in this field, both globally (Romano, 2010; Byerly, 2011) and locally (Kirat, 2004; Kurdi, 2014). All these studies confirm that male journalists vastly dominate not only certain newsbeats but also hard news articles in general, when compared to their female counterparts; this is also the case in data journalism (Ausserhofer et al., 2017).

Journalists' gender	Frequency	% of Total	Valid %	Cumulative %
Male	830	62.8	62.8	62.8
Female	12	0.9	0.9	63.7
Unknown	479	36.3	36.3	100.0
Total	1321	100.0	100.0	

Table A. Journalists' genders among the analysed articles.