



**Exploring HRIS Post-Adoption: A Grounded Theory of
Employee-Driven Administrative Innovation in the Context of
Kuwait's Public Sector**

By

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Abstract

The aim of this research is to investigate the development of administrative innovation in relation to post-adoption usage of human resource information system (HRIS) in a public sector organization. This research takes an exploratory and explanatory approach to identifying manifestations of administrative innovation, examining the interaction between initiators of administrative innovation and organizational stakeholders, and identifying motivations and perceived barriers.

Grounded theory methodology is employed to investigate administrative employee driven innovation following the adoption of HRIS. The context for the study is a public sector organization, in the banking and finance sector, in Kuwait where HRIS has been adopted and integrated into various human resource (HR) practices. The empirical data consists of thirty-two semi-structured interviews with HRIS users from different organizational levels ranging from managers to ordinary HR employees who use HRIS to perform their daily work tasks. Document analysis was also utilized to support data collection.

The results of the study explain how employees use their knowledge of HRIS and their everyday work practices to generate initiatives for modifying or improving existing administrative processes and tasks. Following the principles of grounded theory, in terms of constant comparison and concurrent data collection and analysis, an integrative framework was developed. The framework aggregates the findings representing a series of actions aimed at developing administrative innovation, at the core of which is ‘taking initiative’ as the central phenomenon. ‘Taking initiative’ requires causal conditions and actions/interactions and is affected by intervening and contextual conditions.

Subsequently, given the centrality of employee agency in post-adoption innovation, institutional entrepreneurship theory is applied as a theoretical lens to enrich the understanding of the development of administrative innovation. This theoretical lens provides deeper insight

by focusing on individuals who can initiate innovative ideas and the actions and interactions they engage in to share and implement their ideas within their institutional context.

This thesis contributes to the body of knowledge by focusing on administrative innovation developing in the context of HRIS post-adoption. It provides insight into employee-driven innovation (EDI) and information systems (IS) post-adoption literature. Theoretically, it relates inductively generated findings on the phenomenon of “taking initiative” to innovate to institutional entrepreneurship theory, especially through discussing the conditions that enable individuals to innovate, even from within highly institutionalized organizational settings.

Finally, in terms of significance for practice, a number of suggestions are advanced on how to stimulate and manage employee-driven innovation in public sector organizations.

List of publications

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Definition of key terms

Administrative innovation	Changes related to work strategies, administrative structures, information systems, people and culture in the organization
Employee-Driven Innovation	Generating and implementing new ideas (products or processes) from ordinary employees
Grounded theory	A systematic approach to generating theory from data
HRIS	A computerized system assisting organizations in control and decision-making by providing current and accurate data.
Innovation	The generation and implementation of useful ideas to improve internal organizational processes.
Post-adoption	A stage that occurs after the information system is initiated, implemented and adopted in the organization.

List of abbreviations

BPR	Business Process Reengineering
DOI	Diffusion of Innovation
E-HRM	Electronic Human Resource Management
EDI	Employee-Driven Innovation
ERP	Enterprise Resource Planning
HR	Human Resource
HRIS	Human Resource Information System
HRM	Human Resource Management
IE	Institutional Entrepreneurship
IS	Information System
IT	Information Technology
KM	Knowledge Management
NPM	New Public Management
R&D	Research and Development
U.S.	United States of America
UK	United Kingdom

1 Introduction

1.1 Research background

Organizations often invest considerable resources to implement a variety of information systems (IS) as a way of supporting their work. In the field of IS, considerable research attention has been devoted to IS implementation and adoption in organizations. However, it is acknowledged that IS can be underutilized or used narrowly following its adoption in organizations (Jasperson, Carter & Zmud, 2005; Wang, Liu, Feng & Wang, 2014). As a result, increased interest on the IS post-adoption stage has emerged in recent years. IS post-adoption stage refers to the continued usage and utilization of IS after adoption. It is argued that the development of innovative practices enables organizations to use IS to their full potential (Qin & Huang, 2011). Hence, there is a need for research to move beyond a focus on adoption and diffusion and consider the discovery of new ideas (Lucas, Swanson & Zmud, 2007; Zaman & Fielt, 2016). It is also essential to understand how the development of new ideas following the adoption of IS can contribute to innovation (Zaman & Fielt, 2016). This overlooked area of inquiry serves as the motivation behind this thesis.

This study focuses particularly on a human resource information system (HRIS) in the context of post adoption. HRIS is a type of administrative information system that have a prominent role in organizational success (Troshani, Jerram & Hill, 2011). HRIS is often considered as a part of a broader enterprise resource planning (ERP) system (Zafar, 2013). It is primarily used in organizations to support human resource management (HRM) practices and is considered a revolution that has reshaped the field of HRM (Bussler & Davis, 2002). HRIS has evolved from a simple recordkeeping system in the 1960s to a more sophisticated system that is high in complexity and assists organizations in decision making and reporting

(DeSanctis, 1986; Ngai & Wat, 2006). Previous research on HRIS has focused predominantly on the adoption of the system as a form of innovation per se, and relatively little is understood about innovation emerging in the context of HRIS post-adoption usage.

Innovation has a key role in enhancing organizational performance and success. Innovation has been valued in terms of its contribution to the survival and growth of organizations (Francis & Bessant, 2005). The concept of innovation has been widely studied and linked to different academic fields such as economics, management and IS. Innovation ranges from doing things better to doing things differently (Bessant & Tidd, 2015). It includes various types that embrace tangible products to intangible processes and technological to non-technological changes.

In the IS field, innovation is often linked to the introduction of IS as technological innovation (Allen, 2000; Ravichandran, 2000), and few studies have sought to examine non-technological innovation. The concept of non-technological innovation refers to the introduction of practices and processes that represent new ways of managing work (Hamel, 2006; Volberda, Van Den Bosch & Mihalache, 2014). Despite the fact that non-technological innovation is less researched, it is deemed to be crucial for organizations. Non-technological innovation can support and complement technological innovation (Schmidt & Rammer, 2007). Černe, Kaše and Škerlavaj (2016) emphasize its significant effect on organizational performance. Non-technological innovation can develop in all processes in organizations and includes organizational, management, and administrative innovation (Volberda, Van Den Bosch & Heij, 2013). Given the focus on HRIS as an administrative system, this study investigates administrative innovation and explores its link to IS post-adoption. Hence, this study goes beyond a focus on technological innovation and emphasizes the non-technological side of IS.

Administrative innovation refers to changes in internal organizational processes and systems (Evan, 1966; Wang, 2010). More specifically, it is concerned with changes related to work strategies, administrative structures, IS, people and culture in organizations (Ling & Nasurdin, 2010b; Popadiuk & Choo, 2006). It is acknowledged that administrative innovation can either be radical innovation originating from the top organizational level, or incremental innovation mostly developed at the lower organizational level (Černe et al., 2016; Ravichandran, 2000).

Černe et al. (2016) highlight the importance of employee-based administrative innovation. This is related to the concept of employee-driven innovation (EDI). EDI is a relatively new concept that is often linked to other fields such as creativity literature and organizational learning (Amundsen, Aasen, Gressgård & Hansen, 2014). Traditionally, innovation has been mainly linked to research and development (R&D) units and did not recognize the role of ordinary employees (Høystrup, 2010; Kesting & Ulhøi, 2010). Hence, the main emphasis of EDI is on ordinary employees who have potential valuable ideas to improve their work and therefore, should be recognized (Kesting & Ulhøi, 2010). Predominantly, EDI can lead to incremental innovation (Amundsen et al., 2014) as it often deals with small incremental changes in relation to daily problems and work tasks.

According to Sousa, Pellissier and Monteiro (2012), incremental innovation constitutes more than 80 percent of every innovation produced. Therefore, it is essential to not overlook incremental innovation as it “may sow the seeds for radical innovation” (Shipton, Lin, Sanders & Yang, 2017, p. 187). In the innovation literature, most of the research focuses on innovation emerging from the upper (top) organizational levels or by R&D related functions (Høystrup, 2010). Kesting and Ulhøi (2010) propose that employees often have hidden innovative ideas that can be recognized due to their in-depth context-specific knowledge (Kesting & Ulhøi, 2010). By engaging in their daily work, employees can identify opportunities and recognize

problems that are often invisible to the management (Robinson & Schroeder, 2014). Such work-related knowledge and experience allow employees to participate in different types of innovation. Hence, employees can contribute to improving work in terms of processes, tasks, communication and use of computers (Sørensen & Wandahl, 2013).

In the innovation literature, the public sector is traditionally known to hinder innovation and most innovation studies focus on the private sector (Windrum, 2008). Innovation is considered challenging in the public sector because of the traditional bureaucratic atmosphere that is regarded as inimical to innovation (Sørensen et al., 2018). It is widely accepted that “Bureaucracy puts an upper limit on what individuals are allowed to bring to their jobs” (Hamel, 2006, p. 80). Although some studies examine administrative innovation and HRIS in the public sector (Troshani et al., 2011), few studies integrate administrative innovation and HRIS post-adoption. Therefore, this study extends this area of investigation by examining the development of administrative innovation following the adoption of HRIS in public sector organizations in Kuwait.

1.2 Research aim and questions

The aim of this research is to investigate the development of administrative innovation in relation to post-adoption usage of HRIS in public sector organizations. Therefore, the following research question is raised based on the review of the literature: **How does administrative innovation develop following the adoption of HRIS in the context of public sector organizations?**

Based on the identification of gaps in the literature and to develop an in-depth understanding of the development process of administrative innovation, it is essential to identify the main aspects of the process including: manifestations, initiators, enablers, barriers,

motivations and interactions in relation to administrative innovation. Therefore, this study addresses the following sub-questions:

1. What are the manifestations of administrative innovation related to post-adoption usage of HRIS in public sector organizations?
2. Who initiates administrative innovation following the adoption of HRIS in a public sector organization, and what are the perceived enablers and barriers?
3. How do initiators of administrative innovation related to HRIS interact with stakeholders in the context of public sector organizations? And what are their motivations?
4. How do these interactions, motivations, perceived enablers and barriers influence the development of administrative innovation in the context of public sector organizations?

More detailed explanation of how the research questions emerged is presented in the literature review chapter (Section 2.5). In order to achieve the research aim, the objectives of this study are as follows:

- To examine the post-adoption stage of HRIS in the context of public sector organizations.
- To explain what constitutes administrative innovation in relation to HRIS post-adoption in the context of public sector organizations, through identifying types and outcomes of administrative innovation.
- To develop a mid-range theory that explains the development of administrative innovation taking into account: (a) the roles and the motivations of initiators (b) the interaction between initiators and organizational stakeholders; and (c) the enablers and barriers to administrative innovation in relation to HRIS post-adoption in the context of public sector organizations.

1.3 Significance of the study

This research aims to investigate the development of administrative innovation in relation to the post-adoption usage of HRIS in public sector organizations. This requires the examination of manifestations of administrative innovation, the potential initiators of innovation and the interaction between initiators and organizational stakeholders following the adoption of HRIS.

In relation to IS field, innovation is a topic of high value to researchers and practitioners (Jha & Bose, 2016). Innovation represents a powerful lens by which to address the complexities of IS implementation, both adoption and post-adoption (Bagayogo, Lapointe & Bassellier, 2014; Kamal, 2006; Lucas et al., 2007).

Despite its importance, the development of innovation is poorly understood and “suffers from a paucity of empirical research validating its constructs as well as firmly grounded theories that extend the understanding of this stage” (Jha & Bose, 2016, p. 302). This study attempts to establish the connection between HRIS post-adoption and administrative innovation by providing an in-depth explanation of the development of administrative innovation following the adoption of HRIS.

In addition, this research follows an innovative approach to investigate innovation (Fichman, 2004). Due to its inductive nature, grounded theory stimulates creative thinking and provides new insights in relation to the phenomena under investigation (Strauss & Corbin, 1998). Therefore, this study can contribute to the existing body of knowledge on innovation and IS post-adoption by providing rich insight into the theoretical understanding of how and why administrative innovation develop following the adoption of HRIS.

In terms of significance for practice, despite the enormous investments and the continuous advancement in technology, the case of underutilized IS continues to persist in organizations (Jawahar & Harindran, 2013). Researchers argue that the true value of IS can be achieved during the post-adoption stage through extending the tasks and the technology

associated with IS (Jaspersen et al., 2005; Rashid, Hashim, & Hock, 2012). Therefore, this research explores post-adoption from the perspective of administrative innovation which is related to changes in IS, organizational processes and work tasks.

Innovation is essential to enrich the use of IS and to utilize IS to a greater potential (Jaspersen et al., 2005). It is also evident that innovation has a critical effect on organizational performance (Černe et al., 2016). Given the widespread of innovation and its significant impact, managers can only “decide to lead with innovation, or respond to it, but they can no longer ignore it” (Cronin, 2014, p.73).

This study provides a novel contribution by illuminating the manifestations of administrative innovation that can emerge from day-to-day practices following the adoption of HRIS. The results of this study explain the process of taking initiative that is central to the development of administrative innovation.

In addition, this study provides practical insight that is beneficial for organizations to better understand administrative innovation and how it can lead to utilizing IS to a greater extent. Therefore, a number of suggestions are advanced on how to stimulate and manage administrative innovation in public sector organizations (Section 6.4).

1.4 Overview of the Methodological Approach

Innovation is considered as a complex interactive process that can involve different activities and multiple actors (Newell, Robertson, Scarbrough & Swan, 2009). The aim of this study is to understand how the process of administrative innovation unfolds in the context of HRIS post-adoption. It requires an in-depth understanding of the organizational processes and individuals’ experiences in relation to administrative innovation. Therefore, this research follows an inductive approach to generate a theory that explains the development of

administrative innovation from the perspective of organizational members who engage in the process.

Given the complexity of the innovation process, its subjective nature, its context-dependence, and the interactions involved, no a priori theoretical framework was forced to explain the phenomena. Instead, grounded theory is selected as a well suited research methodology (Glaser & Strauss, 1967; Strauss & Corbin, 1998).

Grounded theory is utilized as an innovative approach to develop a theory of a social process based on the view of participants who have experienced the process (Creswell, 2013). Therefore, it allows the researcher to explore the experiences, perceptions and interactions of organizational members in relation to HRIS post-adoption.

This study focuses on HRIS to investigate administrative innovation emerging following its adoption in public sector organizations. HRIS is an administrative IS used to support HRM goals and to improve its effectiveness (Chakraborty & Mansor, 2013). It is closely linked to administrative innovation as HRIS can promote administrative changes in organizational processes (Ball, 2001).

The context for this research is a public sector organization, in the banking and finance sector, in Kuwait. It is selected as an appropriate setting to examine administrative innovation given that HRIS has been implemented since 2009. In addition, HRIS is integrated into various organizational processes to support work practices and tasks.

In relation to data collection, to examine innovation emerging in the context of HRIS post-adoption usage, face-to-face semi-structured interviews have been conducted with HRIS users in the IS and human resources (HR) departments. In addition, document analysis was employed in this study to support the data collected from the interviews. The documents are used to deepen understanding by verifying or adding detail related to issues raised in the interviews.

In terms of sampling, participants were selected on the basis of theoretical sampling, which is one of the main features of the grounded theory methodology (Glaser & Strauss, 1967). Theoretical sampling refers to selecting participants based on concepts derived from data analysis to densify categories and to enrich understanding of the phenomena (Strauss & Corbin, 1998). Thus, participants were recruited from different organizational levels ranging from managers to ordinary HR employees who use HRIS to perform their daily work tasks.

Data collection and analysis were conducted simultaneously following the principles of grounded theory. The interview data were analyzed using the grounded theory coding procedure in accordance to Strauss and Corbin (1998), which involves open, axial and selective coding. Memo-writing and diagramming were extensively employed throughout the research.

Iterations of data collection and analysis continued until categories became theoretically saturated. Theoretical saturation occurs when the analysis does not reveal new relevant data and each category is developed with its properties (Strauss & Corbin, 1998). In this study, theoretical saturation was reached after thirty-two interviews with HRIS users.

The findings were obtained through the rigorous application of grounded theory, in particular the Straussian version (Strauss & Corbin, 1998). By adhering to the procedures of grounded theory (e.g. constant comparison, theoretical sampling, memo-writing and diagramming) and by utilizing the appropriate analytic tools (coding paradigm and conditional/consequential matrix), an emergent theory was developed and integrated with relevant aspects of the literature.

A detailed explanation of the research design and process is provided in the methodology chapter (Chapter 3). This is followed by a presentation of the core category and subcategories, and the integrative diagram of the emergent theory in the findings chapter (Chapter 4). Subsequently, the integration of the emergent theory with the literature is illustrated in the discussion chapter (Chapter 5).

1.5 Thesis structure

This thesis consists of six chapters. First, this introductory chapter presents the background to the research and the research questions, aim and objectives. It also highlights the expected contribution of this research.

Chapter 2 provides a discussion of the literature reviewed. It is comprised of three sections that discuss the relevant literature on innovation, HRIS and the public sector as the main themes of the study. The section on innovation presents an overview of the field of innovation and introduces administrative innovation as the focus of this research. The section on HRIS discusses the functions, users, subsystems and post-adoption usage of HRIS. The section on public sector identifies the characteristics of the sector and discusses innovation and HRM/HRIS within the public sector.

Chapter 3 explains the methodological background and the research design of this study. Grounded theory is adopted as the methodology and a public sector organization in Kuwait is chosen as the research context. A justification for the selection is presented in Chapter 3. In addition, the chapter identifies the philosophical perspectives, data collection instruments and procedures, and data analysis methods. The chapter also includes a discussion of research quality and ethical considerations related to the research.

Chapter 4 presents the findings of the research in the form of a process that represents the development of administrative innovation in the context of HRIS post-adoption. It presents the categories that emerged from the data analysis and explains the theoretical integration process. It concludes with presenting the integrative diagram which denotes the emergent theory of the development of administrative innovation following the adoption of HRIS in the public sector organization.

Chapter 5 discusses the emergent theory in relation to the existing literature. It explains the application of a formal theory as a theoretical lens to view and frame the emergent theory

in order to position the theory within the wider disciplinary knowledge. In addition, it highlights relevant aspects of IS and innovation literature in order to place the theory within the existing relevant literature. The chapter is structured according to a conditional/consequential matrix which is developed to illustrate the complexity of the development process of administrative innovation.

Chapter 6, the conclusion chapter, offers a summary of the key findings of the study by addressing the research questions. It also presents the contribution of the study in terms of theoretical and methodological contribution. In addition, it acknowledges the limitations of the study and suggests directions for future research.

2 Literature review

2.1 Introduction

This research focuses on administrative innovation in relation to HRIS post-adoption in public sector organizations. Hence, the literature review chapter is organized into three sections based on the focus of this research (Figure 1).

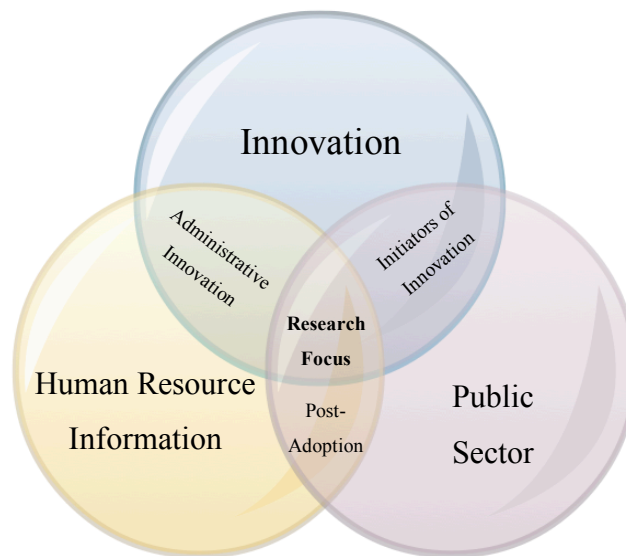


Figure 1 - Research focus

The first section reviews the relevant literature on innovation, and includes different subsections commencing with a discussion of the definitions and types of innovation. This is followed by a discussion of non-technological innovation. The next subsection elaborates further on administrative innovation as a type of non-technological innovation and explores the link between administrative innovation and information system (IS) and knowledge management. The subsequent subsection explores the literature on the initiators of innovation, in particular, management-driven innovation and employee driven innovation (EDI). The following two subsections briefly discuss the drivers and barriers of innovation. The subsection concludes with a summary of the key points.

The second section reviews the relevant existing literature on HRM, HRIS and post-adoption. First, it provides a brief overview of the field of HRM and different HRM practices. Next, it explores the link between HRM and administrative innovation. This is followed by a discussion on HRIS comprising the meaning, functions, users and subsystems of HRIS. The following section links HRIS and innovation. Subsequently, the discussion proceeds to explore HRIS post-adoption by providing an overview of the post-adoption phase and exploring the links to administrative innovation. The section concludes with a summary to highlight the key points.

The third section sets out the context of the public sector. It reviews the characteristics of the public sector in general, before exploring innovation in the public sector, including the types and initiators of innovation. This is followed by a discussion of the existing literature on HRM/HRIS in the public sector. The next section focuses particularly on the public sector of Kuwait and explores the relevant studies in relation to innovation, HRIS and post-adoption. Subsequently, a summary of the main points discussed in the section is provided.

Finally, the chapter concludes with a summary that illuminates the key findings of the literature review in the different areas of innovation, HRIS and the public sector. This is followed by a description of the rationale for the research questions to be addressed in this study.

2.2 Innovation

2.2.1 Introduction

This section provides a general overview of the field of innovation. It commences by exploring the different definitions of innovation and presenting the definition adopted in this research. It then identifies the various categorizations of innovation. Next, it focuses on non-technological innovation and explores the different types of innovation related to it, followed by a further elaboration on administrative innovation and a discussion of its link to IS and knowledge management (KM). The subsequent section discusses the initiators of administrative innovation, comprising management driven innovation and EDI. EDI is further explored in relation to its definition, types, approaches and benefits and drawbacks. Subsequently, a brief overview of the drivers and barriers of innovation is presented. The section concludes with a summary of the key points.

2.2.2 Definition of innovation

Innovation is a term used extensively in our daily lives with different meanings attached to it. In the literature, innovation has been widely studied and linked to different research fields. Despite the widespread use of the concept, there is no single common definition of innovation. Innovation has different definitions proposed by researchers in various disciplines, such as IS, management, economics and science (Baregheh, Rowley, & Sambrook, 2009; Jha & Bose, 2016). Koellinger (2008) emphasizes that “innovation is a subjective concept and whether some activity qualifies as innovative or not depends on the perspective of the observer” (p. 22). Therefore, it is essential to explore the different concepts and identify what constitutes innovation in this research.

Most discussions around innovation, in terms of what it means and why it matters, start with the definition proposed by Schumpeter (1934), who is often considered ‘the father of innovation’ after his influential and seminal contribution to the field (Damanpour & Aravind, 2012; Janssen, Stoopendaal & Putters, 2015). Schumpeter (1934), as an economist, defines innovation as new ways of combining available resources (e.g. products, processes) to create economical value (Høyrup, 2010). This definition highlights that value creation is an essential aspect of innovation. Even though the Schumpeterian concept of innovation seems to be more related to the economic context, it is still built upon by researchers in different fields (e.g. Høyrup, 2010; Potts & Kastle, 2010).

In the management discipline, Knight (1967) argues that attaching a ‘value judgement’ to the definition of innovation is problematic, as it is considered a limited way of understanding innovation because it overlooks negative cases of innovation (when it does not add value) or failed innovation (when the innovation is unaccepted). Therefore, Knight (1967) proposes another definition to view innovation as “the adoption of a change which is new to an organization and to the relevant environment” (p. 478). Knight (1967) claims that idea creation is not included in the definition of innovation because creation is related more to creativity. He argues that although creativity (idea creation) is crucial, it is not necessarily part of the innovation process because “the innovators often are not the creator” (p. 480). Innovation, then, is more about the social interaction, occurring when the idea is implemented and introduced into practice.

In contrast, other definitions of innovation emphasize the importance of creativity in the innovation process. For example, Amabile (1988) links innovation to creativity and conceptualizes innovation as “the successful implementation of creative ideas within the organization” (p. 126). Other definitions link innovation to entrepreneurship and the ability of individuals to create changes. For example, a widely used definition of innovation proposed by

Drucker (1985) views innovation as the instrument of entrepreneurs. More specifically, his definition suggests that innovation is the means of creating change that adds economic value to the organization.

Most definitions in the literature view innovation as a process. For example, Thompson (1965) identifies different stages in his definition of innovation as “the generation, acceptance, and implementation of new ideas, processes, products or services” (p. 2). This definition highlights the different stages of innovation (idea generation, acceptance and implementation). It also identifies different types of innovation (processes, products, services).

Other definitions refer to innovation as a process of change within an institutional context. Van de Ven (1986) defines innovation as “the development and implementation of new ideas by people who over time engage in transactions with others within an institutional context” (p. 591). The institutional context here refers to a set of legitimated organizational arrangements. Van de Ven (1986) highlights factors that are necessary for the development of innovation including ideas, people, transactions and context.

In relation to context, Damanpour (1991), in his study of innovation at the organizational level, extends the definition of innovation to provide sufficient consideration to the influence of the external environment. Innovation represents “a means of changing an organization, whether as a response to changes in its internal or external environment or as a preemptive action taken to influence an environment” (Damanpour, 1991, p. 556).

It is essential to highlight here that other definitions view innovation as an outcome rather than a process. For example, Rogers (1995), known for his influential work on the diffusion of innovation, offers a similar definition, stating that “an innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (p. 11).

The previously described definitions point out that innovation has a distinctive characteristic of newness. Newness mainly means that the idea is new to the adopting unit

(individual or organization) and related environment (Zaltman, Duncan & Holbek, 1973). Thus, innovation does not have to be something new to the industry or new to the world. However, these definitions do not fully explain the usefulness of these new ideas. It is important to clarify that not all new ideas can be considered as innovation. To be considered as innovation, the ideas must be useful (Van de Ven, 1986).

A further definition offered by West and Anderson (1996) states that innovation is “the introduction and application, within a group, organization, or wider society, of processes, products, or procedures new to the relevant unit of adoption and intended to benefit the group, individual, or wider society” (p. 681). This definition takes into account the benefits associated with innovations. It clearly highlights that innovation adds value to the adopting organization or even to society as a whole.

Similarly, Plessis (2007) emphasizes the benefits of innovation. Based on Plessis’s (2007) definition, innovation is “the creation of new knowledge and ideas to facilitate new business outcomes, aimed at improving internal business processes and structures” (p. 21). This definition also highlights the importance of knowledge in the innovation process (Baregheh et al., 2009).

A more recent and comprehensive definition was offered by Sørensen and Torfing (2011), who state that innovation is an “intentional and proactive process that involves the generation and practical adoption and spread of new and creative ideas, which aim to produce a qualitative change in a specific context” (p. 849). This definition emphasizes the intentional actions and proactiveness that initiate innovation. It also highlights the process oriented and creative aspect of innovation. They emphasize that innovation can result in qualitative transformation that challenges the sedimented practices in a particular context and can be related to products, services and work routine.

Similarly, Shipton et al. (2017) define innovation as the intentional introduction of valuable and useful ideas related to a particular context. They highlight that innovation adds value to the organization by extending the boundaries of knowledge and providing new insights to improve existing ways of working. They also emphasize that the distinction between different phases of innovation is not clear-cut.

After conducting a comprehensive content analysis of innovation definitions in different disciplines, Baregheh et al. (2009) suggested a multidisciplinary definition for the concept of innovation. Their definition states that “innovation is the multistage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace” (p. 1334). This definition encompasses the essential elements that characterize an innovation such as its aim, nature, type and stages (Rowley, 2012).

Another useful approach to draw attention to how the definition of innovation evolved is by looking at the Oslo Manual, which is an international guide for the collection and use of innovation data in industry. The Oslo Manual uses another approach by which to update the definition of innovation. For instance, in 1992, the Oslo Manual analyzed the concept of innovation strictly as a technological product and process innovation occurring mainly in the manufacturing sector. A second edition of the Oslo Manual was published in 1997 to capture innovation that occurs in the service sector, in addition to manufacturing (OECD, Eurostat & EU, 1997). Subsequently, a third edition of the Oslo Manual published in 2005 provides an updated and revised definition of innovation. It defines innovation as “the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations” (OECD & Eurostat, 2005, p. 46). This definition recognises the various types of innovation, such as product, process, marketing and organizational innovation. Keeping up

with progress in the field of innovation, the latest edition of the Oslo Manual (OECD and Eurostat, 2018) updates the definition of innovation to “a new or improved product or process (or combination thereof) that differs significantly from the unit’s previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process)” (p. 20). This definition is proposed as a general definition that can be applied in different fields and sectors and, therefore, combines the previous types of innovation into two categories: product and process innovation.

To sum up, the development and the complexity of the concept of innovation is mirrored in the different definitions used in innovation studies. The literature review shows that the definition of innovation is changing over time. Following the seminal work of Schumpeter, research on innovation is growing continuously (Damanpour & Aravind, 2012). Hence, the definition of innovation has evolved by being extended and adapted to different studies. In general, it has extended from a narrow description to a wider description that covers different aspects of innovation.

The review of the various definitions that have been suggested in the literature informed the definition of innovation in this research. Innovation is viewed as *the generation and implementation of useful ideas to improve internal organizational processes*. Given that the focus of this research is on the development process of innovation in a specific context (public sector organizations), it is useful to conceive innovation as a multistage process that incorporates generation of ideas and implementation.

2.2.3 Types of innovation

As discussed in the previous section, innovation is used in different disciplines, and a diverse range of definitions of innovation exist. As a result, researchers express different views on the types of innovation. Each type has different characteristics and attributes (Damanpour & Evan,

1984). Hence, the initiation and the implementation process may differ between the various types of innovation (Damanpour, 1987).

This section presents an overview of the types based on several factors, such as outcome, relation to the core activities and technology, interaction with the external environment, intent, magnitude and integrative models of innovation types.

Outcome. Identifying innovation based on its outcome has become mainstream in the literature. The five categories of innovation proposed by Schumpeter (1934) are widely used and act as a starting point. He differentiates between five main types of innovation including new product, new methods of production, new markets, new forms of supply and new organizations (Schumpeter, 1934). One limitation of this categorization is that it excludes some important types of innovation, such as service innovation.

Service innovation is included in Knight's (1967) proposed innovation types. According to Knight (1967), there are four different types of innovation including product/service, production process, organizational structure and people innovation. Product/service innovation is related to the establishment of a new tangible product or a new service. Production process innovation includes new operations and processes. Organizational structure innovation relates to changes in the formal ways of people's interactions and communication in the organization. People innovation affects people in the organization directly, such as changes in behavior (Knight, 1967). The main limitation of the study by Knight (1967) is the failure to consider the fact that improvements to products or processes can also be identified as innovation.

Hovgaard and Hansen's (2004) classification introduces business systems innovation as a new category. They argue that business systems innovation includes all different types that

are not classified as either product or process innovation. For instance, improvements in management or marketing techniques can fall under business systems innovation.

More recently, the Oslo Manual (OECD & Eurostat, 2005) identified four main types of innovation. Three types are similar to Knight's (1967) classification: product, process and organizational innovation. However, the fourth type – marketing innovation – is concerned with introducing new or improved methods related to the product's positioning in the market. According to the Oslo Manual (OECD & Eurostat, 2005), product and process innovations are considered technological innovations. In contrast, organizational and marketing innovations are considered non-technological innovations.

Another concept related to organizational innovation is social innovation. It is considered as a broader concept than organizational innovation (Pot & Vaas, 2008). In organizational management, social innovation refers to improvements of the relationship between the organization and its employees (Meijerink, 2014). According to Pot and Vaas (2008), "It includes such things as dynamic management, flexible organisation, working smarter, development of skills and competences, networking between organisations" (p. 468). For example, working smarter can enhance employee wellbeing, and developing skills and competencies can improve employee performance, thus increasing productivity (Meijerink, 2014; Pot & Vaas, 2008). Organizations can enhance social innovation through different methods, such as the use of IS (Limburg, 2014). According to Limburg (2014), organizations can achieve social innovation by providing better information to employees and enabling them to engage in decision making.

Francis and Bessant (2005) introduced the '4Ps' model to categorize innovation into four types: product, process, position and paradigm. Product innovation involves introducing a new or improved product or service. Process innovation improves operations and procedures. Position innovation deals with the marketing aspects of a product and changes the way that

target segments view the product. This study identifies a new type of innovation, paradigm innovation. Paradigm innovation replaces old business approaches by applying a new understating. Under paradigm innovation, innovations are classified as inner- or outer-directed. Inner-directed innovation reflects changes in the values and social structure of the organization. An example of inner-directed innovation is the attempt to change the ‘mental models’ that the employees have through changing their perceptions and thoughts about work. Outer-directed innovation mainly relates to business models. For instance, outer-directed innovation can occur when managers change their current business models, reshaping the development of the organization. Examples of outer-directed innovation include mergers and joint ventures (Francis & Bessant, 2005).

Relation to the core activities and technology. Another typology was proposed by Daft (1978) in which a dual-core model was introduced to label the different types of innovation. According to the dual-core model, organizations have two cores: a technical core and an administrative core. The technical core is related to technology and the main activities of the organization. The administrative (also considered as non-technical) core is related to the organizational structure and activities that are indirectly related to the main work of the organization. Therefore, innovation is classified based on the two cores as either technical or administrative. For example, technical innovation can include an idea for a new product, and administrative innovation can refer to a new policy for recruitment. This typology is essential as it distinguishes between the social structure and technology; technical innovation is related to technology, and administrative innovation is related to the social structure (Gopalakrishnan & Damanpour, 1997).

While Daft (1978) compares technical and administrative innovations, Damanpour (1987) distinguishes between technological and administrative innovations. Technological

innovation refers to changes in technology, while administrative innovation refers to changes in organizational structure. The difference between technical and technological innovations can be misunderstood. In a widely cited work, Damanpour and Evan (1984) point out that technical innovation and technological innovation are different. They describe technical innovation as changes in the organization's technical system that affect its main activities. Technical innovation can be related to changes in products and services, processes or technologies related to the core activities of an organization (Damanpour & Evan, 1984; Gopalakrishnan & Damanpour, 1997; Rowley, Baregheh & Sambrook, 2011). Thus, it comprises all types of innovations related to the main work of the organization, including technological innovation. An example of technical innovation is the development of a new technique to enhance the production process, such as quality control techniques (Sisaye, 2003). In contrast, technological innovation is mainly associated with changes in technology (Damanpour & Evan, 1984). It refers to the advancements and improvements of technology or to the adoption of a new technology (Schmidt & Rammer, 2007). A notable example of technological innovation is the information system (IS) (Allen, 2000).

Interaction with the external environment. Damanpour (1987) recognizes a new type of innovation, which is ancillary innovation. Apparently the first to use this term, in his investigation of innovations in libraries, he defines ancillary innovation as innovation that occurs as a result of engaging with the external environment, such as communities, customers or other organizations. It is concerned with providing community services. For example, programs for career development provided by libraries can be considered ancillary innovation. In other words, the main aspect of ancillary innovation is that it results from the organization's interaction with the external environment and collaboration with other organizations in order to innovate.

A similar type used in business management literature is inter-organizational innovation (Mandell & Steelman, 2003). Mandell and Steelman (2003) define inter-organizational innovation as arrangements between organizations to reach a mutual goal. It involves actions that can develop across boundaries of organizations, such as partnerships and joint ventures (Mandell & Steelman, 2003).

Collaborative innovation is a term used to combine ancillary innovation and inter-organizational innovation (Wu, Ma & Yang, 2013). Collaborative innovation is popular between organizations and includes many forms, such as partnerships, strategic alliances and other knowledge sharing arrangements (Lee, Olson & Trimi, 2012).

Similarly, the concept of open innovation is based on interaction. Open innovation is mainly concerned with knowledge transfer and combining internal and external ideas to enhance innovation (Chesbrough, Vanhaverbeke & West, 2006). Therefore, the innovation process goes beyond the organization's boundaries (Rowley, 2012). This means that organizations can cooperate and exchange knowledge with other organizations or parties to create innovation instead of just relying on internal activities (Enkel, Gassmann & Chesbrough, 2009). It involves two main practices: inbound and outbound open innovation (Huizingh, 2011). Inbound practices are concerned with utilizing external knowledge, and outbound practices are concerned with the external exploitation of innovation developed internally (Huizingh, 2011). Therefore, open innovation allows organizations to combine different knowledge and skills and to explore new ideas that can enhance the capacity to innovate (Rowley, 2012).

A similarity between the concepts of ancillary, inter-organizational, collaborative and open innovations exists. These types of innovation include the involvement of external parties. Ancillary innovation, as explained previously, is a term used by Damanpour (1987) to explain how innovations can occur as a result of engaging with the external environment, such as

communities, customers or other organizations. Inter-organizational innovation is used in business management literature to refer to innovations that are created as a result of inter-organizational arrangements (Mandell & Steelman, 2003). Collaborative innovation is concerned with cooperating with other organizations to enhance innovation (Lee et al., 2012). Even though collaborative innovation can occur in both the public and private sectors, it was mostly used in studies to investigate public sector innovation (Sørensen & Torfing, 2011; Wu et al., 2013). Open innovation is related to knowledge transfer, shared learning and understanding with organizations (Enkel et al., 2009; Rowley, 2012).

Intent. Other researchers differentiate between innovations by whether or not the intent was planned or incidental. Planned innovation is a part of an organizational plan (Thong, 1999). It is often a project that is funded for research and development (Wagner, 2008). It occurs when the organization actively seeks opportunities to innovate, and involves different stages such as generating ideas, selecting a specific project, developing and commercializing (Wagner, 2008). In contrast, incidental innovation is a reaction of an organization to change (Thong, 1999).

Magnitude. Magnitude is another factor used to distinguish between innovation types (Crossan & Apaydin, 2010). It refers to the degree of change and is classified as either radical or incremental innovation (Dewar & Dutton, 1986; Gopalakrishnan & Damanpour, 1997). It is argued that these are considered attributes that describe the extent of the change associated with any type of innovation (Rowley et al., 2011).

Radical innovation leads to fundamental changes to existing activities, while incremental innovation produces marginal changes and reinforces existing capabilities (Gopalakrishnan & Damanpour, 1997). Crossan and Apaydin (2010), in their systematic review of the literature on organizational innovation, found that more focus has been placed on

radical innovation by researchers and managers. They also argue, based on empirical research, that some managers might not perceive incremental innovation as ‘innovation’. A possible explanation for this might be that minor innovation does not involve a significant departure from current processes (Plessis, 2007). Instead, it involves small changes and its effect on an organization is low compared to radical innovation. Although incremental innovation is concerned with just “doing what we already do better” (Tidd, Pavitt & Bessant, 2001, p.15), it is essential to not ignore the potential of it.

To emphasize the importance of incremental innovation, Souto (2015) mentions that incremental innovations lead to improvements, and that consequently, these continuous improvements could also result in radical change overall. An example of incremental innovation is the continuous improvement program that involves gradual sustainable changes to products or processes (Audretsch, Martínez-Fuentes & Pardo-del-Val, 2011).

In addition, disruptive innovation is another type related to the degree of change associated with innovation. Disruptive innovation can replace the existing activities with completely new activities (Albury, 2005). In other words, it is more than a major change; it is a replacement of existing practices. It is similar to the concept of discontinuous innovation, which can introduce significant changes that may go beyond the organization and affect a whole industry (Rowley et al., 2011).

Integrative models of innovation types. While a variety of definitions of types of innovation have been suggested, researchers argue that innovation often exists as an interrelation between the different types. Therefore, one type of innovation can have some characteristics of the other types (Cooper, 1998; Rowley et al., 2011).

Cooper (1998) argues that studying innovation as a unidimensional concept has caused misunderstanding and conflict in research findings. The unidimensional concept refers to the

assessment of an innovation type (e.g. administrative innovation) without considering the dimensions of the innovation (e.g. incremental/radical). According to Cooper (1998), innovation, as it exists in nature, is mostly multidimensional. Therefore, the multiple dimensional model was proposed as a different approach to classify innovation (Figure 2). This represents three dimensions comprising: product vs. process, administrative vs. technological and incremental vs. radical. According to this model, innovation type can be determined by the intersection between the different dimensions. Therefore, innovation can have the characteristics of different types. For instance, an innovation resulting from using technology to improve the production methods of a certain product has technological, process and incremental/radical dimensions. It consists of technological innovation, as it involves technology. It also consists of process innovation because it deals with production processes. Moreover, it also involves incremental or radical innovation depending on the degree of change (Cooper, 1998).

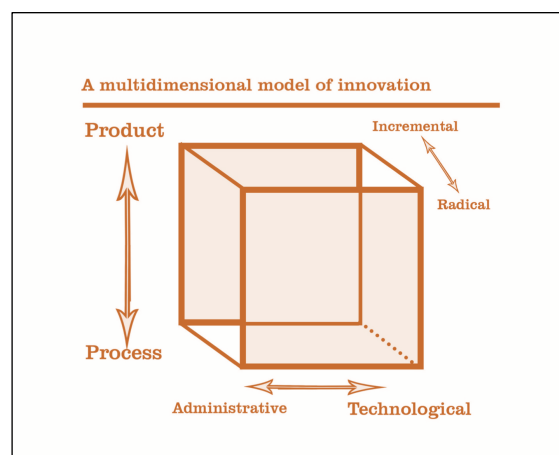


Figure 2 - Multidimensional model for innovation

Source: (Cooper, 1998)

Building on the work of Francis and Bessant (2005), Rowley et al. (2011) presented the innovation mapping tool shown in Figure 3. The innovation mapping tool is based on the

integration of various types of innovation previously defined by researchers into one framework. In Figure 3, different types of innovation are linked to four main categories based on Francis and Bessant's (2005) model: product, process, position and paradigm. The aim of this tool is to identify the key types of innovation in the literature and to emphasize the relationships between the types. This model represents a comprehensive overview of the different innovation types; however, it overlooks some key types of innovation such as open innovation and social innovation.

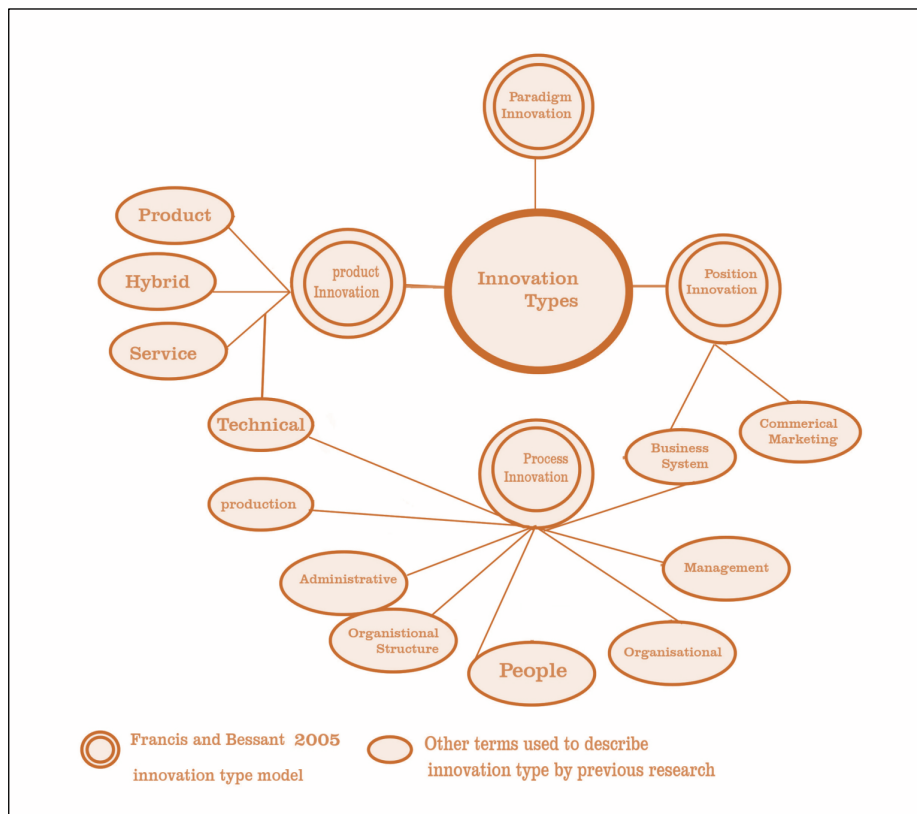


Figure 3 - Innovation type mapping tool

Source: (Rowley et al., 2011)

To conclude, it is clear that although the literature states that innovation has different forms ranging from tangible products to intangible operations and from technological to non-technological dimensions, more emphasis is placed on product and technological innovations.

The field of non-technological innovations is considered to be a subfield of innovation that has only recently gained more attention (Černe et al., 2016; Damanpour & Aravind, 2012). For instance, the Oslo Manual (OECD et al., 1997) has been revised and republished in 2005 to include terms that represent non-technological innovations, such as organizational innovation (OECD & Eurostat, 2005). Given that this research is intended to focus on the field of non-technological innovation, the following section moves on to describe non-technological innovation in more detail.

2.2.4 ‘Non-technological innovation’

In the innovation literature, previous research mostly focused on technological innovation and only recently has attention been turned to non-technological innovation (Černe et al., 2016). Despite the recent research attention on non-technological innovation, the understanding is relatively limited compared to technological innovation. The reason for this is that researchers use different terms interchangeably to refer to innovations that are not directly related to technology. Hence, the literature on non-technological innovation is fragmented and lacks a holistic understanding of the different types of innovation. In contrast, it appears that there is a common understanding that technological innovation can be broadly regarded as product or process innovation (Damanpour, 2017). An example of a term used in describing non-technological innovation is that of managerial innovation, which is used by Damanpour and Aravind (2012) to refer to all changes related to the structure, administration and management of the organization. This diversification of terms hinders progress in the field as it can result in misunderstanding and the lack of connections between studies (Černe et al., 2016).

Therefore, in their recent work, Černe et al. (2016) try to overcome such fragmentation in the field. They performed a co-citation analysis of articles since 1975 to further develop the field of non-technological innovation and provide additional clarity. They argue that

management innovation cannot be used as a general term to label all types of non-technological innovation. A possible reason for this is that the knowledge base of management innovation does not cover all types of non-technological innovation. Therefore, they propose the term non-technological innovation as an umbrella concept.

Schmidt and Rammer (2007) conducted research to investigate technological and non-technological innovations. Technological innovations are activities that involve a development in technology, while non-technological innovations are related to improving organizational methods. In their research, they used firms' data from the German Community Innovation Survey (German CIS 4) to explore the existence of non-technological innovation and its relationship to technological innovation and organizational performance. The findings confirm that technological and non-technological innovation are linked. Therefore, introducing technological innovation (product or process innovation) can affect the internal processes in the organization (organizational or marketing innovation). For instance, introducing a new IS (technological innovation) may trigger changes in non-technological business processes (organizational innovation). They also point out that non-technological innovation can spur success with technological innovations. This is based on another result of their research showing that when an organization combines its product and process innovations with both marketing and organizational innovations, it can perform better in terms of higher sales and cost reductions.

Following Schmidt and Rammer (2007), Mothe and Thi (2010) conducted a study to further investigate the effects of non-technological innovation on innovating activities. Similarly, they analyzed data from CIS 4. Their study reveals that non-technological innovation, in particular organizational and marketing innovation, can affect an organization's capacity to innovate in products or services, but they cannot affect its innovative performance.

However, the effect of non-technological innovation differs based on the type of industry and the phase of innovation process.

For the purpose of this research, non-technological innovation types related to the administration and management aspects of organizations are explored in more detail. The reason for this is the overlap that exists between organizational, management, business systems and administrative innovations (Černe et al., 2016; Damanpour & Aravind, 2012; Rowley et al., 2011; Volberda et al., 2013). Therefore, this section does not intend to be a comprehensive list of all categorizations of non-technological innovations; rather, it explains the differences before proceeding to examine administrative innovation.

Organizational innovation. Organizational innovation is a broad concept. Therefore, the literature can be confusing, as some researchers use the term ‘organizational innovation’ to refer to any type of innovation that is generated in or by the organization (Černe et al., 2016). However, according to the Oslo Manual (OECD & Eurostat, 2005), organizational innovation refers to the introduction of new organizational methods, and can include changes in business practices, workplace organization or external relations. It can be considered an essential type of innovation as it can support innovating activities and enhance organizational performance (OECD & Eurostat, 2005).

Researchers often investigate the positive impact of organizational innovation on other types of innovation. This is exemplified in the recent work undertaken by Le Bas, Mothe and Nguyen-Thi (2015) to investigate the role of organizational innovation; their work confirms that organizational innovation can influence persistence in technological innovation. Persistence refers to the extent of innovative output over a period of time (Le Bas et al., 2015). However, Mariano and Casey (2015) hold an opposing view, arguing that organizational innovation can sometimes have a negative impact. In their study, they identify four groups of

organizational innovation determinants: content, employees' involvement, leadership and organizational structure. They refer to content as the current and new knowledge acquired by the organization. Employees' involvement refers to the behaviors of employees in response to new ideas. Leadership involves the level of managerial support for innovation. Organizational structure includes the organizational hierarchy and method of communication. Mariano and Casey (2015) focus on content and leadership to study the potential negative side of innovation. For instance, they mention that organizations have an existing level of knowledge and that managers have an important role in modifying and enhancing the knowledge base. Therefore, when introducing organizational innovation as new knowledge, incompatibility with existing knowledge can negatively affect organizational performance. As a result, it can cause organizational dysfunction, such as resistance.

Although research has been carried out on innovation and organizational change, the boundaries between organizational innovation and organizational change are still unclear. As presented in section 2.2.2, the concept of innovation is mainly about changes. Therefore, organizational innovation is assumed to be directly related to organizational change (Baregheh et al., 2009). Organizational innovation can cause organizational change. However, organizational change does not always involve innovation. For instance, Rowe and Boise (1974) argue that innovation is a result of internal decisions. Thus, changes that are forced on an organization by law do not necessarily create innovation (Rowe & Boise, 1974). For example, organizational change that results from applying new organizational methods based on strategic managerial decisions can be considered as organizational innovation (OECD & Eurostat, 2005).

Organizational innovation can refer to changes in structures or behaviors (Le Bas et al., 2015). Thus, it can be subdivided into two types: administrative innovation and human capital innovation (Wong, 2013). As described earlier, administrative innovation is concerned with

changes in the organizational structure (a more in-depth explanation of administrative innovation is provided in the next section 2.2.5). Human capital innovation deals with the recognition and recruitment of innovators (Wong, 2013). It involves the practices adopted by the organization in order to identify, select and hire innovative individuals.

Management innovation. While organizational innovation refers to changes in all business practices, changes related to managerial practices can be referred to as management innovation (Birkinshaw, Hamel & Mol, 2008; Damanpour & Aravind, 2012).

Management innovation is a type of innovation that can be confused with organizational innovation. A likely explanation is that researchers use the term ‘management innovation’ differently in the literature. Whereas some researchers use the term primarily to refer to management processes (Birkinshaw et al., 2008; Hamel, 2006), it is also used as a broad concept that includes organizational, administrative and managerial innovations (Kraus, Pohjola & Koponen, 2012).

Management innovation is defined as “the invention and implementation of a management practice, process, structure, or technique that is new to the state of the art and is intended to further organizational goals” (Birkinshaw et al., 2008, p. 825). This definition implies that management innovation involves novel ideas resulting in significant organizational change. However, other perspective on management innovation suggest that it can also be new to the organization itself when implementing an idea that is already available in other contexts (Mol & Birkinshaw, 2009).

Business systems innovation. Business systems innovation includes all types of innovation not classified as product or process innovation (as mentioned in section 2.2.3) (Hovgaard & Hansen, 2004). Product and process innovation are considered technological

innovations (OECD & Eurostat, 2005; Schmidt & Rammer, 2007); therefore, business systems innovation excludes technological innovation. However, the key problem with this explanation is that the concept is very broad and is similar to the definition of non-technological innovation.

Moreover, business systems innovation involves changes related to management, marketing and customer orientation (Rowley et al., 2011). Thus, it is similar to the term 'business model innovation', a term used by researchers to reflect the way organizations work to create, deliver and capture value (Chesbrough, 2010; Teece, 2010). It deals with the following ways in which managers shape their business environment: (a) to create value by understanding market needs; (b) to deliver values by improving its operation; and (c) to capture the value of innovation employed by generating profit (Teece, 2010). According to these functions, business model innovation can be divided into three subtypes: (a) value offering innovation, (b) value architecture innovation and (c) revenue model innovation (Spieth & Schneider, 2016).

Researchers argue that this innovation type can cause paradigmatic changes (Spieth & Schneider, 2016; Teece, 2010). Therefore, it is also similar to the concept of paradigm innovation. Paradigm innovation, as discussed earlier (Section 2.2.3), refers to changes related to the way organizations do business.

To sum up, this section has discussed what constitutes non-technological innovation. It conveys that the field of non-technological innovation is relatively fragmented compared to technological innovation. Next, it explored the link between technological and non-technological innovation. Subsequently, it acknowledges the overlap between different types of non-technological innovation, thus distinguishing and briefly discussing organizational, management, and business system innovation. Given the focus of this research, the next section further explores administrative innovation a type of non-technological innovation.

2.2.5 Administrative innovation

This section introduces administrative innovation, as a form of nontechnological innovation, in greater detail. It commences by defining administrative innovation and exploring the relevant literature, followed by exploring its link with KM and IS.

Various definitions of administrative innovation can be found in the literature. A widely quoted definition of administrative innovation was proposed by Evan (1966). According to his definition, administrative innovation is “the implementation of an idea for a new policy pertaining to the recruitment of personnel, the allocation of resources, the structuring of tasks, of authority, of rewards” (p. 51). This definition relates administrative innovation to specific organizational processes, for instance, hiring employees, assigning tasks and rewarding. In other words, it shows that administrative innovation is related to human resources practices and work tasks.

Another definition proposed by Damanpour and Evan (1984) indicates that administrative innovation is generally related to the social system of the organization. Social system here refers to the interaction between the organizational members and includes the organizational structure, processes and rules necessary to perform tasks (Damanpour & Evan, 1984).

Similarly, a study conducted by Subramanian and Nilakanta (1996) highlights that administrative innovation is not concerned with the introduction of new products or new services. Hence, it supports the view that administrative innovation is more concerned with changes in rules, procedures and the social system of the organization. Furthermore, Ravichandran (2000) states that administrative innovation is related to “the adoption of administrative programs, processes, or techniques new to the adopting organization” (p. 694). Furthermore, more recent definitions of administrative innovation highlight that administrative innovation comprises changes related to work strategies, administrative structures, IS,

people and culture in the organization (Ling & Nasuridin, 2010b; Popadiuk & Choo, 2006). Examples of administrative innovation in the literature include total quality management (TQM), business process reengineering (BPR) and administrative reforms resulting from the new public management (NPM) reform in the public sector (Bui, 2011; Ravichandran, 2000).

In the literature, the concepts of organizational and administrative innovation overlap. This is because administrative innovation is also concerned with changes related to internal organizational processes. To differentiate between the concepts, administrative innovation is often used as a narrower concept that can refer to changes related to HR practices, administrative processes and work tasks (Birkinshaw et al., 2008; Evan, 1966; Volberda et al., 2013). Therefore, administrative innovation can be considered as a type of organizational innovation (Wong, 2013).

Due to the absence of a common definition of administrative innovation, studies tend to vary based on the meaning assigned to administrative innovation. The majority of studies on administrative innovation focus on management related changes (Sanders, 2007; Tanninen, Jantunen & Saksa, 2008; Teece, 1980). This view is supported by Kimberly and Evanisko (1981) who argue that administrative innovation is more related to the management and only indirectly related to the main operations of the organization.

Most studies relate administrative innovation to a strategic change in the management (Tanninen et al., 2008). As an example of such studies, Sanders (2007) investigated the organizational and environmental factors affecting the adoption of administrative innovation in the health sector. Both terms, administrative and organizational innovation, are used interchangeably and defined as changes in the management systems. He conducted quantitative research on the adoption of a new management program in hospitals, finding that organizational factors are more salient than external environmental factors in influencing the adoption of administrative innovation.

Bui (2011) conducted a review on administrative innovation literature in relation to the unique characteristics of administrative innovation and its diffusion process. He identifies the three most common attributes of administrative innovation. The first attribute is that it is IT-enabled, which emphasizes the link with between administrative innovation and information technology (IT). The second attribute is related to the socio-technological changes, which conveys that, in practice, administrative innovation not only involves pure administrative changes but can also include some changes in technology (Wang, 2010). The third attribute is that it is knowledge-intensive. Therefore, individuals should be knowledgeable about existing practices and rules in order to initiate and implement administrative innovation. Bui (2011) also emphasizes that administrative innovation is context-specific. Thus, studies should consider the context and the internal organizational practices related to administrative innovation.

Since the main attributes of administrative innovation is its association with knowledge and IT (Bui, 2011), the next sections explores the link between KM and administrative innovation and between IS and administrative innovation.

2.2.5.1 Administrative innovation and knowledge management (KM)

Knowledge management (KM) is concerned with managing tacit and explicit knowledge in organizations (Adams, Bessant & Phelps, 2006; Nonaka, 1994). It is widely acknowledged that knowledge (tacit/explicit) is fundamental for the development of innovation (Adams et al., 2006; Sørensen & Wandahl, 2013). Innovation is concerned with creating and utilizing knowledge to improve processes and structures (Plessis, 2007). In the literature, innovation has been linked to different aspects of KM activities such as idea generation, knowledge sharing, and absorptive capacity (Adams et al., 2006; Scarbrough, 2003).

In relation to idea generation, it is argued that “ideas are the raw materials for innovation” (Adams et al., 2006, p. 28). Ideas can be generated from different sources based on the type of innovation such as customers, managers, employees and networks (Rowley, 2012; Vandenbosch, Saatcioglu & Fay, 2006). Idea generation is concerned with the process of generating and acquiring knowledge. Rowley (2012) identifies possible arenas for idea generation such as: observing trends in the environment, solving problems, and findings gaps in the market. Generating ideas and knowledge can be linked to two modes of innovation: STI-mode and DUI-mode (Jensen, Johnson, Lorenz & Lundvall, 2007). On the one hand, the STI-mode, which refers to ‘Science, Technology and Innovation’, is concerned with producing and using codified scientific and technical knowledge (Jensen et al., 2007). It is often linked to innovation based on R&D activities (Nählinder & Fogelberg-Eriksson, 2019). On the other hand, the DUI-mode, which refers to ‘Doing, Using and Interacting’, is concerned with knowledge that is acquired through experience (Jensen et al., 2007). This type of innovation is related to ideas generated from informal processes and everyday routine activities (Honkaniemi, Saari, Mattelmäki & Koponen, 2014; Høyrup, 2010).

In relation to knowledge sharing, the link between knowledge sharing and innovation has been explored in the literature (Kamasak & Bulutlar, 2010; Lin, 2007; Obeidat, Al-Suradi, Masa’deh & Tarhini, 2016). It is argued that KM facilitates knowledge sharing between multiple groups or users involved in the innovation process (Scarborough, 2003). Nonaka (1994) points that “although ideas are formed in the minds of individuals, interaction between individuals typically plays a critical role in developing these ideas.” (p. 15). Therefore, knowledge sharing is an essential part of the development of innovation. Wang and Wang (2012) argue that knowledge sharing influences innovation which can contribute to the performance of the organization. On the one hand, they found that explicit knowledge sharing had the most significant effect on the speed of innovation and the financial performance of the

organization. On the other hand, tacit knowledge sharing had the most significant effect on the quality of innovation and the operational performance of the organization.

The link between the concept of absorptive capacity (Cohen & Levinthal, 1990; Zahra & George, 2002) and innovation is also established in the literature. Absorptive capacity refers to an organization's ability of recognizing the value of, and assimilating and applying new knowledge (Cohen & Levinthal, 1990). Several studies have emphasized the key role of absorptive capacity in relation to innovation (Enkel, Heil, Hengstler & Wirth, 2017; Laviolette, Redien-Collot & Teglborg, 2016; Wang et al., 2014). Absorptive capacity can affect innovation performance (Adams et al., 2006; Wang & Han, 2011). In particular, absorptive capacity is often strongly linked to open innovation research since it is concerned with collaboration between organizations and the utilization of external knowledge (Cheng & Huizingh, 2014; Huizingh, 2011).

With respect to administrative innovation, knowledge can be considered as “intangible tacit, and context-dependent. It includes, for example, knowledge relating to changes in work practices, changes in roles and responsibilities, and changes in attitudes and cultural values” (Newell et al., 2009, p. 192). Ling and Nasurdin (2010b) conducted a study to link administrative innovation with KM in the Malaysian manufacturing industry. They defined administrative innovation as changes related to the social structures, processes, rules and IS. By testing the hypothesis, they concluded that the effectiveness of knowledge acquisition has a positive effect on administrative innovation. Knowledge acquisition is related to the identification of knowledge and the use of it internally (Ling & Nasurdin, 2010b).

2.2.5.2 Administrative innovation and information systems (IS)

In the field of IS, innovation is a topic of high value to researchers and practitioners (Jha & Bose, 2016). The concept of IS innovation is often used to present the linkage between IS and innovation.

Swanson (1994) studied IS innovation and focused on extending Dafts' (1978) dual-core model. He introduced the tri-core model by including a third core called the IS functional core. The tri-core model divides IS-related innovation by its effects on the organization into three types:

- I. Innovations that affect the IS functions, which are mainly restricted to the IS unit. It is subdivided into Type (I)a administrative task innovation and Type (I)b technical task innovation.
- II. IS product and business administrative process innovation, which refers to innovation affecting the administrative core of the organization.
- III. Innovations that affect the core technology of the business, which has a strategic business impact. It includes three subtypes: (III)a process innovation, (III)b product innovation and (III)c integration innovation.

Grover, Fiedler and Teng (1997) conducted a study to test the tri-core model. Based on the results of their study, they state that Swanson's theory can be used as a starting point for studying IS innovation types as it integrates IS innovation with organizational innovation. Other studies adopted Swanson's (1994) typology to examine IS adoption and diffusion (Mustonen-Ollila & Lyytinen, 2003; Sharma & Rai, 2015).

In general, the literature on IS innovation is considered rich (Avgerou, 2008; Grover et al., 1997; Sharma & Rai, 2015; Swanson & Ramiller, 2004). However, Ravichandran (2000) points out that most research in the literature has focused on the technological innovation side of IS. Researchers applied different theories to study the adoption of IS as a technological

innovation (Allen, 2000). For example, Troshani et al. (2011) carried out a study to identify factors influencing HRIS adoption in the public sector by using the innovation configuration approach. In addition, Chakraborty and Mansor (2013) investigated the adoption of HRIS by using the theory of diffusion of innovation (DOI). It is argued that DOI is one of the most employed theoretical bases in examining IS technological innovation (Jha & Bose, 2016; Rogers, 1995).

However, technological innovations often include administrative aspects (Wang, 2010). Thus, it could be linked to administrative innovation. Some studies investigate IS innovation from the perspective of process and administrative innovation (Sharma & Rai, 2015; Tarafdar & Gordon, 2007). As an example, Ravichandran (2000) emphasized the administrative innovation aspects related to IS. He conducted an empirical study focusing on total quality management (TQM) in systems development as a complex type of administrative innovation. He identified relevant environmental, organizational, and task-related factors from the literature to developed hypothesis. Subsequently, to test the hypothesis, he collected data using a survey of more than 100 IS departments in government agencies in the U.S. The result of his study indicates that administrative innovation in IS departments is influenced by internal factors such as management support, the existence of a quality assurance function, and the structural complexity of the IS department.

Other studies link administrative innovation to the adoption and diffusion of IS. For example, Hsu, Lee, and Straub (2012) emphasize the benefits associated with applying administrative innovation as theoretical lens to examine the adoption of IS. They investigate the diffusion of information security management as an administrative innovation. They argue that administrative innovation enhances understanding of the ongoing changes resulting from the diffusion of IS including continuous improvement and restructuring of responsibilities and work tasks.

Although studies explore innovation in relation to different IS matters, Fichman (2004) noticed that adoption and diffusion research represent the dominant paradigm in IS innovation literature. More research is needed to explore innovation that goes beyond adopting and using the system according to prescribed ways (Qin & Huang, 2011). This is because innovation is concerned with findings new ways to use the adopted system in order to fulfil organizational goals (Qin & Huang, 2011). Hence, innovation can improve and extend the use of current systems.

This view is further supported by Jha and Bose (2016) based on their comprehensive review of the existing literature on IS innovation. Jha and Bose (2016) analyze articles published in top IS journals over the last 15 years. They found that adoption and diffusion have received a lot of research attention compared to innovation development. As a result, “the IS research literature on innovation creation and generation faces multiple issues related to its lack of theoretical development and empirical analysis” (p. 301). They recommend that more exploratory research is needed to better understand the initial stages of IS innovation, emphasizing that researchers should extend the understanding of this phase by conducting empirical studies to explore how innovation is initiated. Therefore, there is a need to uncover the various antecedents and drivers of IS innovation (Jha & Bose, 2016).

To sum up, this section explored the concept of administrative innovation, which is a form of non-technological innovation. The review of different definitions of administrative innovation informed the definition that is used in this study. Administrative innovation is regarded as changes in administrative processes, work tasks, and IS. It is closely linked to IS as it can result in finding new ways to extend the use of current systems. In relation to IS, it is acknowledged that the development of innovation is relatively overlooked and further research is required to identify possible antecedents and drivers of IS innovation. Administrative

innovation is also closely related to knowledge as it is concerned with creating and utilizing knowledge to improve processes and structures. The next section discusses the initiators of innovation within organizations.

2.2.6 Initiators of innovation

According to Van de Ven (1986), “an innovative idea without a champion gets nowhere” (p. 592). Hence, it is essential to consider the role of individuals in the innovation process because they create, carry and implement ideas (Van de Ven, 1986). In addition, innovation can move in different directions according to the organizational hierarchy: it can be a top-down or a bottom-up process, and its direction affects the development process (Daft, 1978). In particular, this section explores management-driven innovation as a top-down process and employee-driven innovation as a bottom-up innovation process.

2.2.6.1 Management-driven innovation

Management driven innovation, or top-down innovation, refers to innovation initiated from higher organizational levels. Although the concept of management-driven innovation is not widely used in the literature, most reported cases of innovation are concerned with innovation generated from the top levels of the organizational hierarchy (Windrum, 2008).

Management driven innovation has been addressed in relation to different types of innovation. For example, the introduction of technological innovation (M. Kamal, 2006), product innovation (Un & Cuervo-Cazurra, 2005), disruptive innovation (Cronin, 2014), service innovation (Saari, Lehtonen & Toivonen, 2015) and organizational and management innovation (Giuliani & Robert, 2016; Volberda et al., 2014).

Wong (2013) claims that the prominent position of managers allows them to have critical knowledge about the organization and the context in which it operates. Innovation is often driven by the strategic direction of the organization (Gaynor, 2013). Hence, ideas initiated by the management are often considered in accordance with the organizational goals. It is also argued that more efficient innovation adoption is associated with higher positions in the hierarchy (Volberda et al., 2014). This is because it is assumed that managers have the knowledge and experience necessary to spot the possible opportunities to innovate, and they also have more authority to influence organizational attention towards adopting the innovation (Volberda et al., 2014).

Management-driven innovation is also concerned with focusing on research and development (R&D) activities (Price, Boud & Scheeres, 2012). This is because ideas of improvement may originate from the formal processes of R&D (Gaynor, 2013). In addition, ideas might emerge from external pressure, such as competition and regulations (Windrum, 2008).

There are some limitations related to management-driven innovation. For example, process innovation initiated from the management of an organization may suffer from resistance (Gaynor, 2013). This can be related to the lack of knowledge about the operational level (Mohamed, 1995). Hence, innovation may fail if employees at the lower organizational level consider the innovation as not being in accordance with the specific work tasks and processes (Brandi & Hasse, 2012).

In relation to administrative innovation, Daft (1978) states that administrative innovation in particular are top-down innovations. This is because the management has more expertise and a clear overall view of the organization; therefore, they can initiate innovative administrative processes (Daft, 1978; Wong, 2013).

In contrast, Černe et al. (2016) emphasizes that some types of organizational innovation, such as administrative innovation, are more related to employees' contributions. Administrative innovation is related to administrative processes and techniques and mostly develops at the lower organizational level (Černe et al., 2016; Ravichandran, 2000). It can be related to the way employees perform their tasks; thus, management might not be the only source of innovation. This can also be supported by Fuglsang and Sørensen (2011), who state that innovations initiated by the management are less related to the daily work routine and more related to the general work system of the organization. The next section provides further details about employee-driven innovation.

2.2.6.2 Employee driven innovation (EDI)

In the literature, most of the research focuses on innovation emerging from the top organizational levels or by R&D related functions (Høyrup, 2010; Kurz, Hüsig, & Dowling, 2018). However, ordinary employees should also be considered an essential innovation source. According to Sørensen & Wandahl (2013), "innovation is no longer just a phenomenon for specialist and R&D employees. The employees possess the hands-on experience with the daily working processes. Hence they possess the knowledge to contribute to upgrading of working processes, optimizing communication channels, the use of computers, and development of new product or services" (p. 589).

The concept of EDI. Employee-driven innovation (EDI), or staff driven innovation, is a relatively new field that attracted attention from scholars and practitioners (Aasen, Amundsen, Gressgård, & Hansen, 2012). It can be also referred to as employee led innovation (e.g., Birkinshaw & Duke, 2013), high-involvement innovation (Bessant & Caffyn, 1997; Bessant, 2003) and everyday innovation (Lippke & Wegener, 2014). EDI can be defined as generating

and implementing new ideas (products or processes) from ordinary employees (Kesting & Ulhøi, 2010). Ordinary employees are the ones whose tasks are not dedicated to innovation and who do not have formal authority to make decisions on innovation (Kesting & Ulhøi, 2010; Laviolette et al., 2016). This definition includes characteristics of EDI, for example, it indicates that the innovation can be of any type. It also stresses that EDI originates from ordinary employees who are not formally involved in decision-making.

Høyrup (2012) extends the definition of Kesting and Ulhøi (2010) and defines EDI as the following:

“The generation and implementation of new ideas, products, and processes – including the everyday remaking of jobs and organizational practices – originating from interaction of employees, who are not assigned to this tasks. The processes are unfolded in an organization and may be integrated in cooperative and managerial efforts of the organization. Employees are active and may initiate, support or even drive/lead the processes.” (p. 8)

Although EDI is a relatively new concept, the idea of employees’ contributions to innovation is recognized in the previous literature. For example, Amabile (1988) in her seminal work about creativity and innovation in organization, recognizes that individual innovation is the foundation of organizational innovation. Hence, EDI has its root in the creativity literature. In addition, EDI has also established link with KM. For example, Kanter (1996) highlights the importance of employees’ innovative contributions “to solve problems, to respond creatively to new conditions, to note changed requirements around them, or to improve practices, rather than mindlessly following procedures derived from the past.” (p. 101).

Therefore, it is essential to recognise the tacit knowledge of ordinary employees (Haapasaari, Engeström & Kerosuo, 2018; Nonaka, 1994). Employees can be considered as an essential innovation source; they can obtain a level of in-depth knowledge about their specific

work tasks that managers might not have (Kesting & Ulhøi, 2010). However, despite the importance of EDI, it can sometimes be overlooked (Høyrup, 2010). According to Kesting and Ulhøi (2010), it is believed that employees have hidden innovative ideas that can be recognized.

In the literature, a very similar concept to EDI exists – the ‘bricolage’ concept (Saari et al., 2015). Fuglsang and Sørensen (2011) state that bricolage is “a ‘do-it-yourself’ problem-solving activity taking place in daily work situations” (p. 581). They noticed that bricolage occurs when employees perform a usual work task in a different way by using existing resources as a result of interacting with customers. So, the difference between the EDI and bricolage can be illustrated by two points: (a) bricolage occurs to solve a problem, which is not necessarily the case for EDI; and (b) bricolage is related to services and results from the interaction between employees and customers, while EDI does not require customer involvement.

Another relevant concept that has been explored widely in the literature is the concept of ‘intrapreneurship’ or ‘corporate entrepreneurship’, which refers to “the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization” (Sharma & Chrisman, 1999, p. 18). It is argued that ‘corporate entrepreneurship’ focuses more on establishing new ventures, strategic renewal and radical change (Baggen, Biemans & Lans, 2015; P. Sharma & Chrisman, 1999). Therefore, to better recognize the daily changes, the concept of day-to-day entrepreneurship was introduced (Mair, 2005). It is defined as “a set of activities and practices by which individuals at multiple levels autonomously generate and use innovative resource combinations to identify and pursue opportunities” (Mair, 2005, p. 51).

Although these concepts seem to have some similarities with EDI, they are not considered as synonymous (Hasu, Saari & Mattelmäki, 2011). Both concepts are concerned with the entrepreneurial action to initiate changes within the organization. However, corporate

entrepreneurship and day-to-day entrepreneurship can include employees from all level in the organization including middle management, professionals and R&D staff (e.g. Mair, 2005; Sakhdari & Bidakhavidi, 2016). It provides limited incorporation of the lower organizational levels (e.g. Rigtering & Weitzel, 2013; Zampetakis, Beldekos & Moustakis, 2009). In contrast, the main focus of EDI is, more specifically, on ordinary employees.

Learning is considered as an essential prerequisite of organizational innovation. (Amarakoon, Weerawardena, & Verreyne, 2016). It is argued that learning constitutes an important pillar of EDI (Høyrup, 2012). For example, Billett (2012) proposes that EDI can be understood as comprising individual learning and changes in work practices. Hence, the change in work practices is shaped by employee engagement. In particular, every day or practice-based learning can be relevant to EDI (Brandi & Hasse, 2012; Price et al., 2012).

In conclusion, the concept of EDI adds an interesting new insight to the classical view of innovation because EDI “may further contribute to innovation in ways that are subtle, informal; in ways that are not a part of the organization’s explicit goals and strategies, and are, finally, beyond the reach of managers” (Høyrup, 2012, p. 7). In other words, EDI may not be visible in the organizational strategies and may result from activities performed without the intention to innovate (Price et al., 2012).

EDI types and approaches. EDI is a complex process that involves different phases such as idea generation and implementation (Gressgård, Amundsen, Aasen, & Hansen, 2014). It can include various types of innovation, such as process, product, organizational and administrative innovation (Høyrup, 2010).

In relation to administrative innovation, Price et al. (2012) conducted a study in the public sector to examine how employees, by enacting their jobs, can change their jobs and practices. They refer to this process as ‘remaking of one’s job’. They argue that employees,

through their daily work, draw on their ‘practical intelligibility’ to remake their jobs. Practical intelligibility refers to employees’ understanding of organizational practices. They suggest that the organizational culture of continuous change and the openness of job descriptions are the main enablers for employees to engage in EDI.

Since EDI does not conform to a specific type of innovation, it can be used to indicate the source of innovations (Černe et al., 2016). Kesting and Ulhøi (2010) argue that EDI often involves significant changes; therefore, radical innovations are employee-driven. They indicate that employees will participate more in radical innovations that can cause a greater strategic impact than incremental innovations. However, Høyrup (2010) and Price et al. (2012) argue that it can include both incremental and radical innovations.

In relation to EDI approaches, with the increased awareness of EDI, organizations in public and private sectors apply different approaches to support EDI (Gressgård et al., 2014). By examining six organizations utilizing structured EDI approaches in France, Teglberg-Lefevre (2010) found that EDI is understood and implemented differently in different organizations. Structured approaches are used to explicitly communicate that EDI is expected and to define the type and the scope of permitted innovation. Teglberg-Lefevre (2010) acknowledges the limitation of such approaches as they are not always effective in generating innovation. In addition, EDI does not always follow structured path, EDI can include invisible minor changes to improve everyday work practices (Lippke & Wegener, 2014).

It is essential to note that not all organizations have a structured EDI approach and innovation can exist as a composite of both employee-driven and management-driven innovations. For example, Boer and During (2001) highlight that innovation requires a balance between top-down and bottom-up innovation processes. In addition, Høyrup (2012) points out that EDI might not always be a purely bottom-up process. Even though it is initiated by the employees, it may involve a complex process of interaction between employees and

management (Høystrup, 2012). As a result, Høystrup (2012) identifies three types of employee innovation approaches:

- *First order EDI* involves bottom-up processes. Innovation is initiated from changes in daily work activities. Høystrup (2012) argues that innovation can also result from coincidence. Therefore, even if there is no clear intention to innovate, the outcome of changes is considered as innovation (Price et al., 2012).
- *Second order EDI* involves bottom-up and top-down processes. For example, the idea is initiated by the employee and supported and formalized by the management.
- *Third order EDI* is initiated by a top-down process. (e.g., a management invitation to employees to take part in innovative activities, such as project development).

Gressgård et al. (2014) emphasizes the importance of using information and communication technologies (ICT)-based tools to support EDI. In particular, the ICT-based tools support the processes of acquisition, dissemination and exploitation of knowledge. However, they emphasize that the organizational and social context have significant roles in exploiting the advantages of these tools.

Benefits and drawbacks of EDI. Some studies in the innovation literature focus on the positive effects of EDI. It is acknowledged that EDI has benefits for both the organization and the employees (Hiltunen & Henttonen, 2016). In relation to the organization, EDI can enhance the competitive advantage of the organization (Kesting & Ulhøi, 2010), can lead to cost reduction and maintaining a supportive work environment (Smith, 2018) and can offer valuable outcomes in relation to products, systems and ways of working (Reibenspiess, Drechsler & Eckhardt, 2019).

In relation to employees, EDI can allow them to enrich their job and to improve work practices (Hiltunen & Henttonen, 2016; Smith, 2018). In addition, EDI can contribute to

developing employees skills (Kesting & Ulhøi, 2010). Høyrup (2010) argues that EDI can lead to improved job satisfaction. Furthermore, it allows employees to make their tasks easier.

Another strand of work highlights the possible associated risks of EDI. For example, EDI might be unrelated to the job roles and could take employees away from their work tasks and responsibilities (Birkinshaw & Duke, 2013). EDI may lead to the generation of numerous ideas that may “may threaten the order of the system and appear chaotic and unpredictable” (Saari et al., 2015, p. 328). In addition, Lui and Hon (2016) point out that, in some cases, EDI can be considered as a risky endeavour as it challenges established practices. Furthermore, Janssen (2003) states that there could be a potential risk for employees, such as a possible dispute with other employees. For example, an idea to change an existing process that employees are used to may result in conflict between workmates as they try to guard it and resist the change. It is argued that, by engaging in innovation, employees take on the risk of evoking conflict and having less satisfactory relationships with other organizational members (Janssen, 2003). Therefore, it is essential to note that “not all innovations are necessarily desirable” (Høyrup, 2010, p. 145).

As a result of the ambiguity and uncertainty that appear in EDI literature, researchers emphasize the need for future studies. As an example, Janssen, van de Vliert and West (2004) state that it is essential to investigate why EDI is sometimes accepted and valued, and sometimes unfavoured and resisted.

Although current literature has explored various issues related to EDI, there is limited understanding of how EDI actually happens in organizations. There is a need to conduct a micro-analysis of the work practices and organizational members to have in-depth understanding of the process (Price et al., 2012).

To sum up, this section provided an overview of the initiators of innovation including management-driven innovation and EDI. The literature review reveals that most studies addressed the issue of management-driven innovation and EDI is often overlooked. In relation to administrative innovation, there is a debate whether it is related to management-driven innovation or EDI. In addition, it is also evident in the literature that innovation can be viewed as interconnected management-driven innovation and EDI.

2.2.7 Drivers of innovation

Over the years, innovation has been extensively researched including different types of innovation within different contexts. As a result, different drivers have been reported in the literature. This section provides a brief overview of the types of drivers of innovation. It is essential to note that since innovation is highly context-dependent and each type has different attributes (Damanpour & Evan, 1984; Newell et al., 2009), the drivers presented may not be applicable to all studies of innovation.

In general, drivers of innovation can be categorized as internal or external drivers (Crossan & Apaydin, 2010). Internal drivers of innovation are concerned with the activities of the organization, the characteristics of the organization and the characteristics of its members. R&D activities are mostly considered as the determinant of innovation (Santamaría, Nieto, & Barge-Gil, 2009). However, other organizational activities that are not based on R&D can contribute to innovation. For instance, using advanced technology can lead to innovation (Santamaría et al., 2009). Moreover, factors not directly related to technology can also enhance innovation, such as organizational factors and individual capabilities (Schlegelmilch, 2016).

Organizational factors include changes in size and structure (Schlegelmilch, 2016). Organizational size can contribute to innovation based on few studies, although there is mixed findings in relation to the extent of its effect on innovation. For instance, a meta-analysis of

previous studies proposed by Damanpour (1992) suggests that a positive relationship exists between size and innovation. Furthermore, Camisón-Zornoza et al. (2004) extend Damanpour's (1992) study and confirm the existence of the positive relation. In relation to the structure, previous research investigated the effects of decision and work structures on innovation (Kesting & Ulhøi, 2010; Smith, Kesting & Ulhøi, 2008). It is argued that the autonomous work structure can affect innovation positively.

Individual capabilities are related to the characteristics of organizational members. It can refer to the qualities and attitudes of organizational members. For example, Amabile (1988) highlights the importance of intrinsic motivation. It is one of the most influential drivers of innovation that is often overlooked (Amabile, 1988). In addition, level of professionalism may affect innovation (Pierce & Delbecq, 1977; Sabet & Klingner, 1993). Professionalism refers to their professional knowledge which is related to the education and experience (Damanpour, 1991). Professionalism can affect self-confidence, idea generation and richness of experience (Pierce & Delbecq, 1977). Hence, it may affect the innovation process. Høyrup (2010) identify additional drivers related to the individuals including ideas, creativity and skills.

In addition, different factors related to organizational management represent another category for drivers of innovation such as leadership and attitude toward change (Borins, 2002; Damanpour, 1991). For example, it is found that managerial attitude facilitates the adoption of innovation (Damanpour & Schneider, 2009). Leadership has been widely studied and linked to the innovation process (Denti & Hemlin, 2012). There are different forms of leadership that can affect innovation differently (Kesting, Ulhøi, Song & Niu, 2015). In general, there is a strong evidence that leadership can enhance innovation (Hughes, Lee, Tian, Newman, & Legood, 2018). In addition, management involvement and supportive management can contribute to create an organizational culture that promotes innovation (Rizkallah & AbdelAziz, 2015; Wong, 2013).

In relation to the external drivers of innovation, environmental factors may trigger innovation (Camisón-Zornoza et al., 2004; Schlegelmilch, 2016). An example of the environmental factors is related change in regulations and increased competition (Bessant & Tidd, 2015; Sisaye, 2003). Advancements in technology may also trigger innovation (Borins, 2002). In addition, external drivers can include the external relationships of the organization. External relationships with suppliers, customers and research institutes can enhance innovation performance (Lasagni, 2012). By external collaboration, organizations can have access to new ideas and transfer knowledge with other parties. The idea of external relationships is mostly related to ‘openness’ of innovation. Researchers use different terms to explain organizational engagement in external relationships, such as open innovation and collaborative innovation (Chesbrough et al., 2006; Wu et al., 2013).

To sum up, this section presents a brief overview of the different drivers of innovation. In relation to the organization, the drivers are categorized as internal and external. Internal drivers are related to the characteristics of the organization and the characteristics of its members. External drivers to the organization are related to changes in the environment and technology.

2.2.8 Barriers to innovation

Barriers to innovation are factors that can delay or prevent innovations (Hueske, Endrikat, & Guenther, 2015). In the literature, researchers adopted different ways to identify the barriers to innovation. As mentioned in the previous section, it is essential to reaffirm that this section presents an overview of how barriers are classified in the literature. Given the context-specificity, the barriers identified as examples may not be applicable to all types of innovation.

For instance, D’Este, Iammarino, Savona and Tunzelmann (2012) argue that barriers of innovations are classified into two types: revealed and deterring barriers. Revealed barriers

refer to the difficulties that organization encounter during innovation process. An example of revealed barriers can be the financial constraints that can slow down the innovation process (D'Este, Rentocchini, & Vega-Jurado, 2014). On the other hand, deterring barriers refers to the obstacles that are insurmountable and prevent engagement in innovation (D'Este et al., 2012). Deterring barriers include nonfinancial obstacles such as knowledge obstacles (D'Este et al., 2014). An example of knowledge obstacles can be a shortage of skills, which can prevent innovation (D'Este et al., 2014).

Hueske et al. (2015) propose another approach to classify the barriers of innovation that considers the multilevel nature of innovation. They refer to it as the external environment, organization and individual (EOI) barrier model. It offers guidance for researchers to identify barriers in different context. According to (EOI) model, barriers are classified based on three level of analysis. The model was further extended to include, a fourth level, the group level and is referred to as the external environment, organization, group, individual (EOGI) barrier model (Hueske & Guenther, 2015).

External environment barriers are related to factors outside organizational boundaries that can affect innovation. It can be related to government, society, customers and vendors (Hueske et al., 2015). Examples of these barriers include lack of government support and customer resistance (Hueske et al., 2015; Nečadová & Scholleová, 2011).

Organization level barriers are identified according to the organization's structure, culture and resources. These barriers include, for instance, lack of management support and the disbelief in the ability of employees to contribute to innovation (Bessant & Caffyn, 1997; Hueske et al., 2015). In addition, inflexible organizational structure and high power distance culture may negatively affect innovation (Jones, 2009; Nečadová & Scholleová, 2011; Rizkallah & AbdelAziz, 2015).

Group level barriers are concerned with factors related to team work in the organization. Barriers can be related to team members, structure, and processes (Hueske & Guenther, 2015). For example, team members' low tolerance for change may be a barrier to innovation (Kirkman, Jones & Shapiro, 2000). Internal conflicts between team members and personality clashes can also hinder innovation (Bessant & Tidd, 2015; Wihlman, Hoppe, Wihlman, & Sandmark, 2014).

Individual level barriers are related to the attitudes and abilities of employees. It can be related to personal traits and abilities. For example, shyness and lack of motivation can be considered as barriers to innovation (Bessant, 2003; Sorensen, Ussing, Wandahl, & Christensen, 2018). In addition, lack of the essential skills or knowledge may inhibit the innovation process (Anderson, De Dreu, & Nijstad, 2004).

To sum up, this section presented an overview of the barriers of innovation. The barriers are presented in accordance to two categorizations: revealed/deterring barriers and EOGI models which serves as a useful guide for researcher to classify innovation. Revealed barriers refer to the obstacles associated with the innovation process while deterring barriers refers to the obstacles that block the innovation process. On the other hand, EOGI model differentiate between external environment, organization, group, individual barriers.

2.2.9 Summary

In summary, this section on innovation presented different definitions of the concept of innovation (Table 1) and showed how the concept of innovation has evolved from narrow definitions into more comprehensive definitions. The review of the definitions informed how innovation is defined in this research. For the purpose of this study, innovation is regarded as

the generation and implementation of useful ideas to improve internal organizational processes.

Next, the section provided an overview of the various types of innovation (Table 2). By reviewing the literature, it was noticed that non-technological innovation has only recently gained more attention, although it is crucial for organizations.

Due to the fragmentation and overlap of the existing studies on non-technological innovations, different concepts were explored to distinguish between the different types of non-technological innovation. Next, given the focus of the research, administrative innovation was introduced in terms of its definition and its link with KM and IS. Administrative innovation is regarded as changes in administrative processes, work tasks, and information systems (IS). It is closely linked to IS as it can result in findings new ways to extend the use of current systems. Administrative innovation is also closely related to knowledge as it is concerned with creating and utilizing knowledge to improve processes and structures.

Subsequently, a discussion of initiators of innovation within organization was provided. It involved an introduction of management-driven innovation and employee driven innovation (EDI). Given that EDI is a relatively new concept, it was explored in terms of conceptualization, types and benefits and drawbacks. EDI is was recently recognized as a fruitful source of innovation and most of the previous research focused on innovation emerging from the top and from (R&D) activities. Finally, an overview of the drivers and barriers of innovation was presented.

The next section introduces Human Resource Information Systems (HRIS). It also includes a discussion of HRIS link to innovation and an overview of the post-adoption phase.

Study	Proposed definition
Amabile (1988)	Implementing creative ideas within the organization
Baregheh et al. (2009)	Multi-stage process that enable the organization to transform ideas into new or improved products/service or processes
Damanpour (1991)	A change to respond to or to influence the external environment
Knight (1967)	Adoption of a change that is new to the organization and related environment
OECD and Eurostat (2005)	Implementing of new or improved product, process, marketing, or organizational technique in the organization and external relations
OECD and Eurostat (2018)	new or improved product or process or both that is significantly different and has been used or made available to potential users
Plessis (2007)	Creating new knowledge to improve internal organizational processes
Rogers (1995)	Ideas perceived as new by the adopting unit such as individuals
Schumpeter (1934)	New ways of combining available resources to create economical value
Shipton et al. (2017)	the intentional introduction of valuable and useful ideas related to a particular context
Sørensen and Torfing (2011)	Intentional and proactive process to generate, adopt and share new ideas to create a qualitative change
Thompson (1965)	Generating, accepting, and implementing a new idea, process, or product/service
Van de Ven (1986)	Developing and implementing new ideas by people interact with others within an institutional context
West & Anderson (1996)	Introducing and implementing within an organization or wider environment processes or products new to the unit of adoption and can provide benefits

Table 1 – Definitions of innovation

Terminology	Proposed definition	Study
Relation to the core activities		
Technical	Directly related to the main work of the organization	Daft (1978)
Non-technical (administrative)	Indirectly related to the main work of the organization	Daft (1978)
Technology involvement		
Technological	Changes in technology	Damanpour (1987)
Non-technological	Changes in organizational methods	Černe et al. (2016)
Outcome		
Product	Establishment of a new or improved product	Knight (1967)
Service	Introduction of a new or improved service	Knight (1967)
Process	Introduction of a new or improved production process	Knight (1967)
Organizational	Changes in organizational structure and formal ways of interaction	Knight (1967)
People	Changes that directly affect people in the organization	Knight (1967)
Social	Related to the relationship between the organization and its employees	Pot and Vaas (2008)
Management	Changes related to the organization's management	Birkinshaw et al. (2008)
Business system/model	Changes in business activities not classified as product or process innovation	Hovgaard and Hansen (2004)
Administrative	Changes in rules, procedures and the social system of the organization	Evan (1966)
Paradigm	Replacing old business approach by applying a new understating.	Francis and Bessant (2005)
Position	Changes in the way that target segments view the product.	Francis and Bessant (2005)
Marketing	Changes related to the marketing aspects of the product	OECD and Eurostat (2005)
Magnitude		
Radical	Fundamental changes to the existing activities	Gopalakrishnan and Damanpour (1997)
Incremental	Marginal changes to the existing activities	Gopalakrishnan and Damanpour (1997)
Disruptive	Replacing the existing activities with completely new activities	Albury (2005)
Intent		
Planned	Part of an organizational plan	Thong (1999)
Incidental	Reaction of an organization to change	Thong (1999)

Interaction with the external environment		
Ancillary	Result of engaging with the external environment	Damanpour (1987)
Inter-organizational	Result of inter-organizational arrangements	Mandell and Steelman (2003)
Collaborative	Involves cooperating with other organizations to enhance innovation	Lee et al., 2012
Open	Knowledge transfer and sharing with organizations	Chesbrough et al. (2006)
Source (or initiators)		
Top-down (management driven)	Introduced by the organization's management	(Daft, 1978)
Bottom-up (employee-driven)	Initiated by employees	Kesting and Ulhøi (2010)

Table 2 - Innovation categories

2.3 Human Resource Information Systems

2.3.1 Introduction

This section reviews the relevant existing literature on HRM, HRIS and post-adoption. It commences by providing an overview of the field of HRM and different HRM practices. Next, it explores the link between HRM and administrative innovation. The following section provides a discussion on HRIS in relation to its meaning, functions, users and subsystems, followed by an exploration of the link between HRIS and innovation. Subsequently, the discussion proceeds to explore the HRIS post-adoption phase by providing an overview of IS post-adoption and exploring the links with administrative innovation. Finally, a summary is provided to highlight the key points.

2.3.2 Human resource management (HRM)

The evolution of HRM. HRM is an essential function in organizations. It is primarily concerned with the relationship between the organization and its HR (Beer, Spector, Lawrence, Mills, & Walton, 1984). It can be defined as “a set of policies designed to maximize organizational integration, employee commitment, flexibility and quality of work” (Guest, 1987, p. 503). In other words, HRM can refer to the rules and activities related to managing people in organizations, such as recruitment, appraisal and training (Sisson, 1990; Wright & McMahan, 1992).

Since the early development of the HRM field in the 1980s, two schools of thought have existed. These schools of thoughts divide the concept of HRM into two approaches: soft HRM and hard HRM.¹ The distinction between soft and hard HRM is based on whether the emphasis of the approach is assigned to individuals or resources (Truss, Gratton, Hope-Hailey & Mcgovern, 1997).

The main focus of soft HRM is the employees. Employees are considered the most valuable asset (Druker, White, Hegewisch & Mayne, 1996). As such, it aims to create a work environment that fosters commitment and innovation in order to improve organizational performance (Kane, Crawford & Grant, 1999). It also aims to create long-term employment, so it places more emphasis on employee development (Kane et al., 1999). Soft HRM practices can include high levels of communication and employee participation and involvement (Prowse & Prowse, 2010).

¹ The Harvard model (Beer et al., 1984) in the American literature is related to soft HRM while the Michigan model (Fombrun, Tichy & Devanna, 1984) is associated with hard HRM (Truss et al., 1997).

In contrast, hard HRM focuses more on strategic fit, in terms of harmonizing HRM practices with the strategic goals of the organization (Truss et al., 1997; Veloso, Tzafrir & Enosh, 2015). Hence, it is often linked to the concept of strategic HRM (Prowse & Prowse, 2010). It considers the employees as another resource or factor of production that can be used to achieve organizational goals (Druker et al., 1996; Kane et al., 1999). For example, the hard HRM approach can be used to fulfil an organizational strategy to maximize economic returns or to minimize production costs (Prowse & Prowse, 2010). An example of a context in which hard HRM might be applicable is in a heavy manufacturing industry to minimize labor costs and gain competitive advantages (Druker et al., 1996).

Truss et al. (1997) investigated the two approaches by using case studies to determine the HRM approach that organizations were practicing. Their findings suggest that there is no pure example of an organization following only one approach. A combination of both approaches exists in organizations. Moreover, their findings show that there is a difference between rhetoric and reality. They state that even though in rhetoric the organization is likely to adopt soft HRM, in reality and based on employee experiences, it is usually closer to hard HRM.

A recent and similar classification of HRM is based on the cost reduction and quality enhancement business models (Marchington, 2015). On the one hand, cost reduction is similar to hard HRM and emphasizes the 'resource' view of HRM. Hence it is more concerned with minimizing the costs of employment in terms of restricting monetary benefits. On the other hand, quality enhancement is related to soft HRM and emphasizes the 'resourceful humans' view of HRM. Thus, it is more concerned with improving the level of performance and employee commitment in terms of providing extensive training and high involvement of employees.

Practices. HRM practices include various activities that are used to manage organizational members. HRM practices can include selection, training, appraisal and reward (Wright & McMahan, 1992). Selection is an inter-related function with recruitment; it is used to attract and obtain the right individual for the right job. Training and development practices are related to improving employees' skills. Appraisal practices are concerned with evaluating the performance of individuals in the organization (Brown & Heywood, 2005). Reward practices refer to providing incentives to motivate a certain behavior (Yang & Rui, 2009). The previously mentioned practices can be considered as the traditional role for HRM.

Beer et al. (1984) suggested a broader categorization of HRM practices that is widely used. According to Beer et al. (1984), the categories are: (a) organizational design and activities, which includes practices related to how work is conducted – such as group work; (b) HR flows, which includes recruitment and career development; (c) performance and reward, which includes job evaluation and bonuses; and (d) communication and decision making, which includes employee participation (de Leede & Looise, 2005).

Another categorization was offered by Lepak, Liao, Chung and Harden (2006). It classifies HRM practices into three sets: skills, motivation and opportunity practices. Skills-oriented practices are related to training and skills improvement. Motivation practices are related to rewards and incentives. Opportunity oriented practices are related to participation and involvement.

HRM and innovation. It appears that researchers often use the term 'HRM innovation' to connect HRM and innovation. As far back as 1987, Kossek (1987) defined HRM innovation as “any program, policy, or practice designed to influence employee attitudes and behavior that is perceived to be new by members” (p. 72).

Similarly, a more recent definition by Amarakoon, Weerawardena and Verreyne (2016) states that HRM innovation is “a new idea adapted into a firm's HR programmes,

systems and practices with an intention to directly or indirectly add value (at least) to the adopting firm” (p. 4). They extend Kossek’s definition by integrating the notion of creating ‘value’. They do not provide a precise explanation of what constitutes a ‘value,’ but refer to it as something to be based both on the innovation and the context.

HRM practices are closely related to knowledge management and innovation in organizations (Ritala, 2016; Shipton, West, Dawson, Birdi, & Patterson, 2006). Scarbrough (2003) identifies three HRM activities that are essential to developing innovation: selection, compensation and career systems. The first activity is concerned with selecting individuals with adequate skills and attitudes to form project teams. The second activity is related to compensating knowledge sharing with financial and non-financial rewards. The third activity is concerned with how the flow of employees and the change of job position, such as promotion, affect the knowledge acquisition. The next section provides more detail about innovation and HRM.

2.3.3 HRM and administrative innovation

In the literature, it is acknowledged that researchers have attempted to link HRM field with innovation (de Leede & Looise, 2005; Ritala, 2016; Scarbrough, 2003; Shipton et al., 2006).

Based on the emphasis to further investigate the link between HRM practices and innovation, Seeck and Diehl (2016) conducted a review of empirical research on HRM and innovation from 1990 to 2015. Their review revealed that the link between HRM and innovation is often viewed from a behavioral perspective. Moreover, they found that the majority of the studies tend to relate HRM to technological and product innovations. In addition, most studies regarding HRM and innovation were related to Europe.

A recent trend in HRM research is concerned with how the different HRM practices can affect the attitudes of employees and their innovative behavior (Ritala, 2016). For example,

supportive leadership and information sharing are found to be positively related to innovative behavior (Bos-Nehles & Veenendaal, 2019).

In relation to technological innovation, HRM practices is examined in relation to the implementation and usage of IT. For example, Bondarouk and Looise (2005) investigated how HR professionals can contribute to IT innovation projects. They found that HR professionals can enhance the innovation process in different ways, such as providing training and aligning users' needs with the adoption of IT innovation. In addition, Lee and Lee (2009) argue that effective HRM practices can enhance the IT usage in organizations. More specifically, their study reveals that employee participation, clearly defined jobs and extensive formal training affect the usage of IT.

In relation to administrative innovation, it can be closely related to HRM innovation. This is because administrative innovation is concerned with changes in HR processes and work tasks. Thus, researchers such as Wolfe (1995) and Agarwala (2003) refer to HRM innovation as administrative innovation. Agarwala (2003) emphasizes that both concepts similarly relate to the social system of the organization and HR practices. However, even though there might be a clear similarity between the two concepts, for the purpose of this study the term administrative innovation is viewed as a broader concept and can relate to changes in administrative processes, work tasks and information systems (Ling & Nasurdin, 2010b).

Jimenez-Jimenez and Sanz-Valle (2008) conducted a study on the relationship between HRM and innovation. Their findings reveal a positive relationship between HRM practices and three types of innovation (product, process and administrative). They suggest that some HR practices can enhance innovation such as participation, teamworking, communication and training.

In addition, Ling and Nasurdin (2010a) examine the influence of HRM practices on innovation in general and on administrative innovation in particular. Their study reveals that

training has a positive effect on innovation in general, while performance appraisal has a significant positive effect on administrative innovation. Therefore, they conclude that results of performance appraisal can motivate employees to initiate more administrative innovation.

To sum up, HRM involve different practices for managing people and work in organizations such as recruitment, communication and training. It is evident in research that HRM can enhance innovation in organizations. It is closely linked to administrative innovation as it can lead to changes in organizational processes and HR practices. However, HRM innovation is considered limited conceptualization compared to administrative innovation. This is because administrative innovation involves changes in administrative processes, work tasks, and IS (as explained in Section 2.2.5).

In addition, HRM experienced a major transformation with the implementation of IS in organizations (Kossek, Young, Gash, & Nichol, 1994). Human resource information system (HRIS) considered as an innovation that reshaped HRM functions (Bussler & Davis, 2001). The next section introduces HRIS in more detail.

2.3.4 Human resource information system (HRIS)

Concept. HRIS is a type of administrative IS that is primarily used in organizations to support HRM. HRIS has evolved from a simple recordkeeping system in the 1960s to a more sophisticated system that is high in complexity and can assist organizations in decision making and reporting (DeSanctis, 1986; Ngai & Wat, 2006).

HRIS involves the interaction between information, technology and organization (Ruël, Magalhães, & Chiemeké, 2011). It can be defined as systematic procedures to record, store, analyze and retrieve organizational data related to HR (Kovach & Cathcart, 1999). Another

definition of HRIS that conveys the main components of the system was proposed by Kavanagh, Gueutal and Tannenbaum (1990). They define HRIS as a:

“system used to acquire, store, manipulate, analyze, retrieve, and distribute information regarding an organization’s human resources. An HRIS is not simply computer hardware and associated HR-related software. Although an HRIS includes hardware and software, it also includes people, forms, policies and procedures, and data” (Kavanagh & Mohan, 2009, p. 13).

According to this definition, it is clear that HRIS is not only based on computerized components; it involves people and organizational procedures as well (Hendrickson, 2003; Tannenbaum, 1990). Later, it was defined by Snell and Bohlander (2010) as a computerized system assisting organizations in control and decision-making by providing current and accurate data.

By reviewing the literature on HRIS, it has been noted that many researchers use the term HRIS interchangeably with electronic human resource management (e-HRM) (Chakraborty & Mansor, 2013; Ruël, Magalhães, & Chiemeké, 2011). For example, this has been clear in the work of, Ruël et al. (2011), who state that no distinction should be made between the terms, as they are similar. Both terms refer to IT-based HR activities (Ruël et al., 2011). Chakraborty and Mansor (2013) acknowledge that it is hard to draw a line between the terms but also assume that HRIS can be regarded as the broader term and includes all types of technological systems that assist HRM practices (e.g. ERP, internet, and HR intranet).

In contrast, Marler and Fisher (2013) argue that there is a difference between HRIS and e-HRM. HRIS refers to an HR system affecting employees involved in HR functions (e.g. HR professionals and managers), while e-HRM refers to internet-based applications affecting all people in the organization (Barišić, Poór, & Pejić Bach, 2019; Marler & Fisher, 2013). E-HRM conveys more the significance of the internet in delivering HR services (Johnson, Lukaszewski,

& Stone, 2016). An example of e-HRM includes the self-service system that enables all employees access to view their personal data (Marler & Fisher, 2013). Similarly, Grant and Newell (2013) confirm that HRIS is an IS primarily related to the HR function and is used mostly by HR staff. In contrast, e-HRM is used by all employees to access their personal data. Stone and Dulebohn (2013) add that e-HRM can also provide access to external stakeholders such as job applicants and business partners to via the internet.

Johnson et al. (2016) further discuss the difference between the terms, and suggest that e-HRM is part of HRIS, “just as e-commerce is enabled through information systems, eHRM is enabled through HRIS” (p. 536). Based on the review of the evolution of HRIS, they conclude that the term ‘HRIS’ originated from the IS field and can be considered as an umbrella term embracing diverse HR systems used in the organization to support HR processes.

Given the focus of this research on administrative innovation which is related to changes in internal administrative processes and work tasks following the adoption of the system, the term HRIS is considered more appropriate. It is more focused on internal HR processes and how HR employees use the system (Barišić et al., 2019; Grant & Newell, 2013).

Functions. HRIS can be considered as a valuable asset of the organization where confidential HR-related data is stored, such as employees’ personal data including salary details, performance appraisal data and absences (Zafar, 2013). It is also fundamental to HRM practices, as it can strengthen the role of the HR department in the organization by improving its effectiveness (Ball, 2001; Chakraborty & Mansor, 2013). HRIS is used to support different HRM practices, such as recruitment, selection, compensation, training and development, performance management and HR planning (Hussain, Wallace, & Cornelius, 2007; Obeidat, 2012; Parry & Tyson, 2011).

Lengnick-Hall and Moritz (2003) aggregate the functions of HRIS in supporting HRM practices as in three main forms: information, automation and transformation. Information is related to publishing current information to organizational stakeholders (usually via the intranet) which allows easier access to information when needed. Automation is related to automating procedures such as report generation. Transformation is related to related to functions that can add value to the organization such as KM.

Few studies have examined the transformation function and how HRIS can add value to the organization (Parry & Tyson, 2011). For example, Grant and Newell (2013) identify three ways in which HRIS functions can influence strategic decisions in the organizations, First, allowing HR staff to perform strategic tasks by automating routine processes, and thus, creating more time for engaging in other tasks. Second, HRIS can provide strategic information to the management and thus contribute to decision-making. Third, HRIS can strengthen the role of HR professionals, allowing them to engage in strategic level activities.

After reviewing approximately 500 articles, Mayfield, Mayfield and Lunce (2003) introduced a holistic model of HRIS (Figure 4) related functions that integrates different findings from previous studies (Obeidat, 2012). The model identifies eight main functions of HRIS, as follows:

- 1) Strategic integration: supporting strategic planning by the management.
- 2) Personnel development: improving employees' skills.
- 3) Communication and integration: supporting organizational communications.
- 4) Records and compliance: managing information.
- 5) Human resource analysis: examining HR needs.
- 6) Knowledge management: developing information sharing practices.
- 7) Forecasting and planning: supporting long-term planning.
- 8) Organizational vision: supporting organizational processes.

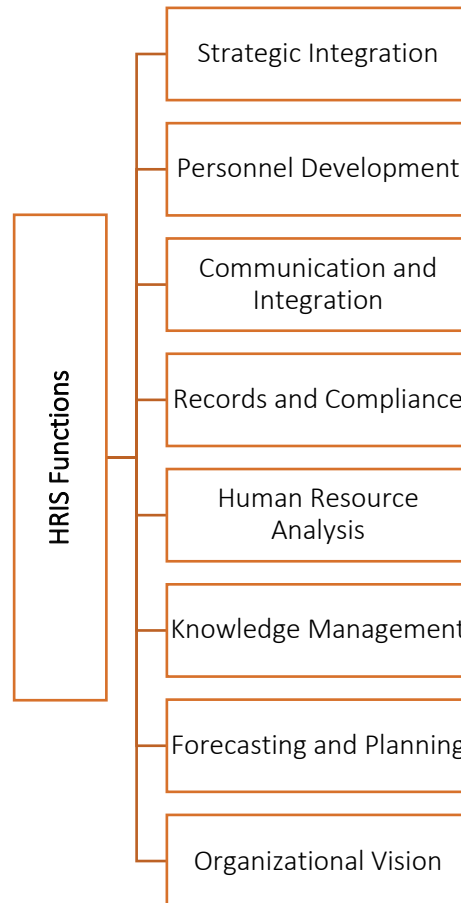


Figure 4 - HRIS function model

Source: Adapted from (Mayfield et al., 2003; Obeidat, 2013)

Researchers reported different advantages associated with integrating HRIS in most HR practices (Bamel, Bamel, Sahay, & Thite, 2014; Beckers & Bsat, 2002; Kovach, Hughes, Fagan, & Maggitti, 2002; Martinsons, 1994; Strohmeier, 2007). For example, HRIS can result in the reduction of HR-related costs and paperwork (Al-dmour & Al-Zu'bi, 2014). HRIS can also improve the accuracy and management of HR information (Haines & Petit, 1997; Hendrickson, 2003). HRIS can produce numerous HR reports that suit the need of the management (Beckers & Bsat, 2002). Hence, it can lead to improvements in the effectiveness and the quality of decision-making (Hussain et al., 2007; Kumar, 2013). In addition, HRIS can

enhance job satisfaction and productivity (Martinsons, 1994). In terms of administrative changes, HRIS can improve administrative efficiency by, for instance, improving employee communication and reducing the burden of administrative work (Beadles, Lowery, & Johns, 2005; Lengnick-Hall & Moritz, 2003; Stone & Dulebohn, 2013). Moreover, HRIS can also result in improving HR-related services such as faster response times to employee requests and faster information processing (Bamel et al., 2014; Ngai & Wat, 2006).

Despite the previous benefits, HRIS can also result in unintended consequences (Stone & Dulebohn, 2013). For example, HRIS implementation can lead to an increase in work stress (Bondarouk & Brewster, 2016; Maier, Laumer, Eckhardt, & Weitzel, 2013). This could be a result of having to learn new skills or perform new tasks following the implementation of HRIS. Moreover, HRIS could lead to disappointment, for instance, if users are not satisfied with HRIS proprieties (Beckers & Bsat, 2002; Bondarouk & Brewster, 2016). These consequences could lead to lower job satisfaction (Maier et al., 2013).

In addition, some privacy concerns may be raised following the implementation of HRIS (Stone & Dulebohn, 2013). Given that HRIS is widely used by different HR employees, there might be some concerns in terms of who can have access to what information (Zafar, 2013). Such concerns could lead to a lack of technology trust in HRIS (Lippert & Swiercz, 2005). According to Lippert and Swiercz (2005), HRIS technology trust is concerned with the perceptions of the predictability, reliability, and utility of HRIS. Predictability is more about expecting consistent performance, reliability is related to the extent of dependence on HRIS to perform certain tasks and utility is related to the perception of HRIS usefulness.

HRIS users. Before proceeding to the discussion on HRIS subsystems, it is essential to identify the main users of the system. Different types of internal and external stakeholders interact with HRIS for different needs (Tansley & Newell, 2007). Hendrickson (2003)

classifies internal HRIS users into three types. The first type of users includes HR practitioners who work in HR departments and use HRIS to perform their tasks. The second type is the management of the organization who can interact with the system for various reasons, such as employee performance appraisals. The third type includes all other employees who can access part(s) of the system related to their own personal data, such as their appraisal reports.

Another viewpoint on the categorization of HRIS users is proposed by Kavanagh and Mohan (2009) and includes both internal and external stakeholders. They divide HRIS users into two broad categories: employees and non-employees. Employees include five types of organizational members: managers, analysts, clerical staff, technicians and self-service users. Managers of all levels can access HRIS to support their decision-making or rely on reports provided by the analysts. Analysts are considered the key users who have more access to HRIS to perform their HR-related tasks, such as analyzing data and generating reports. Clerical staff have less access to HRIS to perform daily tasks, such as data entry. Technicians ensure the functionality of HRIS and work as a link between HR staff and technical staff. Technicians are also referred to as HRIS professionals who have knowledge of HR processes and technology skills, hence, they have a crucial role in supporting HRIS users (Bradley, 2019). Lastly, self-service users refer to all organizational members who have limited access to their personal data on HRIS. The non-employees' categories include job candidates and partners.

Figure 5 shows an overall view of HRIS users by integrating both the categorizations of Hendrickson (2003) and Kavanagh and Mohan (2009). Given the purpose of this research is to investigate administrative innovation (which is related to changes in administrative processes, work tasks and IS), only internal HRIS users who directly interact with HRIS to perform their daily work are considered. Hence, this study focuses on managers and HR employees including analysts, clerical staff and technicians/professionals.

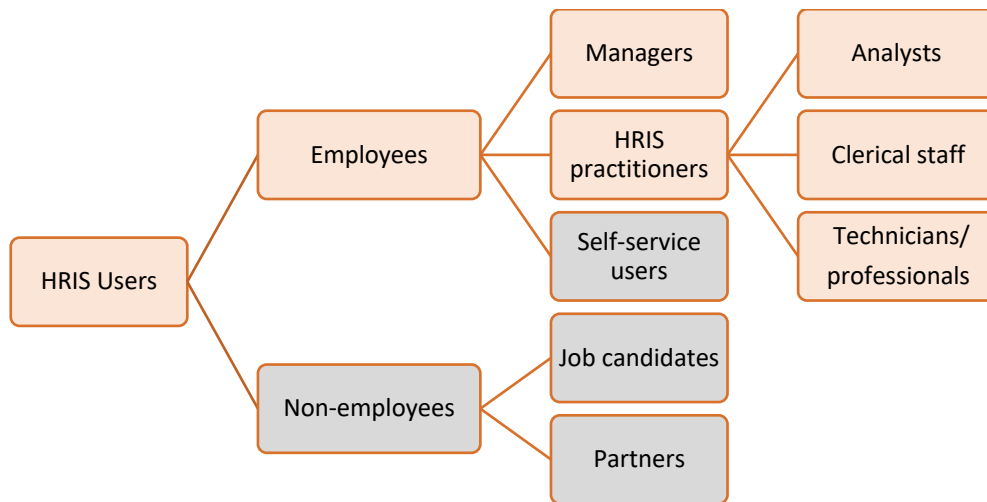


Figure 5 - HRIS Users

Source: Adapted from (Hendrickson, 2003; Kavanagh & Mohan, 2009).

Subsystems. Lepak and Snell (1998) conducted a study to explore the introduction of virtual HR. In their study, they pointed out three roles or goals of IT in HR: operational, relational and transformational. Years later, researchers still use Lepak and Snell's (1998) three goals, arguing that it summarize the literature regarding IT roles in HR (Bissola & Imperatori, 2014; Parry & Tyson, 2011; Ruël et al., 2011).

In regard to IS, Ruël et al. (2011) use Lepak and Snell's (1998) three goals to divide HR subsystems into three broad categories: operational, relational and transformational. However, Ruël et al. (2011) neglect a type of HRIS that involves self-service (Kovach, et al., 2002). Therefore, a fourth category related to HR self-service systems is added to explore the different subsystems.

Operational systems. Operational systems are systems related to internal daily HRM activities (Ruël et al., 2011; Shrivastava & Shaw, 2003). Daily HRM activities include employees, such as employee leave, attendance and payroll practices. Thus it includes electronic attendance registers and payroll systems (Bissola & Imperatori, 2014). Another example of operational systems is the personnel management system (Weimei, 2013). The

functions of the personnel management system include recording information about employees (such as name, age and position) and registering their daily performance (Weimei, 2013).

Relational systems. Relational systems are systems that involve advanced HRM practices (Ruël et al., 2011). Examples of these systems include recruitment systems, training systems and performance management systems (Maier et al., 2013; Ruël et al., 2011). According to Weimei (2013), the recruitment system automated the process of job applications and contains information about the vacancies and the applicants. Relational systems aim to empower employees, such as by using a training system (Parry & Tyson, 2011). The training system can be used to identify the training needs of employees and provide online training (Weimei, 2013). The performance management system is also a relational system that allows managers to evaluate employees and includes relevant information about the staff (Weimei, 2013).

Transformational systems. According to Ruël et al. (2011), transformational systems are related to strategic HRM practices. Some researchers refer to this type as strategic HRIS (Barišić et al., 2019; R. Kumar, 2012). It involves major processes related to organizational change. Thus, it can contribute in changing the role of HRM practices to make them more strategic and less administrative (Shrivastava & Shaw, 2003). Examples of transformational systems include KM systems and HR planning systems (Bissola & Imperatori, 2014; R. Kumar, 2012; Shrivastava & Shaw, 2003).

Self-service systems. A contradiction exists in the literature, as some researchers—such as Marler and Fisher (2013)—view self-service as a type of e-HRM, while other researchers—such as Kovach et al. (2002)—view it as a type of HRIS. HR self-service includes employee self-service and managerial self-service (Gueutal, 2003).

Kovach et al. (2002) argue that employee self-service is an innovative step to improve HRIS in organizations. It reduces the load on HR staff by allowing employees to manage their

personal data (Marler, Fisher, & Ke, 2009). It gives employees access to check and update their personal information. By reducing the level of administrative tasks, HR staff can have the opportunity to focus more on strategic tasks (Marler et al., 2009). There are two forms of employee self-service: the interactive voice response (IVR) system and the HR portal (Kovach et al., 2002). The IVR system gives access to employees via telephone. However, the HR portal can offer more advanced features for employees, such as allowing employees to communicate with each other (Kovach et al., 2002).

Managerial self-service is an HR self-service system designed to allow managers to manage data and perform managerial tasks, such as promotions (Marler et al., 2009). It can enhance decision-making processes by giving managers access to reports and employees data (Gueutal, 2003).

To conclude, this section introduced HRIS by defining HRIS and differentiating between HRIS and e-HRM. This was followed by a discussion of HRIS functions and associated benefits and drawbacks. Subsequently, an overview of the various types of HRIS users including management, employees and non-employees was provided. Finally, the section concluded with an overview of the different types of HRIS including operational, relational and transformational systems. The next section discusses the link between HRIS and innovation.

2.3.5 HRIS and administrative innovation

Most studies on HRIS focus on the adoption and implementation of the system (Jawahar & Harindran, 2013; Ngai & Wat, 2006; Tansley & Newell, 2007; Teo, Lim, & Fedric, 2007; Troshani et al., 2011). Chakraborty and Mansor (2013) argue that researchers investigated many aspects related to HRIS adoption except innovation. Thus, they performed a study to

investigate HRIS adoption using the framework of innovation adoption. They used the archival research method to analyze data obtained from secondary sources. Based on the articles published on HRIS, they conclude that HRIS adoption is influenced by several factors that can be divided into three categories: organizational, technological and environmental factors. For instance, their results show that an organization's size and management commitment are organizational factors that can have a higher influence on HRIS adoption than other factors. Technological readiness is considered by a number of studies as a significant technological factor. Technological readiness refers to the organization's IT expertise and infrastructure. Their findings also include environmental factors identified by previous researchers, such as competition. The pressure of competition can contribute to the adoption of HRIS, as it allows the organization to better manage their human capital. Chakraborty and Mansor (2013) also argue that most studies are based on Europe and outside Asia. Therefore, they suggest that future studies should expand their work and investigate in different geographical areas, as the culture of the country and organization can influence the results of the study.

Similarly, some studies attempt to link HRIS adoption to innovation literature (Troshani et al., 2011). Most of the studies focus on the view of HRIS as technological innovation (Ahmer, 2013; Florkowski & Olivas-Luján, 2006; Obeidat, 2013; Teo et al., 2007). For example, Obeidat (2013) examined the link between the decision to adopt HRIS and innovation diffusion by conducting a quantitative study. In his study, it appears that HRIS was considered as technological innovation, and the diffusion of innovation (DOI) referred to people's attitudes towards adopting this technological innovation. The study was conducted in Jordan, and data was collected by survey questionnaire. He concluded that HRIS and innovation diffusion are positively linked.

Other studies focus on non-technological innovation associated with HRIS adoption (Bamel et al., 2014; Lin, 2011). For example, Bamel et al. (2014) highlights that HRIS adoption

is more likely to involve an organizational change. They found that perceived benefits of HRIS adoption in universities include improving HR services, faster responses to queries and easier access to information and reducing paper work. They also identified the main barriers that affect HRIS adoption such as lack of commitment from top management and lack of HRIS-related knowledge.

Lin (2011) conducted a quantitative study to investigate the impact of HRIS adoption on organizational innovation. Based on data collected from managers and R&D employees in Taiwan, the findings reveal that HRIS has a positive effect on organizational innovation. The findings also suggest that HRIS moderate the relationship between employee's creativity and organizational innovation. Lin (2011) argue that employee's creativity is central to the process of organizational innovation and HRIS can assist managers in educating and training employees. Therefore, HRIS has an impact on transforming employees' creativity into organizational innovation.

Examining the adoption of the system in organizations is essential, but researchers also emphasize the importance of examining innovation and the usage of systems beyond adoption (Aeron & Jain, 2015; Fichman, 2004; Phahlane, 2017). It has been conveyed in different studies that HRIS is often not utilized to its full potential (Beadles et al., 2005; Jawahar & Harindran, 2013; Kumar, 2013). As reported by Jawahar and Harindran (2013), "the issue of underutilized systems persists in organizations in spite of technological advances and an ever-increasing organizational investment in these technologies" (p. 55). Hence, it is essential to investigate HRIS following the initial adoption to understand what is going on.

Recently, Barišić et al. (2019) conducted a survey to examine the impact of the intensity of HRIS usage on organizational performance in different countries. They found that organizations employing more HRIS features in their work can become more productive and more innovative. They suggest that qualitative investigation is needed to provide an in-depth

understanding of the factors that allow organizations to use HRIS to its full potential and to maximize the positive impact of HRIS on organizational performance.

In addition, researchers highlight the importance of investigating the link between innovation and the post-adoption stage of IS (Rashid et al., 2012). Therefore, the next section explores HRIS post adoption and the link with administrative innovation.

2.3.6 HRIS Post-adoption and administrative innovation

Kovach and Cathcart (1999) state that “many organizations are finding that the most fundamental value of technology is its ability to encourage new thinking that removes the need for layers of administration” (p. 276). Given that the focus of this research is on the concept of administrative innovation in particular, it is essential to understand how the post-adoption stage can be linked to administrative innovation.

IS post-adoption. The post-adoption stage occurs when the IS deployed in the organization and integrated into organizational processes. Zhu & Kraemer (2005) refer to post-adoption as the stage when users actually use the system and create value of the system. It occurs “when users through experience have concrete knowledge of the technology” (Karahanna, Straub, & Chervany, 1999, p. 203). IS post-adoption is considered as the longest stage in IS project life cycle and the stage in which the organization can realize greater IS benefits (Jasperson et al., 2005).

It is acknowledged that some IS can be underutilized or used narrowly (Bamel et al., 2014; Jasperson et al., 2005; Wang, 2010). Therefore, IS researchers have become increasingly interested in investigating the utilization of systems after adoption. For example, Lucas, Swanson and Zmud (2007) suggest that further studies are needed to investigate IS-enabled innovation “to study the deep use of systems, which must surely come from individual and

collective learning and the institutional restructuring that takes place long after systems are first adopted and receive initial acceptance” (p. 209).

The IS post-adoption stage is explained from the perspective of different IS models, and the most widely used models are proposed by Cooper and Zmud (1990) and Jasperson et al. (2005).

Cooper and Zmud (1990), propose the six-stage model of IT implementation covering initiation, adoption, adaptation, acceptance, routinization, infusion. A brief explanation of each phase is presented in Table 3:

Six-stage IT implementation model	
Initiation	Introducing the system after exploring the different alternatives
Adoption	Investing resources to implement the innovation
Adaptation	Revising work processes and training employees
Acceptance	Employing the system and Committing to use it in work processes
Routinization	Embedding the system into routine processes
Infusion	Extend the use of the system to its full potential

Table 3 - Six-stage IT implementation model

IS Post-adoption is often related to the last three stages of the model after the system has been employed in the organization (acceptance, routinization, infusion) (Odusanya, Coombs, & Doherty, 2015). The infusion stage is more emphasized in the IS post-adoption literature because of the main emphasis on using IS to a greater potential (Rashid et al., 2012).

Jasperson et al. (2005) propose a three-stage model of IT adoption and use: 1) organizational adoption decision, when the system is installed in the organization, 2) individual adoption decision, when users use the system in their work either voluntarily or mandatory based on organizational rules, and 3) voluntary exploration and use of the system to extend its

features. Hence, IS post-adoption is linked to the third stage of this model as it involves exploring and finding new ways to perform tasks (Jasperson et al., 2005).

Previous studies have addressed different matters related to the post-adoption stage. For example, studies explored the forms of post-adoption usage, behaviors, absorptive capacity and the link between post-adoption and innovation (Ahuja & Thatcher, 2005; Bagayogo et al., 2014; Jasperson et al., 2005; Rashid & Wang, 2012; Wang et al., 2014).

In relation to the different forms of post-adoption usage, Saeed and Abdinnour (2011) conducted a study to better understand self-service IS post-adoption. They propose three types of IS usage in the context of post-adoption usage behaviors: expanded usage, integrative usage, and exploratory usage. Expanded usage refers to the level of IS features that are utilized to perform tasks. Integrative usage is concerned with integrating IS into the work processes. Exploratory usage refers to finding innovative ways to use IS.

The exploratory IS usage is related to the concept of ‘enhanced use’ of IS. Bagayogo et al. (2014) refer to post-adoption as ‘enhanced use of IT’. They applied a grounded theory methodology to investigate post-adoption. They interviewed users of different types of IT applications, ranging from enterprise systems to word processing software. Subsequently, they defined the concept of ‘enhanced use of IT’ as “novel ways of employing IT features” (Bagayogo et al., 2014, p. 361). In addition, they identified three types of enhanced use: utilizing a previously unused feature of the system, utilizing the system to perform additional processes and extending IT features of the system. They suggest that future studies should investigate how the phenomena occurs within the organizational context.

Employee behavior following IS adoption is referred to as ‘post-adoptive behavior’ (Jasperson et al., 2005). It can be defined as the behavior of employees after the system is implemented and used in organizational activities (Jasperson et al., 2005). This could be a result of the learning and experience generated after using the system that can enable

employees to extend the current use of the system and modify tasks and work procedures (Ahuja & Thatcher, 2005; Jaspersen et al., 2005). In the literature, researchers have investigated post-adoptive behavior and identified factors related to it such as gender and work environment (Ahuja & Thatcher, 2005; Jaspersen et al., 2005; Karahanna et al., 1999; Wang et al., 2014). For example, Jaspersen et al. (2005) suggest that management support is needed to enhance the use of the system. Furthermore, they encourage future research to expand their work and investigate the outcome of this behavior and the feedback related it.

Another study conducted by Wang et al. (2014) highlights the importance of employees' absorptive capacity in utilizing IS to its full potential. They conducted a survey in China to test the hypothesis derived by applying the absorptive capacity theory. They define absorptive capacity as three main processes: recognizing new knowledge, assimilating and sharing the new knowledge and applying the knowledge to generate output such as new work processes. They linked absorptive capacity to employees' perceptions regarding job autonomy and fairness of rewards. Job autonomy refers to the extent of flexibility in performing tasks and managing workloads, while fairness of rewards refers to the equity of benefits received based on a certain behavior (Wang et al., 2014). They concluded that perceived job autonomy and fairness of rewards could affect absorptive capacity. In addition, absorptive capacity can allow employees to innovate and use IS to its full potential.

Post-adoption and administrative innovation. Studies have also linked innovation to post-adoption usage (Ahuja & Thatcher, 2005; Nambisan, Agarwal, & Tanniru, 1999; Rashid et al., 2012; Rashid & Wang, 2012). For example, Rashid et al. (2012) suggest a link between innovation and post-adoption by examining previous IS literature. They propose that the degree of innovation is dependent on the level of IS usage following adoption. For example, continuous and minimum IS usage in routine processes following the adoption can lead to low

degree of innovation (Rashid et al., 2012). In contrast, deeper use of the system and enhancement of work processes are associated with a higher degree of innovation (Rashid et al., 2012).

Therefore, administrative innovation could be linked to post-adoption usage of the IS. As explained earlier, post-adoption allows employees to use the adopted system to its full potential. This is based on their experience of the system that allows them to “actively pursue various ideas to deploy the technology in their immediate work context” (Nambisan et al., 1999, p. 372). Hence, they can modify and extend the use of the system and improve performance (Jasperson et al., 2005; Odusanya et al., 2015).

Another perspective to link administrative innovation to post-adoption usage of HRIS is by applying the IT impact framework presented in Figure 6 (Remenyi, Money, & Twite, 1991; Zuboff, 1988). This is one of the most widely used frameworks in IT and IS literature (Fichman, Dos Santos & Zheng, 2014; Gardner, Lepak, & Bartol, 2003; Ruël et al., 2011; Trivellas & Santouridis, 2013). According to Gardner et al. (2003), Remenyi et al. (1991) and Zuboff (1988), the IT impact framework involves three stages of use: automation, information and transformation.

The automation stage involves automating manual processes, thus reducing the need for employees to perform the tasks. For example, the introduction of HRIS reduces the workload of employees by automating routine administrative tasks like record keeping. After automating processes, the second stage of IT impact is the information stage. IT ‘informs’ the processes at this stage; therefore, IT provides more comprehensive information related to processes in the system. For instance, at this stage, HR staff can have access to more employees’ data and statistics on HRIS. The third stage is the transformational stage. At this stage, new work practices and processes can be introduced. It embraces creativity, knowledge and information; thus, it can contribute to innovation. In other words, the transformational stage

can allow HR staff to be creative and contribute new innovative processes (Gardner et al., 2003; Zuboff, 1988). Transformational activities can occur after the extensive use of HRIS (Normalini, Kassim, Ramayah, & Kurnia, 2012). This is because HR staff will be expected to have more time to innovate and improve HR activities (Normalini et al., 2012). Administrative innovation could be linked to the transformational activities, as employees can initiate innovative processes based on their prior experience with IS during this stage.

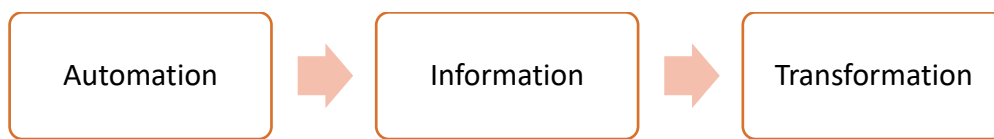


Figure 6 – IT impact model

To conclude, most studies focus on IS post-adoption behavior and usage and only a limited number of studies explore administrative innovation emerging following the adoption of IS. However, it is possible to establish the link between administrative innovation and IS post-adoption by reviewing the literature. Administrative innovation can result in improving work tasks and findings new ways to extend the system to a greater potential.

2.3.7 Summary

This section introduced the concept of HRM and its main practices. In addition, HRIS was presented and defined, followed by an identification of HRIS users, functions and the related subsystems. Subsequently, HIRS was linked with the concept of innovation. Lastly, the IS post-adoption stage was described and linked with administrative innovation.

In general, the literature review revealed that, despite the recognized importance of IS post-adoption, most studies focused on the adoption and implementation of IS (Saeed & Abdinour, 2011). In addition, HRIS adoption is not the end of organizational change and

innovation. It is essential to understand how HRIS is utilized and to explore innovation emerging in the context of HRIS post-adoption. This study extends the research on HRIS post-adoption by investigating administrative innovation following the adoption of HRIS in public sector organizations. The following section outlines the context of the public sector and reviews the relevant literature on innovation and HRIS in the public sector.

2.4 The Public Sector

2.4.1 Introduction

Identifying a sector of activity is essential to investigating innovation, as each sector can differ based on its features and priorities (Tidd & Bessant, 2009). This study is concerned with administrative innovation following the adoption of HRIS in public sector organizations. Therefore, this section aims to present the main characteristics of the public sector. This is followed by an exploration of innovation in the public sector context in terms of types and initiators of innovation. In addition, HRM and HRIS are explored in relation to the public sector literature.

2.4.2 Characteristics of the public sector organizations

The public sector includes public institutions that regulate and implement laws, as well as institutions that provide public and social services, such as health and education (Windrum, 2008). To better understand innovation, it is essential to explore the differences between the public and the private sector (Bysted & Hansen, 2015).

A review of the literature related to the comparison between the public and private sector revealed that researchers compare between the two sectors from different perspectives such as innovation (Bysted & Hansen, 2015; Rainey, 1999), IS (Ward, 2006) and HRM (Boyne, Poole, & Jenkins, 1999).

As a general model to compare the public and private sector, Helden and Reichard (2016) suggest the three dimensions approach as useful way to understand the commonalities and differences between the two sectors. The three dimensions approach, developed by Perry and Rainey (1988), relates the differences between public and private sector to three dimensions. According to Perry and Rainey (1988), the first dimension is ownership, which stresses that public organizations have full or partial government ownership. The second dimension is finance, which stresses that the government is the source of funds for the public organization. The third dimension is concerned with control, which shows that the public organization is more influenced by political conditions rather than economic conditions (Helden & Reichard, 2016).

Meier and O'Toole (2011) criticize the previous three dimensions approach, as it cannot be applied in all situations. They highlight that the dimensional approach lacks an explanation for an organization that can be owned by the government but derive revenue from public services (such as some postal services). Therefore, they offer another way to differentiate based on public purpose (Helden & Reichard, 2016). Based on the concept of public purpose, the public organization operates to realize a public goal that is set by the government, such as public welfare or providing effective public services. In contrast, the private sector is often driven by profit-related purposes (Helden & Reichard, 2016).

Rainey and Chun (2009) identify various characteristics that can be unique to public organizations based on their research findings. For instance, public organizations tend to have less flexible decision-making processes than private organizations. This can be partially due to

political constraints. Public organizations also tend to have frequent changes in management caused by political changes and elections. According to these characteristics, it can be assumed that innovation is harder in the public sector. The next section explores the literature on innovation in the public sector.

2.4.3 Innovation in the public sector

Innovation in the public sector is often overlooked and more emphasis is placed on the private sector (Nählinder & Fogelberg-Eriksson, 2019). There is a generally accepted assumption that “public organizations are built on hierarchical structures and rigid processes and mostly lack any type of innovation culture” (Reibenspiess et al., 2019 p.2). Hence, innovation is considered challenging in the public sector because of the traditional bureaucratic atmosphere (Rowley, 2012; H. Sørensen et al., 2018). However, an increased interest in innovation has emerged in the public sector due to its critical role in improving efficiency and effectiveness (Albury, 2005; Arundel & Huber, 2013).

Before exploring innovation, it is essential to distinguish between traditional bureaucracies and new public management (NPM) as a type of reform in the public sector. Public sector reforms can “influence the direction and type of innovation that are encouraged” in the public sector (Windrum, 2008, p. 14).

Traditional bureaucracies. In the bureaucratic context, the public sector is often considered slow; a possible explanation is the characteristics of the bureaucratic model such as vertical communication channels and compliance (Vigoda-Gadot, Shoham, Schwabsky, & Ruvio, 2005). Researchers criticize this model for being mainly based on rigid rules and complex hierarchies (Matei & Bujac, 2016). Bureaucratic contexts tend to maintain established procedures and rules that proved to work reasonably well in the past and to oppose change (Vigoda-Gadot et al., 2005).

An example of how bureaucracy can affect innovation is shown in the seminal work of Thompson (1965). Thompson (1965) argues that the bureaucratic system can influence productivity but not innovation. He suggests that modifications should be made to the bureaucratic system in order to enhance innovation. For example, decentralization is needed to increase employee engagement and therefore enhance innovation. Damanpor (1996) tests and extends the work on the relationship between bureaucracy and innovation. He focused on two attributes related to the bureaucratic system—namely, centralization and formalization. Centralization refers to the level of decisions made at the top of the organizational hierarchy, while formalization refers to the level of regulations and formal rules in the organization (Damanpor, 1996). He confirmed that formalization negatively affects innovation. He highlighted that rigid rules and procedures that emphasize job descriptions can inhibit innovation. In addition, centralization is also negatively associated with innovation, as it reduces employees' involvement and participation in making decisions (Damanpor, 1996).

In the literature, there appear to be a general agreement that a bureaucratic environment affects innovation negatively (Camisón-Zornoza et al., 2004; Hamel, 2006). However, some researchers argue against the predominant notion that the bureaucratic system hinders innovation (Larsen, 2015; Olsen, 2006). Larsen (2015), for example, conducted a case study using a Danish police department as a bureaucratic organization. He found that there is an ambivalent relation between public sector innovation and bureaucracy. In the case study, new ideas were collected and assessed through formal procedures. Therefore, in contrast to previous studies, formalization was found to have a key role in initiating innovative ideas (Larsen, 2015).

New public management. NPM reforms involve replicating and transferring private sector management principles in order to improve the public sector (Boon & Verhoest, 2016; Li Langergaard, 2011). According to Windrum (2008), “NPM is driven by the belief that

acquiring and developing private sector management skills and practices is necessary in order to deal with the fundamental dilemma of the public sector” (p. 15). The public sector dilemma refers to individuals’ needs for improving the quality of services in the public sector (Windrum, 2008).

An argument frequently found in the literature is that innovation started to spread more in the public sector with the emergence of NPM (De Vries, Bekkers, & Tummers, 2016; Li Langergaard, 2011; Windrum, 2008). Li Langergaard (2011) explains this by emphasizing that NPM principles—such as decentralization and empowering employees—support flexibility and innovation. For instance, public organizations under NPM reforms can be more responsive to changes of environment and population (Li Langergaard, 2011).

Although it is essential to understand the different attributes of traditional bureaucracies and NPM, Hartley (2005) highlights that in reality these reforms can co-exist in public sector organizations (Hartley, 2005). Hence, this can lead to the creation of hybrid organizations (Billis, 2010). Hybrid organizations can be regarded as “organisations created in order to address public needs and to produce services that are public in character, at the same time resembling private corporations in the way they are organised and managed” (Thomasson, 2009, p. 353). It is difficult to characterize hybrid organizations because the regulations, organizational structures and practices differ between countries (Thomasson, 2009).

2.4.3.1 Types of innovation in the public sector

Previous studies have explored various types of innovation in the public sector. De Vries et al. (2016) conducted a systematic review of public sector innovation by investigating the literature published between 1990 and 2014. They identified four main categories of innovation in the public sector: (a) process innovation, which relates to technological and administrative processes; (b) product/service innovation, which refers to changes in products or services; (c)

governance innovation, which refers to new changes that address societal needs; and (d) conceptual innovation, which is similar to paradigm innovation and refers to changes in concepts and paradigms. An example of conceptual innovation is the introduction of NPM reforms (Windrum, 2008).

More recently, Buchheim, Krieger, and Arndt (2019) conducted another systematic review by focusing particularly on innovation types and the antecedents of innovation in the public sector. Their findings confirm the categories of innovation identified by De Vries et al. (2016). They highlighted that the majority of research has revolved around product/service innovation and process innovation. In relation to antecedents of innovation, most research focuses mainly on the organizational level while the individual level remains underexplored (Buchheim et al., 2019; Bysted & Hansen, 2015).

In relation to administrative innovation in the public sector, several studies focused on its adoption in public organizations (Damanpour & Schneider, 2009; Gianakis & McCue, 1997; Kimberly & Evanisko, 1981). Most studies focus on radical changes that are often informed by NPM reform (De Vries et al., 2016; Hansen, 2011; Vigoda-Gadot et al., 2005). Lippke and Wegener (2014) point out that current research on innovation in the public sector appear to celebrate radical innovation and overlook incremental changes in daily work processes and tasks.

However, few attempts have been made to investigate incremental administrative innovation (Damanpour & Schneider, 2009; Lippke & Wegener, 2014). For example, Damanpour and Schneider (2009) conducted a survey in the U.S public sector to assess the role of managers in relation to the adoption of incremental administrative innovation. Their results indicated that managers' education and experience have a positive effect on innovation.

Despite the increased interest in innovation in the public sector, it is not always possible to innovate. It is argued that the public sector encounters more complex barriers than other

sectors (Vigoda-Gadot et al., 2005). Researchers identified different barriers to public sector innovation, and it is clear that the most reported barrier to innovation is the bureaucratic environment (Gallowj & Zanfei, 2013; Rainey, 1999). Other barriers include a lack of incentives, lack of competition and the culture of risk aversion (Albury, 2005; Arundel & Huber, 2013; Borins, 2001; Damanpour & Schneider, 2009). Low incentives can be a barrier because people might not be motivated to innovate. Lack of competition might also be a barrier, as public organizations are less likely to compete through innovation (Potts & Kastle, 2010; Sørensen & Torfing, 2011). The culture of aversion means that public organizations tend to avoid risks associated with innovation, such as higher levels of public scrutiny (Albury, 2005; Borins, 2001; Rainey, 1999). In addition, administrative constraints, weak leadership, and complex organizational structure can affect innovation negatively (Rainey, 1999; Vigoda-Gadot et al., 2005).

After identifying the types of innovation in the public sector context, it is essential to identify the possible initiators of innovation in the public sector through bottom-up and top-down processes (Hartley, 2005). Therefore, this is explained further in the next section.

2.4.3.2 Initiators of innovation in the public sector

Innovation in the public sector is often viewed as top-down innovation (Arundel & Huber, 2013; Borins, 2001; Saari et al., 2015). Top-down innovation is generated by higher organizational levels, such as ministers, political leaders and senior managers rather than the employees (Saari et al., 2015; Windrum, 2008). Thus, top-down innovation can be more concerned with the overall organizational structure and regulations rather than specific changes in the processes (Windrum, 2008).

Although most studies seem to agree that innovation is often a top-down process, there is a continuous debate on the role of employees in the innovation process. Borins (2001)

highlights that in spite of the inhospitable context, innovation can be initiated in all levels of the public sector organization.

As a result, there have been few studies exploring EDI in the public sector (Gallouj & Zanfei, 2013; Hasu et al., 2011; Price et al., 2012; Saari et al., 2015). Bottom-up innovation can be considered as more focused, involving detailed changes in certain processes (Windrum, 2008). Some studies focus on exploring EDI in the public sector (Price et al., 2012; Reibenspiess et al., 2019). For example, Reibenspiess et al. (2019) explore EDI in the public sector through implementing a work model to develop digital innovation. Reibenspiess et al. (2019) identify four enablers of digital innovation: innovation time, innovation champions, innovation culture and digital innovation platform.

Saari et al. (2015) argue that there is a set of activities and actors that links top-down processes and bottom-up processes to enhance the development of EDI in the public sector. In their case study, they presented a framework to illustrate the relationship between the two processes from the perspective of service innovation (Figure 7). They used the term ‘strategic reflexivity’ to refer to top-down processes. Strategic reflexivity is related to the role of management in encouraging innovation based on the strategies and goals of the organization. EDI is related to innovations initiated from the lower level of the organization. They highlight that coordination between the top-down and bottom-up processes is performed by middle managers. Therefore, they suggest that middle managers have a key role in the spread of innovation in the public sector.

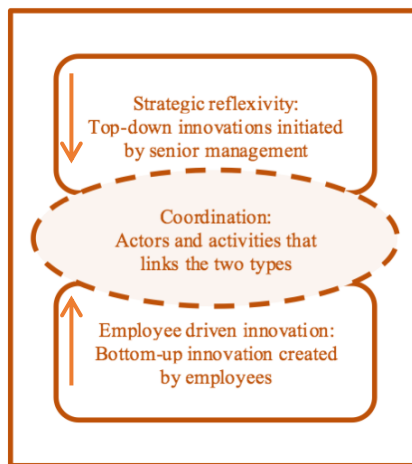


Figure 7- Relationship between top-down and bottom-up EDI

Source: Saari et al. (2015)

To sum up, this section has presented an overview of the public sector reforms followed by a discussion of different types of innovation that exist in the public sector. Subsequently, a discussion of the potential initiators of innovation in public sector organizations was provided. In general, previous innovation research in the public sector tend to focus more on top-down processes (Management-driven innovation), and there is limited understanding of EDI in relation to administrative innovation.

2.4.4 HRM and HRIS in the public sector

HRM in the public sector faces different issues than the private sector. For instance, HRM has also been affected by the NPM reforms. Brown (2004) differentiates between traditional and new approaches. Under the traditional bureaucratic approach, HRM was centralized and controlled by agencies to set employment rules and perform HR tasks, such as hiring and training (Brown, 2004). However, the NPM model changed the conditions for HRM. It

introduced new ways of managing people (Brown, 2004). For instance, it encourages decentralization by establishing more flexible structures and management systems (Brown, 2004).

Several studies have been conducted to investigate the differences of HRM between the public and the private sector (Boyne et al., 1999; Harel & Tzafrir, 2001). For example, Boyne et al. (1999) found through a survey study in public and private sectors in UK that significant differences in HRM exist between the two sectors. The results show that activities such as training and promoting equal opportunities are more aligned with the public sector.

Similarly, Harel and Tzafrir (2001) found that HRM practices differ between the two sectors. Their results indicated that managers in the public sector focus more on processes such as selection and grievance procedures. In the private sector, managers place more emphasis on growth and pay for performance. The previous comparison is related to the previously discussed concepts of hard and soft HRM. The private sector is argued to be more associated with hard HRM while the public sector is more related to soft HRM as it places more emphasis on employees (Boyne et al., 1999).

This view on hard/soft HRM was further supported by Veloso et al. (2015) in their study to examine employees perceptions of soft and hard HRM in the public and the private sector. They confirm that there are differences between the public and private sectors. On the one hand, HRM practices in the public sector emphasize soft HRM more and are perceived as operational, administrative and having weak consideration of the strategic goals. On the other hand, HRM practices in the private sector are perceived as operational and also strategic with a hard HRM emphasis. Hence, they conclude that, in general, organizations are practicing both hard and soft HRM to get advantages of both approaches and hence organizations are “using a hard model of HRM practices, and are expecting to achieve the benefits of a soft model concerning the work relationship between employees and employer” (p. 14).

In relation to HRIS, most studies focus on the private sector, especially in relation to the strategic impact of HRIS (Beadles et al., 2005). Hence, there is a lack of research investigating HRIS in the public sector (Beadles et al., 2005; Troshani et al., 2011). In addition, studies examining HRIS in the public sector mostly focus on implementation and adoption of HRIS.

For example, Troshani et al. (2011) conducted a qualitative exploratory research of HRIS adoption in a public sector organization in Australia. By conducting semi-structured interviews with organizational actors, they found that several environmental, organizational, and technological factors affect the adoption of HRIS. For instance, government regulations (environmental factor) affect management commitment (organizational factor) which can influence the adoption. In addition, technological factors such as user-friendliness can also influence HRIS adoption.

Al-Khowaiter, Dwivedi, and Williams (2015) investigated the mandatory use of HRIS in the public sector of Saudi Arabia based on the technology acceptance model (TAM). By utilizing a questionnaire-based survey, they found that the social influence had a direct and indirect effect in encouraging the use of HRIS. In addition, their findings suggest that perceived usefulness and ease of use had a significant effect on the use of HRIS.

Matimbwa and Masue (2019) examined HRIS use and implementation in the public sector of Tanzania through content analysis. Their study revealed that HRIS was not fully utilized due to encountering different challenges. They report five challenges affecting the use of HRIS: financial constraints to maintain HRIS, inadequate HRIS expertise, inadequate government structure, unreliable internet connectivity and lack of top management support.

Beadles et al., (2005) report other challenges that affect the use of HRIS in the public sector. They conducted a survey of public universities in the US. The results of their study

show that the public sector was not taking full advantage of the capabilities of HRIS due to the nature of HRM practices (that are different from the private sector). In addition, the need for more training to be able to use HRIS more effectively.

To sum up, HRIS in the public sector is considered under-researched (Beadles et al., 2005). Most studies of HRIS focus on the adoption and implementation of HRIS and there is limited understanding related to the post-adoption stage of HRIS.

Given that Kuwait's public sector is selected as a research context to examine HRIS post-adoption, the next section reviews the relevant literature on IS and innovation in the public sector of Kuwait.

2.4.5 The public sector of Kuwait

The public sector of Kuwait is selected as the research context as discussed in the methodology chapter (Section 3.7.2). This section reviews the relevant IS and innovation studies in Kuwait. Different studies examined IS usage and adoption and innovation in Kuwait (Al-Hawary & Aldaihani, 2016; AlAwadhi & Morris, 2008; Jones, 2009).

In terms of IS usage and adoption, previous research investigated the factors that affect IS usage (Almutairi, 2007, 2008; Rouibah, Hamdy, & Al-Enezi, 2009). For example, Almutairi (2007) adopted a quantitative approach in his study and found significant statistical evidence that indicates the relationship between IS usage in the public ministries and the increased efficiency of the internal performance, coordination, and customer focus.

In terms of innovation studies, few studies have examined innovation in the context of the public sector in Kuwait (e.g. Allahow, Al-Hawary, & Aldaihani, 2018). For example, Al-Hawary and Aldaihani (2016) focus on public services offered by a semi-public organization. They explore different types of innovation capabilities such as administrative, technological and marketing innovation. They argue that an organization can improve its innovation

capabilities by training employees, investing in technological applications, and by interacting with customers through technical and social media.

Although previous studies examined IS and innovation in the public sector of Kuwait, only a limited number of studies integrated innovation and IS (e.g. Elmorshidy, 2018). For example, Elmorshidy (2018), conducted a quantitative study to investigate the effect of knowledge management systems (KMS) on innovation in Kuwait including both private and public sector employees. Using survey data from 392 employees, he found that the quality of system, information, service of KMS positively affect the use of KMS. In addition, the use of KMS increases innovation by employees by allowing them to come up with new ideas and solutions to improve their work, to complete their tasks in less time and to communicate better. The findings of Elmorshidy's (2018) study represents a holistic view of employee innovation in Kuwait. He suggests that future studies can adopted a qualitative approach to further explore the link between IS and employee innovation. It is also beneficial to extend his work by focusing on a specific sector in order to provide an in-depth investigation of employees' experiences and perceptions in relation to innovation.

There is a lack of studies regarding the area of HRIS post-adoption and innovation in the public sector in Kuwait. Therefore, this study addresses this gap by investigating innovation developed following the adoption of HRIS. In addition, this study focusses on a specific type of public sector organizations, which are referred to as independent public sector organizations.

2.4.6 Summary

This section discussed the context of the public sector. First, it started by differentiating between the public and private sector before discussing the different public sector reforms, followed by a discussion of the concept of innovation in the public sector. Subsequently, it

identified the initiators of innovation in the public sector. It also examined HRM and HRIS in the public sector. Lastly, it discussed innovation and IS in the public sector of Kuwait.

2.5 Key findings of the Literature Review

This section aims to critically examine the literature presented in the previous sections. It presents the key findings based on the reviewed literature on innovation, HRIS and the public sector. This is followed by an explanation of the emergence of research questions.

Knowledge gap. The literature review on innovation revealed that more emphasis was placed on technological innovations, although non-technological innovations have recently gained more attention. Among non-technological innovation types, administrative innovation can be related to changes in organizational practices and work tasks, as well as changes related to IS (Swanson, 1994; Volberda et al., 2013).

In relation to initiators of innovation, most studies have focused mainly on management-driven innovation while EDI is often overlooked (Kurz et al., 2018). Černe et al. (2016) suggest that future research is needed to focus more on employee-driven (bottom-up) innovation rather than management-driven innovation, as it has been relatively ignored in the literature. They also suggest that bottom-up innovation is particularly a crucial aspect of understanding administrative innovation. The reason is that administrative innovation is related to administrative processes and techniques and mostly develops at the lower organizational level (Černe et al., 2016; Ravichandran, 2000).

An increased interest in EDI has emerged recently as an important source of innovation (Aasen et al., 2012). Despite the importance of EDI, some aspects are still sometimes overlooked. Limited research has investigated how the process of EDI unfolds and how employees come up with ideas to bring about change in their work (e.g. Hiltunen & Henttonen, 2016; Kesting & Ulhøi, 2010). Other studies emphasize that innovation exists as a combination

of management-driven innovation and EDI (Høystrup, 2012). In particular, there is still a lack of knowledge regarding how innovation develops in the context of IS post adoption. Hence, it provides an opportunity for more in-depth investigation, production of novel findings and advancement of knowledge in this area.

The literature on HRIS has predominantly focused on the adoption of the system (Troshani et al., 2011). There is limited understanding related to the post-adoption stage of HRIS. Researchers emphasize the importance of examining innovation and the usage of systems beyond adoption. This is highlighted by Lucas, Swanson and Zmud (2007) who suggest that further studies are needed to investigate IS-enabled innovation that results from the deep use of the system.

Most studies focus on IS post-adoption behavior and usage and only limited number of studies examine innovation emerging following the adoption of IS. Therefore, there is a need for more exploratory research to investigate the different theoretical issues related to IS innovation, particularly the generation of innovation (Jha & Bose, 2016). More specifically, there is a gap related to understanding administrative innovation following post-adoption usage of HRIS.

In addition, the literature on the public sector suggests that innovation differs between public and private sectors, establishing that bureaucratic regimes traditionally associated with public sector organizations are inimical to innovation (Damanpor, 1996). Moreover, there is a lack of studies regarding innovation in the public sector compared to the private sector (Windrum, 2008). In addition, there is a need to understand how innovation is developed in the public sector. As stated by Hartley (2005), future research is needed “to understand much more about the organizational processes of innovation development through ‘top-down’ policy development, through ‘bottom-up’ innovation emerging from the activities of managers and staff in organizations...” (p. 33).

Lastly, there is a paucity of research related to administrative innovation following HRIS adoption in the context of public sector organizations. Therefore, this research intends to address a gap in the intersection between administrative innovation, post-adoption usage of HRIS and public sector innovation. In other words, this research aims to contribute to the existing body of knowledge by enriching the understanding of the development of administrative innovation following the adoption of HRIS in the context of public sector organizations.

The emergence of research questions. Given the complexity of innovation, it is essential to clarify the view of innovation in this study. Wolfe (1994), based on his review of organizational innovation literature, recommends that researchers clearly identify the main aspects of the research focus including the type, stage, and attributes of the innovation and the type of organization included in the investigation. This identification serves to avoid ambiguity in the research.

Therefore, it is important to reaffirm what constitutes innovation in this research in order to establish the scope of the study. For the purpose of this study, innovation is viewed as *the generation and implementation of useful ideas to improve internal organizational processes*. The main aspects of innovation in this research are as follow:

- Type of innovation: this research is concerned with administrative innovation following the adoption of HRIS in the public sector.
- Stage of innovation: this study aims to understand the development of innovation as a multistage process comprising idea generation and implementation.
- Attributes: this study is open to investigating innovation in terms of radical/incremental and management-driven/employee-driven innovation.
- Organization: this study focuses on public sector organizations.

The literature review and the identification of the knowledge gaps has subsequently informed the research question. Based on the current knowledge about administrative innovation, the following research question emerged: *How does administrative innovation develop following the adoption of HRIS in the context of public sector organizations?*

The development process of administrative innovation in relation to HRIS post-adoption is rarely explored in-depth in the literature. There is a lack of understanding regarding HRIS post-adoption stage and what constitutes administrative innovation in this stage. There is also a limited understanding concerning how administrative innovation can lead to modifying work tasks and utilizing IS to a greater extent. Hence, it is essential to identify types and outcomes of administrative innovation (Q1).

Given the varied views in the literature on how administrative innovation originate in the public sector, it is essential to identify the potential initiators of administrative innovation and their motivation and to explore whether innovation develops through top-down, bottom-up, or interconnected processes (Q2).

In terms of interactions, there is a lack of understanding concerning how the process of administrative innovation unfolds from generation to implementation. Hence, this study aims to examine the process of interaction between the initiators of innovation and organizational stakeholders. It is deemed essential to identify the enablers and barriers of idea generation and implementation, which is not fully explored in the literature of IS post-adoption and innovation (Q3).

Administrative innovation and HRIS post-adoption represent a ‘black box’ and insight is often lacking about the how the development process unfolds within the public sector organizations. Therefore, it requires in-depth investigation of how the interactions,

motivations, perceived enablers and barriers influence the development of administrative innovation (Q4).

Therefore, in order to generate an in-depth understanding of the development of administrative innovation following the adoption of HRIS in the public sector, the following sub-questions will be addressed:

Q1: What are the manifestations of administrative innovation related to the use of HRIS in public sector organizations?

Q2: Who initiates administrative innovation following the adoption of HRIS in a public sector organization, and what are the perceived enablers and barriers?

Q3: How do initiators of administrative innovation related to HRIS interact with stakeholders in the context of public sector organizations? And what are their motivations?

Q4: How do these interactions, motivations, perceived enablers and barriers influence the development of administrative innovation in the context of public sector organizations?

3 Methodology and Research Design

3.1 Introduction

This chapter aims to introduce the methodology of the research. First, the purpose of this research is identified. Second, the philosophical assumptions underpinning the research in relation to the research paradigm, ontology and epistemology are discussed. Third, a discussion of the research approach and justification for the adoption of a qualitative research are provided, followed by a comparison between qualitative methodologies and a justification for selecting the Grounded Theory methodology. Grounded theory is discussed in more detail in terms of its development, versions, and key characteristics. This is followed by a discussion of the research context. In addition, data collection and data analysis is explained. Last, ethical considerations related to the research are addressed.

3.2 Research purpose

It is essential to explain the purpose of the research before proceeding with any discussion of methodology. Robson (2002) identifies four types of research purposes: exploratory, descriptive, explanatory and emancipatory (Figure 8). According to Robson (2002), exploratory research is used to investigate what is happening and to find new insights. It can be utilized to understand a phenomenon when little is known about it. It is considered flexible because the focus of the study can be narrowed as a result of gaining better understanding (Saunders et al., 2009). Descriptive research provides a precise representation of a phenomenon. It is often needed to have a prior understanding of the subject before gathering data to describe it. Saunders, Lewis, & Thornhill (2009) argue that “it should be thought of as a means to an end rather than an end in itself” (p. 140). Thus, they emphasize the possibility of linking descriptive research to other types of research in order to provide conclusions that go

beyond description. Explanatory research is utilized to explain a phenomenon and identify links and causes between different aspects (Robson, 2002). For example, quantitative data can be collected to recognize the relationship between variables, and qualitative data can be used to explain the situation (Saunders et al., 2009). Emancipatory research is related to actions and aims to form chances and desires for engagement (Robson, 2002). Robson and McCartan (2016) clarify that it is possible to combine more than one purpose in the research. In addition, the research purpose can change as the research proceeds (Robson & McCartan, 2016).

Exploratory	Descriptive	Explanatory	Emancipatory
<ul style="list-style-type: none"> • To understand what is going on 	<ul style="list-style-type: none"> • To provide precise representation 	<ul style="list-style-type: none"> • To explain and identify relationships 	<ul style="list-style-type: none"> • To create chances and desires for action

Figure 8 - Research purpose

Source: Robson, (2002)

Based on the research objectives, this research aims to investigate and explore the development of administrative innovation in relation to post-adoption usage of HRIS in the context of public sector organizations. It requires the identification of manifestations of administrative innovation and an examination of the interaction between initiators of innovation and organizational members. In addition, it requires the identification of the enablers and perceived obstacles in the context of public sector organizations. As discussed in the literature review chapter (Section 2.5), the development of administrative innovation is relatively underexplored in the existing literature. Therefore, this research has both exploratory and explanatory purposes, since it not only aims to explore administrative innovation following the adoption of HRIS, but also to explain perceptions, behaviors and interactions.

3.3 Philosophical Perspectives

This section introduces the research philosophy that refers to “the use of abstract ideas and beliefs that inform our research” (Creswell, 2013, p.16). Discussions on research philosophy often start with identifying the underlying research paradigm. The research paradigm could be considered a philosophical framework, as it leads to further assumptions related to ontological and epistemological stances of the research. Therefore, this section explains the meaning of research paradigm and identifies three positions. Subsequently, the ontological and epistemological stances are presented.

3.3.1 Research paradigm

Research paradigm is defined as “the basic belief system or world view that guides the investigation, not only in choices of method but in ontologically and epistemologically fundamental ways” (Guba & Lincoln, 1994, p. 105). The paradigm guides the conduct of the study in relation to generating and interpreting knowledge about the social world (Wynn & Williams, 2012). Therefore, it is considered as a net comprising ontological, epistemological and methodological stances (Denzin & Lincoln, 2005).

Different schools of thoughts exist regarding the types of research paradigms (e.g. Burrell & Morgan, 1979; Guba & Lincoln, 1994). In this research, the most common paradigms in IS and innovation literature are explored: positivism; interpretivism; and critical research (Chen & Hirschheim, 2004; Coombs, 2017; Fox, 2012).

Positivism is concerned with explaining the social world based on natural laws (Guba & Lincoln, 1994). It refers to the application of models derived from natural science to study the social world (Bryman, 2012). Thus, it is more concerned with facts and cause-effect relations that exist free from time and context (Guba & Lincoln, 1994). It is argued that, in this

paradigm, the researcher is independent and external to the data collection process (Saunders et al., 2009).

Interpretivism is concerned with explaining the social world as being based on the subjective and shared experiences of individuals (Burrell & Morgan, 1979). This paradigm takes into account the complexity and uniqueness of the social reality (Saunders et al., 2009). It focuses on explaining the phenomena based on the perspective of participants within a particular context (Wynn & Williams, 2012). Thus, it is more concerned with participants' beliefs, experiences and interactions (Goldkuhl, 2012). Moreover, the researcher has a key role in data collection by interpreting the meanings and perceptions of participants (Klein & Myers, 1999; G Walsham, 1995). As explained by Orlikowski and Baroudi (1991) "interpretivism asserts that reality, as well as our knowledge thereof, are social products and hence incapable of being understood independent of the social actors (including the researchers) that construct and make sense of that reality" (p. 13).

Critical realism is a philosophical paradigm that emerged as an alternative to positivism and interpretivism (Wynn & Williams, 2012). It holds some similar views from positivism in relation to the nature of reality (Bryman, 2012). For example, on the one hand, it assumes that there is an external reality that is "quite independent of the mind" (Saunders et al., 2009, p. 114). On the other hand, it is also similar to interpretivism by focusing on the subjective knowledge of individuals (Wynn & Williams, 2012). In addition, it takes into account the importance of identifying the context within which the phenomena occur (Bryman, 2012). Regarding the role of the researcher, it is argued that "the role of the critical researcher is always to go beyond mere studying and theorizing, to actively effect change in the phenomena being studied" (Orlikowski & Baroudi, 1991, p. 21).

The research paradigm adopted in this research is the interpretivist paradigm as this paradigm considers the need to understand people's perceptions about the everyday world and

their interactions within a specific context (Bryman, 2012; Burrell & Morgan, 1979). Hence, it is considered suitable based on the research problem at hand, which involves investigating organizational actors' experiences and perceptions regarding administrative innovation, as well as the interactions between individuals and stakeholders in the process of initiating innovation.

3.3.2 Ontological position

Ontology is a philosophical perspective that refers to how reality is perceived (Creswell, 2013). It differentiates between two philosophical positions – realism and relativism. Realism is concerned with the assumption of the existence of an external single reality (Burrell & Morgan, 1979), assuming that reality exists independently of how people act or think (Saunders et al., 2009). In contrast, relativism is based on the belief that there are multiple forms of realities (Guba & Lincoln, 1994), and that multiple realities exist as a result of the different views that people hold (Creswell, 2013). Therefore, this position emphasizes the role of individuals and their perceptions and experiences. Relativism is mostly associated with the interpretive paradigm (Guba & Lincoln, 1994).

The ontology adopted in this research is relativism. It is considered suitable based on the research problem at hand, involving the investigation of organizational actors' experiences and perceptions regarding administrative innovation, as well as the interactions between the individuals and organizational stakeholders in the process of initiating innovation. Individuals behave and interact differently in different contexts, the consequence being that the idea of a single reality cannot be adopted.

After identifying the nature of reality in the research (ontology), it is important to clarify what can be known (epistemology) about this reality (Grix, 2002). Hence, the ontological position should be linked to the epistemological position of the study.

3.3.3 Epistemological position

According to Grix (2002), “If ontology is about what we may know, then epistemology is about how we come to know what we know” (p. 177). Therefore, epistemology is related to how knowledge is constituted (Saunders et al., 2009). Moreover, it is also concerned with the link between the researcher and the participants (Creswell, 2013).

Objectivism and subjectivism are two positions of epistemology that can be contrasted (Guba & Lincoln, 1994). According to objectivism, knowledge has an objective meaning and is independent of individuals’ experiences and perceptions (Crotty, 1998). The researcher should have an objective role that does not affect the data (Crotty, 1998; Guba & Lincoln, 1994). Therefore, the researcher is often distant from the phenomena in order not to influence or be influenced by it (Slevitch, 2011).

In contrast, according to subjectivism, knowledge is subjective and constructed as the researcher interacts with participants (Lincoln & Guba, 2005; Sale, Lohfeld & Brazil, 2002). It proposes that “all knowledge we acquire is a product of the interaction between the known and the knower” (Pickard, 2013, p. 12), and emphasizes the researcher’s role in interpreting and constructing knowledge (Guba & Lincoln, 1994; Saunders et al., 2009). The researcher investigates the phenomenon by interpreting individuals’ perceptions, experiences and interactions (Slevitch, 2011). Moreover, the research context and culture should be understood (Grix, 2002; Pickard, 2013).

Therefore, the epistemological position adopted in this study is subjectivism. Knowledge about the phenomena of administrative innovation following the adoption of HRIS in the context of public sector organizations can be developed based on interpreting and interacting with organizational members.

3.4 Research Approach

The research question and underpinning philosophical assumptions influence the choice of the research approach (Slevitch, 2011). The research approach is examined in relation to qualitative and quantitative approaches. Subsequently, a justification for choosing a qualitative research approach is provided.

Qualitative research is a type of research that does not rely solely on statistics. Instead, it depends on the experiences, behaviors and interactions of individuals (Strauss & Corbin, 1998). The qualitative research approach is more frequently employed in alignment with the interpretivist paradigm (Sale, Lohfeld & Brazil, 2002; Slevitch, 2011). The researcher is more connected to the participants, and therefore knowledge is created by interpretation and interaction within the research context (Guba & Lincoln, 1994; Slevitch, 2011).

Creswell (2013) highlights common aspects related to qualitative research. For instance, data should be collected in a natural context where the individuals experience the phenomena. Another important aspect is the essential role of the researcher in data collection by interacting with participants. In addition, the evolving research process of qualitative research enables modification of the initial design if required during data collection. Moreover, it is a comprehensive approach that can convey the different perceptions, experiences and factors related to the study (Corbin & Strauss, 2015).

On the other hand, quantitative research is based on numerical data and statistics (Slevitch, 2011). Quantitative research relies on existing knowledge to formulate hypotheses and identify variables to be tested (Silverman, 2013). It mostly aims to reveal cause and effect relationships between variables. The issue of generalization is also emphasized in quantitative studies (Silverman, 2013). Therefore, a representative sample is chosen so that the findings of the study can be applied to a broader context (Silverman, 2013).

The issue of generalization is different for qualitative research. As qualitative research is based on the notion that individuals have different experiences and perceptions, it does not aim for generalization to other populations (Corbin & Strauss, 2015; Slevitch, 2011). Instead, qualitative research aims for an in-depth understanding of the relevant phenomena (Corbin & Strauss, 2015). According to Slevitch (2011), ‘transferability’ may be applicable in qualitative research and it refers to “the extent to which readers can use/transfer described experiences of the phenomenon to their settings based on the depth and vividness of the descriptions” (p. 78). More detailed discussion on the issue of transferability and generalizability is provided in the research validity and reliability section.

In addition, qualitative research is more closely related to the principle of inductive analysis (Creswell, 2013). The inductive approach refers to the process of generating theories based on empirical data (Saunders et al., 2009). In contrast, quantitative research, based as it is on theories that are subsequently verified by collecting data, is representative of a deductive approach to data analysis. A deductive approach therefore entails developing hypotheses from existing literature and designing appropriate strategies for testing the hypotheses (Saunders et al., 2009).

The qualitative approach is considered the most appropriate option for the proposed study, as the purpose here is to investigate the development of administrative innovation in relation to post-adoption usage of HRIS in the context of public sector organizations. The investigation requires in-depth understanding of the phenomena, including organizational processes and individuals’ experiences. This study also aims to examine the process of interaction between organizational actors. Thus, the qualitative approach is well suited, as it allows the researcher to explore the experiences of individuals and their interactions.

3.5 Methodology

After the researcher demonstrates how the world can be viewed (ontology) and what constitute knowledge based on the identified worldview (epistemology), a question arises regarding how to acquire the knowledge (Grix, 2002). Acquiring knowledge is related to the concept of methodology. Although methodology and methods are often used as synonyms, each concept has a different meaning (Saunders et al., 2009). Whilst methodology conveys the way of studying the social world and conducting research, methods refer to the techniques of collecting and analyzing data (Saunders et al., 2009; Strauss & Corbin, 1998). In relation to qualitative research, methodology is described as “inductive, emerging, and shaped by the researcher’s experience in collecting and analyzing the data” (Creswell, 2013, p. 22).

3.5.1 An overview of qualitative research methodologies

Creswell (2013) identifies five common qualitative research methodologies in social science: narrative research; phenomenology; ethnography; case study; and grounded theory. A brief explanation of each is provided below.

Narrative research. Narrative research is based on understanding the experiences and stories of individuals (Creswell, et al., 2007). It can be defined as “an account of an experience that is told in a sequenced way, indicating a flow of related events” (Saunders, Lewis & Thornhill, 2009, p. 497). It often involves few participants (one or two), and data collection is based on their stories reported in chronological order (Creswell et al., 2007). Different methods of data collection can be used, such as observations and interviews (Creswell, 2013). Narrative research aims to describe a story; therefore, it is not considered suitable for this research. This research aims to investigate a process – administrative innovation related to the post-adoption usage of HR. By exploring the experiences and perceptions of individuals, this research does

not aim to report the stories of individuals, but rather to generate an in-depth understanding of the phenomena.

Phenomenology. Compared to narrative research, which aims to describe the stories of individuals, phenomenology describes commonalities between individuals who have experienced a phenomenon (Creswell, 2013). Therefore, phenomenology aims to understand a phenomenon by collecting data from participants regarding their experiences (Creswell et al., 2007). Data collection is often based on in-depth interviews, but it can also include other methods, such as observation and documents (Creswell, 2013; Suddaby, 2006). The outcome of a phenomenological study is an in-depth understanding that involves a description of the common lived experiences of all participants (Creswell, 2013). Although phenomenology is useful in generating in-depth understanding, it was not favored in this study as it is mostly concerned with the subjective experiences of individuals (Suddaby, 2006), and this study not only seeks to understand experiences in relation to administrative innovation following the adoption of HRIS, but also to explain the development process and the perceptions, behaviors and interactions of organizational actors.

Ethnography. Ethnographic research is derived from anthropology (Creswell et al., 2007), and as such is more concerned with describing and understanding a social context (Saunders et al., 2009). A common method for ethnography is observation (Creswell, 2013). Extended observation enables the researcher to engage in the culture they are investigating (Silverman, 2013). Thus, the outcome could be a description of the culture and its attributes, such as behaviors, interactions and language (Creswell, 2013). Therefore, ethnographic research can last longer than other methodologies (Saunders et al., 2009). Ethnography is not adopted in this study, as the main focus of this study is not to describe the organizational culture. Instead, this

study focuses on the development process of administrative innovation in relation to the post-adoption usage of HRIS.

Case study. Different perspectives exist in relation to the case study approach. A case study can refer to a methodology or to an object of a study (Creswell & Poth, 2017; Mäkelä & Turcan, 2007). For example, Stake (2005) argues that: “case study is not a methodological choice but a choice of what is to be studied” (p. 443).

As a methodology, case study involves a deep investigation of a phenomenon in its specific context by employing multiple methods of evidence (Yin, 2009), with the aim of providing an in-depth understanding of a single case or multiple cases (Creswell, 2013; Robson & McCartan, 2016). Data is collected using different instruments, such as interviews, observations and documents (Creswell & Poth, 2017). It is not an absolute requirement but the development of an initial theory before collecting data is an essential aspect of case study research (Yin, 2009). This initial theoretical framework is often developed to guide data interpretation (Saunders et al., 2009). However, this strategy is criticized on the basis that “the danger is that if you start with a relatively tight conceptual framework or theoretical views, this may blind you to important features of the case or cause you to misinterpret evidence” (Robson & McCartan, 2016, p. 152). The outcome of the case study approach involves a rich case description often represented by case themes (Creswell & Poth, 2017).

Grounded theory. Grounded theory methodology is a systematic approach to generating theory from data (Glaser & Strauss, 1967). Unlike other methodologies, grounded theory goes beyond providing a description to constructing a theory (Corbin & Strauss, 2015; Creswell, 2013). Description refers to describing an event or a situation with a list of themes that are not

necessarily related to each other, while a theory represents a process and explains why and how it occurs (Corbin & Strauss, 2015).

Another difference is related to the use of an initial theoretical framework before collecting data; grounded theory methodology discourages their use, as the main purpose of grounded theory is to construct a theory from data (Corbin & Strauss, 2015). In addition, the grounded theory approach offers explicit procedural guidelines for data analysis to facilitate theory generation (Robson & McCartan, 2016). Another unique characteristic of grounded theory is the iterative process, which refers to the continuing cycle of data collection and analysis (Corbin & Strauss, 2015).

In this study, grounded theory was selected as a methodology for data collection and analysis. The following section provides a detailed rationale for this decision.

3.5.2 Rationale for grounded theory methodology

Grounded theory methodology has been selected as a suitable approach for conducting this research based on the following reasons:

First, with respect to the research paradigm, grounded theory is a general methodology that can be applied within any research paradigm (Urquhart & Fernández, 2013). Therefore, it is suited with the interpretive paradigm of this research as the process of coding allows the researcher to interpret the reality, and explain the phenomena, based on the multiple perspectives of different participants (Urquhart, 2012).

Second, grounded theory is well suited to investigate organizational actors' behaviors, experiences and interactions in a specific context (Saunders et al., 2009). This research aims to examine the interaction between the initiators and the organizational stakeholders of administrative innovation, their motivations, and the enablers and perceived obstacles in the context of public sector organizations.

Third, due to a lack of studies in relation to the development of administrative innovation following the adoption of HRIS, this study is not based on a theoretical framework. In addition, this study aims to generate a theory for understanding and explaining how the process of administrative innovation unfolds following the adoption of HRIS in the context of public sector organizations.

It is acknowledged there is some overlap between grounded theory and case study approach (Locke, 2001). Both can be applied without an initial theoretical framework and both methodologies can lead to a generation of a theory that explains why and how certain phenomena occur (Corbin & Strauss, 2015; Yin, 2018). The difference is mainly related to the analysis procedures. Some studies integrate both approaches in conducting their research (Fernandez & Lehmann, 2011). For example, some studies apply a combined approach by using the grounded theory as a method of analysis within the case study research (Halaweh, Fidler, & McRobb, 2008; Seidel & Urquhart, 2013). Although it is possible to employ case study and grounded theory in conjunction, this study only employs grounded theory methodology for data collection and analysis. The reason is that grounded theory on its own is well suited to provide an in-depth explanation of a single 'case' or several cases (Corbin & Strauss, 2015).

Moreover, grounded theory was selected because of its focus on generating a theory of a process (Corbin & Strauss, 1990; Creswell & Poth, 2017). As stated by Glaser and Strauss (1967), the founders of grounded theory, this methodology “facilitates the generation of theories of process, sequence, and change pertaining to organizations, positions, and social interaction” (p. 114). In other words, its analysis procedure is more oriented towards explaining a 'social process' (Glaser & Strauss, 1967; Locke, 2001). This type of process analysis allows the researcher to divide the phenomenon into a series of steps (Corbin & Strauss, 1990). Thus,

grounded theory supports the generation of an in-depth understanding of processes that are less understood by existing theories (Charmaz & Bryant, 2016).

This study aims to investigate the development process of administrative innovation following the adoption of HRIS, which is a phenomenon that is not completely explored in the literature. According to Van de Ven and Poole (1990), the development of innovation can be represented by a grounded process theory that “focuses on explaining the temporal order and sequence of steps that unfold as an innovative idea is transformed and implemented into a concrete reality” (p. 313). In other words, generating a process theory is essential to explain the development process of administrative innovation. Hence, grounded theory was considered well suited as it offers analysis strategies that help the researcher to analyze the data for process, such as making comparison and asking sensitizing and theoretical questions (Corbin & Strauss, 2015).

In addition, since grounded theory is constructed from data rather than existing theories, it stimulates creative thinking and provides new insights in relation to the phenomena under investigation (Strauss & Corbin, 1998). This is further emphasized by Charmaz and Bryant (2016), who state that grounded theory “fosters creating new ideas and possibilities for making imaginative interpretations of social life. And that is the beauty of grounded theory” (p. 360). Thus, grounded theory provides a greater potential to contribute new insights in relation to developing theories in different disciplines (Seidel & Urquhart, 2013).

It is essential to highlight the broad application of grounded theory in different disciplines such as management, IS and innovation disciplines (Seidel & Urquhart, 2013). In the IS literature, grounded theory is widely adopted to study different topics such as IS post adoption and IS innovation (Birks et al., 2013; Fernández, Lehmann & Underwood, 2002; Orlikowski, 1993). For example, Bagayogo et al. (2014) applied grounded theory to understand the post-adoption usage of IS. They point out the grounded theory is a useful approach to

develop a rich descriptive model that considers the contextual and processual aspects of a less documented phenomenon.

With regard to innovation literature, grounded theory was also used in studies of organizational innovation. For example, Carrero, Peiro and Salanova (2000) used grounded theory to investigate radical organizational innovation. They highlight that grounded theory offers a flexible research strategy that allows researchers to capture the frequent changes within the organizational context in relation to the development of innovation. Therefore, grounded theory is suitable for in-depth understanding of innovation while considering the complexity of social interactions and processes (Carrero et al., 2000).

As mentioned previously, there is a lack of extant studies addressing the development process of administrative innovation in relation to the post-adoption usage of HRIS. In addition, this study's objectives focus on understanding and explaining how administrative innovation develops following the adoption of HRIS in the context of public sector organizations. Therefore, grounded theory is well-suited as the methodology for data collection and analysis.

3.6 Grounded Theory Methodology

This section aims to introduce the grounded theory methodology. It begins with a discussion of its origin and an overview of the different versions and key characteristics of this approach, followed by a justification for selecting a Straussian version of grounded theory.

3.6.1 The development of grounded theory

Grounded theory is a widely used methodology in qualitative studies. It can be defined as a “qualitative methodology – the purpose of which is to construct theory grounded in data” (Corbin and Strauss, 2015, p. 3). It was originally developed by Glaser and Strauss (1967) in

their seminal work ‘The Discovery of Grounded Theory’. Though initially developed for sociological studies, it has been used in other fields such as IS (Urquhart & Fernández, 2013), human resource management (Murphy, Klotz, & Kreiner, 2016) and innovation (Carrero et al., 2000).

Grounded theory involves a systematic procedure for developing a theory from the obtained data (Glaser & Strauss, 1967). Therefore, the researcher can conduct the study without a predefined theory in order to allow the grounded theory to emerge from data (Glaser & Strauss, 1967).

Thereafter, Glaser and Strauss continued to develop the methodology, but in two distinct directions and mainly in relation to data analysis. This split in the founders of grounded theory resulted in the existence of different versions, based on the name of the founder of the approach, referred to as Glaserian and Straussian versions.

More recently, two other versions of grounded theory were developed which are referred to as constructivist and Clarkeian versions (Apramian et al., 2017). A brief discussion of each version is provided below. It is important to clarify that the discussion is not meant to criticize any version but rather to portray a sense of the ongoing debate and to justify the version adopted in this study.

Glaserian version of grounded theory. This version is referred to as classical grounded theory. Based on the original approach of Glaser and Strauss (1967), it is argued that this version is based on an objectivist philosophical stance that views the researcher as a neutral observer (Charmaz, 2014). The main reason for this argument is the idea of discovering data, which reveals that reality is external and can be discovered (Charmaz, 2014). Moreover, the researcher is considered as being separate from participants (Charmaz, 2014). The coding in the Glaserian version involves open, selective and theoretical coding (Seidel & Urquhart,

2013). In contrast to the Straussian version, the coding is not supported by analytic tools. Instead, it is considered that “the paradigm forces data, hinders emergence, and leads to conceptual description rather than grounded theory” (Seidel & Urquhart, 2013, p. 240).

Straussian version of grounded theory. Strauss and Corbin (1998) offered a more structured approach for grounded theory (Creswell, 2013). One of the differences between Glaser’s and Strauss and Corbin’s version is related to the process of coding. Strauss and Corbin (1998) provide explicit systematic guidelines for coding and analyzing data (Matavire & Brown, 2013). The coding process includes three stages: open; axial; and selective coding (Strauss & Corbin, 1998). In addition, this approach offers analytic tools, such as the coding paradigm and conditional/consequential matrix, to facilitate the analytical process (Strauss & Corbin, 1998). These analytic tools may also help in guiding novice researchers (Heath & Cowley, 2004). In the Straussian version, the researcher identifies a central category through data analysis to represent the main idea of the research and link it to related concepts (Strauss & Corbin, 1998). More details are provided in relation to data analysis based on the Straussian version in Section 3.9.

Constructivist version of grounded theory. Another version of grounded theory, introduced by Charmaz (2006), is called constructivist or Charmazian grounded theory (Apramian et al., 2017; Charmaz, 2006). According to the constructivist version, unlike the Glaserian version, the theory cannot be discovered. Instead it is constructed by the researcher and the participants (Charmaz & Bryant, 2016). It emphasizes the role of the researcher as actively interacting with participants. Therefore, there is a similarity with the Straussian version (Charmaz, 2014), as both versions recognize that theory is constructed. However, instead of focusing on a central category (like the Straussian version), the constructivist version emphasizes different local

worlds, views and relationships (Creswell, 2013). The constructivist version focuses on how historical moments, situations, interactions and social structures can influence the study (Charmaz & Bryant, 2016). Therefore, it is considered as being more focused on feelings, views and values than on the research method (Creswell, 2013). In relation to coding, the constructivist version offers two flexible stages – namely, initial coding and focused coding (Charmaz & Bryant, 2016). Thus, it is considered as less structured than the Straussian version (Creswell, 2013).

Clarkeian version of grounded theory. An extension of the grounded theory introduced by Clarke (2005), this version is referred to as situation analysis. It draws on the Straussian version of grounded theory (Clarke, 2005), placing greater emphasis on discourse theory and social worlds/arena theory (Apramian et al., 2017; Vasconcelos et al., 2012). It is argued that situations should be considered as the unit of analysis (Clarke, 2005; Creswell & Poth, 2017). These social situations can be analysed through three mapping strategies: situational maps; social worlds/arenas/discourse maps; and positional maps (Clarke, 2005; Creswell & Poth, 2017). It aims to build theories that “represent all the social worlds and discourses in an arena, amplifying the silent and silenced, specifying implicated actors and actants, and seeking out their (usually quite marginalized) discourses” (Clarke, 2005, p. 178). Thus, it takes into account missing discourses, silent actors and other aspects of work that are not usually acknowledged (Apramian et al., 2017).

Key characteristics of grounded theory. Birks et al. (2013) highlight that choosing a specific version of grounded theory is not a major concern as long as the key principles of grounded theory are utilized. Similarly, Charmaz and Bryant (2016) emphasize that despite the existence of different versions, common aspects can be identified:

1. All versions aim to generate a theory grounded in data rather than testing a theory (Birks et al., 2013; Corbin & Strauss, 2015).
2. The use of inductive data is common, since all versions state that data is collected without a prior theoretical framework (Corbin & Strauss, 2015).
3. The concurrent processes of data collection and analysis are common. In grounded theory, data collection is followed by analysis, and based on the analysis, more data can be collected (Corbin & Strauss, 2015).
4. Theoretical sampling forms the basis of data collection in grounded theory (Birks et al., 2013; Strauss & Corbin, 1998). This means that data and participants are selected based on the emerging concepts from the analytical process (Glaser & Strauss, 1967).
5. All versions emphasize the use of comparative analysis, which is considered a major feature of grounded theory methodology (Strauss & Corbin, 1998). Glaser and Strauss (1967) explain the process of constant comparison as comparing incidents to other incidents previously identified in same and different categories. In other words, it refers to the process of comparing collected data with the defined concepts and categories (Creswell, 2013).

3.6.2 Justification for selecting the Straussian version

As a result of the ongoing debate in the literature between different versions, choosing the version to follow was challenging. However, the Straussian grounded theory was adopted in this study as the methodology from the alternatives based on the following reasons:

It is considered a more structured and systematic approach than the Glaserian and constructivist versions of grounded theory (Creswell, 2013), and it provides clear guidelines for conducting the research and analyzing the data.

In relation to coding, the Straussian version introduces analytical tools to aid the analysis process. The coding paradigm is one of the tools that can assist the researcher with data analysis to carefully think about the relationships between different categories (Strauss & Corbin, 1998). The Glaserian version criticizes the use of the coding paradigm and considers it as forcing a conceptual description of data (Matavire & Brown, 2013; Seidel & Urquhart, 2013). However, Strauss and Corbin (1998) emphasize that “the paradigm never should be used in rigid ways” (p. 142). Therefore, the paradigm does not aim to force interpretation on data, rather it involves asking questions about data that help the researcher to organize concepts and think of possible linkages (Corbin & Strauss, 2015).

As a novice researcher, it was decided to follow the Straussian approach. It offers a detailed explanation of the analytical procedures that can lead to building a theory. These procedures “can serve to ensure a systematic analysis and thus bring about increased credibility to grounded theory research” (Mäkelä & Turcan, 2007, p. 131).

In response to the criticism of the analytic techniques followed in this version, it is important to note that “they are not meant to be used rigidly in a step-by-step fashion. Rather, their intent is to provide researchers with a set of tools that enable them to approach analysis with confidence and to enhance the creativity that is innate, but often undeveloped, in all of us” (Strauss & Corbin, 1998, p. 14). The researcher is aware of the potential threat of forcing the data (Seidel & Urquhart, 2013). Therefore, the researcher is only employing and adapting the analytical tools if deemed applicable to the data. As emphasized by Strauss and Corbin (1998), researchers should be flexible in the application of these analytical techniques and procedures and adapting them according to their different studies (Kenny & Fourie, 2015).

3.7 Research design

The research design section explains the plan and the strategies of how the research was conducted in relation to data collection and analysis. First, it explains the use of literature in the research. Second, it presents the research context and the criteria used for selection. Then, it explains the process of data collection with regard to the sampling method and data collection instruments. Third, it provides a detailed discussion of the process of analysis.

3.7.1 The use of literature

One of the most misunderstood topics in grounded theory is the use of literature (Birks & Mills, 2015). According to Urquhart and Fernández (2013), a common misconception in the literature is that the grounded theory researcher is a blank slate. However, although the grounded theory study should not be conducted with a preconceived theoretical framework (Glaser & Strauss, 1967), the literature should not be ignored and should be incorporated into the research process.

In grounded theory, the literature can be considered as an analytical tool used to enhance theoretical sensitivity (Strauss & Corbin, 1998; Urquhart & Fernández, 2013). The concept of theoretical sensitivity refers to “having insight into, and being able to give meaning to, the events and happenings in data. It means being able to see beneath the obvious to discover the new. This quality of the researcher occurs as he or she works with data, making comparisons, asking questions, and going out and collecting more data” (Strauss & Corbin, 1998, p. 46). Professional and personal experience may also enhance theoretical sensitivity (Strauss & Corbin, 1998).

In this study, the use of literature followed what Urquhart and Fernández (2013) explain as a two phase process including a non-committal literature review and integrative literature review. The non-committal literature was the preliminary review conducted before undertaking the research to explore existing studies in the field and to identify knowledge gaps. Therefore,

in this study, the researcher explored the literature on HRIS, innovation and the public sector in order to specify the main area of inquiry. Subsequently, after generating a substantive theory, an integrative literature review was conducted to locate the emergent theory within the existing IS and innovation literature. A relevant formal theory was selected as a theoretical lens to discuss the findings and to raise the theoretical level of the substantive theory (Eisenhardt, 1989; Orlikowski, 1993). The integrative literature review is presented in the discussion chapter (Chapter 5).

3.7.2 Research context – Site selection

Identifying the research context is one of the initial decisions that the researcher has to consider before conducting research (Strauss & Corbin, 1998). This section introduces the criteria used for site selection followed by providing general information about Kuwait and the selected public sector organization.

Administrative innovation is considered as a context-specific phenomenon (Bui, 2011). It is best understood in an applied context, hence the need to choose a setting for naturalistic inquiry. The site selection for this study is from the public sector in Kuwait. In the literature, there is a lack of studies regarding HRIS and administrative innovation in the public sector in Kuwait. Therefore, the aim of this research is to investigate administrative innovation following the use of HRIS in a public sector organization in Kuwait.

3.7.3 General information about Kuwait

Kuwait is small country in the Arabian Gulf region in the middle east. Kuwait is considered as a wealthy oil-producing country with a strategic location bordering Saudi Arabia, Iraq and Iran (BBC, 2018). The population in 2019 of Kuwait is estimated to be around 4 million (CSB,

2018). The official language of Kuwait is Arabic. In addition, the English language is widely spoken and understood in Kuwait.

Given the focus on the public sector, Kuwait is undergoing public sector reforms in line with the country's long-term strategic development plan. As announced in 2017, Kuwait emphasize Vision 2035 initiative for a sustainable future. One of the main priorities of this vision is to improve the effectiveness of government. In particular, it aims to “reform administrative and bureaucratic practices to reinforce transparency, accountability, and efficiency in the government” (New Kuwait, n.d.).

The ratio of employment in 2018 in the public sector is equivalent to (75.2%) Kuwaiti and (24.8%) non-Kuwaiti (CSB, 2018). Kuwait's public sector has the seventeen ministries and sixteen independent public sector organizations (CSB, 2018).

In Kuwait, the *independent public organization* is defined as a public organization that engages in commercial, financial or industrial activity and has more flexibility in management that moves it away from the rigid routine associated with other public organizations (CSC, n.d.). In other words, it represents a hybrid organization, which is owned by the government and provides public services but also has some degree of flexibility similar to the private sector.

3.7.4 General information about the selected organization

The criteria for site selection was based on three aspects: (a) it is a public sector organization; (b) it has full control over its administration (including HR policies); (c) it has adopted HRIS.

The selected organization is one of the leading public organizations in the country. Established in the 1960s, it is considered an independent government organization operating in the finance and banking sector. As requested by the management of the organization, the name of the organization is not disclosed in this study for the purpose of confidentiality. The organization has approximately 1,200 employees working in different departments. The

researcher is an employee in the organization and therefore has prior understanding of HRIS and HR practices. It is considered as an interesting case because the advanced use of IS and the hybrid nature of the organization might provide novel insight about administrative innovation and HRIS post-adoption.

Departments. Based on the purpose of this study, which is to investigate the development of administrative innovation related to post-adoption usage of HRIS, the research was conducted in two departments, namely the HR department and the IS department. Each department includes several sections. The HR department has approximately 100 employees working in different sections such as career development, training and payroll. The HR department has different responsibilities, such as providing HR services to organizational members, enhancing and improving work processes and performance and developing job structures. For the IS department, the research mainly focused on the IS development section, particularly on the HRIS team.

HRIS. HRIS has been adopted in the organization and integrated in various HR practices. The current HRIS employed in the organization is Oracle HRMS, part of the Oracle E-Business Suite of applications that focuses mainly on HR functions (Oracle, 2016). Oracle is used to support various HR functions such as management of HR data, payroll, performance management, recruitment, training, and self-service (Oracle, 2016). The organization updated their HRIS System to Oracle R12, one of the latest versions of Oracle HRMS, in 2010. Since then, most HR processes have been automated. In relation to the types of HRIS subsystems in the literature (as presented in Section 2.3.4), the organization employ operational, relational and both employee and managerial self-service systems.

To sum up, this section presented an overview of the research context. A leading public sector organization in the banking and finance sector was selected as a research context within which the research was conducted, and the grounded theory developed. It has been selected an exemplar of public sector organizations, as focusing on one organization can provide in-depth understanding of the development process of administrative innovation. This will require collecting data from HRIS users of different organizational levels.

3.8 Data collection

This section identifies research participants, which follows the application of grounded theory's concept of theoretical sampling. Subsequently, it introduces the instrument of data collection adopted for this study.

3.8.1 Sampling approach

Participants. Selecting the group of possible participants is the initial step for collecting data (Strauss & Corbin, 1998). The group should be selected based on the research question and their theoretical relevance (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Since the main research question is related to the development of administrative innovation resulting from the use of HRIS, the group of possible participants includes HRIS users from different organizational levels in a public sector organization.

HRIS users include different organizational members within the organization, ranging from management to HR employees who interact directly with HRIS to perform their HR-related tasks such as analysing data and generating HR reports. In particular, the participants included top, middle and lower level managers. Employees (HRIS practitioners) included analysts, who use HRIS to perform their work tasks. Clerical staff who use HRIS for

administrative tasks such as data entry. Technicians who ensure the functionality of HRIS and are responsible for implementing technological changes. Table 4 shows the participants recruited in this research.

Employees (HRIS Practitioners)			Management		
HRIS Analysts	Clerical Staff	HRIS Technicians	Top Managers	Middle managers - Supervisors	Lower level managers - Team leaders
15	4	3	2	4	4

Table 4 - Research participants

Theoretical sampling. According to the principles of grounded theory, selecting participants or a sample from the target group is based on theoretical sampling. Theoretical sampling, one of the main features of grounded theory, is defined as “a method of data collection based on concepts derived from data” (Corbin & Strauss, 2015, p. 134). Glaser and Strauss (1967) identify the underlying question in theoretical sampling as “What groups or subgroups does one turn to next in data collection? And for what theoretical purpose?” (p. 47). Theoretical sampling emphasizes that participants should be chosen based on their ability to contribute in developing the theory (Creswell, 2013). Therefore, the sample is chosen to enrich the understanding of the derived concepts and not to represent a population (Birks et al., 2013). In addition to enriching understanding, theoretical sampling allows the researcher to validate the developed concepts against new data (Strauss & Corbin, 1998).

Since theoretical sampling can only be applied after data analysis, the first data collection can be based on open sampling (Strauss & Corbin, 1998). Although the term open sampling might cause confusion, Strauss and Corbin (1998) refer to it as a way of sampling in the initial data collection stage in order to start open coding. They emphasize that initial sampling is relatively open and offers different techniques by which to conduct it.

Open sampling can be conducted purposefully or systematically (Draucker et al., 2007). For example, the researcher can purposefully collect data from participants who are more likely to provide rich and relevant data about the phenomena. Another technique is to sample systematically, for instance, based on a list going from one person to another based on who agrees to participate in the research (Strauss & Corbin, 1998).

In this study, by taking into consideration the availability of possible participants and their willingness to participate, the researcher initially selected participants based on purposive open sampling. It is a useful approach in the first stage of data collection in order to maximize variations of data and to be able to develop concepts and start sampling theoretically. Therefore, the first three participants were HRIS analysts with different roles and different levels of experience. The data analysis commenced immediately after the interviews and further selection of participants was based on theoretical sampling, the results of analysis and constant comparison (Corbin & Strauss, 2015).

3.8.2 Data collection methods

Different data collection methods can be used in qualitative studies and grounded theory, including: interview; focus group; observation; and document analysis. This section discusses the alternative instruments considered and justifies the selected instruments: semi-structured interview supported by document analysis.

3.8.2.1 Research instruments considered

Interviewing. This is considered as a main method for gathering data in grounded theory (Charmaz & Bryant, 2016; Creswell, 2013). It can be classified into three main types: structured; unstructured; and semi-structured interviews.

Structured interview. The researcher uses a guideline for conducting the interview (Corbin & Strauss, 2015). In other words, it is based on a list of predefined questions for all participants (Saunders et al., 2009). Thus, structured interviews are often considered uncommon in grounded theory (Corbin & Strauss, 2015). The reason for this is that grounded theory requires a more flexible interview design permitting modification after analyzing previously collected data (Corbin & Strauss, 2015). In addition, the interaction between researcher and participants is limited, as there is no opportunity for discussion and follow up questions (Saunders et al., 2009).

Unstructured interview. Interviews conducted without a specific guideline or predefined questions can be referred to as unstructured interviews (Corbin & Strauss, 2015; Saunders et al., 2009). Instead of predefined questions, the researcher sets the main topic or themes to investigate (Edwards & Holland, 2013). After explaining the main topic, participants have the chance to talk freely about their experiences or perceptions (Saunders et al., 2009) et al., 2009). The main advantage of unstructured interviews is flexibility in discussion and modification of the design (Edwards & Holland, 2013).

Semi-structured. Considered as “a conversation that has a structure and a purpose” (Kvale, 1996, p. 6), this type of interview is conducted with a set of questions, though they are not fixed and may change between interviews (Saunders et al., 2009). Compared with unstructured interviews, the researcher has more control over the topics discussed in the interview (Corbin & Strauss, 2015). In addition, the participants have more opportunity to talk about their experiences, unlike structured interviews. The reason for this is the flexible interview design which allows the researcher to modify the questions (Edwards & Holland, 2013). For example, the researcher can alter the sequence of the questions or add additional questions based on the flow of the interview (Bryman, 2012; Robson & McCartan, 2016). The

additional questions allow the researcher to clarify answers or to delve deeper into a particular issue (Corbin & Strauss, 2015).

Focus group. A focus group interview can be conducted with a small group of participants who share a common experience (Silverman, 2013). It can be used when the interaction between participants has the potential to provide useful information about the phenomena (Creswell, 2013). It involves an informal discussion around a specific topic (Silverman, 2013). Facilitating a focus group may be challenging to researchers because it is difficult to capture the views of all participants, including those who are shy or dominate the discussion (Robson & McCartan, 2016).

The focus group interview was not favored in this study for several reasons. Since this study aims to investigate organizational actors' experiences and perceptions regarding administrative innovation and HRIS, participants might not be able to share their experiences during the focus group due to power hierarchies and confidentiality. Power hierarchy may affect the ability of participants to talk freely about their experiences in front of others since participants are selected from different organizational levels (Robson & McCartan, 2016). Even if focus group participants are selected from the same organizational level, confidentiality can be a concern. Participants might be hesitant to disclose their innovative ideas. For example, a participant might not willing to share his/her ideas if it has not yet been approved. This may lead to withholding valuable data and, thus, may affect theoretical development (Birks & Mills, 2015)

Observation. Observation is a method by which the researcher collects data by recording field notes about the participants and their activities in a specific research context (Creswell & Poth, 2017). It is considered as a useful data collection instrument to understand cultures (Silverman,

2013). To carry out observations, a decision has to be made regarding who will be observed, as well as what and when to observe (Creswell, 2013). This study aims to investigate the development of administrative innovation following the adoption of HRIS, and as there is a lack of knowledge about how administrative innovation develops, who initiates it and how initiators interact with stakeholders. In addition, administrative innovation can involve minor modifications to IS, daily practices and individual work tasks, which is difficult to observe. Therefore, observation cannot be used to as a main data collection instrument.

However, observation can be considered as a supportive data instrument that is useful in complementing other data collection instruments (Robson & McCartan, 2016). It can provide valuable data related to the interaction between organizational members as “persons are not always aware of, or able to articulate, the subtleties of what goes on during interactions between themselves and others” (Corbin & Strauss, 2015, p. 41). Thus, it was considered useful to observe staff meetings and management meetings to better understand the interaction between organizational members in relation to administrative innovation. However, this was not possible and observation was not carried out because permission was not granted.

Document analysis. Documents are considered as a secondary data source that can be used in different qualitative approaches such as grounded theory (Birks & Mills, 2015; Glaser & Strauss, 1967; Saunders et al., 2009). Documents often have a supportive role in providing background insights or additional information regarding the phenomena under investigation (Shenton, 2013). Data can be collected from various types of documents including published or unpublished written material such as minutes of meetings, financial reports, and organizational policy documents (Birks & Mills, 2015). However, access to such documents may not always be available. For internal documents within the organization, permission should be granted for the researcher to use the documents (Saunders et al., 2009).

Selected research instruments. In this study, the data collection instruments consist of face-to-face semi-structured interviews supported by document analysis. Semi-structured interview is considered appropriate for this study as it allows the researcher to capture participants' perceptions of administrative innovation in the context of HRIS post-adoption. It offers a structured, yet flexible and adaptable design that allows the researcher to modify the questions based on the flow of conversation with the participant (Robson & McCartan, 2016). Such flexibility is essential, especially with the use of grounded theory, as it facilitates the researcher to remain open to new insights that emerge in the interview and to conform with the theoretical sampling approach (Birks & Mills, 2015).

In addition, the aim of document analysis in this study is to support the data collected from the interviews. The documents are used to verify or to provide additional detail supporting issues raised in the interviews. Thus, document analysis can deepen understanding of the development of administrative innovation following the adoption of HRIS. The next section provides further detail about the process of conducting interviews and obtaining relevant documents.

3.8.3 Data collection process

This section will explain the development of the interview guide while taking into consideration the principles of grounded theory. It also demonstrates the arrangement of the interviews and explains how documents are used as a data source.

Interview guide. All interviews were conducted by the researcher using an initial guide (appendix 1) of questions related to the main topic of administrative innovation and HRIS. As

suggested by Charmaz (2014), new researchers should “develop a detailed interview guide to think through the kind of questions that can help them fulfil their research objectives” (p. 62). The guide was developed based on the research questions and the literature review (Corbin & Strauss, 2015).

The set of indicative questions allow the researcher to explore the perceptions of participants regarding administrative innovation and to capture their experiences within their everyday work practices. Charmaz (2014) highlights that grounded theory researchers should be cautious about the use of an interview guide and should ensure that the data is not forced into preconceived topics or categories identified in the interview guide as this contradicts the purpose of a grounded theory study. Therefore, the questions were not fixed and some questions were changed as the research progressed as a result of analyzing and identifying aspects requiring further investigation. This was conducted in conformance with the principles of grounded theory, theoretical sampling, and constant comparison. In addition, the interview guide differs between the type of participants. The researcher prepared one interview guide for management and another modified guide for employees (HRIS analysts and HRIS technicians).

The interview guide consists of several sections representing the issues to be covered in the interview with suggested indicative questions (Kvale, 1996). The questions in each section consist mainly of open-ended questions and include open questions and follow-up questions. The open questions allow participants to describe an experience or an event, whilst follow-up questions serve to further explore and extend the responses (Saunders et al., 2009). The interview guide was translated to Arabic as the interviews were conducted in Kuwait using the Arabic language. The main topics covered in the interview are: HRIS usage; initiatives; and interactions with organizational members.

The first part of the interview guide involves general background questions about the participant and the organization such as work experience and job responsibilities. The section

on HRIS usage explores participants perceptions and understanding of HRIS and the extent to which HRIS is integrated into their task performance. The initiatives section explores participants' experiences of administrative innovation. The interactions section investigates how participants interact and communicate with other organizational members in relation to administrative innovation. The last part of the interview allows the participant to add anything they perceive as relevant to the research (Corbin & Strauss, 2015).

The interview guide is available in the Appendix 1. It is important to note that the questions were not fixed throughout the interviews. For example, during the interview, the wording of the questions changed and some clarification were given. For example, in the initiatives section, the researcher had to clarify some questions to participants when they were asked to describe their ideas in order to understand their participation in the innovation process. Initially, it was noted that participants tended to relate this question to creative ideas and major changes, but after discussion they realized that they participated in some way by initiating ideas specifically related to their work tasks. In addition, as a result of constant comparison, theoretical sampling and memo-writing, some additional questions were asked in the interview and some questions were modified. For example, writing post-interview and conceptual memos (Section 3.9.5) helped in theoretical sampling as memos often offered some guidance in terms of how to proceed with data collection by suggesting further questions that could be asked or other participants that could be interviewed.

Interview process. Before commencing the interview process, the researcher obtained ethical approval and sought permission to access the organization. Subsequently, to recruit participants, the researcher contacted potential participants by phone or email to introduce herself, explain the research purpose and the reason for conducting the interview. Emails and office phone numbers were published in the organization's portal. The researcher also sent the

information sheet by email to the participants to provide further detail about the research. In addition, the researcher explained that participation was completely voluntary and that confidentiality was preserved. If the participant was willing to participate, an appointment was set, as per the convenience of the participant, to conduct a face-to-face interview.

Before the interview, participants were provided with the information sheet and consent form. The researcher ensured that the participants read and understood the information sheet and signed the consent form. Then, the researcher asked for permission to audio record the interview. All interviews were audio recorded except one interview. One of the participants requested the researcher to turn off the recorder to make them feel more comfortable. All interviews were conducted in Arabic, which is the official language of Kuwait and the native language for the researcher and the participants. Note-taking was used to record notes and ideas during the interview. Following the interview, memo-writing was an essential strategy to think analytically about the interview and to guide further data collection. In addition, interviews were transcribed and subsequently analyzed using constant comparison strategy. Based on the initial analysis of the interviews, the researcher invited additional participants who were more likely to provide relevant and rich information.

Collection of documents. As mentioned previously, the analysis of relevant documents was utilized to support data collection. Document search was guided by theoretical sampling (Birks & Mills, 2015). In this study, relevant documents that would be helpful are, for instance, policy documents, proposals, and memorandums of meetings. However, this was subject to the availability of the documents and permission to access. The documents provided useful information about the background of the organization and, thus, helped the researcher to understand the context of the organization and the nature of the work that took place (Shenton, 2013). Direct quotation from documents was not possible because permission was not granted.

However, documents were analysed to gain a better understanding of the process of administrative innovation. In addition, documents were also utilized to verify some of the data collected from the interviews. The documents analysed include public and internal documents as follows:

- Background of the organization published on the organization's website (e.g. vision and mission statement, organizational hierarchy).
- Other publicly relevant available documents (e.g. announcement for the employee reward program).
- Internal rules and regulation booklet.
- Idea proposals.
- Change request forms (technical changes on the system).
- Task allocation plan.
- Job descriptions.

3.9 Data analysis

This section explains the procedures of data analysis. It starts with an explanation of the concept of comparative analysis, one of the core strategies of grounded theory. This is followed by a discussion of coding in relation to conceptualization, processes and analytical tools. Subsequently, the concept of theoretical saturation is presented, followed by a discussion about the use of memos and diagrams in the research. Lastly, the use of computer assisted qualitative data analysis software is discussed.

It is important to reaffirm that, in grounded theory, data collection and data analysis are regarded as interrelated processes (Corbin & Strauss, 1990). Figure 9 demonstrates the main processes followed in data collection and analysis in accordance to the procedures of grounded theory (Strauss & Corbin, 1998)..

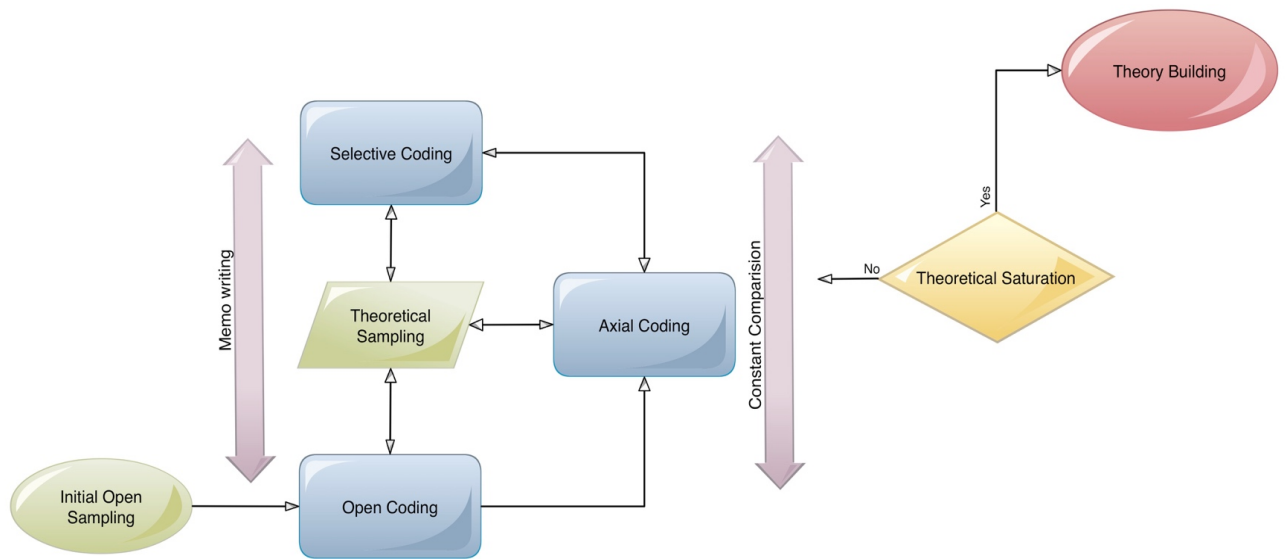


Figure 9 - Main procedures of grounded theory

Sources: adapted from Birks & Mills (2015); Corbin & Strauss (2015)

3.9.1 Comparative analysis

Comparative analysis is a fundamental process of data analysis in grounded theory (Strauss & Corbin, 1998). It involves two types of comparative methods: constant comparison; and theoretical comparison (Strauss & Corbin, 1998).

Constant comparison is a continuous process throughout data analysis (Corbin & Strauss, 2015), involving comparing data to former data identified in the same and different category (Glaser & Strauss, 1967). This allows the researcher to identify variations and uniformities in order to classify data (Glaser & Strauss, 1967; Strauss & Corbin, 1998). The process of constant comparison can lead to a reduction of data (Corbin & Strauss, 2015). Glaser and Strauss (1967) explain reduction as “the analyst may discover underlying uniformities in the original set of categories or their properties, and can then formulate the theory with a

smaller set of higher level concepts” (p. 110). In other words, by identifying uniformities and uniqueness, the researcher can distinguish between concepts and subsequently integrate the concepts to build the theory (Corbin & Strauss, 2015).

Theoretical comparison is defined as “an analytic tool used to stimulate thinking about properties and dimensions of categories” (Strauss & Corbin, 1998, p. 73). It can be utilized, for example, when there is confusion about the meaning of data or a need to identify relevant properties and dimensions (Corbin & Strauss, 2015). During theoretical comparison, the researcher can use experiences or literature to understand the meaning of data (Strauss & Corbin, 1998). In addition, the researcher can collect more data to clarify the meaning (Strauss & Corbin, 1998). Therefore, theoretical comparison can lead to theoretical sampling (Strauss & Corbin, 1998).

3.9.2 Coding

Coding refers to the process of assigning concepts to represent the data and then integrating the concepts to develop a theory (Strauss & Corbin, 1998). This section first explains the meaning of concepts and their levels of abstraction. Second, it proceeds to discuss the process of coding in grounded theory, followed by a discussion of the analytic tools that can be used in the analysis process.

Levels of concepts. A concept represents an elementary unit for theory building (Strauss & Corbin, 1998). In grounded theory, concepts are classified based on the level of abstraction, namely the lower-level concept, category, subcategory and core category, as presented in Figure 10 (Corbin & Strauss, 2015). Lower level-concept is a label given to a phenomenon in raw data, such as an object or event, and is considered as the foundation of the theory (Corbin & Strauss, 2015). Concepts sharing similar properties that represent a phenomenon are grouped

to form a higher level concept, which is referred to as a category (Strauss & Corbin, 1998). Subcategories denote aspects related to a phenomenon, such as its causes and consequences (Strauss & Corbin, 1998). The core category (or central category) is a higher level abstract term that can represent the central theme of the study (Corbin & Strauss, 2015). Therefore, all categories and subcategories can be incorporated under the core category (Strauss & Corbin, 1998).

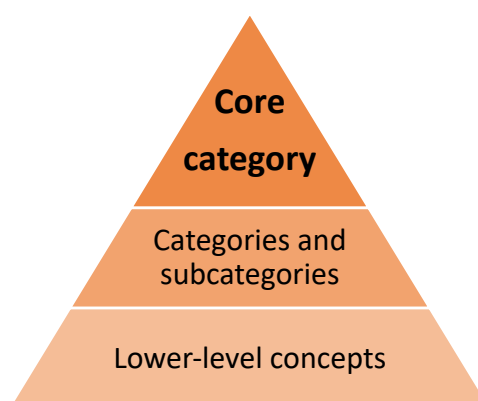


Figure 10 - Levels of concepts

Source: Corbin & Strauss (2015)

Coding process. The process of coding is explained by following the procedures and guidelines set out by Strauss and Corbin (1998). In grounded theory, the coding process is divided into three phases: open; axial; and selective coding.

Open coding. According to Strauss and Corbin (1998), open coding is the first phase of the coding process. It can be conducted in three ways. First, by line-by-line analysis, or microanalysis, which is useful in the earlier stages of data analysis. It allows the researcher to examine the data closely to identify concepts. Second, by paragraph analysis, which can be used if several concepts have already been identified. Third, by document analysis, which

assigns a more general concept to the whole document. In open coding, the researcher generates concepts, and related concepts can be linked together to form categories and subcategories.

Axial coding. Strauss and Corbin (1998) explain that, during the axial coding phase, the researcher links and integrates categories and subcategories. Each category represents a main phenomenon related to the research. Subcategories denote aspects related to a phenomenon, such as its causes and consequences. Therefore, in this phase, subcategories can be linked to a higher category.

Selective coding. The selective coding phase can be defined as “the process of integrating and refining the theory” (Strauss & Corbin, 1998, p. 143). During selective coding, the researcher identifies a core category that can be considered as the central phenomenon. In order to develop a theory, the core category has to be linked logically with all categories (Corbin & Strauss, 2015).

It is essential to mention that the coding procedures were not conducted as a linear process (Heath & Cowley, 2004). Instead, the coding procedures overlap, and the researcher needs to move back and forth between the different procedures as a result of engaging in constant comparison. In this study, the researcher conducted two iterations of data analysis. The initial coding stage involved microanalysis of the interview transcripts to closely examine the data to avoid overlooking any essential ideas. Microanalysis allows the researcher to remain open, by listening carefully to what participants are saying, and thus to ensure that “the data are not being forced; they are being allowed to speak” (Strauss & Corbin, 1998, p. 65). This stage resulted in a number of open codes and categories.

The second stage of data analysis was performed leading to a further refinement of codes and categories. For example, the use of ‘gerunds’ is recommended in grounded theory coding, as it better captures sequence and actions (Birks & Mills, 2015; Charmaz, 2014; Silverman, 2013). In addition, using gerunds in coding can assist the researchers to “see invisible patterns and move their analyses from static topics to dynamic processes” (Charmaz & Bryant, 2016, p. 359). Coding for actions and processes gives the “theory a sense of “life,” or movement” (Strauss & Corbin, 1998, p. 168). Therefore, during the second iteration, a number of codes were converted to gerunds as they more precisely represented actions and processes. As an example of this, the category ‘reaction towards innovation’ was converted to ‘reacting to innovative ideas’. In addition, similar categories were combined into one category. Subsequently, the process of selective coding involved integrating categories and deciding on a single category to represent the central phenomenon.

3.9.3 Analytical Tools

Strauss and Corbin (1998) present tools that can aid the researcher in coding and analyzing the data. Applying such tools is optional and therefore not mandatory, based on the nature of the study and the generated concepts. These tools include the coding paradigm and conditional/consequential matrix.

3.9.3.1 The paradigm model

The paradigm model or the coding paradigm introduced by Strauss and Corbin (1998) aims to assist the researcher in the axial coding phase. It is an analytical tool that can be used to allow the researcher to think of possible relationships between categories (Strauss & Corbin, 1998). The coding paradigm can enrich the analysis by providing a theoretical framing for the generated concepts (Corbin & Strauss, 2015; Locke, 2001). The components of the paradigm

include conditions, action/interactions and consequences. Conditions are reasons why phenomena occur, action/interactions involve the responses of individuals to phenomena and consequences are the outcomes and results from actions and interactions (Corbin & Strauss, 2015). The coding paradigm has been applied in different studies in IS literature (e.g. Galal, 2001; Rodon & Pastor, 2007).

Although much of the criticism on the Straussian version focuses on the use of the coding paradigm, there are some advantages associated with its use. For example, Seidel and Urquhart (2013), in their detailed review of the paradigm, argue that the conscious and flexible use of the paradigm may enhance theoretical sensitivity: since it allows the researcher to think about relationships, it often leads to building a theory.

In addition, the paradigm model facilitates the generation of theories that move beyond description to explaining models of how and why things occur (Seidel & Urquhart, 2013). The reason for this is that the paradigm offers an explanation of the phenomena by demonstrating the causal relationship between categories and, thus, explaining why and how certain processes happen. Therefore, the emergent theory can be structured according to the elements of the paradigm (Vollstedt & Rezat, 2019). Researchers can, given the flexible use of the paradigm, introduce amendments by adding or removing elements based on the fit and relevance to their studies (Kelle, 2007; Vollstedt & Rezat, 2019).

In this study, the paradigm was not applied rigidly and therefore was not forced on the data. Coding was performed without considering the elements of the paradigm model. Different coding families were explored to think of possible ways to construct the theory (Urquhart, 2012). However, during the process of data analysis and constant comparison, it appeared that the paradigm model fit the data. In addition, it is well suited as an integrative framework (Section 4.7.2) to explain the development process of administrative innovation following the adoption of HRIS.

3.9.3.2 Conditional/consequential Matrix

Strauss and Corbin (1998) explain the concept of the conditional/consequential matrix that can be used in selective coding. It is an analytical tool consisting of a diagram of concentric circles representing the interaction between micro- and macro-conditions and consequences related to the phenomena (Creswell, 2013; Goulding, 2002; Strauss & Corbin, 1998). On the one hand, micro-conditions refer to conditions related to individuals, such as experiences, perspectives, assumptions and cultural backgrounds, that can influence their interpretation (Corbin & Strauss, 2015). On the other hand, macro-conditions are distinct from individuals and include, for example, political and social conditions (Corbin & Strauss, 2015). The matrix highlights the existence of different levels of influences relevant to the data (Goulding, 2002).

The difference between the paradigm model and the matrix is that the paradigm illustrates the phenomenon with its context, causal conditions, actions and interactions, intervening conditions and consequences; in contrast, the matrix illustrates how these categories coexist within different levels and how the categories affect each other (Strauss & Corbin, 1998).

Creswell and Poth (2017) note that the matrix is rarely used in grounded theory studies and that researchers often finalize their studies with selective coding. They argue that the reason for this is often lack of time and resources. Another possible reason could be that the matrix is not applicable to emergent data as the researcher should be flexible in the use of these analytical tools.

Corbin and Strauss (2015) emphasize that the researcher can be creative in the application of the matrix according to how it fits the data. Therefore, in this study, the matrix was developed at the end of data analysis, after theoretical integration (Section 5.2). The matrix was primarily utilized as a representation of the phenomenon within its relevant levels of

influences rather than a procedure for data analysis (Corbin & Strauss, 2015). Therefore, the main reason for developing the matrix was to illustrate the complexity of the development process of administrative innovation and to assist the discussion of the emergent theory within the existing knowledge.

3.9.4 Theoretical saturation and theoretical integration

Based on the principles of grounded theory, data collection and analysis resumed until the categories were theoretically saturated. Theoretical saturation occurs when data analysis does not reveal new additional information to develop concepts or categories (Glaser & Strauss, 1967; Strauss & Corbin, 1998). Moreover, Corbin and Strauss (2015) emphasize that saturation is reached when all categories are developed with their relevant properties (subcategories) and related to the core phenomenon. In this study, data saturation was reached after conducting thirty-two interviews with different participants' groups: management, clerical staff, HRIS analysts and technicians.

Theoretical integration evolved through the process of comparative analysis. It is an essential process that leads to building a theory which refers to “the act of constructing an explanatory scheme that systematically relates concepts to each other around a core concept” (Corbin & Strauss, 2015, p. 81). Therefore, in order to integrate the theory, the researcher should select a core category that represents the central theme of the study. The core category should be selected based on the criteria of deciding on a central category such as theoretical significance, frequent appearance in data, and logical link with other categories (Corbin & Strauss, 2015; Goulding, 2002; Strauss & Corbin, 1998).

In this study, the researcher understands that integration should be logical and not forced upon the data. Therefore, by engaging in constant comparison and examining the data, one of the identified axial categories was raised to become the core category. ‘Taking initiative’

was a category that appeared frequently in the data. It was also found that it could be logically linked to other categories as it fit the data very well (Strauss & Corbin, 1998). The other categories were linked to the core category of 'taking initiative' in an integrative diagram that reflects elements of the paradigm model. As a result of this theoretical integration, a substantive theory was developed to provide an explanation for the development process of administrative innovation following the adoption of HRIS in a public sector organization (Section 4.7).

According to Corbin and Strauss (2015), the theory is represented by “a set of well-developed categories (themes, concepts) that are systematically developed in terms of their properties and dimensions and interrelated through statements of relationship to form a theoretical framework that explains something about a phenomenon” (p. 62). Therefore, a theory is constructed by defining the central theme, explaining the context, relating the actions and interactions, and representing the potential outcomes in an integrative framework (Corbin & Strauss, 2015). The integrative frameworks are used to demonstrate a “very abstract representations of data. They need not contain every concept that emerged during the research process, but they should focus on those that reach the status of major categories” (Strauss & Corbin, 1998, p. 153).

Theories generated are often substantive level theories (Creswell, 2013). This means that the theory is more specific to a context or a population (Strauss & Corbin, 1998). The researcher can scale up the theory by allying the theoretical framework with formal concepts derived from existing theories (Seidel & Urquhart, 2013).

3.9.5 Memo-writing and diagramming

In grounded theory, memo writing and diagramming are essential techniques related to data analysis and theory development (Creswell, 2013; Strauss & Corbin, 1998). These techniques help the researcher in comparing and identifying relations between different concepts derived

from the analysis (Urquhart, 2012). In addition, memos and diagrams are useful tools to represent the progress of the research process by recording the different insights and decisions (Birks & Mills, 2015; Strauss & Corbin, 1998).

Memo writing is considered as “the fundamental process of researcher/data engagement that results in a ‘grounded’ theory” (Lempert, 2007, p. 245). Corbin and Strauss (2015) highlight that memos should be written following each analysis process and throughout the research process. They emphasize that recording memos allows the researcher to be creative in linking concepts and identifying gaps. In addition, memos can be of different length and content, as every researcher has a different style of recording memos. Another use of memos is in reflective writing to record the ideas and experiences of the researcher when conducting the study (Birks & Mills, 2015; Corbin & Strauss, 2015).

In this study, memo writing was consistent throughout the research process to record notes and ideas. The researcher developed different types of memos: post-interview memo; conceptual memo; and storyline memo.

Post-interview memo. This type of memo was written immediately after each interview. It was employed as a way of reflecting on the issues discussed during the interview. The researcher recorded initial thoughts, feelings and ideas about the interview. It gave the researcher insight by enhancing the process of constant comparison as these memos were compared to identify similarities and differences. It also added to the process of theoretical sampling as it often ended with possible ways to proceed with data collection by suggesting further questions that could be asked or other participants that could be interviewed. One example of a post-interview memo is represented in Figure 11.

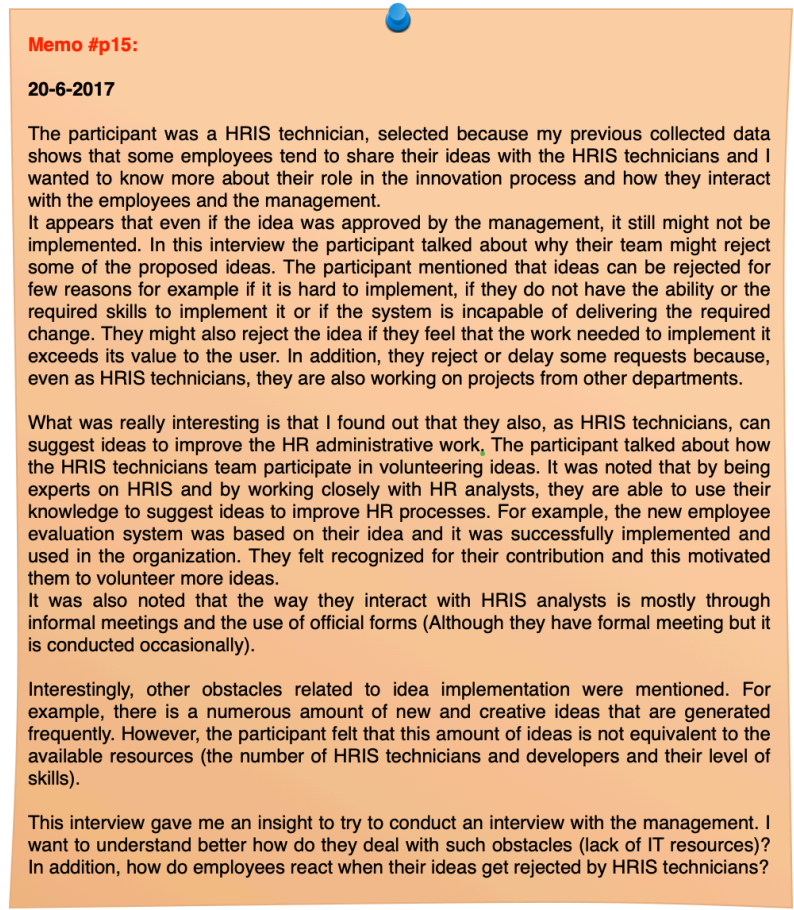


Figure 11 - Example of post-interview memo

Conceptual memo. This type of memo can also be referred to as theoretical memo (Urquhart, 2012). In this study, the researcher wrote about the different concepts and categories that emerged from the analysis. It offered a way of thinking and making sense of the data, for example, by comparing incidents related to a specific category between the interviews. The conceptual memo allowed the researcher to identify possible relationships between concepts and also to identify gaps that should be filled by employing theoretical sampling. These memos grow in depth and complexity with the progress of the analysis (Charmaz, 2014; Corbin & Strauss, 2015). Initially, they included notes about the emerging concepts. Subsequently, with the development of categories, they included explanation of categories and their different properties. An example of the initial conceptual memos is provided in Figure 12.

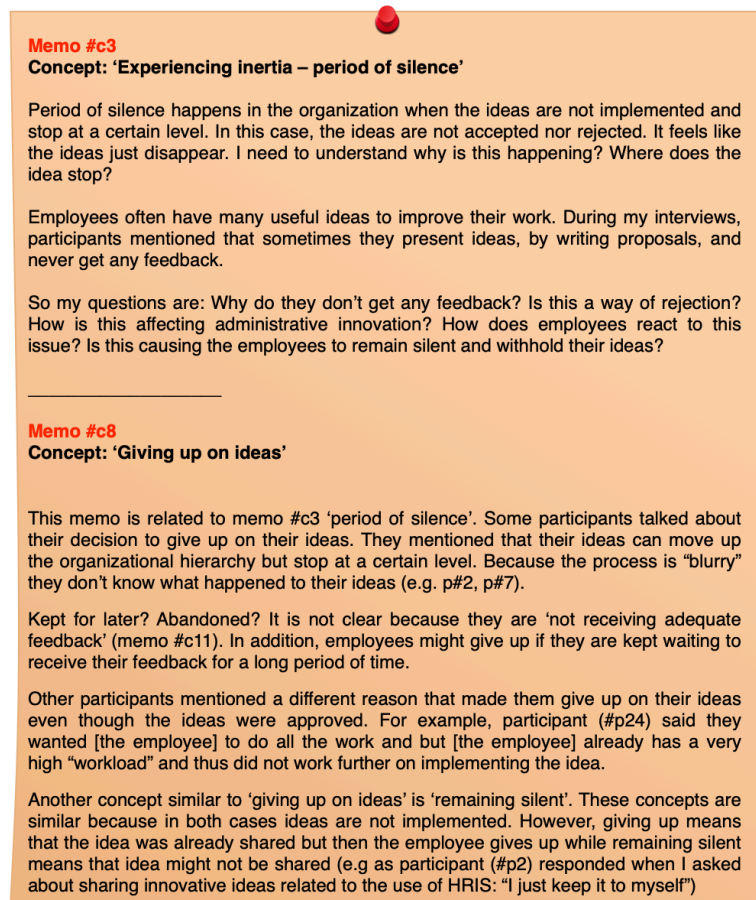


Figure 12 - Example of conceptual memos

Storyline memo. Writing a storyline memo is a process that helps the researcher in the theoretical integration phase. According to Birks and Mills (2015), a storyline is “a strategy for facilitating integration, construction, formulation and presentation of research findings through the production of a coherent grounded theory” (p. 180). This type of memo can also be referred to as a summary memo (Corbin & Strauss, 2015). It is a short summary that allows the researcher to synthesize what is going on (Corbin & Strauss, 2015; Strauss & Corbin, 1998). The memo should be analytical and thus use the name of the categories and concepts to illustrate the logical linkage between them. It does not contain all of the details, but it includes sufficient information about the major categories (Corbin & Strauss, 2015).

The storyline should not be imposed on the data, instead it should be drawn from the data (Birks et al., 2009). Returning to raw data and memos may help the researcher to write the general description of what the research is about and make sure it fits the data (Strauss & Corbin, 1998). In this research, a conceptual storyline was developed using the names of the categories that emerged from the analysis to assist in the integration process. The conceptual storyline memo was integrated with explanation of the integrative diagram provided in the findings chapter (Section 4.7).

Diagramming. Diagrams are useful visual representation of the research process and the conceptual relationships (Corbin & Strauss, 2015), and can be used in all stages of the research and include a number of different formats such as figures or conceptual maps (Charmaz, 2014). It is a way of organizing data and demonstrating the relationships between concepts (Corbin & Strauss, 2015). It helps the researcher to view the scope of categories and identify any gaps (Charmaz, 2014). In this study, the researcher used diagrams, especially through the analysis process, to represent categories and their properties.

3.9.6 The use of computer assisted qualitative data analysis software

Qualitative data analysis can be facilitated by the widespread use of computer software (Saunders et al., 2009). In the literature, CAQDAS is a common acronym that refers to Computer Assisted Qualitative Data Analysis Software (Ahmad & Newman, 2010; Lewins & Silver, 2007).

CAQDAS can assist the researcher in various ways related to analyzing and organizing data. For example, it saves time and effort in managing large amounts of data (Silverman, 2013). In addition, it helps in storing, searching and linking all sorts of data, such as interview transcripts and recordings (Saunders et al., 2009; Silverman, 2013). Moreover, it is commonly

used to facilitate the coding process in relation to assigning codes to sets of data and retrieving codes (Lewins & Silver, 2007; Silverman, 2013), and supports comparative analysis by assisting the researcher in searching, retrieving and comparing data (Silverman, 2013). Additionally, it allows the researcher to write memos and notes related to the data and research process (Saunders et al., 2009). Furthermore, diagrams can be created to illustrate the relationships between coded data (Lewins & Silver, 2007). Moreover, CAQDAS supports the analysis procedure involved in grounded theory methodology (Ahmad & Newman, 2010; J. Corbin & Strauss, 2015; Hutchison, Johnston, & Breckon, 2010).

Despite the various advantages of CAQDAS, it has also been subject to criticism, such as involving an automated processes and marginalizing the role of the researcher in reflection and interpretation (Ahmad & Newman, 2010; Hutchison et al., 2010). In other words, it is criticized for keeping researchers distant from their data (Ahmad & Newman, 2010). However, Lewins and Silver (2007) highlight that the improvements of CAQDAS in relation to coding, searching and linking data allow the researcher to be closer to the data. For example, the use of annotations tools allows the researcher to highlight segments of data and the use of hyperlinks facilitates the creation of relationships between concepts. Furthermore, the researcher has a key role in data analysis that cannot be eliminated, as Corbin and Strauss (2015) stress that “analysis is about thinking, and thinking is the one thing that computer can’t do yet” (p. 205).

Different types of CAQDAS are available, such as ATLAS.ti, MAXQDA and Nvivo (Saunders et al., 2009). In this research, Nvivo was used for data analysis, as the researcher has previous knowledge of the software. The interview transcripts were imported to Nvivo to be analyzed. The coding was conducted on Nvivo as it is easier to manage the different codes and create links between them. Print-outs were also used to compare and examine the list of codes and to identify relationships. In addition, memos were imported to the software and linked to

the relevant categories and transcripts. This process enabled the easy retrieval of memos and quotations as needed.

3.10 Research quality

This section explains the quality of the research in terms of presenting the role of the researcher in the study and discussing the validity and reliability of the research.

3.10.1 Role of researcher

In qualitative research, the researcher is considered as being an integral part of both the data and the research process (Corbin & Strauss, 2015; Cutcliffe, 2000). Hence, it is essential for researchers to understand and reflect upon their own role in their research process (G Walsham, 1995). Researchers need to be self-reflective to clarify how they can influence or be influenced by their research (Corbin & Strauss, 2015). Reflexivity refers to the researchers' awareness of their position within the research (Creswell, 2013). It is concerned with the relation between the researcher and the phenomena under investigation, in terms of participants, research settings and previous experiences (Saunders et al., 2009). As explained by Strauss and Corbin (1998), "whether we want to admit it or not, we cannot completely divorce ourselves from who we are or from what we know. The theories that we carry within our heads inform our research in multiple ways, even if we use them quite un-self-consciously" (p. 47). Therefore, Clarke (2005) emphasizes that the role of researchers should not be hidden and recommends researchers to disclose their knowledge and prior experiences in relation to the research.

In this study, the researcher has prior knowledge and experience in the area of HRIS. Hence, it was necessary to engage in reflective memo-writing. Reflective writing allows the researcher to be transparent about the actions and decisions taken during the research process (Birks & Mills, 2015). In grounded theory, reflexivity assists the researcher to ensure that

preconceived ideas are not forced on the data (Corbin & Strauss, 2015). For example, reflective writing helps the researchers to avoid questioning the validity of the data analysis by having thoughts such as, “does that thought originate from my knowledge, experience or beliefs or does it belong to the interviewees?” (Cutcliffe, 2000, p. 1480).

In order to avoid this situation, the researcher needs to be explicit about their position by thinking and justifying decisions taken in data analysis or theoretical development (Mruck & Mey, 2007). Hence, in this study, the researcher is fully aware of the accumulated knowledge and professional experience in the field of HRIS. This knowledge was helpful in stimulating thinking about the data and in enhancing theoretical sensitivity (Strauss & Corbin, 1998). However, in order to ensure the grounding of data, the researcher engaged in extensive constant comparative analysis and memo-writing. By constantly making comparisons between concepts and going back to examine the data, the researcher was able to ensure that each category or concept is supported by actual relevant data.

3.10.2 Research validity and reliability

Assessing research quality often involves a discussion of the validity and reliability of the research (Bryman, 2012). Validity in qualitative studies refers to “how accurately the account represents participants’ realities of the social phenomena” (Creswell & Miller, 2000, p. 124). This research follows grounded theory procedures. Hence, “validation is built into each step of analysis and sampling” (Strauss & Corbin, 1998, p. 211). As explained earlier, data collection and analysis are joint processes conducted concurrently. Engaging in constant comparison, the researcher constantly compared the generated categories with new incidents in the data. In addition, the emergent theory was reviewed against raw data to in order to ensure its fit with the data.

Reliability refers to “the consistency of the analytical procedures, including accounting for personal and research method biases that may have influenced the findings” (Noble & Smith, 2015, p. 34). Similarly, Corbin and Strauss (2015) emphasize that methodological consistency and self-awareness may enhance the quality of the research. With regard to methodological consistency, the researcher adopted grounded theory methodology which fits well with the interpretive paradigm and the exploratory and explanatory research purpose. In terms of self-awareness, it is essential for researchers to disclose their personal feelings and reflect on their personal experiences by embracing “that a state of complete objectivity is impossible and that in every piece of research—quantitative or qualitative—there is an element of subjectivity. What is important is to recognize that subjectivity is an issue and that researchers should take appropriate to minimize its intrusion into their analyses” (Strauss & Corbin, 1998, p. 43). Therefore, as explained in the previous section (Section 3.10.1, role of the researcher), personal biases are made explicit by engaging in reflective memo writing throughout the research process.

In relation to research validity and reliability, Lincoln and Guba (1985) provide another criteria, more specific to qualitative research than validity and reliability, for evaluating the trustworthiness of the research. Their criteria involve assessing credibility, transferability, dependability, and confirmability.

Credibility refers to the trustworthiness of the findings in representing participants’ perspectives about the phenomenon under investigation (Corbin & Strauss, 2015). A useful way to establish credibility is microanalysis. By engaging in microanalysis, or line-by-line analysis, the researcher carefully examines the data to understand what participants are saying and to represent their perceptions of the phenomena. In addition, constant comparative analysis, by which the researcher compares the derived concepts with raw data, allows the researcher to ensure that the concepts and categories are grounded in data. Peer checking can

also contribute to the credibility of the research (Lincoln & Guba, 1985). In this study, the researcher engaged in regular meetings with the research supervisors and used memos, diagrams and list of codes to communicate and discuss the process of data collection and analysis.

Transferability is concerned with possible application of the findings in other contexts (Lincoln & Guba, 1985; Noble & Smith, 2015). Bitsch (2005) explains that “the researcher facilitates the transferability judgment by a potential user through “thick description” and purposeful sampling” (p. 85). In this study, the researcher provided a rich description about the context and the research process. The discussion includes the criteria used for the selection of participants and how participants were recruited by theoretical sampling procedures. Therefore, based on the richness and depth of description, readers can judge the transferability of findings to other settings (Slevitch, 2011).

Dependability is similar to the concept of reliability and, thus, is concerned with the consistency of the research process in terms of data collection and analysis. It can be enhanced by adopting an auditing approach (Bryman, 2012). Lincoln and Guba (1985) propose the use of an audit trail to establish dependability. An audit trail refers to keeping record of the research progress in terms of raw data, coding process and memos that shows the progress of the research and allows the tracing of concepts (Robson & McCartan, 2016). For example, in this study, interview transcripts, memos, and diagrams represent the development of the theoretical conceptualization of the study.

Confirmability is also related to the auditing approach (Lincoln & Guba, 1985), concerned as it is with issues of objectivity of data and biases (Bitsch, 2005). As explained earlier in this section, complete objectivity is unattainable in research (Strauss & Corbin, 1998). However, it should be clear how the researcher attempts to minimize the influence of personal values and experiences on the conduct of research and the findings (Bryman, 2012). In this

study, confirmability was established by carefully following the procedures of grounded theory and engaging in reflective memo writing.

Another issue often discussed in relation to validity and reliability is the issue of generalizability. It is often discussed from a statistical perspective. Thus, it is acknowledged that qualitative research does not aim for the generalization of results to other contexts (Slevitch, 2011). Instead, it aims for the in-depth understanding of a phenomena within a specific context (Corbin & Strauss, 2015). However, other forms of generalizability in qualitative research can be relevant to this study (e.g. Lee & Baskerville, 2003; Walsham, 1995). According to Walsham (1995), the generation of theory is considered as a form of generalization in qualitative research. In particular, grounded theory studies are well suited to this form of theoretical generalization, for the reason that grounded theory is concerned with “generalizing from empirical statements to theoretical statements” (Lee & Baskerville, 2003, p. 237). In addition, it is also argued that qualitative studies can generate to theories, instead of other contexts or populations (Bryman, 2012; Coombs, 2017). Therefore, generalizability can be based on the theoretical significance, which requires “an emergent theory to be subsequently discussed in relation to a pre-existing theory” (Saunders, Lewis & Thornhill, 2016, p. 400). Relating the emergent theory to a higher-level theory in the literature demonstrates that the findings have a broader theoretical significance beyond the specific case from which the data was generated (Saunders et al., 2016).

With respect to grounded theory in particular, Glaser and Strauss (1967) provide criteria for evaluating the credibility of research. The criteria involve:

1. Providing sufficient description. This study provides rich description about the phenomena of administrative innovation, HRIS users as the research participants, and the public sector as the research context.

2. Providing sufficient detail about how the conclusion was reached in terms of how data collection and analysis occurred. This chapter demonstrates the procedures followed in data collection and analysis by adhering to the Straussian version of grounded theory.
3. Including a multiple comparison group. In this research two groups of participants were recruited, mainly management and employees. The management group included different positions such as top, middle, and lower level managers. The employees group included clerical staff, HRIS analysts, and technicians. The inclusion of diverse groups facilitated the development of in-depth understating of the development of administrative innovation based on different perspectives.

3.11 Ethical Considerations

It is crucial to identify ethical issues that the researcher may deal with when conducting research (Robson, 2002). Moreover, no data can be collected before obtaining ethical approval (Corbin & Strauss, 2015). Therefore, prior to data collection, the researcher applied for research ethics approval. The ethical approval for this study was received from the university's Research Ethics Committee (Appendix 2).

As the main data collection method in this study is semi-structured interviews, ethical concerns could be related to gaining access (Saunders et al., 2009). Saunders et al. (2009) identify two types of access that the researcher may need to conduct the research: physical; and cognitive access. They state that physical access is related to obtaining permission (usually from the management) to access the organization. In contrast, cognitive access is related the obtaining the approval to engage with organizational members as research participants and collect data. Saunders et al. (2009) explain possible reasons for failure to gain access, such as if it is perceived that the researcher is untrustworthy, undertaking sensitive research or acquiring confidential data. Since the research context is a public sector organization, in which

the researcher is an insider, the issues of physical and cognitive access were addressed.

However, the process of negotiating permission to carry out the research took longer than what was expected due to some concerns about the reason for conducting the research, the confidentiality of the data and employee time. The researcher explained the purpose of the research and that collected data is secured and anonymized. The researcher also informed the organization that interviews take 45 minutes to one hour and the interview appointments are set by the participants according to their work schedules. In addition, participants are free to reschedule the interview if needed. Finally, permission was granted with the condition of preserving the anonymity of the organization and the participants.

The insider researcher in particular has to be aware of different ethical considerations. (Bell & Bryman, 2007; Etherington, 2007; Saunders et al., 2009). In this study, given that the researcher is an employee in the organization, possible ethical issues must be considered. First issue is power imbalance, which is related to whether the status (or job position) of the researcher poses some level of authority (Saunders et al., 2009). However, the status of the researcher is that of a regular employee at the lower organizational level and not as part of the management.

Another issue is related to hesitation and suspicion regarding the reasons for conducting the research in the organization and data usage (Saunders et al., 2009). Given the nature of government organizations and that data is highly confidential, this issue was experienced when negotiating the permission to conduct the research (as explained above). Since this study is related to HRIS, there were some concerns about disclosing confidential data or accessing personal records of employees. The researcher explained that the data collection does not involve financial data related to the organization nor employees' personal data. Only relevant data is collected regarding HRIS and administrative innovation which is related to changes in organizational processes and work tasks.

Pressuring participants or forcing them to engage represents another ethical concern (Creswell, 2013). Therefore, the researcher provided a clear explanation to potential participants that participation is voluntary and they are free to accept or reject involvement. Participants were informed that it is possible to withdraw from the interview at any time without any consequences. In addition, the management of the organization did not take a part in inviting participants and did not interfere in the decision of who to be interviewed. Only the researcher was responsible for recruiting potential participants.

It is acknowledged that the researcher might encounter difficulties related to gender differences (Etherington, 2007). For instance, it might be difficult to obtain data from male participants, as they might feel uncomfortable being interviewed by a female researcher. Thus, the researcher tried not to let gender differences affect data collection. By conducting semi-structured interviews, the researcher encouraged male participants to talk more about their experiences by providing follow-up questions and asking for elaboration.

In relation to informed consent, all research participants were approached and informed about the study. If there was an acceptance to participate, an information sheet and consent form were provided. Both the researcher and the participant signed and retained a copy of the consent form. The information sheet included essential information, including purpose of the study, voluntary participation, anonymity and protection of confidentiality (Creswell, 2013).

The consent form, which is a written agreement to ensure informed consent, also confirmed that the participants understood the details of the information sheet. Participants were assured that even after signing the consent form as an agreement to participate, they could still decline to answer any questions or even withdraw from the interview at any time (Corbin & Strauss, 2015). In addition, participants were assured that their anonymity would be preserved, their names and personal information protected, and the confidentiality of data was also clarified to confirm that the collected data would be secured and confidential.

Lastly, to preserve anonymity of the organization and participants, names, jobs and other identifying information are not disclosed. In addition, gender was not revealed in the presentation of findings.

3.12 Chapter summary

This chapter presented the methodology adopted for this study. In summary, a qualitative research approach was chosen to investigate how administrative innovation develops following the adoption of HRIS in the context of public sector organizations. Due to the lack of previous studies addressing the development process of administrative innovation in relation to post-adoption usage of HRIS, grounded theory was chosen as the methodology for data collection and analysis. It is well suited to investigating organizational actors' experiences and interactions in a specific context, and it supports the generation of in-depth understanding of phenomena. A public sector organization was selected as the research context to conduct an in-depth study and develop a grounded theory. In addition, semi-structured interviews supported by document analysis were chosen as the data collection instruments, which allowed the researcher to explore the perceptions and experiences of participants. This chapter also discussed data analysis procedures and the use of computer assisted qualitative data analysis software. Subsequently, it discussed ethical considerations related to the research.

4 Presentation of Findings

4.1 Introduction

This chapter aims to present the research findings based on the analysis of data drawn from a public sector organization in Kuwait. The findings provide insight into the development of administrative innovation in order to answer the research questions. As mentioned in the introduction chapter, the main research question is: *How does administrative innovation develop following the adoption of HRIS in the context of public sector organizations?*

By analyzing the data from thirty-two semi-structured interviews (with the support of documents analysis), a substantive theory emerged. The theory is represented by a set of developed categories integrated around a central category to explain the development process of administrative innovation.

Before presenting the findings, it is essential to provide a brief overview of the analysis process (explained in detail in the methodology chapter) which influenced the structure of this chapter. Data collection and analysis were conducted simultaneously following the principles of grounded theory. The analysis process involved open, axial and selective coding. During open coding, the analysis revealed concepts, categories and subcategories related to administrative innovation. These categories and subcategories were then linked together through the process of axial coding. Subsequently, the process of selective coding involved integrating categories and deciding on a single category to represent the central phenomenon.

After reviewing the memos and comparing the concepts, the core category was finally identified and the other categories integrated around it. The paradigm model (Section 3.9.3.1), was utilized to establish connections between the categories, consisting of contextual conditions, causes, actions/interactions, intervening conditions and consequences (as set out in the methodology chapter). In the integration process, the categories were integrated using an

integrative diagram to form a substantive theory illustrating the development process of administrative innovation. Figure 13 illustrates the progress of the analysis.

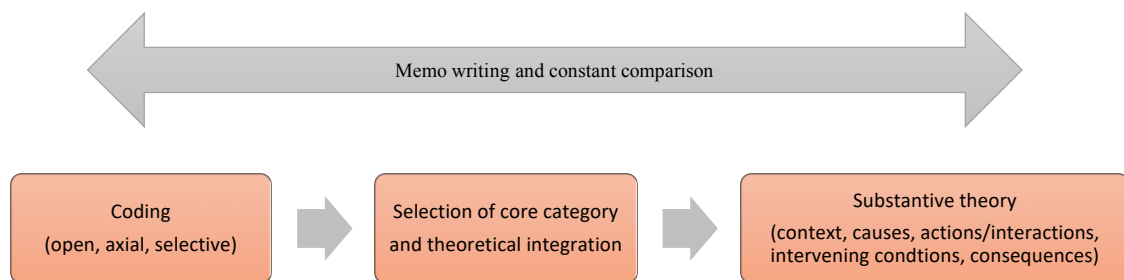


Figure 13 - Progress of the analysis process

Based on the paradigm model and the research question, the findings are divided into phases to explain the development process of administrative innovation. Section 4.2 is related to the context of the public sector, which introduces a category of contextual conditions acknowledged by participants based on their experiences. The following sections (4.3 Ideation phase, 4.4 Actions and interactions and 4.5 Idea implementation phase) present inductively-generated categories that uncover the development process of administrative innovation across the archetypical stages of innovation development: ideation, actions and interactions and idea implementation.

In more detail, Section 4.3 corresponds to the ideation/idea generation phase. This phase includes categories that explore causal conditions and conceptualize the ways in which the ideas which are at the basis of administrative innovation are generated. This is followed by the actions and interactions which are presented in Section 4.4 to present and theorise the strategies in relation to engaging and responding to administrative innovation. Section 4.5 corresponds to the implementation phase, which explains potential consequences of administrative innovation. Section 4.6 is the encountering difficulties section which presents intervening conditions that can affect the development process of administrative innovation. Subsequently, development of the core category, which denotes the main theme identified in

relation to administrative innovation, and the integration of the emergent theory, is explained in Section 4.7. Within each section of this chapter, specific words related to the categories and codes are presented in italicized font. This chapter ends with a summary and conclusion.

4.2 The context of public sector organizations

The development process of administrative innovation occurred within the context and conditions of *working in a public sector organization*. This category includes a set of conditions under which the phenomenon occurs. The contextual conditions involved are organizational and sectoral conditions. According to the findings, these contextual conditions shape the actions and interactions of participants in relation to administrative innovation. Actions and interactions refer to undertaking activities and negotiating to achieve a result, which is administrative innovation.

The organization selected as a case study for this research is an independent public sector organization within the financial and banking sector. As an independent public sector organization, it has attributes of a public sector organization and a private sector organization. Therefore, the contextual conditions presented in this section include conditions pertaining to the public sector in general and those conditions pertaining to the distinctive type of organization under study.

The conducted interviews revealed that *having job security* is a condition related to the public sector. It is understood as having a secure job with a low probability of being dismissed. Participants expressed their perceptions of job security and generally held the view that it is a common aspect of public sector organizations. As one of the HRIS analysts stated:

“I would be honest with you, the only thing that differentiates the government organizations is the job security not the salary. Here, in the government sector, an employee is unworried because there is not much responsibility and he cannot be held accountable. Even if there is a problem,

he will get out of it with something simple and he will not be completely responsible. While in the private sector, the employee is being accountable for his mistakes. For example, in some cases, they will explicitly say that this specific employee is responsible for the loss of this client. But here the employee can make endless mistakes and it will be just fine... But we can consider this as double-edged sword.” (Participant 2)

The above quotation conveys disappointment and shows that some employees may take advantage of the notion of job security in the public sector. However, as elaborated by the HRIS analyst, job security in the public sector could also be considered as a “*double-edged sword*”, namely, that it can have both positive and negative effects on employees’ performance. For instance, on the positive side, mistakes can be viewed as a learning experience for employees and offers an opportunity for them to do better. On the negative side, job security can be an excuse for negligence and not taking responsibility. This means that it may allow employees to make mistakes without fear of losing their job.

According to the findings of this research, the perceived absence of *workplace flexibility* in the public sector is a condition that can affect the innovation process. Workplace flexibility, in this study, refers here to having flexible rules and policies. From the interviews, there is a perception that the organization is not very flexible with regard to changing its organizational rules and policies. For instance, a senior employee commented on workplace flexibility in terms of dealing with new ideas by stating that:

“The public sector has less flexibility than the private sector. The private sector receives and accepts new ideas faster and cares more about new ideas... And they take ideas more seriously than the public sector.”
(Participant 9)

This perception may interfere with the level of initiative shown by the employee. Consequently, it may have an impact on administrative innovation and the way that ideas are communicated and handled in the organization.

In relation to the information systems in the organization, limited flexibility may also affect administrative innovation that involves technological change. As an example of this, HRIS technicians responsible for changes and modifications to the system noted that inflexible rules increase the amount of effort needed to perform their tasks. This is illustrated in the following quotation:

“As a government organization, it is not very open to changing its business rules. So sometimes as technicians we are the software engineers and we have to do a lot of customizations. And there are a lot of gaps between the requirements and the system. So in order to reduce the gap we have to put in a lot of effort.” (Participant 14)

According to the interviews, there is a perception that the new HRIS system reduces flexibility and, therefore, has a negative impact by creating a work environment with limited flexibility. For instance, an HRIS analyst who deals with employees’ requests and enquiries concerning attendance and holiday leave pointed out:

“There was one thing that almost 90% of the employees did not like about the system. It is the fact that we are going to apply the rules and regulation precisely, and there will not be much flexibility.” (Participant 32)

This means that the system is operating based solely on the organizational rules and does not provide flexibility in the same way as paperwork. Using an example from the interviews to illustrate this issue, when the organization previously used paper forms to process employees’ leave and absences, an employee might not show up to work at the required time (whether for the reason of being tardy or absent) and call the supervisor to ask for leave. Once the employee returned from leave, he/she could then retrospectively complete the paper request and send it officially to the HR department to be processed. Under the new system this is no longer possible. Employees have to apply for leave or obtain permission beforehand, otherwise,

it will be considered as an unauthorized absence. Employees perceive this inflexibility of the system as problematic.

Employees highlighted the importance of *having flexible decision making*, for instance, in relation to attendance and absenteeism. They thought that supervisors should be given more authority in this matter, as reflected in the following quotation:

“There must be flexibility in dealing with employees. I know that there are rules and procedures that we must follow but in some cases the supervisor should be able to make a decision... Why don't they give supervisors a chance to make decisions? The supervisor knows his employees well and I think this will help to improve the work a lot... Concentrating on employees' attendance and absenteeism more than their productivity is what affecting our work negatively... Like honestly, what do I get from an employee who shows up at 7 o'clock in the morning sleepy and sitting like a statue not doing anything and not being productive?” (Participant 2)

Based on the interview data, it appears that the reason for the aforementioned inflexibility being embedded in the system is based on another contextual condition, pertaining to the public sector in general, which is *focusing on the attendance and absenteeism of employees*. Participants perceive that the public sector organization values employee attendance more than participation and productivity. This view was commonly supported by other participants. For instance, a supervisor with 24 years of experience in the public sector agreed with this. The supervisor believed that, particularly in the public sector, more emphasis was placed on the attendance of employees. Similarly, the supervisor believed that this may negatively affect the performance of employees in the public sector, stating that:

“I think it is important to realize the difference between government and private sectors. Unfortunately, the government sector does not appreciate outstanding employees. Recognition in this sector is based in the first instance on educational qualifications and secondly on attendance. It is not based on the type of work or even participation ... I consider this to have

negative effect in most or actually, in my point of view, in all government organizations.” (Participant 12)

The above quotation also reflects the emphasis on the educational qualifications of employees more than productivity. By reviewing the publicly available documents, a public announcement concerning the criteria of employees’ evaluation and recognition in the organization put attendance and punctuality on the top of the list as the key assessment criterion. In contrast, creativity and initiative are mentioned at the bottom of the list. This may imply that attendance and punctuality is perceived as being more important than innovation.

In addition, lack of flexibility is also linked to the *established work routine* in the public sector which affects the innovation process. Routine is defined in the literature as repetitive patterns of activities that involve multiple actors (Feldman & Pentland, 2003). In this research, it also refers to following the deeply entrenched processes used to accomplish work tasks. This may have an impact on employee initiative regarding participating in innovation. Employees who have a desire to change may perceive work routines as being restrictive and limiting their ability to innovate. For instance, an HRIS analyst commented that: *“most of the work is routine, and we cannot but follow these rigid procedures”* (Participant 20). Moreover, a senior HRIS analyst argued that work routine was problematic in the public sector:

“The problem in the government organization is the routine and the old work procedures which are still used to this day. Every organization needs to try to improve its procedures.” (Participant 27)

By talking about this issue, participants explained how they *follow bureaucratic procedures* in their daily tasks. This is perceived to be a challenge affecting their ability to improve their work. A senior HRIS analyst offered a detailed explanation for this issue:

“For example, the employee completes a task, then it is reviewed by a first reviewer, then a second reviewer, and then the supervisor. After that it goes to the assistant manager, then to the manager and then to executive manager

and finally it goes to the top manager. And this procedure will take at least two weeks, and everyone is requesting different changes and revisions. The procedure is very long and takes a lot of the employee's time and actually can kill the employee. Imagine after all of that when you finally complete a task as soon as you turn your back, it will come back to you to revise it again. The same task keeps coming back again and again and this is causing delays for the other tasks and making the employee tired. So reducing the steps of the procedures will give me a chance to free my mind and make me think of what could be changed or improved.” (Participant 27)

The above quotation reflects that task performance followed traditional prolonged and ingrained procedures that are less likely to change. As a result, it may diminish initiative and affect the employees' ability to participate in administrative innovation because of causing pressure and exhaustion. Another issue highlighted in the above quotation is that work processes are often considered as task-based, and this also may impact the employees' ability to innovate.

Besides lack of flexibility and the dominance of routines and bureaucratic procedures, *the level of supervision* in the public sector is also a contextual condition. Supervision refers to supervising and monitoring the management of organizations in the public sector. Employees perceived that some staff in managerial positions can misuse their authority, and that they acted in a controlling way that can affect their subordinates negatively. This behavior can undermine employee initiative because it restricted them from being involved and giving suggestions. Therefore, there is a need for more effective supervision. This was reflected by an HRIS analyst, who stated that:

“One of the biggest obstacles in the public sector is the lack of supervision, there are people who I consider them as being mentally ill because they are obsessed about being in control. They want to control the employees, this is what is ruining everything. If the supervision increased on this sector, I believe that we would have a new generation with much more creativity. This

should begin from the organization itself and the supervisors.” (Participant 7)

Even though it seems that most contextual conditions are challenging, most participants felt positively about their organization as an *independent organization*. In Kuwait, independent organizations are a distinguished type of public sector organization evidencing independence in terms of their management, policies and procedures. The organization selected as a case study here is an independent public sector organization in the banking and financial sector. Therefore, some systems, rules and procedures in the organization differ from the other public sector organizations. As noted by an HRIS analyst:

“Organizations in the public sector differ from each other. Ministries are different than independent organizations, independent organizations are slowly progressing and becoming similar to private sector organizations.” (Participant 16)

For example, working in an independent organization *provides a better opportunity for innovation and creativity* as supported by an HRIS analyst who commented that: *“this is an independent organization so there should be more creativity”* (Participant 22). In addition, independent organizations have different regulations for promotions and rewards. Promotions and rewards are based on different criteria including performance evaluation and attendance. It is not merely based on seniority as in other public sector organizations. This issue was explained by an HRIS analyst, who stated:

“We have to differentiate between government entities such as ministries and independent government entities. In the ministries, it is certain that there are no incentives and the employee is like a thousand other employees. There is no difference. The only difference is that this employee has more years of experience than the others, because the system of promotion is all about seniority. For example, I can work there for 10 years, and I will know for

sure that I will be promoted and I will get to a higher position regardless of what I do. But, the independent entities have their own rules and regulations, like ours here, and this is more likely to motivate employees unlike ministries.” (Participant 2)

An example from the case study is the announcements that the organization advertises publicly about their reward program, which is uncommon in other public sector organizations. Further, the organization motivates employees to improve their skills and abilities by obtaining professional certificates. It announces financial incentives to encourage the employees to enhance their knowledge.

As an independent organization, it is constantly *trying to be up to date with the technology* by updating and expanding the use of IS. HRIS has been implemented in the organization since 2009 as part of the Oracle system. In particular, the HR department in the organization is constantly updating and improving HRIS to increase its effectiveness. An example of this is the recent update to HRIS which was mostly related to employee self-service. As reported by an HRIS analyst:

“We were the first department to implement the system, we always want to change, so we changed from the ‘Mainframe’ to the ‘Oracle’ system. Although we faced many problems and had many mistakes but we continued and then finally we saw the change. Honestly, we saw very good results. Even after that, we updated the system because we want to improve more and to be better.” (Participant 7)

To summarize, it is essential to understand the context as it denotes the different organizational and sectoral conditions that form the settings in which administrative innovation develops. It consists of a set of situational conditions which are important in shaping the development process of administrative innovation. These conditions are related to the public sector, the organization itself and its HRIS usage. The different conditions identified are: job security,

workplace flexibility, organizational value, routine procedures, level of supervision, organizational independence and HRIS implementation.

The key finding in this section is that although the organization is an independent public organization, it is still featuring a substantial bureaucratic work environment. The public sector conditions, for example, in terms of lack of flexibility and well-established procedures, may negatively affect the development of administrative innovation. However, the independence status of the organization provides a better opportunity for technological improvement and innovation.

The following section presents the findings pertaining to the ideation/idea generation phase as the first phase of the development process of administrative innovation. It includes categories that emerged from the analysis in relation to sensemaking of HRIS and idea conceptualization.

4.3 Ideation phase

This section is related to the process of conceiving new ideas, referred to here as the ‘ideation’ phase. In the extant literature, ideation is widely recognized as a main aspect of innovation. Organizational innovation in particular consists of ideation and implementation (Anderson et al., 2004). Implementation is presented in Section 4.5 which, in this study, corresponds to the idea implementation phase.

Throughout the interviews, virtually all of the participants came up with at least one idea to improve their work. Therefore, it is important to understand how and why employees create new ideas. In order to explain this, the ideation phase is divided into two sub-sections which represents the related categories: making sense of and interacting with HRIS, and forming the idea.

4.3.1 Making sense of and interacting with HRIS

Based on data analysis, sensemaking of and interaction with HRIS emerged as a category that represents the basis of administrative innovation. Sensemaking refers to developing assumptions, expectations and knowledge about HRIS which influence the subsequent actions of users (Orlikowski & Gash, 1994). This category represents findings related to employees' interpretation of HRIS and how it is used in the organization. In addition, it shows how participants perceive and interact with the system in the context of post-adoption.

Throughout the interviews, participants explained how HRIS is currently employed in the organization to support various HR functions such as training and development. Participants were unanimous in their view that HRIS had improved the efficiency and the accuracy of work in the organization. For example, one of the supervisors explained that:

“Actually, the Oracle system gave us options to better develop our systems and all sections became linked and integrated. All the data is taken from one centre, which is the Oracle system. Each section is linked to the other sections. It is no longer the case that each section has its own data. For example, the training system, that we are currently working on, takes its data from the ‘people screen’, which is the Oracle... We also have a career development section which has the promotions system. Of course, it was a completely paper-based system in the past. Also, the performance evaluation system which was also paper-based only. But now both systems are computer-based and performed on Oracle and all systems are connected. Each part of the system takes and feeds itself from one centre. So, the reports provide me with all the data I need.” (Participant 12).

The above quotation reflects that HRIS provided better integrated information about human resources. It was reported that data is derived from a single central database. This resulted, therefore, in having more accurate and consistent data across the different sections in the HR department. The reports produced by the current system provided a complete picture including all the required details for better monitoring within the organization. In addition, the above

quotation highlights that using HRIS enabled the organization to *automate many processes* related to the different HR functions. This view was further supported by other participants, for instance, an HRIS analyst commented that: *“almost everything now is done electronically, our job now is more about observing rather than doing everything manually”* (Participant 32). One of the reported examples of automated processes is the recruitment process. Employees responsible for recruitment felt positive that almost everything is currently done electronically. The functions of the recruitment system involved accepting or rejecting applications based on the defined rules. This also involved filtering applicants, extracting applicants’ information and evaluating applicants. Hence, their job often just involved monitoring and preparing reports.

Consequently, the organization is *becoming more paperless* as there was a major reduction in the volume of paperwork such as printed reports and employees’ letters. This resulted in improvement in organizational processes, particularly in administrative work. For example, since the flow of documents in the organization usually required a considerable length of time, the system allowed faster communication between different departments and faster responsiveness to employee requests. This was confirmed by a supervisor who reported that:

“We reduced the amount of paper used in our communication internally by almost 90%. This had a huge effect on the organization and especially on my section which was responsible for receiving mails sent to the HR department. For instance, we used to receive approximately 70,000 paper forms in a year. So, eliminating all of this paperwork is considered a remarkable accomplishment and it made the work procedures easier.” (Participant 12)

In addition, throughout the interviews, a common view shared amongst the participants was that using HRIS resulted in major *time and effort saving* in relation to communication, work processing and task completion. For example, an HR analyst made the point that:

“The work has improved a lot. And I think one of the simplest but yet most powerful improvements is that the system saved us a lot of time and effort,

and it organized our operations better. Everything is clearer now by using the system.” (Participant 23)

Moreover, HRIS contributed in *minimizing human errors*. While discussing this issue, a previous incident was reported of an error-prone data entry process related to annual leave. For example, HRIS users may occasionally enter the start and end date of annual leave incorrectly. This may have resulted in inconvenience since the incorrect number of days was deducted from the annual leave balance. Currently, these types of errors can be detected by the system as it checks the start/end dates and alerts the employees prior to processing annual leave. An HRIS analyst commented that:

“We are minimizing human mistakes. For example, we had some mistakes before like entering the details of an employee’s leave incorrectly. I mean for example by entering a wrong date and starting a leave on Saturday or ending a leave on a Friday and in this case the weekend shouldn’t be counted as annual leave. These mistakes caused problems for us and for the employees as well.” (Participant 32)

In addition to the organizational improvements resulting from HRIS usage, it may also lead to improving employees’ technical and operational knowledge. The interview data revealed that, after using and interacting with the system in their jobs, employees have better knowledge of the various functions of HRIS. This allowed them to feel *more independent* and more technically competent. Therefore, employees are able to perform their tasks without the need of constant help from HRIS technicians or other experienced employees. As emphasized by a senior HRIS analyst:

“I am very capable to use the system in performing my tasks. I feel that I am well trained based on my work experience in this organization and also based on my previous experiences... I’ve been working on the same system for a while... I don’t need a lot of help to use it.” (Participant 19)

In this research, it was found that *building trust on the system* enabled employees to use the system more effectively. Most participants, for instance, noted a newly launched HRIS feature related to the employee self-service system, referred to as e-transaction. The new feature was implemented across the organization in January 2017, a few months before the interviews were conducted and is concerned with employee's requests such as applying for leave, permissions (e.g. travel permission) and official letters (e.g. status letter). An example to illustrate this would be requests for permission to leave the organization during working hours. Employees may request permission from their direct supervisors for various personal reasons, including attending a hospital appointment or completing government transactions. The supervisor has the right to approve or reject the request depending on the situation. If permission is granted, the employee is allowed to leave for a maximum of four hours. Previously, employees had to fill-out a 'permission to leave' form and give it to their supervisors to sign. Under the new system, employees now have to request permission using the self-service system. Similarly, they complete a request form that goes directly to the supervisor to make the final decision. However, participants reported that they were using both the new system and the old procedure in parallel.

Supervisors perceived *parallel implementation* as an important step, primarily because it remained a new feature that employees have to get used to. Therefore, they have to complete both the electronic and the paper forms. However, employees perceived parallel implementation as the result of lack of trust in the system. For example, an HRIS analyst commented that:

“They are always worried if the system is wrong or if there is a data entry mistake. This does not make sense, because if they implement a system they have to know its problems and flaws.” (Participant 2)

Parallel implementation was perceived by employees as unnecessary and wasting time and effort. For example, one detailed explanation of the parallel process was mentioned by an HRIS analyst who reported that:

“I really don’t like the fact that we are using both the new and the old procedure at the same time. We need to have a softcopy and a hardcopy of everything. This is very frustrating, let’s say I want to apply for a personal excuse, I have to complete the form and send it to my supervisor and at the same time I need to apply for it on the system and it goes also to my supervisor for approval. Then, I have to wait for his signature on the paper as well as his approval on the system because if I leave before that it will be registered as unauthorised absence on the system. They said that this is only temporary but I don’t know when we will stop doing the old procedure.”
(Participant 1)

In addition, the parallel strategy was also applied to task performance. Employees tended to rely on both paperwork and the system to complete their tasks. As a case in point, an HR analyst explained how they performed the tasks with the team and emphasized the issue of building trust in the system. This is reflected by the following quotation:

“I think that it is all about trust. What will happen if we lose the data or if something goes wrong? There is always that fear. That is why they currently are using the system but also doubling their effort by doing it on papers as well. Because they still don’t have that trust.” (Participant 20)

Based on data analysis, it was found that technological improvements may lead to building trust in the system and thus increase the use of the system. According to an HRIS technician who participated in the implementation of Oracle in the organization, the new system provided adequate information and reports. The management perceived these as more accurate and timely information. The HRIS technician stated that:

“Before, when they were using the ‘Mainframe’ they did not have much capabilities or adequate information and reports. For example, previously, it was not unusual for them to spend months preparing a report, when the management requested it. But currently, they have everything, they have an advanced database and also a master data. So, they can now prepare reports in just a day. Even the top management is now requesting more information and reports because now the work is much more organized, efficient, and accurate.” (Participant 13)

The above quotation reflects that employees and managers currently *have a better access to information* in order to perform their tasks as a result of updating HRIS.

However, *inability to use the system* is a problem affecting the usage and interaction with HRIS. For example, participants noted that some managers and employees remained still unable to use the system. The data revealed that this may be due to lack of knowledge of HRIS and lack of interest. According to an HRIS analyst, responsible for recruitment, *“to this day, there are employees and managers who don’t know how to use the system” (Participant 2)*. For example, the interview results of job candidates can be performed directly on the system. However, managers may evaluate candidates using the paper form and then request their employees to transfer the results to the system. In addition, age can be a factor that limits interaction with the system. Interviews with senior employees showed that they used the system in a more superficial way than other employees. An HRIS analyst admitted that:

“We have old people working with us who are not that good with the computer and the system. There was a senior employee who did not even know how to log-in.” (Participant 32)

To summarize, this section presented findings on how employees perceived and interacted with HRIS and the possible outcomes of using HRIS in the organization. The findings showed that the benefits of HRIS are related to improving the efficiency of work in

terms of: automation of different tasks, reduction of paper consumption, saving time and effort, minimizing errors, and providing more accurate and timely information. The key finding, in relation to administrative innovation, is that interacting with HRIS leads to improving employees' knowledge about the various functions of HRIS. However, specific challenges may affect HRIS usage in the organization such as the perceived lack of trust in the system and inability of some users to interact with HRIS. The following section presents findings on how ideas can be generated as a result of making sense of and interacting with HRIS.

4.3.2 Forming ideas

This section is related to how ideas, which often form the basis of administrative innovation, are generated following the adoption of HRIS. First, it presents practices by which ideas emerge: HRIS interactions, individual practices and skills, and work-related practices. Second, it presents the sources (or actors) involved in the process of generating new ideas.

Practices related to idea generation. According to the data analysis, this study revealed that new ideas are generated based on three practices: ideas emerging from HRIS interactions, individual practices and skills, and work-related practices.

In terms of interactions with HRIS, it was found that ideas may emerge from informal learning that employees can engage in through their daily interaction with the system. Ideas may emerge from *exploratory learning* and *exploitative learning*.

Exploratory learning typically means to actively practice and engage with the system. In the literature it is defined as generating new ideas based on the active search for alternative perspectives that allows employees to make adjustments to their work (March, 1991; Shipton et al., 2006). Employees engage in exploratory learning by doing their job, for example, when using new features to perform their work. Based on the findings, exploratory learning, in this

study, refers to exploring unused features in the system. One of the many examples of this idea formation process involves an HR analyst who provided an example of this when talking about everyday experience with HRIS. While performing the tasks on the system, the analyst noticed reports which had not been used previously. The HR analyst tried to use these reports to generate new outputs that are useful for decision-makers such as supervisors and managers. This is reflected in the following quotation from the interview:

“While working on the system, I noticed that there are reports that we have not used previously. These reports show the attendance data. So I created an Excel workbook and integrated the data into Excel. This feature allowed me to create reports to view attendance, lateness, and overtime. It included charts that make it easier to compare between employees in relation to attendance and helps the supervisor in evaluation process. This was really good feature but I did not have the courage to share it.” (Participant 31)

Exploitative learning may also lead to creating ideas based on HRIS interactions. In this study, it refers to employees using their knowledge to refine existing practices. It may lead to performing a specific task in a different way. The data revealed that employees often engaged in exploitative learning when experiencing different and easier ways to perform tasks. Participants reported cases of exploitative learning such as integrating other software with HRIS. An example of this derived from an HR analyst in the payroll section who talked about his experience in conceiving a different and easier way to perform one of the tasks. He created an Excel sheet to check the calculation of end of service gratuity on the system while other employees performed this manually. He believed that this new idea reduced the time and effort required to perform the task:

“I am doing something in a different way, different from my co-workers... I created an Excel sheet that contains different formulas to calculate end of service benefits because one of my tasks is to review and check the calculation of the system. Other co-workers do this task manually which

takes them a lot of time and effort. But I use the Excel sheet to make it easier and it gives me all the results instantly.” (Participant 18)

In relation to individual practices and skills, *having detailed knowledge of tasks* may assist the employees in generating ideas to innovate. Throughout the interviews, a shared view amongst participants was that they understood every specific detail of their tasks and work processes in a thorough and comprehensive manner. Therefore, they have the ability to initiate change. Regarding this issue, a senior HRIS analyst emphasized that:

“The employee performs the tasks and knows the details of the details. This means when you work in fine detail, you can come up with new thoughts and suggestions that you can present. This is because the manager does not know the precise details of the tasks.” (Participant 23)

Employees can also generate ideas based on their *previous knowledge and expertise*. This can be based on previous work experience or their educational background. An example of this is provided by an experienced HRIS analyst, who submitted a proposal concerning an idea based on prior experience on another public sector organization. The idea was about creating a mobile phone application for employee self-service. This can allow the employees to access the system to view their information and to apply for leave or permissions. For example, in case of emergency, the employee would be able to request permission for late attendance for the following day. The HR analyst stated that:

“I was working in an organization whose network is larger than the network of this organization and includes many departments, we are here maybe 800 or 900 employees, but there were thousands of employees in the other organization. This is a much larger number, and they have a special link to the HR system that the employees can access when they are outside the organization anywhere and anytime. And even if there are any hacking attempts, the system can protect itself and prevent hacking.” (Participant 19)

The above example illustrates clearly how knowledge and experience may lead to generating innovative ideas. In addition, it was found that *discovering deficiencies* in the system or the procedures also leads to creating new ideas. *Discovering deficiencies* refers to finding the flaws in systems or processes while performing tasks. An example of this was offered by a senior HRIS analyst, who stated that:

“I mean of course I do have a role in the improving the work, because sometimes while I am working I discover things that are missing, or defects that exist in the system or in the procedure. So then I try to solve it. Actually, we are working currently with the IT team to solve some issues and there are some issues that we already solved with their support.” (Participant 27)

Similarly, *fulfilling work needs can help in forming ideas*. Employees may generate ideas to improve the system to meet the requirements of their work. For example, when their job requires some type of periodic information, they may suggest changes in the system to get better access to the information they need. This is supported by an HRIS technician, who communicated regularly with the employees especially in the implementation phase, by reporting that:

“In my opinion, I think that ideas are generated based on work needs, sometimes they feel that they are required to change because they need certain information, so they begin to present suggestions on how to improve... For example, for those who are asked by the senior management to report on the employee’s in and out activities and permissions, it was very difficult to collect the data. While with the new system, Oracle, it is more organized and accessible.” (Participant 13)

The interviews reveal that ideas can also emerge from *work processing challenges*, for instance, if the task is too complicated to accomplish. Challenges were perceived as opportunities to generate ideas to improve or change existing processes and tasks. Problem solving is considered an effective way to stimulate new ideas. Several participants believed

that *encountering a problem* in their work presented an opportunity for them to think efficiently and to come up with new insights. This allowed them to exploit HRIS to a greater potential. One example of this is related to employees' self-service features. Previously, employees had limited access to their personal information and needed to make inquiries often. It was stressful for HR staff to handle large amounts of inquiries and requests. Therefore, a supervisor, who was one of the HR staff at that time, contributed an idea to have customized view-only screens that allowed employees to access certain information easily. Subsequently, the employees were able to access their personal information such as job history, training courses, performance evaluations and salary information. The supervisor stated that:

“Why did I submit this project? Because we used to receive a lot of calls and inquiries from the employees, it was difficult for them to access their information. For example, if an employee needs a job statement, he calls the personnel section; if it is financial statement, he calls the payroll section; if it is a statement about his training courses, he needs to ask the training section. There were many problems because his personal information was not readily available and accessible. There were also many complaints that the staff were always busy and did not respond to the calls and inquiries in sufficient time and that was because of the pressure of work... I knew that the system has this feature and I confirmed it by asking the IT team.”
(Participant 12)

“I always keep thinking how I can employ the system to solve the problem. The idea that I look for is not only to solve the problem but also to improve the process at the same time.” (Participant 12)

The above quotations illustrate that ideas can emerge when participants encountered problems at work. It also shows that the inability to deal sufficiently with employees' personal inquiries stimulated thinking toward employing the system more efficiently. Similarly, throughout the interviews, employees agreed with the notion that ideas resulted from confronting problems. For instance, a senior HRIS analyst reported that:

“It is very rare to come up with new ideas if there is no problem... I mean sometimes we face a problem at work, then we sit together and think of possible ways to solve it. Everyone says his opinion and his idea. At the end, we decide on one idea and write a proposal about it to be sent to the IT department” (Participant 11)

The above quotation also reveals that ideas can result from *brainstorming*. It is considered as a group process in the organization, referring to thinking together and suggesting different ideas to solve a problem.

Having a holistic understanding of the HR department, including systems, processes and tasks, was also perceived to enhance idea generation. In relation to the management, it was perceived that managers have an overall holistic view of how work tasks are conducted in the department. A further interesting finding that emerged from the data was that employees also needed to have a holistic understanding of the work. Participants noted that a possible way of doing this was through job rotation. In the organization, it was implemented only within specific sections. For example, in the payroll section, employees go through rotations every quarter of a year. Recently, the HR department initiated a job rotation program for new employees at the start of their career, to visit different sections in the department before settling on their specific allocated section. However, a number of employees felt that rotations should be conducted regularly across sections in order to enhance knowledge and experience. This also allowed employees to understand how HRIS is used in different sections in the department. Therefore, job rotation enriches employees’ overall understanding of work in a holistic manner. For example, a senior HR analyst stated that:

“When you hire a new employee, you do not just teach him the nature of the job, you should help him develop. Rotation has a big role in developing the employee... For example, a staff member who print reports might feel unproductive but I can tell that he has the ability to design reports, so I can rotate him to another section where he can be creative. With his experience

in reports and his designing skills, they will have a bomb of creativity... this helps the organization... and increases the experience of employees in the organization itself... it's like having an internal recruitment. Rotation makes the organization more powerful.” (Participant 19)

Sources of new ideas. The data analysis suggests that ideas can come from multiple sources. Participants revealed that ideas leading up to administrative innovation can be *introduced by the management* such as a change in the work process or the system. For example, the supervisor of the training section reported that ideas are occasionally initiated by the committee of training courses and scholarships. The committee comprises management staff responsible for decision making. They can determine the eligibility of employee for an overseas training course or a scholarship, and as such need information including performance evaluation and job description. They may also ask for additional information or changes necessary to facilitate the decision-making process. The supervisor stated that:

“Sometimes, we improve our work based on the requirement of the committee. The committee consists of supervisors and managers. Sometimes, they present their point of view and request changes to be made to the procedures in the department.” (Participant 25)

On the other hand, it was found that ideas can be *initiated by employees*. Thus, employees also had the agency to introduce and participate in administrative innovation. Further analysis of the data revealed that most ideas for improvement and change originated from the employees. As highlighted by a supervisor in the organization:

“This is always the case, improvement suggestions often come from the lower organization level to the higher level, from the employee who actually have their hands on the work, while the execution starts from the higher organization level, in the opposite direction.” (Participant 30)

The role of HRIS technicians in the development process of administrative innovation is discussed in section 4.4.2 on explaining idea sharing. However, an interesting finding was that HRIS technicians are not only perceived as facilitators or consultants, but also as participants in generating ideas. The interviews revealed that HRIS technicians can participate in two ways. First, they can participate by providing the means by which employees can generate ideas to improve their work. For example, as mentioned by one of HRIS technicians:

“The IT team should always look for what is new in the market and what are the new systems. For example, the upgrade of the Oracle system, of course it is not the HR staff who came up with this idea because these kinds of ideas are pure IT projects. For example, when we see that Oracle has released many new features in a newer version, we can suggest to apply them so that employees can benefit from these features. In these areas, the IT team should have an initiative because the HR staff do not know these things; this is not their specialty, they are only using the system to do their work.” (Participant 13)

The above quotation illustrates that system upgrades are considered as a means by which a wider set of ideas might be generated and implemented. Second, *HRIS technicians may generate ideas* themselves to improve administrative work based on their technical knowledge. However, it is perceived that their ideas involved technological changes more than the ideas of other employees or managers. An example of one of their ideas is the evaluation system. The idea was suggested by HRIS technicians to transform a standard and limited evaluation system into an advanced system that met the requirements of the organization. This is supported by an HRIS technician who stated that:

“... We have implemented the evaluation system. It was available in the past but it was standard and simple and did not meet their needs. So, we suggested to them an idea to make the manager or the supervisor evaluates his employees through the system and not on papers. They did not expect that it could be implemented, and they could not imagine how the system would

work... We presented and explained the system for them and of course there was a lot of admiration and acceptance of the idea and it was implemented. Currently, all the evaluation is done through the system.” (Participant 15)

In general, the interviews revealed that there was *more awareness of the innovative potential of employees* and their ability to come up with new ideas and initiate change. For instance, the HRIS technician who implemented change requests on the system confirmed that recently many ideas were emerging from the employees’ level:

“Recently, I have noticed that most of the ideas are initiated from the employees’ level. Ideas we worked on previously were from the management level, this was because employees were not used to the system yet. But recently, like within the last two years, employees started to come up with many ideas. After using the system, understanding well how it works, and realizing how it can make their daily tasks easier, they started to come up with new ideas. And I think this is really good.” (Participant 13)

The above quotation also highlights how important it is to familiarize employees with the system and how it can be used to enhance work processes; this may enable employees to generate ideas.

However, *the amount of work* may be perceived as a burden that restricted employees’ abilities to create ideas. This may cause exhaustion and stress and, therefore, negatively impact the process of generating ideas. Some participants expressed their frustration and inability to innovate because of workload commitments. For example, a clerical employee expressed feelings about the numerous tasks that they have to perform and commented: *“This is causing huge stress on us to perform all the work so we don’t have time to think about improving or fixing issues.” (Participant 10)*. Even if employees have some ideas in their minds, they may not have the time for developing them, experimenting, or moving them forward (as outlined in the next section).

To summarise, this section presented on the category concerning the formation innovative ideas. It explained how employees used their knowledge of the system and the work procedures to come up with new ideas to modify or improve current processes and tasks. It reported different practices in which new ideas may emerge. These practices included: HRIS interactions comprising exploratory learning and exploitative learning, individual practices and skills such as discovering deficiencies, and work-related practices such as problem solving, brainstorming, and job rotation. Regarding the sources of new ideas, it showed that employees had the agency to initiate ideas following the adoption of HRIS. It should be noted that in all of the cases innovation was not a formal part of their job descriptions. The next section proceeds to the actions and interactions phase, reporting on the findings regarding how employees may take their ideas forward.

4.4 Actions and interactions phase

After presenting the idea generation phase, this section introduces the findings related to the actions and interactions necessary to move ideas forward. It presents the actions taken by employees and their interactions with other organizational members for the purpose of turning ideas into actions. Actions and interactions refer to activities, reactions, and negotiations that occur in relation to administrative innovation. This section is divided into three sub-sections which describe how employees take initiative, share their ideas, and interact with management.

4.4.1 Taking initiative

Taking initiative represents a category related to the process of pursuing a change by taking the ideas forward. This category refers to taking actions towards administrative innovation. The findings revealed different enablers for employees to proceed with their ideas. The findings also disclosed conditions that can restrain employees from undergoing this process.

Enablers of taking initiative. In terms of enablers, *striving to improve* is concerned with having a desire to change and to take innovative ideas forward. Based on the findings of this research, it was evident that employees may have innovative ideas, and hence it is important to understand what influences their decision in taking the ideas forward. Participants discussed the notion of passion and desire to improve. Therefore, striving to improve was developed as a subcategory that referred to having the desire and willingness to make an effort in order to change something. It drives the employees to take initiative when they have an idea. Most participants emphasized on the importance of having a strong desire to change in order to initiate concrete change. To illustrate this, for example, an HRIS stated that:

“Who aspires to change and has the desire to improve will initiate a change himself, while who has the information but is too stingy to share it with the organization no matter how they motivate him, he will greedily ask for more incentives. The desire of giving is better than anything else. meaning that whatever you give to the employee, next time he will crave more and more. But if he has a desire to change to improve the work and make it easier for himself and others, he will not care about incentives.” (Participant 20)

The above quotation reflects that having a desire to improve is essential to taking initiative regardless of extrinsic incentives. Therefore, passionate employees are able to voice their ideas and initiate changes, while other employees may be reluctant to share their ideas. For this reason, it is essential to understand where this desire emerges from. Further analysis of the data revealed that this desire is motivated by a variety of factors including self-interest, group interest or from the interest of the organization.

This desire could be based on employees’ *self-interest* which refers to doing what is best for themselves. Concerning this point, an HRIS analyst commented that: *“even if I don’t*

get recognized, it's fine with me, because when I improve something I do it for myself and to make my tasks easier" (Participant 1).

It can be based on a *group interest*. For instance, if the group or the team is struggling with a process, improving it will become a group goal. The employee will try to initiate a change for the benefit of the group. A supervisor reported a recent change implemented in his section, and emphasized that: *"honestly the idea was based on a group desire, because our work on voucher preparation was very stressful and time-consuming" (Participant 26).*

Moreover, it can be based on the *interest of the organization* in general. As an example, one of the HRIS technicians declared his motives to suggest ideas and to support other employees' ideas by stating that *"because every improvement or a change is a success for us in the first place and for the organization as well" (Participant 15).* Similarly, An HRIS analyst highlighted the importance of the idea's influence on organizational procedures: *"I care more about the effect of my idea on the work, not just about suggesting a new idea" (Participant 16).*

Striving to improve is similar to the notion of *proactiveness* that participants talked about in the interviews. *Proactiveness* is perceived as a personality trait that influenced the employee's decision to take initiative. For instance, one of the managers commented that:

"I can see that there is a difference between a regular employee and a proactive or I can even say a superstar employee... The difference is that the employee can be either proactive or reactive. The proactive employee is always trying to give solutions to the problems he faces in his work. This employee suggests changes, proposes ideas to develop the system. For example, if we have a procedure that needs a whole day to be completed, this employee proposes an idea to complete the procedure within an hour or so. Of course, he won't be able to change the procedure by himself but at least he suggests it. But I can't go to a reactive employee and ask for suggestions and thoughts... This comes from within the person. It means that humans have different qualities, each person is different. We, as managers, don't think that, for example, this employee is good and the other employee is not

so good. I am sure that everyone is good. It just means that every person has different abilities and skills.” (Participant 29)

The above quotation illustrated the perception that proactiveness is an intrinsic enabler that drives the employees’ towards taking initiative. The interview data revealed that some employees perceived themselves as being proactive in looking for different ways to improve their work processes and tasks.

In addition, *persistence* was frequently reported in the interviews. This means that when an employee has the determination to make a change, he/she is more likely to take the idea forward. Persistence, then, allowed the employee to continue speaking up and sharing ideas in spite of the difficulties that can be encountered. An example of persistence can be seen when an HRIS analyst commented: *“No matter how many times I get rejected, if it is for the good of the organization, I will always present my ideas” (Participant 31)*. Similarly, another example of persistence was offered by an HRIS analyst who reported a situation where an idea was rejected but the employee just did not give up:

“At first, I was depressed, I felt that they don’t want to improve. But then I reached a certain point when I realized that if I don’t seek improvement, I will not get anywhere. So, I tried and tried harder until we were able to do this big project. What I mean is that this thing made me insist more. If this door is closed, I will go to the next door.” (Participant 32)

This comment shows that employees may have a strong desire to continue and that a previous negative experience may even increase the level of persistence. In addition to persistence, managers emphasized the importance of *giving latitude* to employees in terms of performing their tasks. Latitude allowed the employees to have the freedom regarding task performance based on their knowledge and skills. For instance, this was revealed by some supervisors as their way of encouraging employees to be innovative. The supervisors may ask employees about their opinions, and even allow them to come up with their own ways to

complete certain tasks. It appears that there is a perception that latitude gives the employees more confidence, allowing them think of new ways to perform their work. As reported by one of the supervisors:

“In our work, I always like to ask the employee about his opinion. Sometimes, I assign a task to the employee and ask him to do it his way. Even if there were a standard way, I’ll always ask what he thinks about it and how he can add to it.” (Participant 30)

Participants referred to the same concept in different ways. For instance, an HRIS analyst referred to this freedom to act as having “*a green light*” that allowed the employee to come up with ideas. Latitude was also described by a top manager in the organization as a way to enhance innovation. The manager used the following metaphor: “*Unleash the beast in him*” (Participant 29), with the meaning to bring out the best in the employee. This referred to giving employees the freedom and the opportunity to utilize their skills and exhibit their innovative ideas. The manager believed that latitude can effectively motivate the employee and turn them into a more successful employee.

In some cases, extrinsic incentives were an important part of taking initiative. The findings suggested that financial and non-financial incentives were perceived as enablers for taking initiative. *Financial incentives* are mainly monetary rewards such as bonuses. From the data, it is clear that the most common way of rewarding employees in the organization, in this case, was based on monetary rewards. For example, almost all employees received an annual bonus based upon their evaluation, and some employees may also receive a special bonus if they evidenced outstanding performance. This can be supported, for instance, by a comment from an HRIS analyst: “*here the incentives are mostly financial and mainly based on the special bonus*” (Participant 31).

In addition, *non-financial incentives* were frequently cited by most of the participants. These incentives can refer to any non-monetary reward that the employee perceived as

motivating. Based on the analysis, it appeared that there was a strong emphasis on the need for non-financial incentives. For example, an HRIS analyst made the point that: *“sometimes you just need a pat on the shoulder to let you know you are doing well”* (Participant 20). Non-financial incentives can also simply be *“supportive words”* or *“appreciation words”*. There are various types of non-financial incentives reported in the interviews. This is reflected in the following quotation from an interview with a manager in the organization:

“Incentives are not always monetary, sometimes incentives are non-monetary, such as ‘thanks letters’ or the way managers treat their employees... There are many other ways to motivate. As a matter of fact, there are people who get affected by words such as thanks or good job. These little words have a great effect and are no less important than monetary incentives.” (Participant 29)

As illustrated in the above quotation, non-financial incentives are perceived to have an effect on employee motivation that can be just as important as the financial incentives. Interestingly, from the interviews, it appeared that employees may even perceive this kind of incentives as being more valuable than financial incentives. A senior employee, for instance, emphasized the point that non-financial support was more valuable to employees and that there existed a need for more non-financial incentives:

“This non-financial support is much more meaningful to me, and makes me feel differentiated, even if it is something as simple as having my own private office... The organization is supporting me well financially, in terms of promotions, job evaluations, and bonuses. But I prefer the non-financial support more. And this is not just me, many employees who are in a similar situation feel this way too.” (Participant 9)

The above quotation highlights that there is a lack of non-financial incentives in the organization. This implies that, whilst employees are often motivated by non-financial incentives, the organization tends to focus on financial rewards. This was further supported by

a supervisor who believed that there was a need to place more emphasize on awarding appreciation letters to the employees in recognition of their contributions. The supervisor stated that:

“We do have incentives, for example, previously we used to send ‘thanks letters’ sometimes, but I think this needs more attention... I mean there should be more activation of ‘thanks letters’, we have done this before and we are keen to make it more effective so that any employee who offers an idea must at least receive a thanks letter.” (Participant 30)

Training courses are perceived as a type of non-financial incentive. Participants emphasized training courses as a means of motivation. Although the organization offered local-based and foreign-based training courses, employees reported that there was a lack of training courses especially in the HR department. This is reflected, for instance, in a quotation from an interview with an HRIS analyst, who made the point that:

“For example, even with training courses, we are one of the departments where the percentage of courses is low and there is little training in the department in general. This is maybe because they consider our work as routine, but certainly the training courses will affect the work in many ways. Everything will be developed even for example in terms of treatment, communication and putting effort. Even if they just provide general training course not necessarily specialized courses, this will also help. I think that this point is the only thing we currently lack and need more attention.” (Participant 20)

The above quotation highlights the importance of training courses to employees. It is perceived that training courses not only improved their knowledge and skills, but also improved the way employees communicated and dealt with other organizational members. This may also motivate employees into taking initiative to improve their work processes and tasks.

In addition, *creating a competitive environment*, where there is friendly rivalry between employees, may motivate employees to come up with ideas for improvement. For example, one of the supervisors reported this as the way of motivating employees in his section by stating that:

“To create a friendly competition between the employees I talk about the employee’s achievement like who completed the task first with accuracy in front of the other employees. And I can see the positive effect of this friendly competition as it motivates the employees and make them more productive.”
(Participant 26)

With regard to taking initiative, there was a common emphasis amongst participants on *new employees’ potential*. New employees were perceived to be more likely to innovate. They were often considered as the source of improvement and change, where new ideas and suggestions emerge. A senior HRIS analyst, for instance, commented that:

“From my experience, I think if the organization wants to improve and to be successful, it has to focus on the young employees, because they are the ones who will carry the organization in the future.” (Participant 19)

Further analysis of the data revealed that the perception that new ideas were often initiated from new employees is based on two main assumptions: their familiarity with technology and their educational background. This can be supported by a quotation from an interview with a supervisor who described his experiences with new employees. He reported that:

“We engage in discussions with employees almost daily. But especially new employees I mean who are young and still considered as fresh graduates they are more active in providing new things, because they have been engaged with technology since the beginning of their lives. So they can offer new ideas.” (Participant 25)

In addition, it can also be based on their educational background. Regarding this point, an HRIS analyst highlighted the importance of educational background in taking initiative for work improvement that:

“Younger employees, I think that most new ideas are coming from them. This is because of the educational difference, as they are new graduates so their way of thinking and their technical background is a little bit better than other employees.” (Participant 20)

Intervening conditions of taking initiative. Based on the findings, there were conditions that could restrain employees from taking initiative such as the employees’ perception of *being responsible for execution only* and the management’s perception of *self-motivation*. Several employees considered themselves as *being responsible for execution only*. They presumed that they were allowed to take part only in implementing change and not initiating it. For example, an HRIS analyst held the view that employees’ responsibility lies in the implementation phase by stating that:

“We as a part of the organization, we are considered as an implementing part, and not the part who can discuss and develop and solve. Orders just come to us and we perform the tasks.” (Participant 2)

According to the findings of interviews with the management, the majority of managers expected that employees should be *self-motivated*. Expecting self-motivation can have an impact on employees’ willingness to take initiative. This is similar to the notion of *striving to improve*; however, this concept represents the management’s view. Most managers believed that employees would be willing to initiate a change without the need of encouragement. For this reason, managers felt that they did not have to focus more attention on encouraging or motivating their employees because motivation was considered as something intrinsic that

emerges from within the individual. For example, one of the supervisors commented on their expectations of employees' self-motivation by stating that:

“I don't have to encourage them, as a supervisor in the organization I am also supervised by a manager. So, when my manager talks about a problem on the system or a delay in a procedure, I always go and look for solutions. I don't just wait for him to ask me what to do... So, the ideas come from the employee himself and sometimes ideas just come suddenly... As soon as the employee realizes that his supervisor is facing a problem, I expect that the employee will present suggestions. He shouldn't just wait for me to provide the solutions” (Participant 12)

This illustrates that a self-motivated supervisor may also expect his employees to be self-motivated. Therefore, the supervisor may not put much effort into encouraging the employees to come up with ideas to contribute administrative innovation. Similarly, another manager related self-motivation for taking initiative to the personality of the employee and to the interest of the organization and the country in general:

“I will always link this to the employee himself. Actually, it stems from the inside, from their own personalities. They seek improvements because they want to offer something for their country, their society, and the organization in which they work. At the end, this is a Kuwaiti government organization, so if he doesn't work hard for it, who else would?” (Participant 29)

Outcomes of taking initiative. As an outcome of the process of taking initiative, the employees take their ideas forward and this may lead them to engage in the process of *requesting a change*. Throughout the interviews, participants reported different ways to request a change in the organization, which is explained in detail in the idea implementation phase (Section 4.5). For example, they can use a specialized change request form called '*System Modification Request*' if the proposed idea involves a change in the system.

The outcomes of this process may also involve *self-satisfaction* which refers to employees' being pleased with their initiative to improve their work. Some employees decided to make changes in order to feel good about themselves. They feel useful and important when contributing ideas to the improvement of work processes and tasks.

However, taking initiative can also lead to a negative outcome such as an increase in employees' workloads. This refers to an increase in the number of tasks or the amount of work as a result of taking initiative. One of the HRIS analysts referred to this outcome as job enlargement, which meant adding additional tasks to the existing job. The analyst explained the reason of refraining from initiating changes by commenting that: *"because this will cause more stress on me. And will result in having more tasks which is considered as job enlargement"* (Participant 2). In some cases, the employees may decide to *give up on their innovative ideas* because of the high workload and thus do not want to proceed with the implementation.

To summarize, this section presented the axial category taking initiative. It refers to taking actions towards administrative innovation. It presented different enablers that allowed employees to take their ideas forward. Enablers included striving to improve, being persistent, giving latitude, offering incentives, creating competitive environment, and realizing the potential of new employees. It also represented a set of conditions that restrained employees from undergoing this process including: being responsible for execution only, and expecting self-motivation. Finally, it identified the possible outcomes of taking initiative which included requesting change, being self-satisfied and increasing workload.

4.4.2 Sharing ideas

When taking initiative, employees often decided to share their ideas. Therefore, this section illustrates how participants shared their ideas that are related to administrative innovation.

The process of idea sharing may require *seeking professional advice and having confidence*. *Seeking professional advice* is a common approach noted by many participants as the initial step they usually take when deciding to share their ideas. Professional advice can be viewed from a technical perspective which is related to consulting with HRIS technicians. Although this was not a requirement, participants seemed to do it before proceeding with their ideas.

It is noted that, regardless of the level of experience, participants still seek consultation and advice from HRIS technician team. For example, a supervisor with 24 years of experience in the organization and responsible of HRIS operations discussed his experiences when initiating an idea:

“In any project I want to do, as soon as the idea comes to mind, the first people I turn to are the Oracle team, I have to make sure if I have the option to do this thing or not. I have to make sure before I put my idea forward. If they say that the system allows me to do this thing or that I can improve it in a certain way, then I will make my proposal.” (Participant 12)

This confirms the fact that supervisors and experienced employees may choose to determine the possibility of implementing their ideas before taking their ideas forward. Similarly, participants with less experience consulted with HRIS technician to ensure the practicality of their ideas. This was reported by an HR analyst who was a new employee with less than two years of work experience in the organization:

“But often, I would talk about many ideas even if they are simple with our Oracle team first to know if the idea is doable or not. And then, if it is possible to do it, I go and talk to my supervisor about it. For example, we wanted to do a questionnaire related to the HR system and the new self-service feature. They wanted to do it on papers for all staff in the organization. But I thought that we can do it on the system so I spoke to the Oracle team. I asked them if they have the tools available to implement this questionnaire on the system.”

We had a small informal meeting and discussed the idea and then I wrote a proposal. Then I spoke to my supervisor. After that, the proposal went to the managers and then it went to the IS manager and now it is in progress. After implementation, it will be circulated to the staff.” (Participant 4)

The quotation illustrates how HR analysts worked closely with HRIS technicians to validate their ideas prior to sharing them with other organizational members. This consultation may give employees more confidence to disclose their ideas as they have an initial confirmation that the ideas, from the point of view of the HRIS technicians, are technically feasible. The previous quotations also revealed that the consultation was mostly conducted an informal way.

This was also confirmed in the interviews with the HRIS technicians. They reflected on how employees shared their ideas with them and also what they felt about it. HRIS technicians believed that employees were more likely to talk about their ideas with them. As noted by one of the HRIS technician: *“Most of the time employees will ask us about the possibility of their ideas verbally and sometimes by email also” (Participant 14).*

However, it seems that some HRIS technicians believed this was a compulsory step, that employees needed to inform and ask for their opinions before submitting an official request. An HRIS technician stated that:

“For example, sometimes when we are focusing and working on a particular system, we get surprised by receiving the change requests. And sometimes they send the requests without turning to us, and this thing also bothers us. They have to come ask and consult us before sending a change request.” (Participant 15)

Another way of seeking professional help was by *consulting employees with more expertise*. An HRIS analyst, a new employee in the organization, believed that sharing the idea with experienced employees allowed new employees to benefit from their expertise and knowledge. The HR analyst stated that:

“The employees who have more experience will help us a lot, because they know whether this the idea will work or not, they know the employee’s limit in offering suggestions.” (Participant 20)

Employees also perceived that *having confidence* in their own abilities and expertise allowed them to share their ideas by either presenting it to their colleagues or their supervisors. Hence, confidence is an essential enabler for the process of idea sharing. It allowed employees to step forward and reveal their ideas to other organizational members.

There are different strategies involved in the process of sharing an idea. It seems that the most common way of organizing work in the organization is based on teams. The majority of participants talked about sharing their suggestions and ideas with their team members before presenting the idea to the supervisors. They expressed the view that, in doing so, they could share their knowledge and improve the quality of ideas. As commented by an HR analyst, who held the view that idea sharing enabled other employees to add to his existing idea and improve it:

“I like to discuss it with my colleagues so if there is something wrong with my suggestion, I take ideas from them and then we can present it as a group idea to the supervisor.” (Participant 7)

The above quotation shows that some participants *share ideas with their team members* based on their preference. It is also noted that they seek team recognition as an outcome of idea sharing. However, in certain cases employees might share the ideas because they are worried about the reaction of other team members. For example, one of the clerical staff, with 16 years of experience, expressed his concerns in relation to sharing ideas by stating that:

“Before talking to my supervisor about any idea, I prefer to cooperate and ask all the team members because there might be something that upset them or something that they dislike. So, if I just go directly to my supervisor and have my idea implemented they might be upset with me because I didn’t tell

them or ask them for their opinions. So, it is better to talk to them in the first place.” (Participant 10)

The above quotation suggests that employees may decide to share ideas with other team members in order to avoid conflict.

Despite the emphasis on idea sharing, concerns were expressed and several participants were against the notion that ideas should be shared with team members. Instead, they preferred to share their ideas directly with their supervisor or the management (the following section explains the employee-management interaction). This was reported by an experienced HR analyst who preferred not to share the ideas with the team because of the perception that the team was unwilling to improve their work:

“Because I can see that they don’t like improvements, I will not talk about my ideas with them. If I have an idea, I will talk to my supervisor first and then I might inform the others... The fact that there is no team collaboration. I mean when you have teams that don’t have the spirit of collaboration, the situation will be similar to a competition. It is just like ‘okay, we are a team but I have some information and I don’t want the other person to benefit from it so that I can be recognized for it’.” (Participant 22)

The above quotation illustrates that team members may have different attitudes and values. In addition, it appears that some teams are less cohesive than others. This could lead to team members not engaging in collaboration with each other. It was noted that *lack of collaboration* between team members can hinder idea sharing between team members. In addition, *seeking individual recognition* prevented the employee from exchanging knowledge and ideas with others.

Most participants valued the *role of team leaders* in encouraging employees to speak up and share their views. As commented by an HR analyst: *“Both employees and managers can improve the work. But the biggest factor that affects this is the team leader” (Participant 17)*. Throughout the interviews, participants reported that team leaders were assigned based on

the level of job position. However, there appeared to be a degree of tension regarding the method of assigning team leaders. Employees perceived that job positions may not be the effective way to allocate team leaders. It was also believed that having a higher position did not necessarily affect the level of creativity and innovativeness. This point is illustrated by the following quotation:

“The team should have a leader and unfortunately, what we are currently facing is that the rest of the team does not accept the team leader... Team leaders are assigned based on the job title, and this is an obstacle. Because even if the job title is higher than others, his creativity might be less. Or he might not have the ability to control or to manage... I believe that the employee who has a leader charisma will naturally become the leader between the team members. So, I would leave each team to identify a leader by themselves without forcing a leader on them. This will occur naturally because not everyone has a leader charisma so the leader will eventually stand out.” (Participant 22)

The above quotation shows that it is often preferable to give teams the freedom to choose their own leaders. Further, it was perceived that a charismatic team leader would emerge and stand out as a result of enhanced leadership skills.

In addition to a lack of collaboration and lack of an effective team leader, participants identified other obstacles that could undermine idea sharing. These obstacles can be related to the employees themselves, such as *remaining silent* and *dissatisfaction*. For example, employees may choose to remain silent and refrain from speaking up about their ideas. This obstacle is related to idea sharing more than taking initiative. This is because it mainly deals with whether the ideas that employees may hold will be communicated to other organizational members or not. Employees may also be secretive and thus conceal their own innovative ideas. In general, they may either implement the idea without sharing it, which is considered as *hidden innovation*, or withhold their ideas due to different reasons. In the interviews, employees

reported some cases of hidden innovation. It occurred when employees initiated a change in their task performance, to complete the task faster or to make it easier, without informing other organizational members about this change.

Employees reported different reasons for withholding ideas. For example, an HR analyst believed that the existing situation was discouraging, commenting that: *“At this time, honestly, no, I don’t feel like talking about my ideas, even though my supervisor will do his best to pass our ideas to the management”* (Participant 7). Others may remain silent because they feel that this is the way of work in the organization, *“This is the way we work here you don’t talk about your ideas unless you are asked about it”* (Participant 10). Moreover, still others held back their ideas because of *dissatisfaction*. An HR analyst expressed the view:

“But if you are not satisfied in a particular aspect, it will affect you even if you have a desire to change something, I mean I’ve just talked about my ideas and you asked me why I didn’t tell anyone about them, well, because I am not completely satisfied to share.” (Participant 31)

Dissatisfaction can involve different reasons for different employees. For example, an HR analyst who had an *unpleasant first experience* when he felt that his first idea was ignored mentioned that: *“If I have any suggestion I will not share it with my team leader again, because of what happened. I don’t think I will write another proposal”* (Participant 18).

Other obstacles were related to ideas such as *perceiving the idea as being too simple to be shared*. There was no sufficient understanding of what ideas should be shared and whether the idea should involve minor or major changes. An HR analyst questioned the need to share ideas and commented that: *“These are simple things that the supervisor does not need to know about, it is not because I want to hide it from him, no, it is just because it is a simple thing”* (Participant 2). A few participants talked about *idea appropriation*. For example, an HR analyst mentioned that: *“you might suggest an idea that they like but because you are not a senior employee, they take your idea and give it to someone else, and this is really happening”*

(Participant 22). This HR analyst explained his experience and expressed his disappointment when he suggested a new idea to implement a new feature linking the job title with appropriate training courses. In this way, the employee could participate in training courses directly related to his/her specialty and work requirements. The idea was accepted but was given to other employees for implementation. The HR analyst felt disappointed for not being involved in the implementation, even though it was his own idea.

As a result of sharing the idea, employees *receive different reactions* regarding ideas leading to administrative innovation. The findings showed that most employees are *motivated* in that they were more willing to change and improve their work practices. Therefore, they tended to accept new ideas and to also come with their own ideas for improvement. They also aimed at simplifying tasks and processes, reducing errors and increasing the effectiveness of work. Participants often linked motivation to young employees. For example, an HRIS analyst commented that:

“But we as youth, we want to change, we want things to be easier, and we hope that one day we will not have any papers on our desks and everything will be done electronically.” (Participant 7)

Employees often seemed *indifferent* to innovation and only wanted to perform their own individual tasks. They tended to be rather unresponsive to innovative ideas and uninterested in offering their ideas to initiate possible change. For example, an HR analyst was reluctant to generate ideas and remarked that: *“I think everything is okay. And development and its related matters are not my concern. My current workload is enough, I will not think of doing anything new” (Participant 5).*

One of the supervisors described this type of employee as careless employees by stating regarding this type of employee: *“all they care about is to complete their tasks, earn their*

salaries and then leave. They don't have creativity or initiative and they don't even make an effort" (Participant 12).

Other employees were *resistant*. They felt unmotivated and did not want work practices to change. They expressed a reluctance by taking an opposing stance against any new ideas. As observed by an HR analyst: *"I noticed that whenever a new idea is initiated, people will immediately attack it" (Participant 5)*. In addition, another HR analyst narrated his experiences with resistant employees:

"There are some employees and some supervisors who don't like to change and most of the time I hear them saying things like 'why do you want to change?', 'we don't want this', 'what is this new trend!', 'we are doing ok, so let's keep things this way'." (Participant 4)

Consequently, a possible outcome of the idea sharing process is that an employee may move forward and *present the idea* formally or informally. In general, ideas can be presented in a formal way which involves writing a proposal or filling out a request form if the idea incorporated technical changes. An official change request is available and used in the organization for modifying and adding features to the system. However, to date, no official request exists for ideas that do not involve technical changes. In many cases the employees *share their ideas informally*. They often communicated their ideas verbally as a way of following the norm. As explained by an HR analyst regarding how ideas are communicated in many cases:

"Actually, we don't have something official or something written, but we do it as a norm, we start by talking about our suggestion to the team leader, then the team leader takes it to the supervisor and the supervisor is the one who can take it further to the management. So, we usually follow this tradition." (Participant 7)

In summary, this section has focused on idea sharing with organizational and team members in general. It can be seen that the process of idea sharing may necessitate having confidence and seeking professional advice. It may or may not involve interactions with team members. It deals with certain obstacles that may be related to the team, the employee him/herself or the idea. The potential outcome of this process is presenting the idea formally or informally. However, the informal way of idea presentation is more common in the organization. The following section reports findings that are more focused on the communication and interaction between employees and the management in relation to administrative innovation.

4.4.3 Interacting with the management

As mentioned in the previous section, employee-management interaction is one of the essential strategies to share and implement ideas. This section explores in more detail the process of interaction between employees and management in relation to administrative innovation.

The interviews reveal that, in many cases, the *employees' relationship with their supervisors* or managers can influence their decision to volunteer innovative ideas. Employees perceived that satisfaction with their relationship with the supervisor allows them to effectively share their ideas and opinions. On the one hand, an HRIS analyst explained how this satisfaction resulted in the ability to communicate ideas to the supervisor without fear of rejection:

“The situation between me and my supervisor is simple, friendly and without arrogance, it’s fine with me to give him ideas and it’s totally fine if he says that I’m wrong or it’s not possible or the idea is difficult to implement. I will always come back with a second and a better idea.” (Participant 20)

On the other hand, if dissatisfied with the relationship with the supervisor, the employee may be discouraged to share ideas. For example, an HRIS analyst commented that:

“When the relationship with the supervisor is not good, I will even hesitate to open up a conversation with him, because I will be worried about his reaction, for example, will he accept my opinion? will it feel awkward?”
(Participant 31)

The findings show that *trust* is perceived as an important factor in employees’ communication with the management. The employees should be comfortable and open with their managers. In relation to administrative innovation, employees should be able to share their ideas about the work processes and tasks without fear of disclosure. As stated by one of the clerical staff:

“There has to a trust between the employee and his supervisor... It’s nice when we can trust the supervisor with what we say. For example, if I tell him my opinion such as what I dislike about the work processes or how someone is performing the tasks, he shouldn’t go around and tell other employees about it. There should be trust.” (Participant 10)

In addition, trust is also perceived in terms of listening to and taking ideas into consideration. The interviews reveal that trust allows employees to communicate their ideas by knowing that their supervisor or manager will take the necessary steps to implement their ideas. As emphasized by an HRIS analyst:

“We feel that our supervisor is trying to motivate us to suggest ideas. It doesn’t matter whether the ideas get implemented or not, what really matters is that we trust him and we know whenever we give our supervisor an idea, he will seek to implement it.” (Participant 7)

In terms of a mechanism of communication, there is a *need for constant communication* in the organization. Almost all participants felt that there was a lack of meetings which can affect the level of interactions between the employees and the management. The interviews revealed that management was aware of the importance of regular meetings and communicating with employees. As confirmed by one of the top managers in the organization:

“Meetings are very important in creating a social and a friendly environment. From my point of view, meetings can increase communication, and bring the employee closer to his manager. We shouldn’t be isolating them from each other and the manager has to know every minor and major issue about the work in his department... In many organizations in the country, hopefully we are not one of them, the doors are closed. The employee does not see his supervisor nor participate with his colleagues. They just don’t get together to discuss their problems and share their ideas. Getting together and having discussions will enrich the work.” (Participant 29)

Although management talked about the need and the importance of formal meetings, there was a *lack of formal meetings* in the organization. In relation to administrative innovation, participants perceived that formal meetings were not always effective. As explained by an HRIS analyst:

“I prefer informal meetings. I feel it provides a more ‘give-and-take’ situation between me and the supervisor... I think participating in formal meetings depends on who is present at the meeting. Because sometimes there are people who make you feel discouraged and try to disregard your ideas.” (Participant 4)

The data revealed that supervisors used alternative ways to *encourage employee engagement*. For example, supervisors may not conduct meetings but they try to keep the employees engaged by involving them in the implementation of different projects. As stated by one of the supervisors:

“No, we don’t have regular meetings. Maybe because honestly, I don’t have time. The workload is high and I am working on different projects. But I did something else which is involving my employees in the projects. For example, I have involved some of them in the FileNet project. I always request progress reports and I also asked them to be responsible for training the new users of the system. I want them to be updated and to have

continuous communication with the programmers and to keep me informed about all of the details related to system and project development.”
(Participant 12)

The above quotation illustrates that employee involvement in projects may lead to constant communication with their supervisors. This gives employees an opportunity to increase their knowledge about the projects and to offer innovative suggestions and ideas.

In addition, some participants talked about the concept of *open door policy* as a way of communicating with management. Having an *open door policy* implies that the manager is open to listening to employees' ideas. The majority of supervisors believed that they have already implemented this policy. As stated by one of the supervisors:

“I don't think it is necessary to do something about it [conducting meetings] or for example to have a suggestion box, because the door is open. The supervisor's door and also the manager's door are open to the employees. If any employee has a suggestion, he can submit it to his direct supervisor and the supervisor will discuss it with him. If it is feasible, they will submit a written proposal to the concerned section or department to implement it.”
(Participant 26)

An important aspect of interacting with managers is about *handling and managing employees' ideas*. The way of dealing with employees' ideas may influence the idea sharing process by encouraging employees to volunteer ideas. An HRIS analyst, for instance, thought that:

“Especially the way the supervisor deals with the idea. I mean, if the employee introduced a new idea and the supervisor immediately said we can't apply it for some reason. For example, he might say that this is not the way we work, or the management doesn't accept this, or there might be obstructions from the top management. So, if the supervisor doesn't even try to support the employee, this will discourage the employee... But, if the employee presented an idea and the supervisor said yes, I will support you

and see if we can implement it or not. And then guide him through the procedures in order to obtain the approvals from the management. This will encourage the employee a lot, even if the idea is not implemented in the end, because the supervisor support is obvious.” (Participant 21)

In the interviews with the management, they explained how they usually dealt with the innovative ideas of their employees. A supervisor commented that:

“If the idea is appropriate we will take it seriously, then we will refer to the organizational rules because our work procedures are based on specific rules. If the rules permit this, we will proceed further and present the idea to the higher management.” (Participant 25)

The way of reacting to and processing the ideas may encourage other employees to share ideas and help in creating a better work environment. For example, one of the managers reinforced the importance of this view and highlighted that:

“The way of dealing with any suggestion proposed by the employee will encourage him and encourage his colleagues as well and the work environment will be an encouraging environment for initiatives and suggestions.” (Participant 28)

There are challenges related to interaction with the management. For example, in the interview, concerns were expressed about the fear of management which can affect the process of idea sharing in the organization. In some cases, employees were *afraid of speaking up* and interacting directly with the management to suggest their ideas. This is mainly related to the fear of reaction to innovative ideas, as highlighted in the following quotations from the interviews with HRIS analysts:

“It’s the employee’s fear of reaction. The supervisor’s reaction and the manager’s reaction. The employee does not know their point of view, whether they will like it [the idea] or not, or if the outcome will be in his favor or not.” (Participant 31)

“The most difficult thing is to make them [supervisors] understand my point. I feel worried because I want them to get my idea and comprehend it and not to think that I am just being arrogant.” (Participant 17)

Some participants perceived this fear as an intrinsic factor that hindered the interaction between employees and management. A senior HR analyst commented the following about this fear:

“I think it depends on their personalities... there are people who don't like to talk, maybe because they are afraid, or maybe they prefer talking to another employee and ask him to deliver the idea.” (Participant 9)

Therefore, as a result of the fear of management, employees either choose to withhold their ideas or to share their ideas through intermediaries, such as team leaders or senior employees who can facilitate the idea sharing process between employees and management.

Although this fear of management is perceived as intrinsic, it is essential for managers to encourage their employees to voice their ideas and to eliminate the fear of management. For example, a senior HRIS analyst and a team leader talked about this issue and suggested a possible solution:

“I feel that the employees need more encouragement because every manager is sitting in his office with the doors closed. So, the employees don't feel confident to go there and talk... We should start from the beginning when the employee is just a trainee. we should encourage the employees to talk, even if not directly to his supervisor, he can talk to someone in a higher position... we should try to take away their fears of management. So in the beginning they might have the confidence to talk to an employee at higher position and then he will gradually have more confidence to speak to the team leader and then they might also talk to supervisors.” (Participant 27)

Another challenge is related to communicating ideas of administrative innovation to the management based on *having different perspectives*. For example, an HRIS analyst explained the reason why a proposed idea was not approved:

“No, my idea was not implemented, because the team leader has a different point of view... The employees want to change, but the higher levels don’t want to because they see it as a waste of time and that there are other more important things to do.” (Participant 16)

This difference in perspective between employees and management was also noted by the management. For example, one of the managers commented that:

“The manager sometimes considers simple suggestions as unimportant but these suggestions can be of a great importance to the employees, so they should be taken into account, discussed and should not be ignored.” (Participant 28)

In addition to the previously mentioned challenges, employees felt that there should be some *improvement in the management* in relation to behaviors, attitudes and mindsets. For example, HRIS analysts talked about the need to improve the management:

“They need to let go of their controlling behaviour, and stop saying things like ‘I am the manager, I want my employees to do it my way and you can’t interfere in it’, we refuse such behaviour.” (Participant 7)

“If I were a manager, I would not make them feel that I am their boss. We are all employees in the organization. They don’t work for me, instead, they work with me. And this will make a huge difference... currently, this situation doesn’t exist and that’s why I want to do it.” (Participant 31)

The consequences of the process of interaction between management and employees in relation to administrative innovation can involve accepting the idea, adjusting the idea, and rejecting the idea. Accepting the idea meant directing the employee on how to proceed further with the idea to obtain approval and implementation (e.g. referring to another

person/department). Adjusting the idea occurred when the supervisor or the manager helped the employee to improve the proposed idea so that it was more likely to be implemented. Rejecting the idea can result due to different reasons such as if the idea was impractical, if it failed to follow the established organizational rules or if there were no efficient resources to implement it.

Employees may react differently to idea rejection. For example, if adequate reason and explanation for the rejection was given, it could influence employees to generate better ideas. However, if no adequate feedback is given, the rejection may negatively affect employees' decisions to share ideas. As explained by an HRIS analyst:

“Sometimes our ideas are not accepted. I know that not every idea is a successful idea but sometimes the employee works very hard to come up with an idea and then he gets surprised when it is rejected. This might discourage him and make him stop suggesting ideas... When I see an employee, who is excited about his idea and wants to change, I will not put him down. Even if it is a bad idea, I will thank him for his effort and encourage him to come up with more ideas.” (Participant 2)

This section explained the process of interactions between the employees and the managers in relation to administrative innovation. It presented two main enablers for this interaction: the influence of relationship with the supervisor and the importance of trust. Subsequently, it presented the activities involved in the interaction such as conducting meetings, engaging employees, having an open-door policy and handling employees' ideas. It presented challenges related to the interaction including the fear of management, having different perspectives and the need to improve the management. Lastly, it described the consequences of the interaction between employees and management. This involved accepting, adjusting and rejecting the idea.

In summary, this section described the actions and interactions phase that is part of the development process of administrative innovation. It presented the findings based on three axial categories: taking initiative, sharing ideas and interacting with the management. Further, it explained how generated ideas are communicated in order to move forward. The following section explains the last phase of the development process which is the implementation of innovative ideas.

4.5 Idea implementation phase

This section is related to the process of transforming ideas into action, which is referred to as the ‘execution’ phase, and presents findings about the process of implementing ideas of administrative innovation. It is divided into three subsections: implementing change, improving administrative work and getting acknowledgment.

It is worthwhile noting here that not all administrative innovation ideas proceed to the implementation phase. Due to *encountering different difficulties* (section 4.6), some ideas may be rejected, abandoned or stuck at a certain organizational level.

4.5.1 Implementing change

This axial category is concerned with the process of change in relation to administrative innovation. The data revealed that, in many cases, employees have the opportunity to be *involved in the change process*. Employees perceived their involvement as being important members in the organization. In addition, as a result of the involvement, the employees felt that their contribution was valued. As an example to support this, an HR analyst who took part in implementing a project described the feelings associated with participating in project meetings and reported that:

“I used to participate in meeting and suggest ideas before... I mean, especially at the beginning, during the implementation of the system, although I was just a trainee, they allowed me to be involved in the meetings with the Oracle team... At the time I was talking and the supervisors were taking our opinions as employees. I felt like I was very important... What I like about my department is that our supervisors support us and allow us to participate... [my supervisor] allowed me to speak with the Oracle team about my ideas, although I was new. He didn't say ‘oh, this is a trainee and should not interfere with the meeting’. Instead, I have been involved in the process in order to understand the basics of the system and to learn and say my opinion... at that time they made us feel like we are decision makers.”
(Participant 7)

However, if employees are sometimes *not involved* in the change process, they may feel ignorant and that their ideas are not taken into consideration, as reported by an HR analyst:

“We don't know about anything. We are always surprised by the changes they [the management] introduce. They don't meet with us to inform us about the new change they are planning to make, or to listen to us and to know what we think about it. We are the ones who are doing the work so we have to participate. But this is not the case. We don't participate, we just receive their decisions.” (Participant 17)

Employees may also perceive this as being imposed on them. For example, talking about this issue, one of the clerical staff expressed the feeling about a newly implemented procedure that changed the way that they used to perform their tasks, stating that: *“they imposed it on us... no one asked us about our opinions... were forced to implement it, it was an order”* (Participant 10).

Communicating change is an essential aspect of this process. It is concerned with the way of sharing information and making employees aware of new changes. Employees can be informed about changes in meetings. Although the findings revealed that meetings were rarely

conducted in the organization, a team leader emphasized that meetings are a useful way of communicating change:

“As a team leader, if I want to change something, I don’t just do it and surprise my team with it. No, instead I set with the team members to share my thought and ask them about their point of view.” (Participant 27)

In addition, participants described how major changes were communicated to the employees in the organization. For example, a supervisor explained how they presented a newly added feature on the self-service system that allowed employees to apply for leave. An internal announcement was published about the new change and training was offered. The supervisor reported that *“we provided training sessions for the whole organization, employees and supervisors, about how to use the new system” (Participant 12)*. Therefore, by announcing the new feature and providing essential training, the management made employees aware of the change.

Based on the findings, a variety of perspectives were expressed regarding the outcome of implementing change. The data revealed that employees and managers *have different attitudes* in relation to ideas implementation. It appears that they can accept or resist the change based on the type of change and its effect on work procedures and performance of tasks.

On the one hand, some organizational members will *accept the change* and this occurred when they approved the change and implemented it completely. A possible reason for this is when the change is associated with enhancement of work, as mentioned by one of the supervisors who stated that: *“I noticed that if the new process is making their tasks easier everyone will accept it” (Participant 25)*.

On the other hand, there are some organizational members who *reject or resist change*. They wanted to stick to existing procedures and the usual way of doing work. There is a

perception that older and more experienced employees tended to reject change, as noted by an HR analyst who reported that:

“However, some of the older employees, for example who have more than 15 years of experience, they didn’t want to change because they hardly learned how to use the system so they want to stick with the same system and not to change it. They don’t like to improve.” (Participant 7)

The organization tried to reduce change resistance by *working in parallel*. As explained in section 4.3.1, this meant using the new process and the old one at the same time to perform a specific task in order to give people time to become used to the new process. An example of this was the newly launched self-service system within the organization, where employees used the new system and carried out the old procedure in parallel. The reason for this was to provide employees a chance to try and understand the system and make sure that no mistakes occurred.

This section presented the findings related to the process of implementing change. It explained employees’ perceptions about their involvement in the change process. The findings revealed that their involvement influenced their perception about the importance of their ideas. When employees are involved, they feel that their ideas are valued and they can contribute to improving the administrative work. In contrast, if employees are not involved they feel that their ideas are ignored and that changes are imposed upon them. The section then described how change can be communicated in the organization by conducting meetings or publishing announcements. Subsequently, it explained how the organizational members reacted differently toward change, as some accepted the change whilst others resisted it.

4.5.2 Improving administrative work

This section is based on the axial category that represents the manifestations of administrative innovation. According to the findings, this section can be divided based on three dimensions: technological, operational and social. This is aligned with the previous literature that described

administrative innovation as socio-technological and, thus, comprised changes in information systems, organizational processes and tasks (Bui, 2011; Popadiuk & Choo, 2006).

Technological dimension

This type of administrative innovation is concerned with innovation that involved technological changes in HRIS. It included *development of new systems or new features, and modifications of existing systems.*

The analysis revealed that innovation involving technological changes can be initiated by managers, HRIS analysts, and HR technicians. Managers may request new customized systems or reports based on their needs. Examples of custom and in-house built systems included promotions and bonus systems. Another example of new system development was the supervisor self-service. Managers and supervisors needed frequent information about their employees such as their attendance, leave and evaluations. The information was available in different reports generated from the system or requested from the HR department. To facilitate easier and faster access to information, an idea was proposed to implement the supervisor self-service, a set of custom-made screens tailored to the specific needs of managers and supervisors. This innovation enabled them to view the details of their employee instantly to enhance the decision making process. As stated by the supervisor who initiated this innovation:

“Among the projects I have asked for was the supervisor self-service screen. It enables the supervisor to see the information about his employees without the need for reports, he only opens the screen and can see all his employees’ details.” (Participant 12)

HRIS analysts may also initiate innovation such as *adding new features to the system or utilizing unused features.* For example, an innovation related to having a new notification feature was initiated by an HRIS analyst. The notification feature showed the daily changes made in the employees’ records and the users who made the changes. This innovation was

initiated to minimize errors and to make users more alert and aware of the changes. This was because part of their job, as HRIS analysts, is to have accurate information and to be aware of any changes related to the employees' records. The HR analyst stated that:

“we should have a notification system to show what changes are done in the employees' records daily and who made the change, it is a way of auditing, keeping track of changes, being updated.” (Participant 4)

In addition to developing new systems and features, innovation may involve *modifying existing features and reports*. For example, managers and HRIS analysts may request additional information on reports. This was mentioned by a senior HR analyst as a way of keeping up with work needs. He stated that:

“I have asked for many things for example changing reports like adding or removing some information, and also editing screens whether data-entry or view-only screens. I have also requested creating new reports based on our needs.” (Participant 11)

Modifications of the system also included *elimination of defects*. The analysis revealed that, through task performance, HRIS analysts may initiate innovations upon noticing limitations in the system. It is a way of improving the work because it fixes defects in the system in order to provide more accurate and better information.

Operational dimension

This dimension is related to innovations concerned with improving tasks and organizational processes. In terms of tasks, administrative innovation can be related to task allocation, management, and performance. As a result of using HRIS, employees may participate in giving suggestions about how tasks should be distributed. *Organizing and reallocating tasks* can improve the work by assigning tasks between employees based on their knowledge and

experience of HRIS. For example, an HRIS analyst responsible for payroll data, initiated an innovation to change the existing way of task allocation:

“I made general suggestions in the way of organizing and distributing the work ... I mean for example, we distribute our work according to the grades. Employees are divided based on their grades such as eighth, ninth, tenth and each grade has a nature of work. The lower the grades, the harder the task will be. So, when you assign an employee to work on the lower grades, he will be very stressed while others will have less stressful tasks.” (Participant 17)

The above quotation illustrates that task complexity should be taken into consideration when distributing tasks between team members. In addition to task allocation, employees may also initiate innovation relating to task management. For example, one of the participants mentioned that they created a simple form to keep track of tasks when assigned and when being performed on the system. Another example of tracking tasks was the innovation related to the new notification system that was mentioned in the previous section because it involved technological changes.

Regarding task performance, employees may come up with innovations to *simplify their tasks* as a result of using HRIS. For instance, an HR analyst stated that: *“I always try to look for ways to make the task easier and to shorten the time and complete my tasks sooner” (Participant 1)*. In addition, as a result of using HRIS and improving their knowledge of the system, an employee may request to gain more access to the system to perform additional tasks. Moreover, some participants talked about *integrating other software* to enhance work. For example, multiple HR analysts talked about using Excel to help them perform some of their tasks.

In relation to organizational processes and procedures, to improve internal processes, innovation may result from the knowledge and experience of HRIS. For example, *creating e-*

forms is a way of enhancing internal processes and minimizing delays. As mentioned by one of the supervisors: *“I participated in creating the electronic forms to replace paper forms. These forms are used for internal communication and internal procedures”* (Participant 12). Employees can *use the e-forms* to request information from the HR department, such as requesting a salary certificate. Moreover, *providing more authority* may help in increasing the efficiency of organizational procedures. For example, a team leader initiated an innovation concerned with having an authorized signature for internal communication. This innovation aimed to lower the number of steps and thus reduce the amount of time required to complete the procedures. The team leader reported that:

“I have an example, the idea of authorized signature, in the beginning all of our vouchers and internal communication reports had to be signed by the manager of the department. Can you imagine this? I had to process all of my work to the manger and wait for his signature in order to be able to complete the tasks. So, this idea helped us a lot in reducing the steps in the procedures and my team is working faster and more efficiently.” (Participant 27)

Social dimension

Administrative innovation can involve social changes related to the organizational culture. This type of innovation may lead to *changing work norms* which means changing the usual and expected way of doing things in the organization. For instance, as mentioned earlier in the section looking at interacting with the management, it was perceived that there was a lack of meetings in the organization. Therefore, some employees tried to reinforce the importance of having regular meetings. Based on of the experience of using the system, an HRIS analyst suggested an innovative idea to the supervisor about having a regular meeting with the employees. Meetings are perceived as an important way of sharing their knowledge about the

system, the challenges encountered, and the way of dealing with challenges. The HR analyst stated that:

“I suggested simple things like regular meetings on a weekly basis because we all need to be updated... We all feel that we need this and when I came up with this suggestion recently, there was a great acceptance from the employees and the supervisor. And hopefully we will start doing this very soon... They always say that you learn through experience. So, when we get together to discuss and share our ideas and problems, we can learn from each other’s experiences.” (Participant 20)

The above quotation shows that there was an acceptance for the suggestion because there was a need for it. Another example of innovations that resulted in changing work norms was the introduction of a notification email for leave. The organization employed a new feature on HRIS that sent automatic notifications to employees’ emails about their leave. When the employees applied for leave, they previously received an official paper indicating whether the leave request had been approved and processed or not, but they stopped using paper form and relied on email notifications. Employees believe that this strengthened the use of emails in the organization as a means of communication. HRIS analysts believe that sharing work documents by email helped them to save time and avoid unnecessary delays.

In addition, the implementation of employee self-service was perceived to have changed the work norms. After providing training on the system, every employee used the system to apply for leave and to request information. As mentioned by an HRIS analyst: *“We used to print everything and send it to the employees but now we don’t do this anymore, everything is on the system” (Participant 7).*

To summarize, this section reported the manifestations of administrative innovation according to the interview data. In general, it was noted that administrative innovations were more related to changes in technology and tasks, with a few related to the organizational social

processes. The findings were divided into three subsections: technological, operational and social dimensions. The technological dimension is concerned with innovations that involve technological changes, operational dimension is related to innovation involving changes in organizational process and tasks, and social dimension is concerned with the organizational culture and work norms.

4.5.3 Getting acknowledgment

This section is concerned with personal outcomes such as acknowledgment and recognition as a result of sharing ideas and taking initiative. It is based on the ‘getting acknowledgement’ axial category. Interview data revealed that, in many cases, employees sought recognition. In the interviews, participants talked about recognition in three different ways: recognition of participation, recognition of experience, and post-retirement recognition.

Recognition of participation refers to acknowledging and appreciating employees’ participation in initiating change. Employees want to be recognized and to feel valued when they come up with new ideas. A supervisor emphasized the importance of recognizing employees who contributed ideas and suggestions by stating that:

“I think this is the factor that affects employees the most. The employee may not care about offering his ideas. he will say, for example, if I present an idea and I know that it has a big impact, what will I get in return? As long as there are no rewards for projects or ideas, it is normal see that the employee does not care and wants to finish his work only, why would he put more pressure on himself?... This makes me feel sorry, because we have outstanding young employees who are willing to give from their time, their life, and their knowledge and they even don’t care about the working hours, they are creative people but they are not getting the appreciation that truly they deserve.” (Participant 12)

In addition, some employees *seek immediate recompense* for their input. As noted by one of the HR analysts: *“when the employee does something, he wants a direct recompense., he doesn’t want to wait” (Participant 31).*

The second perspective about recognition is *recognizing employees based on their experience*. Experienced employees want to be recognized for their long experience in the organization. Employees talked about recognition in terms of task allocation, feeling that they should not do the same tasks as new employees and that tasks should be allocated in a better way based on experiences and skills. Moreover, such employees felt that they deserved to be given a supervisory position or at the least be given their own separate office. For example, a senior HR analyst stated that:

“I am not talking only about my case, but about any employee who has reached this level of experience... he has to feel differentiated because of his experience, they need to make him feel appreciated and offer him things and tasks that suit his experience. As an example, for me personally, based on my level of experience I should have a supervisory position but I am currently not supervising anyone... It just to make me feel appreciated... if it is something as simple as having my own private office.” (Participant 9)

One of the managers expressed the need for *post-retirement recognition*. It was perceived that retired employees hold experience and knowledge and should be recognized and valued as well. Therefore, he thought that organizations should open the door for suggestions from retired employees and listen to their ideas and suggestions to improve the work. The manager believed that their knowledge and expertise, gained throughout their employment period, was like an intellectual treasure:

“People rarely talk about this type of recognition, even in the literature, which is recognition after retirement. This phase represents a rich experience in which the employee gained a lot of knowledge whether it’s in work practices, training, or engaging with others. This experience is

considered a treasure. When I differentiate between this employee and other employees, he may have more knowledge because of his long experience. We recognize this employee and benefit from his knowledge.” (Participant 28)

According to the data, there are different perceptions regarding recognition between employees and the management. The management believe that they are *embracing initiative* and offering rewards. However, the employees are *demanding more recognition* for their participation and experience.

The consequences related to acknowledgement and recognition are *becoming depressed* or *feeling valued*. On the one hand, employees may *feel depressed* if they are not recognized for contributing innovative ideas to improve the administrative work. On the other hand, employees may *feel valued* when they are recognized for their contribution. For example, an HR analyst commented that: *“I got credit for it, and this made me feel that all my effort didn’t go up in smoke” (Participant 31).*

To summarize, this section explained the third phase of the development process of administrative innovation. It presented findings based on three axial categories: implementing change, improving administrative work, and getting acknowledgement. It reported how changes related to administrative innovation can be implemented in the organization while considering the role of employees in the change process. Then, it described the potential outcomes of the change process in term of organizational outcomes (manifestations of administrative innovation) and personal outcomes (acknowledgement). The following section presents the challenges that employees may face during the development process of administrative innovation.

4.6 Encountering difficulties

Interview data revealed that employees faced different difficulties that influenced the development of administrative innovation. Some of the difficulties that are part of the

categories were mentioned earlier as related to the specific process such as idea sharing and interacting with the management. This section extends the discussion of difficulties by dividing the difficulties based on three perspectives: personal, interpersonal, and organizational barriers.

4.6.1 Encountering personal barriers

Personal traits and perceptions can affect the employee's ability to volunteer ideas. *Shyness*, for example, may prevent the employee to speak up about his/her opinion. Yet, the employee may possess interesting ideas to improve work processes and tasks.

In the interviews conducted with the employee in the organization, some employees talked about ideas that they did not share with their supervisors and managers. A manager talked about his experience with this kind of employee and mentioned a possible strategy to deal with shy or timid employees. The strategy was to try to know their skills and strengths and to give them a suitable position that allowed them to utilize their skills. This is reflected in the following quotation:

“This doesn't mean that the shy person is not good enough. He may also be as intelligent, but he may not be socially intelligent. He may have analytical intelligence, so we have to put him in the right place, such as accounting, researching or IT. If he does not want to be around people, that's fine we will put him in the right place where he feels comfortable. And I believe that if each one is hired in his right place, I am sure that he will not only do his job but he will also be creative and provide a lot of solutions. This is because he enjoys what he does.” (Participant 29)

In addition, *having self-doubt* may inhibit employees from disclosing their ideas. Self-doubt refers to employees' lack of confidence in his/her skills and experience. In the data, it was considered different from shyness. *Shyness* is more about the personality of the employee while self-doubt deals with their abilities and experiences. Some employees hesitated to give suggestions because of their fear of embarrassment and criticism. For example, participants

who did not share their ideas mentioned reasons like: *“I am afraid that my idea won’t work, or it is going to cause problems and issues”* (Participant 6) and *“The supervisor might not like it and this will make me feel bad”* (Participant 8).

In addition, *negative expectations* may negatively affect an employee’s decision to take initiative. The data revealed that some employees refrained from suggesting ideas because they expected their ideas to be abandoned and forgotten. They perceived that their innovative ideas may get *‘shelved’* and, therefore, would not be implemented. As commented by an HR analyst:

“I mean for example I can write a proposal for my supervisor, it is even possible in some cases to discuss the idea with the management, but then nothing will happen. It will get shelved. This is my expectation.” (Participant 1)

Negative expectations could be a result of having a *negative first impression*, which is related to the impression employees get when they first joined the organization. As noted by some participants who joined the organization before the complete adoption of HRIS:

“When I came to the organization, I imagined that the procedures would be very modern and advanced. But they were still using papers. we had a card for each employee in which we record his leave. I felt that this was really outdated. In the university, we used to swipe cards for attendance and we don’t rely on papers. And here they didn’t even use emails. This was really strange.” (Participant 32)

In addition, other employees expected negative outcomes based on *observing the experiences of other employees*, who may have faced difficulties in approving or implementing their innovative ideas. For example, an HIRS analyst reported that:

“I did not talk about it [the idea], this is because I know my ideas won’t be implemented... From what I saw, many people before me had ambitions and wanted to change things but the ears that can hear them are missing.” (Participant 31)

4.6.2 Encountering interpersonal barriers

There are interpersonal barriers related to the employee's interaction with colleagues and management. One of the difficulties is *dealing with negative colleagues* who have negative thoughts about their work. As noted by an HRIS analyst:

“Most of the time there will be an employee who says that your idea won't be implemented and that you will waste your time writing a proposal but at the end nothing will change.” (Participant 1)

The above quotation shows that negative colleagues can discourage employees from pursuing their ideas. An example to illustrate this point is from an interview with an HRIS analyst who described the experience when a suggested idea was stifled and, thus, they could not proceed with it. The HRIS analyst suggested to change an existing process related to the team work to save time and avoid unnecessary delays. However, the idea was dismissed by the team leader as inappropriate and impractical. In explaining the reaction of the team leader, the HRIS analyst stated that:

“The team leader got upset... told me that I was totally wrong, and that I didn't understand how things work. She warned me not to tell the supervisor about it because then he would know that I misunderstood the procedures and that would affect my evaluation... After few months, I knew that they were working on something similar. This means my idea wasn't wrong.” (Participant 24)

In addition, some employees felt that their voices and *opinions are not getting attention*. For example, HRIS analysts mentioned that *“the employee might think that his voice will not be heard” (Participant 20)*. For this reason, some employees needed to feel engaged and that their opinions mattered. As stated by one of the HRIS analysts:

“They have to ask us about the difficulties or problems we face, and to keep us updated about the coming changes, and to listen to our suggestions and concerns about the changes. I mean we need to listen to each other, we need to be connected, this is very important.” (Participant 16)

In other cases, employees felt that ideas might be *heard but not treated seriously*. In the interviews, some participants talked about their feelings, for example, by stating that: *“I will only talk about it when I feel that the other person is taking my idea into consideration” (Participant 10)* and *“they don’t really take our opinion into consideration” (Participant 1)*.

4.6.3 Encountering organizational barriers

Organizational difficulties are concerned with conditions, policies and procedures that affect administrative innovation. These include inertia, lengthy procedures, lack of clarity, lack of IT resources and time constraints.

Experiencing inertia can hinder the development process of administrative innovation. In this study, inertia refers to a period of silence when there is a lack of activity and a lack of change. The findings suggest that that this condition has an impact on employees’ initiative and participation. Employees can experience inertia when they feel that work processes are stable with no new changes implemented. This does not mean that new ideas are not being suggested, rather it simply means that the work processes remain unchanged for a period of time. For example, as noted by an HRIS analyst:

“Lately, the situation has been very stagnant and quiet. And I don’t think that they will accept our ideas... You know, there are a lot of people with great minds and great ideas but many of them are becoming bored and giving up because it seems like everything is negative around us.” (Participant 7)

The above quotation suggests that experiencing inertia may lead employees to *give up on their innovative ideas*. In the interviews, some participants commented on their decision to give up

on their ideas for different reasons. According to the interviews, it appeared that ideas could move up the organizational hierarchy only to stop at a certain level. In this case, the ideas were neither accepted nor rejected. The employees did not receive adequate feedback to understand the outcome of their ideas. As reported by an HRIS analyst:

“We want them to at least respond to us, even if it is a negative feedback. They should tell us what is wrong about the suggestion and how to fix it. I really don’t know why sometimes we present ideas and they just don’t say anything.” (Participant 18)

Because the process was unclear, employees were not always able to track the progress of their ideas. Most participants felt that there was a *lack of clarity* in relation to the process of communicating ideas and initiating a change concerning administrative innovation. Throughout the interview, a variety of perspectives were expressed about the ways of communicating ideas in the organization. For example:

“Nothing is clear. I mean you can talk about it or write a proposal. It is unclear, there is no specific system for suggestions or even complaints.” (Participant 22)

“The process is totally blurry, by default we do it by talking to our direct supervisor firstly. But in regard to having a specific process, or writing a proposal, or for example what approvals are needed, it is totally blurry, everyone is doing it differently.” (Participant 31)

The above quotations convey that employees are not aware of a specific process or guidelines to demonstrate how ideas should be shared in the organization. As mentioned in sharing the idea section (section 4.4.2), employees may prefer to do it formally by writing a proposal or informally by talking to their team leader or supervisor about the idea.

In addition, *having lengthy procedures* may affect the development process of administrative innovation. It means that the work procedures take a long time and involve many

steps (as explained in section 4.2 when discussing the context of public sector organizations). In the discussion of barriers, participants talked about the lengthy processes in relation to implementing an idea. For example, a senior HRIS analyst reported that:

“The time it takes to implement an idea. It means that you can submit a proposal today, but for the management to decide whether to accept or reject the idea, it will take a long time.” (Participant 23)

Based on the findings, it seemed that even minor changes sometimes went through the same procedures and required a long time to be approved and implemented. As noted by an HR analyst when talking about the experience of initiating change:

“Sometimes I feel that the process is long, especially when sometimes the changes are too small and does not need all of these approvals it might be just a simple change.” (Participant 4)

In addition, there was a perception that the *lack of IT resources* can be a challenge for administrative innovation that involved changes in the system. This referred to the unavailability of technical tools and staff. In the interviews, concerns were expressed about how this may affect the implementation of ideas. One of the supervisors, who talked about the experience with HRIS technicians in implementing changes, reported that:

“The biggest challenges we face are related to the implementation of ideas. Because in order to implement something I need to go through an approval cycle. In addition to the delay from the IT team. They take a long time to listen to our notes or to make small changes. This is may be because they are handling more than one project at a time. Even after developing something, there is a delay in moving it from the work environment RFC to the production environment to make it ‘live’. Also, one of the things that delay projects is the huge amount of change requests.” (Participant 12)

The above quotation illustrates that the lack of IT resources may cause a delay in the implementation of new ideas. This view was echoed by one of the HRIS technician who reported that:

“Not everything can be done on the system. We have limitations and not everything they ask us can be implemented. If it is approved, the job will be arranged according to priorities and according to the availability of IT resources. Even if it is a minor change in the system, it can take a year or more to start working on it. Especially because our technicians are working not only for the HR but also for other departments and systems. They may have a commitment and must complete their work first and then they can start developing something new.” (Participant 13)

The quotations mentioned above show that HRIS technicians were responsible for operating other systems in the organization and therefore, might not have the ability to implement change requests in a timely manner. This may hinder the development process of administrative innovation since, as explained earlier in the idea sharing section (section 4.4.2), HRIS technicians played an essential role in the development of ideas involving technological changes.

In addition, *having time constraints* also limited the possibilities of implementing some of the ideas. The following quotation shows how ideas can be rejected due to the lack of time, as noted by an HRIS technician:

“Sometimes during the development stage, the employees bring up new ideas but we reject it due to the lack of time. Sometimes, there are really great ideas and from the inside I really like them but unfortunately I have to reject them because we need to stick to the schedule.” (Participant 15)

In summary, this section reported the findings based on the axial category ‘*encountering difficulties*’. It presented the challenges that employees might face during the different phases of the development process of administrative innovation. The difficulties were divided into

three subsections. First, personal barriers concerned with personal traits that may negatively affect employee's intentions to take initiative such as shyness, self-doubt and having negative expectations. Second, interpersonal barriers, which emerged from interacting with organizational members such as dealing with negative colleagues, perceptions that ideas were not heard or ideas that were not taken seriously into consideration. Third, organizational difficulties related to organizational processes that may affect the development of administrative innovation such as inertia, lengthy procedures, lack of clarity, lack of IT resources and time constraints.

4.7 Theory development: the emergence of a core category and integration

This section explains the integration of categories and the emergence of the core category. The first section describes how the axial category '*taking initiative*' was raised to become the core category in the explanation of the process. The second section presents the integrative diagram which denotes the emergent theory the development of administrative innovation following the adoption of HRIS in the public sector organization.

4.7.1 Taking initiative as the central phenomenon

The development of administrative innovation in relation to HRIS post-adoption is the main theme of this research. Throughout the process of comparative analysis, '*taking initiative*' is an axial category that emerged in the analysis and appeared frequently in the data. It was also possible to relate it to other identified categories because it seemed to fit the data well. Taking initiative, as explained in section 4.4.1, referred to taking a series of actions towards initiating a change related to the administrative work. It is concerned with proceeding to turn ideas into innovations. Thus, it represented a central sub-process within the larger process of the development of administrative innovation.

To ensure its fit with the data, a detailed storyline was developed and checked against the raw data. This storyline helped in identifying the core category and in the final integration of categories. The storyline was developed as follows: Taking initiative towards administrative innovation necessitated making sense of and interacting with HRIS. By making sense of the system, the employees improved their knowledge and understanding of HRIS and its features. The HRIS knowledge, along with their detailed understanding of their tasks, helped them to generate ideas for administrative innovation. Forming the idea referred to conceptualizing ideas for solving problems or improvements.

Within the larger process of taking initiative towards administrative innovation, the employees engaged in interrelated actions and interactions. When taking initiative, they shared their ideas and interacted with different organizational members such as team members, professionals, and management. Sharing the idea means to convey their ideas to other organizational members such as team members. Interacting with the management has to do with how ideas were communicated and handled by the management. By disclosing the innovative idea, organizational members may have different reactions. They had different attitudes towards administrative innovation: some were motivated, others indifferent, and still others resistant.

These actions and interactions related to administrative innovation are affected by intervening conditions which can diminish the employees' chance of taking initiative. These intervening conditions denoted difficulties relating to the employees themselves, the interaction with organizational members and the organizational procedures.

The process that encapsulates these actions and interactions is aimed at implementing change, improving the administrative work and getting acknowledgement. As a result of taking initiative, employees may have engaged in the process of implementing change. The change can be accepted or rejected based on the type of change and its effect on work performance.

Improving the administrative work was considered in this research as manifestations of administrative innovation. It may involve technological, social and operational changes. Technological changes involved modifications and improvements such as adding new features to the system. Social changes involved, for example, improving internal communication or it can be related to organizational culture and leads to changes in work norms. In addition, operational changes have to do with changes in work processes and employees' tasks. For instance, gaining more access to perform additional tasks was an example of task-related changes. Acknowledgement and recognition may result from taking initiative, meaning that the employee may or may not be acknowledged.

Working in a public sector organization represented the set of conditions that created the 'context' in which employees take initiative. It involves organizational conditions, for example, public sector organizations have many properties such as having routine procedures which referred to maintaining the existing processes unchanged. In addition, it involved personal conditions such as having job security which referred to having a secure job without the risk to be dismissed. Moreover, it involved specific contextual conditions pertaining to the organization in this study, such as being an independent organization, meaning that it evidenced independence in terms of the management and decision-making.

In summary, the process illustrated a progress towards administrative innovation within the context of public sector organizations. The process began by making sense of HRIS and generating ideas, before proceeding to taking initiative, which is a central process that involves idea sharing and interacting with different organizational members. As a result, this may lead to implementing change, acknowledgment and administrative innovation. In addition, there are perceived difficulties that may be encountered throughout the process. The core category, taking initiative, was closely linked to other categories using an integrative diagram based on the paradigm model. The following section presents the integrative diagram.

4.7.2 Integrative diagram for the development of administrative innovation

After selecting ‘taking initiative’ as the core category and ensuring its fit with the data, an integrative diagram (Figure 14) was created based on the paradigm model (Strauss & Corbin, 1998). The diagram was created to integrate the identified categories around the core category. Using integrative diagrams is one of the techniques of grounded theory. According to Corbin and Strauss (2015), diagrams should have a logical flow that illustrates the relationships between categories. The following diagram was created to represent the development process of administrative innovation in relation to HRIS post-adoption in the context of public sector organizations.

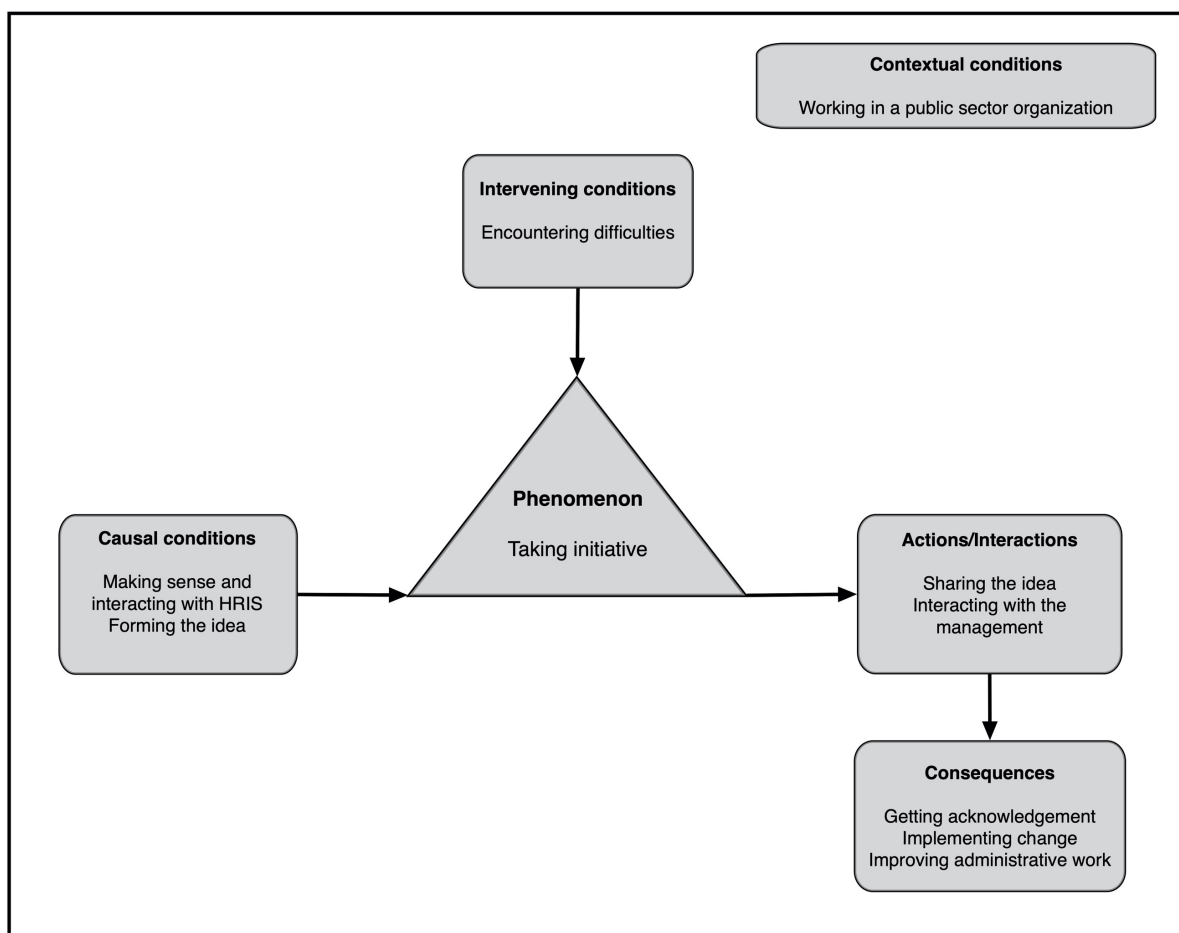


Figure 14 - Integrative diagram for the development of administrative innovation - the emergent theory of taking initiative

The diagram represents a series of actions aimed at administrative innovation. It illustrates that the development process of administrative innovation does not follow a linear pathway, as some conditions may hinder the process or prevent it.

As shown in the diagram, the central phenomenon is taking initiative. It requires both causes and actions/interactions and is affected by intervening conditions. The causal conditions involve making sense of HRIS and forming an idea. The actions and interactions include sharing the idea and interacting with management. The intervening conditions that affect the phenomenon relate to encountering difficulties and challenges throughout the process. The outcomes of this process may involve acknowledgement, implementing change and improving administrative work.

It is important to note that the relations in the diagram represents causal explanations rather than causal relations. As a grounded theory study, this study is not concerned with causality (Strauss & Corbin, 1998). Therefore, this study does not aim to present cause and effect relationships. Instead, it is more concerned with how different conditions explain the development of administrative innovation following the adoption of HRIS. Therefore, the causal explanations represent mechanisms that constitute an understanding of the change process (Carrero et al., 2000).

4.8 Chapter summary

To summarize, it is essential to highlight the key findings presented in this chapter:

- The data revealed more about the centrality of employees than the management regarding their actions and interactions and how they initiated a change in the administrative work.
- Independent public sector organizations, although still featuring a substantial bureaucratic work environment, allowed a considerable degree of innovation.

- Administrative innovation in the public sector is often employee driven. Employees had the agency to initiate and participate in administrative innovation. Therefore, in this research, employees were considered as the main initiators of administrative innovation following the adoption of HRIS (although, in some cases, innovations can be introduced by the management).
- EDI is not purely a bottom up process, instead it involves interactions and exchange between employees and management.
- HRIS facilitated the generation of innovative ideas in relation to administrative innovation. In the context of post-adoption, the data revealed that employees were more familiar with the use of HRIS. It was found that sense-making and interacting with HRIS influenced employees' participation in administrative innovation.
- Taking initiative was the central process in the development of administrative innovation. Employees take initiative in order to transform their ideas into innovations and, thus, to improve their work processes and tasks.
- Non-financial incentives were perceived to have an effect on employee motivation toward administrative innovation. This can be as important as financial incentives.
- The process of idea sharing lacked clarity and, therefore, employees often followed organizational norms to disclose their ideas of administrative innovation.
- Although administrative innovation was often initiated by employees, the management and HRIS technicians played a critical role in the development process of administrative innovation. Management motivated and supported employees and formalized ideas. HRIS technicians acted as consultants and could assist in implementing administrative innovation.

- In some cases, administrative innovation occurred as hidden innovation. This happened when employees concealed their own innovative ideas and implemented the change secretly.
- Employees have different attitudes towards administrative innovation: some were motivated, others indifferent, and still others resistant.
- Administrative innovation was manifested through a variety of changes including technological, operational and social changes.
- The perceived barriers of administrative innovation included personal, interpersonal and organizational barriers that could hinder the development process of administrative innovation.
- Documents did not reveal guidelines or rules related to administrative innovation.

In conclusion, this chapter presented the findings of this research regarding the development process of administrative innovation in relation to HRIS post-adoption. It started with an explanation of the contextual conditions of public sector organizations in which administrative innovation developed. After that, the process of development was divided into three phases: ideation, actions and interactions, and idea implementation. The ideation phase included categories that showed how ideas of administrative innovation are formed. The actions and interactions phase showed how ideas are communicated including the strategies of responding and engaging with administrative innovation.

The idea implementation phase included the potential consequences of the development process. In addition, it presented the difficulties and challenges that can affect the process and included personal, interpersonal and organizational difficulties. Lastly, an explanation for the development of the core category was provided along with an integrative diagram that represented the emergent theory.

5 Discussion

5.1 Introduction

In the final phase of grounded theory methodology, the literature is brought into the discussion in order to integrate the findings and to position the emergent theory within the wider disciplinary knowledge (Corbin & Strauss, 2015). Therefore, the purpose of this chapter is to discuss the most prominent findings from the analysis in light of a formal theory in order to illustrate how the emergent theory of the development of administrative innovation contributes to the body of knowledge.

This chapter is organized into ten sections. The following section (5.2) explains the integration of the emergent theory into the conditional/consequential matrix, which is the basis for the structure of this chapter. The next section (5.3) presents the rationale for applying a theoretical lens to view the emergent theory. This is followed by an explanation and justification for selecting a specific formal theory as a theoretical lens for the discussion of findings (5.4). The remainder of the chapter is structured around the matrix levels into five sections: individual (5.5), team (5.6), professionals and management (5.7), organizational (5.8) and sectoral level (5.9). Subsequently, the following section (5.10) presents a diagram that demonstrates the integration of emergent theory with the existing knowledge. Finally, a summary is provided in section (5.11).

5.2 Conditional/consequential matrix

The conditional/consequential matrix is a useful analytic tool of the grounded theory methodology to assist the researcher to “present a more complete and persuasive explanatory account of the phenomenon under investigation” (Strauss & Corbin, 1998, p. 191). It helps to

illustrate the complexity of the development of administrative innovation following the adoption of HRIS by integrating the findings within the conditional/consequential matrix.

The matrix is used to visualize the phenomenon within different levels of influences which represent a range of micro and macro conditions related to the phenomenon (Corbin & Strauss, 2015). Micro-conditions refer to conditions related to individuals, such as experiences, perspectives, assumptions and backgrounds, that can influence their interpretation. In contrast, macro-conditions are distinct from individuals and include broader conditions, including organizational and social conditions (Corbin & Strauss, 2015).

The rationale for creating the matrix, in this study, is that innovation is a complex process that involves different activities across different levels. In addition, as explained in the methodology chapter (Section 3.9.3.2), while grounded theory methodology is widely employed in different studies, the integration of the matrix is less common (Creswell & Poth, 2017). In this study, the matrix is utilized as an important representation tool to gain a better understanding of the level of influences related to the development process of administrative innovation. More specifically, the matrix demonstrates the multilevel analysis and shows how conditions related to administrative innovation can occur at the level of the individual, team, management, organizational and sectoral level.

To create the matrix presented in Figure 15, the core category, which is ‘taking initiative’, is placed in the centre of the matrix. As explained in the findings chapter, ‘taking initiative’ is an axial category that was raised to become the core category because it appeared frequently in the data and allowed other categories to be integrated around it. In addition, ‘taking initiative’ is considered a central step in the development process of administrative innovation which is the focus of this study. Therefore, the core category is surrounded by the other axial categories which represent conditions (causal and intervening), actions/interactions and consequences. These categories are distributed across a different range of levels.

Based on the scope of the study and the emergent data, five levels are presented in the matrix. Starting from the centre and moving outward, the first micro level is the individual level which discusses findings related to the employees such as their perceptions, feelings, experiences and knowledge in relation to administrative innovation. This is followed by the team level, which focuses on idea sharing and interaction within teams. Then, the management and professionals' level which is considered as a mezzo level as it moves beyond team members and discusses the interactions with IT technicians and managers. After that, the organizational level deals with organizational processes and conditions that are related to administrative innovation. Lastly, the sectoral level, which is the broad macro level, discusses contextual conditions related to the public sector.

As shown in the matrix diagram (Figure 15), the axial categories overlap between the levels of the matrix. This is because the categories represent set of conditions and actions/interactions that span different levels. In general, the micro levels are related to generating and conceptualizing ideas. The mezzo levels are related to sharing and legitimizing ideas. Lastly, macro levels are related to formalizing and implementing administrative innovation.

It is important to highlight again that the structure of the discussion chapter is based on the conditional/consequential matrix and the findings related to each level are discussed from the perspective of relevant theories. Therefore, prior to discussing the levels of the matrix, the next section explains the rationale for applying a theoretical lens to discuss the findings related to the development process of administrative innovation.

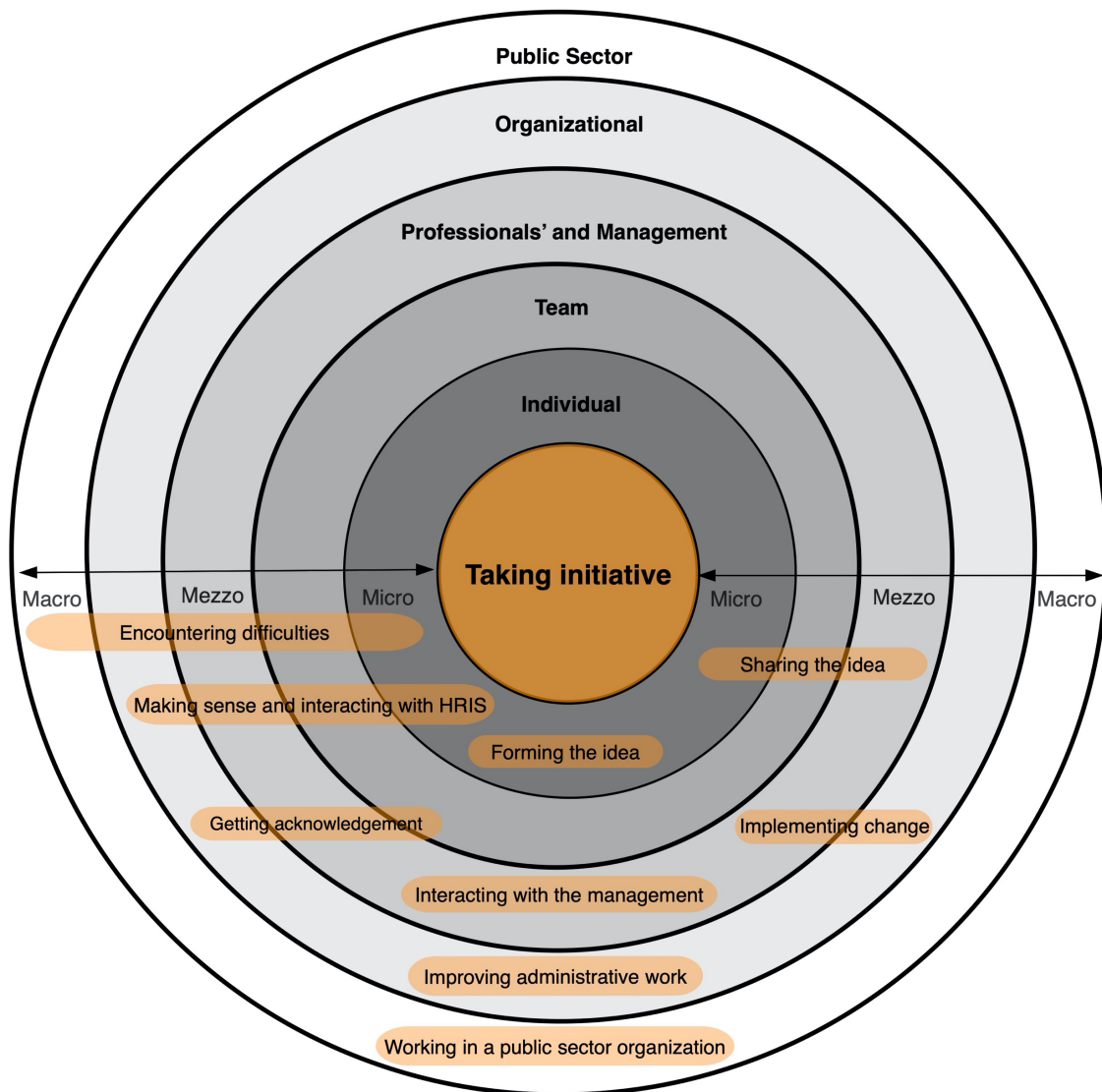


Figure 15 - The conditional/consequential matrix

5.3 Application of a theoretical lens

The last stage in building a grounded theory is to link the emergent theory to the existing literature (Corbin & Strauss, 2015). Before integrating the emergent theory with the literature, it is essential to establish the reason for applying a theoretical lens to frame and discuss the findings.

In grounded theory, two approaches can be applied for theoretical integration with the literature. The first approach is to link the categories of the emergent theory to relevant studies in a similar substantive level in order to illustrate in what ways the theory supports, extends or contradicts previous studies (Corbin & Strauss, 2015; Urquhart, 2012). The second possible approach of theoretical integration is to integrate the emergent theory into a relevant formal or meta theory in order to scale up the emergent theory (Eisenhardt, 1989; Urquhart & Fernández, 2013). Formal theories are considered as being “less specific to a group or place, are broader, denser, and can be used to understand a wider range of social concerns and problems” (Corbin & Strauss, 2015, p. 63).

In this study, the second approach of theoretical integration is adopted. According to Urquhart (2012), this type of theoretical integration is a way to “view our emergent theory through the lens of higher-level, more formal theories and, in this process, start to abstract our emergent theory still further” (p. 169). A notable example of studies adopting the second approach is Orlikowski's (1993) study on the adoption of CASE TOOLS in organizations (Urquhart, 2012; Walsham, 2006). Orlikowski (1993) applied grounded theory methodology to explain radical and incremental organizational changes associated with software development, and integrated the findings into a formal theory within the innovation literature. The reason for applying this approach of theoretical integration is that “by attempting to connect the grounded theory with aspects of existing formal theory, a more general substantive theory can result” (Orlikowski, 1993, p. 330). This approach is useful in raising the theoretical level of the emergent theory and, hence, enhancing theoretical generalization (Eisenhardt, 1989; Orlikowski, 1993).

Relevant meta theories are selected based on the findings of the study and by reviewing the literature. The theoretical lens should provide deeper insight and understanding of the emergent theory (Walsham, 2006). However, it is essential to ensure that the applied theoretical

lens is well suited to the emergent theory and is not forced to fit the data (Glaser & Strauss, 1967; Urquhart & Fernández, 2013).

Therefore, in this study, the emergent theory is framed and discussed in relation to a formal theory whilst acknowledging some aspects of other relevant studies on IS and innovation literature. It is considered as a useful way to obtain the full potential of the grounded theory approach as explained by Urquhart and Fernández (2013): “the conceptualisation level can be improved by the extra step of engaging formal theories to further explain and integrate the emerging substantive theory. While not mandatory, this step is an important component of the method that should be seriously considered in order to achieve the full potential of GTM” (p. 228).

As explained in the methodology chapter (Section 3.7.1), the researcher reviewed the literature in two phases. The first phase, which is the non-committal literature review, is presented in the literature review chapter (Chapter 2) and, involves an exploration of existing studies and theories on HRIS, innovation and the public sector. Subsequently, after developing the substantive theory, an integrative literature review was conducted to locate the emergent theory within the existing literature.

Based on its relevance and fit with the emergent theory, institutional entrepreneurship (IE) was selected as a suitable theoretical lens to discuss the findings which are related to the development process of administrative innovation following the adoption of HRIS in public sector organizations. Hence, this chapter integrates the emergent theory with the relevant concepts from IE literature. The following section explains IE and sets out the rationale for selecting this theoretical lens to discuss the findings.

5.4 Institutional entrepreneurship (IE): explanation and rationale

5.4.1 Institutional entrepreneurship (IE)

Institutional entrepreneurship (IE) originates from institutional theory (Battilana & Leca, 2008; DiMaggio, 1988). Before explaining the origin of institutional entrepreneurship, it is essential to briefly explain the principles of institutional theory. Institutional theory emerged from sociology and is used across different disciplines (Najeeb, 2013). It is used extensively in organizational research as it provides useful insights to explain and understand not only the stability of institutions, but also the transformation and change of institutions (Currie, 2009; Raffaelli & Glynn, 2015). The neo-institutionalism perspective have begun to pay more attention to change under institutional settings (Wijen & Ansari, 2007). This is relevant to this study of innovation since innovations often lead to the disruption of existing institutions (Raffaelli & Glynn, 2015).

Institutions refer to “shared rules and typifications that identify categories of social actors and their appropriate activities or relationships” (Barley & Tolbert, 1997,p. 96). They can include formal and informal rules, norms and taken-for-granted assumptions that regulate the relationships between individuals and their behaviour (Portes, 2006). Institutions are manifested in the way in which people make choices, interact and perform their work (Garud, Jain, & Kumaraswamy, 2002).

In organizations, institutions provide stability to organizational practices and processes (Albertini & Muzzi, 2016). Institutions can influence and also be influenced by broad changes in the environment (e.g. Hoffman, 1999) such as government regulations and minor changes within teams or individual tasks (Powell & Colyvas, 2008). Therefore, institutions are fundamental as they provide structure to daily activities and interactions. In addition, daily

interactions and work practices can maintain, alter or diminish institutions and innovation (Powell & Colyvas, 2008).

In the literature, studies on institutional theory can be categorized into two streams based on the type of the process under investigation. One stream focuses on institutional effects (or pressures) and the other focuses on institutionalization (Currie, 2009; Mignerat & Rivard, 2009). The institutional effect stream views institutions as causes that affect organizations or other entities (Hsu et al., 2012; Jepperson, 1991). It is generally concerned with isomorphism which is a process that forces an organization to be homogenous with other organizations encountering the same environmental conditions (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Thus, this stream focuses on how institutions affect organizations. In their seminal paper, DiMaggio and Powell (1983), distinguish between three types of isomorphism processes: coercive, mimetic, and normative processes. Coercive isomorphism is based on the political influence (such as government regulations). Mimetic isomorphism results from facing uncertainty. Normative isomorphism is related to professionalism (such as imitating other more successful organizations). DiMaggio and Powell (1983) argue that these processes lead organizations in the field to be similar. Building on these three processes, Scott (1995, 2008) introduced the pillars framework which classifies institutions as regulative (coercive), cultural-cognitive (mimetic) and normative. This classification is widely referred to as the pillars of institutions (Mignerat & Rivard, 2009; Scott, 1995). Researchers argue that these pillars are not only applied to explain change, but to explain resistance to change as well (Currie, 2009; Perera, 2007; Swanson & Ramiller, 1997).

The other stream, institutionalization process, focuses on institutional change. It is more concerned with the process of creating, sustaining, and replacing institutions. As part of this process, new ideas can emerge which may lead to changes and disruptions in existing institutions (Mignerat & Rivard, 2009). Most studies in this stream focus on the broad

organizational level, with few studies investigating the role of individuals in the institutionalization process (Currie, 2009). Therefore, it is suggested that researchers must investigate micro-levels such as individuals or teams, in order to understand how institutions are created, altered and eliminated (Powell & Colyvas, 2008). However, institutional theory has often been criticized for overlooking the issue of agency (Battilana, 2006).

In order to address the issue of human agency, IE emerged as one of the main concepts of institutional theory (Currie, 2009; Fligstein, 1997). It was first conceptualized by DiMaggio (1988) who stated that “new institutions arise when organized actors with sufficient resources (institutional entrepreneurs) see in them an opportunity to realize interests that they value highly” (p. 14). Institutional entrepreneurs include different types of actors, such as individuals, organizations and networks (Hardy & Maguire, 2008). IE has emerged to investigate how institutions developed (Maguire, Hardy & Lawrence, 2004). Therefore, its main focus is on institutional change. Institutional change involves four types: institutional formation, institutional development, reinstitutionalization and de-institutionalization (Jepperson, 1991). Institutional formation refers to creating a stable behavioral pattern. Institutional development involves modifications within existing institutions. Reinstitutionalization refers to exiting an institution and creating a re-organized institution around different rules and principles. De-institutionalization refers to eliminating existing institutions (Jepperson, 1991; Oliver, 1992).

The aforementioned conceptualization of IE by DiMaggio (1988) reveals three main aspects related to institutional change: agency, resource mobilization, and opportunity (Dorado, 2005). Agency refers to the willingness of actors to engage in a process to reproduce or to transform existing structures or patterns of behaviour (Dorado, 2005; Emirbayer & Mische, 1998). Resource mobilization refers to the access and use of resources needed to initiate an institutional change. Resources can involve cognitive, social, and material resources. Opportunity is defined as “the likelihood that an organizational field will permit actors to

identify and introduce a novel institutional combination and facilitate the mobilization of the resources required to make it enduring” (Dorado, 2005, p. 391). IE also highlights embeddedness, legitimacy and power which are discussed further in subsequent sections (Beckert, 1999).

Some studies view IE as a collective action (Wang & Swanson, 2007; Wijen & Ansari, 2007). These studies focus on the collective effort and suggest that IE can involve collaboration between a group of actors which can be referred to as collective IE (Garud, Hardy & Maguire, 2007). It is argued that collective IE occurs when actors collaborate with others who have similar interests, in order to initiate macro-level changes (Pacheco, York, Dean & Sarasvathy, 2010). As an example, Wijen and Ansari (2007) draw on critical insights from institutional and regime theories to identify drivers of collective IE. They developed a conceptual framework for understanding the drivers of institutional change in fields where actors encounter collective action challenges. In this research, the findings are focused on ideas generated individually, although the development of administrative innovation may involve interaction between organizational members. As explained in the findings chapter (Section 4.4.2 and 4.4.3), employees may interact with team members and the management to share their ideas of administrative innovation.

Recently, in relation to IS literature, an institutional perspective has been adopted to investigate a wide range of IS topics (Baptista, Newell, & Currie, 2010; Mignerat & Rivard, 2009). Topics include IS development (Chae & Poole, 2005), IS adoption and use (e.g. Heikkilä, 2013), IS innovation (e.g. King et al., 1994; Swanson & Ramiller, 2004; Wiredu, 2012) and administrative innovation (Hsu et al., 2012). For example, in IS research, some studies focus on the influence of institutions on the design, adoption and use of IS (Heikkilä, 2013; King et al., 1994; Orlikowski & Barley, 2001; Teo, Wei & Benbasat, 2003). For instance, Teo et al. (2003) employ an institutional perspective to investigate the adoption of

interorganizational IT innovation. The results of their study showed that the three institutional forces (mimetic, coercive and normative) influence and drive organizational intention to adopt interorganizational systems (Teo et al., 2003).

In addition, an example of institutionalization is the process of institutionalizing IS. Previous IS research investigated how IS become institutionalized within organisations (Baptista et al., 2010; Nielsen, Mathiassen, & Newell, 2014; Silva & Backhouse, 1997). IS can be considered as institutionalized when it is integrated with the routines of employees (Baptista et al., 2010). In addition, IS can be regarded as institutionalized when it is no longer viewed as innovation and when its use is taken-for-granted to perform specific work tasks (Silva & Backhouse, 1997).

Although institutional theory is applied to examine different IS topics, only a few studies have applied IE as a theoretical lens to examine IS and innovation (e.g. Han & Park, 2017; Liu & Li, 2014; Wang & Swanson, 2007; Wiredu, 2012). For instance, by drawing on DiMaggio's (1988) seminal work, Wang and Swanson (2007) conducted a case study to analyse the role of institutional entrepreneurs during the institutionalization of a specific IT innovation which is an enterprise software, professional services automation. They focused on two IE activities: mobilization and legitimation. Their results show that institutional entrepreneurs mobilize an organizational community in order to increase the possibility of launching IT innovation successfully.

In summary, this section has explained the origin of IE as a recent strand of institutional theory that accounts for agency. It also provided examples of the application of IE within IS and innovation literature. The next section justifies the selection of IE as theoretical lens to discuss the findings of this study.

5.4.2 Rationale for selecting IE as a theoretical lens

This study is concerned with the development of administrative innovation following the adoption of HRIS. A grounded theory methodology was applied to develop an understanding of how employees use their knowledge of HRIS and their everyday work practices to come up with innovative ideas to modify or improve existing administrative processes and tasks.

Based on the findings, ‘taking initiative’ is the core category in the emergent theory which mainly focuses on the initiative of employees who use HRIS in their day-to-day work in a public sector organization. Taking initiative is an entrepreneurial activity initiated by ordinary employees to introduce changes and diverge from current practices. It is considered an entrepreneurial activity as it challenges ways of thinking and performing work in the organization (Shipton et al., 2017) This indicates that the development process of administrative innovation is often employee-driven and, hence, originates at the lower organizational level.

Furthermore, in order to understand EDI, it is essential to shed light on the context under which it occurs (Kristiansen & Bloch-Poulsen, 2010). Based on the findings of this research, it appears that administrative innovation develops within a substantially institutionalized context. It is noted that, in addition to the formal rules, administrative innovation is often managed by informal rules and norms within the organization.

In revisiting the literature, the concepts of change, agency, and institutional context were identified as relevant concepts to the emergent theory. After examining different theories, IE was selected as a well-suited theoretical lens. It is particularly relevant to understanding the findings as it takes into account the institutional context under which administrative innovation develops. In addition, IE integrates two main relevant concepts: *institutions* and *entrepreneurship* (Albertini & Muzzi, 2016). Institutions are established practices and norms

related to organizational processes and interactions. Entrepreneurship is related to the actions of actors who employ resources to initiate changes (Albertini & Muzzi, 2016; Maguire et al., 2004).

Given the focus on HRIS post-adoption, Baptista et al. (2010) argue that despite the lack of explicit link between institutional theory and IS post-adoption, institutionalization of IS is closely related to IS infusion stage (Section 2.3.6). They argue that since IS is fully embedded and integrated in the organizational routine, it contributes in creating stable work processes. To explain this, by continuously using the system, the IS enabled practices become embedded within organizational rules and practices or, in other words, become institutionalized in the routines and the behaviors of organizational members over time (Baptista et al., 2010).

From an IE perspective, organizational members can change or reproduce institutions by engaging in incremental changes in their routine work and daily activities (Powell & Colyvas, 2008). Therefore, it is essential to pay more attention to regular organizational members as change agents and not to focus only on leaders and heroic change agents (Barley & Tolbert, 1997; Hardy & Maguire, 2008). This emphasis is relevant to this study because it examines administrative innovation from the perspective of HRIS users from different organizational levels. This study reveals that ordinary employees are often the drivers of administrative innovation following the adoption of the system. Therefore, employees are considered as change agents and thus, initiators of administrative innovation. This perspective can be closely linked to the concept of institutional entrepreneurs. However, it is important to note that not all change agents can be considered as institutional entrepreneurs. Battilana (2006) specifies that “only individuals who somehow break with the rules and practices associated with the dominant institutional logic(s) and thereby develop alternative rules and practices can be regarded as institutional entrepreneurs” (p. 657). Therefore, in this study, the employees

who initiate and implement their ideas are viewed from the perspective of institutional entrepreneurs.

In addition, the concept of IE is deemed relevant because administrative innovation may lead to changes in existing work practices and norms; and it is noted that everyday work practices can result in institutional changes that can even move beyond the individual and the organizational level and radiate to the sectoral level (Smets, Morris & Greenwood, 2012).

In this study, administrative innovation involves incremental changes that may lead to modifying existing work practices and norms. Hence, in order to better understand this phenomenon, the influence of its institutional context should be taken into consideration. It is decided here that IE is well suited as a theoretical lens to view the emergent theory in relation to IS and innovation literature. This perspective enriches understanding of the development process of administrative innovation following the adoption of HRIS.

The following sections discuss the findings based on IE theory to explain why and how administrative innovation develops by focusing on individuals who can come up with ideas of administrative innovation, on their actions and the interactions within the institutional context and on the consequences of administrative innovation.

5.5 Individual level

This section discusses the conditions originating from the individual level in the conditional/consequential matrix in relation to IE theory. It offers an explanation of the conditions that enable individual initiators of administrative innovation to be considered as institutional entrepreneurs by linking the key concepts of IE to the emergent theory.

According to the findings of this research, employees have a critical role in the development of administrative innovation following the adoption of HRIS. As reported in the

findings chapter (Section 4.3.2), most ideas for improvement and change originate from the employees. In addition, employees had the agency to initiate changes and participate in administrative innovation. In the findings chapter, several examples are provided to illustrate how employees deploy their knowledge of the system to come up with new ways to perform their tasks. For example, employees are able to generate ideas by engaging in different practices following the adoption of HRIS such as interacting with HRIS and engaging in exploratory learning and exploitative learning. This implies that innovative ideas, that can become more widespread as administrative innovation in the organization, are more likely to arise from the individual level rather than the team or management level. Support for this finding can be found in the innovation literature; research on EDI emphasizes that all employees have the potential for innovation in their work, regardless of their background or experiences (Kristiansen & Bloch-Poulsen, 2010).

Drawing on IE, employees who come up with ideas of administrative innovation within highly institutionalized environments can be conceptualized as institutional entrepreneurs (Battilana, 2006). In line with this, as explained previously (Section 5.4.2), IE theory emphasizes the role of individuals who are able to mobilize the available resources to establish new institutions or transform existing institutions (Maguire et al., 2004). Therefore, these individuals have the agency and the ability to engage in institutional change which may allow them to depart from existing work practices and norms.

One of the key concepts related to IE theory is human agency (DiMaggio, 1988). Human agency refers to the willingness of actors to engage in a process of modifying existing structures or patterns of behavior (Dorado, 2005; Emirbayer & Mische, 1998). This emphasis on agency and the purposive actions of individuals is consistent with the ‘taking initiative’ category, which is the core category in the emergent theory of the development of administrative innovation and thus, is situated in the centre of the conditional/consequential

matrix (Figure 15). As explained in the findings chapter, ‘taking initiative’ is a central process that refers to taking a series of actions towards initiating a change related to the administrative innovation.

As a result of introducing agency, IE research is often criticized from the perspective of the paradox of embedded agency (Battilana & D’aunno, 2009; Battilana, Leca & Boxenbaum, 2009; Garud et al., 2007). This paradox is captured in the following question by Holm (1995): “How can actors change institutions if their actions, intentions, and rationality are all conditioned by the very institution they wish to change?” (p. 398). This paradox is concerned with the lack of understanding of how actors are able to initiate institutional changes when they are constrained by their institutional environment. It is argued that to overcome this paradox, studies of IE need to focus more on the individual level and clearly identify the enabling conditions that allow individuals to engage in IE and overcome institutional limitations (Battilana & Leca, 2008). As a result, most researchers attempt to resolve the paradox of embedded agency by investigating the conditions that enable individuals to initiate institutional changes within the institutional environment (Battilana et al., 2009).

For example, Suddaby, Viale and Gendron (2016) emphasize the importance of reflexivity to resolve this paradox. They define the concept of reflexivity as “an individuals’ general awareness of the constraints and opportunities created by the norms, values, beliefs and expectations of the social structures that surround them” (p. 229). They argue that social skills and actors’ social positions affect the degrees of reflexivity which can then lead to either institutional stability or change.

In line with the concept of reflexivity, the findings of this research reveal that employees who participate in administrative innovation are aware of their institutional environment. The categories *working in the public sector* and making sense of HRIS (Section 4.2 and 4.3.1) illustrate that employees are aware of the rules and norms related to the public

sector, for instance, in terms of well-established procedures and lack of flexibility. In addition, employees are also aware of the opportunities available to them based on the nature of the organization (as an independent organization) and available resources such as HRIS.

Actor position is an essential factor that should be considered when investigating IE. Since actors differ in their positions in the organization, it is argued that their position affects their perception of the organization and their ability to act as institutional entrepreneurs in order to challenge existing rules and practices (Battilana, 2006). There is much debate in the literature regarding the position of institutional entrepreneurs. Researchers tend to argue that actors in dominant positions are more likely to initiate institutional change, while other researchers maintain that actors in less dominant positions can also act as institutional entrepreneurs (Hardy & Maguire, 2008). Studies that focus on the dominant positions view institutional entrepreneurs as heroic agents who have the ability to create disruptive and radical changes (Hardy & Maguire, 2008). Other studies view institutional entrepreneurs as regular actors (or change agents) who contribute to changing existing practices by engaging in their day-to-day activities (Powell & Colyvas, 2008).

In this study, interview participants include HRIS users with varying positions from different organizational levels. Managers and employees reflected on their experiences of initiating ideas to change work practices and systems. As explained in the ‘forming the idea’ category (Section 4.3.2), although managers introduced some ideas, it was found that most ideas for improvement and change originated from the employees. This finding aligns with the view that individuals occupying the least dominant positions have the ability to engage in administrative innovation which led to changing established work practices.

Institutional entrepreneurs can, thus, include ordinary employees without any intention to alter their institutions, but their practices can introduce change incrementally (Lounsbury & Crumley, 2007). As explained by Battilana (2006), “Individuals do not have to be successful

in institutionalizing new practices to qualify as institutional entrepreneurs. Individuals who undertake divergent organizational changes fulfil the criteria to be regarded as institutional entrepreneurs” (p. 658).

DiMaggio's (1988) definition of institutional entrepreneurs highlights that individuals engage in IE to realize various interests. Therefore, it is argued that actors are interest-driven to initiate changes in their setting (Greenwood & Suddaby, 2006). In his seminal study, DiMaggio (1988) suggests that further research should be conducted to investigate the role of interest in the institutionalization process. In response, Wang and Swanson (2007), in their study of IT innovation, found that actors who are interested in other institutional aspects of the technology (such as new capabilities) are more likely to engage in IE activities.

The findings of this study further distinguish between three types of interest that drive employees to take initiative and to participate in administrative innovation. The first type of interest is employees' self-interest which refers to the changes initiated by employees to pursue what is the best for themselves. For example, employees may create an alternative way of performing a task in order to make it easier for themselves and to save time. The second interest is group or team-interest; this is when employees pursue change for the benefits of their work team. The third interest is the interest of the organization as some employees are motivated to initiate changes that positively influence the organization. In relation to administrative innovation, it was found that these intrinsic motivations are more dominant than extrinsic motivations.

For example, as reported in the findings (Section 4.4.1), most employees emphasize that having a strong desire to improve is more important to them than extrinsic motivations. Therefore, intrinsically motivated employees are more likely to engage in administrative innovation to improve their work processes and tasks (Engen & Magnusson, 2015).

IE theory emphasizes the importance of resource mobilization in order to initiate an institutional change (DiMaggio, 1988; Hardy & Maguire, 2008). In institutional theory, resource mobilization is related to the access and use of resources needed to initiate an institutional change. According to Battilana and Leca (2008), previous studies have mostly focused on mobilizing resources to respond to institutional forces rather than to pursue institutional change. In this research, resource mobilization concepts are closely integrated with the findings to explain the institutionalization process; therefore, it illustrates how resources are exploited to initiate institutional change.

A wide range of tangible and intangible resources are discussed in the literature (Hardy & Maguire, 2008). In this study, three main existing resources are mobilized to initiate administrative innovation. These resources are organizational resources (IS), knowledge and people (which is discussed in the team level, Section 5.6).

In relation to organizational resources (IS), HRIS is an essential resource for the development of administrative innovation in the context of post-adoption. In this study, ‘making sense of and interacting with HRIS’ (Section 4.3.1) illustrates how HRIS users perceive and interact with the system. Sensemaking refers to creating meaning through interpretation and actions (Maitlis & Christianson, 2014; Weick, 1995). Making sense of and interacting with HRIS allows users to understand the issues surrounding HRIS and its use in the organization. Consequently, employees may deploy their knowledge of HRIS to conceive new ideas to improve their everyday work practices and tasks. Therefore, HRIS is considered as an organizational resource that can lead to forming ideas and initiating changes.

In line with March (1991), the findings of this research suggest that employees can use their knowledge to generate new ideas based on exploratory and exploitative learning. Exploratory learning and exploitative learning represent types of learning activities that are associated with IS post-adoption. These findings support the previous literature of IS usage and

IS post-adoption (Bagayogo et al., 2014; Burton-Jones & Straub, 2006; Saeed & Abdinnour, 2011). It is particularly relevant to Burton-Jones & Straub's (2006) general conceptualization of IS usage. They refer to exploratory usage as looking for innovative ways of using IS, while exploitative usage as IS usage that involves implementing knowledge of IS and tasks. In terms of exploratory learning, the findings are consistent with the previous literature in the view that exploratory learning represents “ the extent to which the user makes an active effort in finding new uses of the IS within their work environment” (Saeed & Abdinnour, 2011, p. 7). The findings of this study enrich the understanding exploitative learning by demonstrating how employees use their existing knowledge in experiencing different ways to perform their usual tasks.

In relation to knowledge, as a second type of resources, the findings indicate that employees' expertise and their knowledge of work processes and tasks assists them in generating ideas related to administrative innovation. For example, throughout the interviews, the majority of employees reported that they understood the details of their tasks in a thorough and comprehensive manner. This enabled them to initiate ideas to improve the existing system and work practices. This is also in line with the previous literature on EDI that views employees as an innovation capital (Kesting & Ulhøi, 2010). The findings illustrate how employees possess knowledge that the managers might not have and how they use their knowledge to come up with ideas to improve their work practices and tasks.

Researchers in IE emphasize the need to investigate whether IE is influenced by the prior experiences and knowledge of individuals (Pacheco et al., 2010). The findings of this research illustrate that previous knowledge and expertise may lead to generating innovative ideas. Examples are provided in the findings chapter (Section 4.3.2) to illustrate how employees can generate ideas based on their previous work experiences or educational background. For instance, one of the participants introduced an idea to add a feature on the

system based on his current and previous work experience with HRIS. Expertise can, hence, be included as one of the mobilized resources to initiate changes in existing work practices and norms.

Embeddedness is another key concept in IE. It can either be technology embeddedness or social embeddedness. Technology embeddedness is when IS becomes embedded in the organization (explained in section 5.8). Social embeddedness is concerned with the extent to which actors are engaged in established institutions and practices (Reay, Golden-Biddle, & Germann, 2006). Most institutional studies consider social embeddedness as a constraint in the institutionalization process (Battilana & Leca, 2008; Reay et al., 2006). This is also highlighted in the innovation literature. However, a recent study by Coetzer, Inma, Poisat, Redmond and Standing (2018) found that this embeddedness is positively related to the innovative behaviours of employees. They argue that employees who are highly embedded in their jobs are more likely to introduce innovations. The findings of this research show that there is an equal balance between new and experienced employees (whether highly embedded or not). Thus, both types of employees are able to come up with ideas and change work practices and tasks.

In summary, this section has illustrated how the individual level in the emergent theory aligns with the key concepts in IE such as human agency, actor position, interests, resource mobilization and embeddedness. The section that follows focuses on idea sharing and interaction within teams from the perspective of IE and the literature.

5.6 Team level

This section focuses on the interaction between team members and its influence on the development of administrative innovation from the perspective of IE.

Given that the previous section on individual level focused on the idea generation phase, this section proceeds to the idea sharing phase. In the innovation literature, this phase is also referred to as the idea promotion phase. Ideas promotion involves presenting initiatives to others and persuading them to accept and adopt those ideas (Haapasaari et al., 2018). As reported in the findings chapter (Section 4.4.2), participants explained their perceptions, experiences and interactions in relation to idea sharing.

The findings of this study show that most employees stressed the sharing of their ideas with other team members prior to proceeding to the formal approval and implementation process. The findings reveal that employees may be willing to share their ideas due to different reasons: to exchange knowledge, and to obtain support. From the perspective of IE, idea sharing practice is closely connected to the concept of resource mobilization (Maguire et al., 2004). Based on the findings, it appears that the team level is concerned with two types of resources: knowledge and people.

In relation to knowledge, the findings reveal that employees may decide to disclose their ideas to team members as a way of exchanging knowledge. They believe that suggestions offered by team members will enrich their ideas. For example, participants explained how idea sharing allows them to benefit from the expertise of other employees and to improve the quality of their ideas. It became apparent in the analysis that idea sharing helps employees with regard to conceptualizing their ideas and thus leads to refining their ideas. Hence, it appears that the team level is concerned with idea promotion and idea refinement as well.

Following the discussion of resources at the individual level (Section 5.5), people are also considered as an essential resource for IE. The findings show that employees may decide to share their ideas in order to obtain support and approval from team members. It is perceived that idea sharing with team members may give them more confidence to take their ideas forward. Employees also need to be able to share ideas with other organizational members who

have different expertise in order to obtain the information which is needed for pursuing administrative innovation. The development of innovation often requires input and support from multiple individuals or groups (Fligstein, 1997; Mumford, Scott, Gaddis, & Strange, 2002).

Gaining support can also be viewed as a way of granting legitimacy. Legitimacy is a key concept in IE (Clegg, 2010; Mignerat & Rivard, 2009). It can be defined as “a generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (Suchman, 1995, p. 574). It is argued that it is an important antecedent for institutional change behaviour. The acceptance and support of organizational members is essential to initiate new practices or changes as it can increase the likelihood of implementing the idea (Dorado, 2005; Hülshager, Anderson & Salgado, 2009). Therefore, in this study, legitimacy mainly refers to the social approval of administrative innovation that allows it to be considered as an appropriate change. Based on the findings, it appears that legitimacy can be assessed based on organizational interests and task requirements. For example, ideas that involve operational changes (Section 4.5.2), such as improvements in internal organizational processes or enhancing task performance, are more likely to be perceived as legitimate.

The findings mentioned earlier in relation to idea sharing are broadly in harmony with those of EDI studies that highlight importance of the interaction between employees and team members in the process of developing innovation (Hülshager et al., 2009; Kristiansen & Bloch-Poulsen, 2010; Laviolette et al., 2016).

In contrast to the emphasis given to idea sharing in the literature, the findings of this study illustrate that some employees are against the notion of idea sharing with team members. The reason for this rejection may be due to the lack of collaboration between team members or dissatisfaction with the team.

In relation to lack of collaboration, the findings of this study reveal that a lack of collaboration tends to hinder idea sharing between team members. This finding supports the existing literature in IE and EDI. Collaboration is key to IE process, it is considered as another way of gaining legitimacy (Hung & Whittington, 2011). Similarly, in innovation literature, Collaboration is considered one of the antecedents of EDI (Saari et al., 2015; P. Smith, Ulhøi, & Kesting, 2012).

In relation to dissatisfaction, it is argued that employees tend to share ideas with other organizational members who have similar values or norms (Smith et al., 2008). The findings of this study support this point of view by illustrating that employees may not be willing to share their ideas if they perceive that their team members have different values and attitudes toward change. For example, employees may withhold innovative ideas when they feel that other team members resist change and prefer to maintain the traditional way of doing things. As Hiltunen and Henttonen (2016) stress, “innovation can be valuable to some groups within the organisation and to some they may have no value or even a negative effect... innovative individuals are not always desired from the co-workers’ perspective and not all innovations are necessarily ‘good’ or desired” (p. 357). This view is also shared by Battilana & Leca (2008) in IE literature by arguing that actors who propose institutional change are likely to encounter opposition by other actors if their interest is in opposition to the proposed change.

The findings of this study further support this view by showing that *dealing with negative co-workers* is one of the interpersonal barriers (Section 4.6.2) that employees face when sharing their ideas with non-supportive organizational members. Sharing an idea with negative team members may lead to discouragement and a lack of interest in taking initiative and pursuing innovation. This may also lead to *idea appropriation*.

Idea appropriation was a particular concern for some participants. A similar concern was mentioned by Lui and Hon (2016); they termed it ‘destructive competition’. It is defined

as “individuals’ intentional suppression of information or ideas for fear that others may use them” (Lui & Hon, 2016, p. 871). It is argued that people have a tendency to withhold their ideas when they feel that others may take their ideas. This is consistent with the findings of this research, as mentioned in the findings chapter (Section 4.4.2), that some participants expressed their disappointment when they initiated an idea but other organizational members take the credit for it. Therefore, idea appropriation may prevent idea sharing and consequently hinder innovation (Lui & Hon, 2016).

When ideas are shared, they tend to move forward in the development process to other levels such as the professional and management level. However, some innovative ideas remain with the employees who are not willing to share. This study also reveal some interesting findings showing that employees may not just suppress their ideas but they may also implement their ideas without sharing them with other organizational members. In this research, as reported in the findings chapter (Section 4.4.2), this is considered as hidden innovation. Hidden innovation refers to unrecognized minor changes that take place in day-to-day activities.

This finding here extend the recent work of Haapasaari et al. (2018) who identified the potential outcomes of employees’ initiatives which include: implemented in the organization, terminated, lost momentum, and remain open. Lost momentum refers to those ideas that are shared and experimented but not fully implemented while remain open refers to ideas that are shared but no decision is taken whether to implement them or not. The findings of this research support their view and adds that some initiatives may lead to hidden innovation.

In innovation research, this is similar to the concepts of knowledge hiding, bootlegging, and underground innovation. It is argued that ‘knowledge hiding’ is an attempt to withhold knowledge from team members (Pandher, Mutlu & Samnani, 2017). Bootlegging and underground innovation mean secretly working on ideas which are not formally supported by the organizations (Knight, 1967; Sakhdari & Bidakhvidi, 2016). The data analysis here

suggests that some employees are reluctant to share ideas with team members because of their perception that their ideas are too simple to be shared. This is similar to ‘actor apathy’, which appears when employees perceive their contribution to be insignificant and therefore abstain from engaging with others (Wijen & Ansari, 2007).

In this section, findings related to the team level and idea sharing were discussed in light of IE and the relevant innovation literature. The findings are related to the relevant concepts from IE such as resource mobilization and legitimacy. The next section discusses idea sharing beyond the team level and considers the interaction of employees with professionals and management in relation to administrative innovation.

5.7 Professionals’ and Management level

Based on the findings, it appears that professionals and managers have central roles in the development of administrative innovation including idea generation and idea implementation processes. This section discusses the findings related to the process of interaction between them in relation to IE.

Although EDI is often considered as a bottom-up innovation process (Brandi & Hasse, 2012). This research shows that it is not purely a bottom up process instead it involves interactions and exchange between employees and management, which is in line with Høyrup's (2012) classification of EDI approaches including the first order EDI and second order EDI order EDI (Section 2.2.6.2). The results of this study offer more insight into the enablers of such interaction. It has been noted that managers and professionals, such as HRIS technicians, can offer motivation, guidance and support. Hence, employees may choose to interact with managers and professionals in order to share and implement their innovative ideas

As reported in the findings, it is a common norm for employees to seek out professional advice before moving forward with their ideas. They tend to obtain professional opinion concerning their ideas from HRIS technicians or senior employees who have more expertise than them. Based on IE literature, this act can be considered as a way of resource mobilization and gaining legitimacy. It was found that regardless of the level of employees' expertise, they often acquire professional advice particularly if their ideas involve changes beyond their personal tasks. For example, as reported in the findings chapter (Section 4.4.2), some employees explained their experience of sharing ideas that involve technological changes with HRIS technicians. They believe that this interaction allows them to determine the possibility of implementing their ideas before taking their ideas forward. In addition, interaction with their supervisors and managers is perceived as a way to validate their ideas, and thus, obtain legitimacy and support. It is argued that legitimacy and support give a green light to employees for moving forward and convert their ideas into implemented innovations (Perry-Smith & Mannucci, 2017).

Smith et al. (2012) maintain the view that supportive management is one of the critical enablers of employees' initiatives. In line with the previous research on innovation, the findings of this study highlight the importance of management support to encourage employees to voice their ideas and to also help them move their ideas to the implementation stage. Despite the emphasis on supportive management, some innovative ideas may still be implemented as hidden innovation without management support (Section 5.6). As reported in the findings (Section 4.4.2), employees can introduce changes in the way they perform their own work tasks without informing or sharing the ideas with management. This is rarely discussed in the literature in relation to EDI and IS post-adoption.

In the findings, managers stressed the importance of giving latitude to employees in relation to task performance. Latitude refers to giving employees the freedom in performing

their tasks based on their knowledge and their skills (Ahmed, 1998). Some managers perceive freedom/latitude as an essential strategy to influence employee confidence and to allow them to experience new ways of doing their work and therefore increasing the level of innovation. This finding is consistent with the existing literature on autonomy showing that task autonomy can enhance idea generation and innovation (Ahmed, 1998; Ahuja & Thatcher, 2005; Kesting, Song, Qin, & Krol, 2016; Kurz et al., 2018; Langfred, 2013).

In light of IE, task autonomy can represent an opportunity for institutional change. As mentioned in the IE section (Section 5.4), opportunity is central to the institutionalization process. Employees may respond differently to institutional opportunities (Dorado, 2005). Latitude and task autonomy are regarded as opportunities that allow employees to generate new ideas and new ways of performing their work and this may lead to modifying existing practices.

In relation to employees' interactions with the management, the concept of power evolved as a relevant concept to deepen the understanding of the findings. Power is one of the important concepts in IE (Garud et al., 2007). It is related to the possession of superior resources such as knowledge, or the actor's position within the organization (Beckert, 1999). It is argued that power is central to the institutionalization process (Wijen & Ansari, 2007). The reason for this is that power can be utilized by actors for different purposes such as to stabilize existing practices or to change and replace them (Beckert, 1999).

According to the findings of this study, the management (including top managers, supervisors and team leaders) have the power to dictate how an activity should be carried out. Therefore, the management are able to promote the implementation of an initiative or to prevent it (Haapasaari et al., 2018). This finding is in broad harmony with those of previous studies on the influence of power on innovation. In the literature, it is argued that people in positions of power are often less open to listening to other perspectives (Robinson & Schroeder, 2014). In

the interviews, when talking about their innovative ideas, some employees expressed concern about their inability to implement ideas related to their tasks because of rejection from their supervisors. For example, one of the employees commented about feeling depressed and unmotivated due to an incidence when they offered an idea to improve an internal procedure related to task performance; however, the idea was rejected by the team leader. Hence, team leaders may use their power to promote or prevent ideas from moving forward.

In relation to power, based on the findings of this study, it appears that employees demand improvement in the way managers supervise and organize the work. Employees feel that some managers exhibit controlling behaviour with regard to change and innovation. This behaviour may limit employees' innovation as only managers are able to make decisions on whether ideas should be implemented or abandoned. Kesting and Ulhøi (2010) argue that "decision rights are often associated with power and prestige, and a high salary. Therefore, managers may be reluctant to share them, fearing that by doing so they will erode their position" (p. 74). Despite this challenge, employees may be able to obtain more authority that allows them to make decisions and to initiate innovation in the context of their everyday work tasks. According to the findings of this research, delegation of authority may increase the efficiency of organizational procedures. For example, as mentioned in findings (Section 4.5.2), one of the team leaders initiated an idea that allowed team leaders to have more authority to process internal organizational requests which helped lower the number of steps and thus reduce the amount of time required to complete the procedures.

Interestingly, trust is deemed central to the process of interaction between management and employees. Based on the findings, employees emphasized the importance of trust in their communication with management. Employees feel that trust enables them to disclose their ideas and work-related issues to managers. This finding provides some support to studies in the innovation literature that emphasize that trust allows employees to freely convey their ideas

to others (Dovey, 2009; Perry-Smith & Mannucci, 2017; Sørensen et al., 2018). Similarly, in relation to IE, this is in alignment with previous research which argued that trust is essential to gain support for institutional changes (Dorado, 2005).

As part of idea sharing and promotion, this section focused on the interaction between employees with professionals and management in the context of administrative innovation. The findings are discussed from the perspective of IE and linked to key concepts such as resource mobilization, legitimacy, opportunity, power and trust. The next section discusses findings related to the idea implementation phase.

5.8 Organizational level

This section is mostly related to the organizational factors that may affect the development of administrative innovation. It discusses the findings related to inertia, IS embeddedness, relevant resources, informal rules and norms, and institutional change.

The findings at this level (organization) are closely related to the concept of institutional work and institutional change. It is concerned with the creation, maintenance and disruption of institutions (Lawrence, Suddaby & Leca, 2011). Therefore, this section discusses the findings from the perspective of institutional work (Zietsma & Lawrence, 2010) and IE to illustrate how institutions can be disrupted and changed as a result of administrative innovation.

One of the main characteristics of an institutional context is stability and lack of change. In this study, this relates to the concept of inertia that emerged in the analysis. The findings (Section 4.6.3) reveal that participants perceive experiencing inertia as a barrier affecting their ability to initiate changes in administrative work.

In the literature, this is also related to the concept of organizational silence, which occurs when refraining from speaking about ideas and concerns in relation to work in the

organization (Morrison & Milliken, 2000). Other researchers who focus on the individual-level, refer to this concept as employee silence (e.g. Pinder & Harlos, 2001). It is considered an intentional withholding of opinions and ideas regarding work-related improvements (Dyne, Ang & Botero, 2003; Pinder & Harlos, 2001). Employees have valuable ideas that can enhance the work processes, and, therefore, their silence affects the level of change initiatives in the organization (Dyne et al., 2003; Morrison & Milliken, 2000).

This study adds to the literature by explaining how employees can break this silence through initiating ideas following the adoption of HRIS. The findings show that employees had the agency to initiate and participate in administrative innovation despite encountering organizational difficulties such as inertia. The findings report different enablers that allow employees to take initiative. For example, persistence emerged as an enabler which means that the employee with a strong desire to continue speaking up and sharing ideas in spite of the difficulties that can be encountered.

In relation to IS, it is considered that technology embeddedness contributes to stability and lack of change in organizations (Baptista et al., 2010; Benlian, 2015). Technology embeddedness occurs when IS becomes embedded and institutionalized in the internal operations of the organization. Institutionalized IS is considered unnoticed and used in a relatively taken-for-granted manner (Silva & Backhouse, 1997). Previous studies have shown that IS embeddedness leads to establishing stable routines, norms, and work practices; therefore, it is challenging for actors to invoke changes that affect the IS and the stability of work practices (Baptista et al., 2010; Benlian, 2015). This research focused on post-adoption of HRIS which means the system is adopted and integrated into different work processes. The findings of this study provide strong evidence that employees are still able to introduce ideas of administrative innovation to diverge from established work practices and norms. Administrative innovation can involve technological and operational changes. This finding is

in broad harmony with those of previous studies on innovation and IS post-adoption (Ahuja & Thatcher, 2005; Bagayogo et al., 2014; Nambisan et al., 1999; Rashid & Wang, 2012). IS post-adoption provide a fruitful opportunity for generating ideas and innovation.

As mentioned in the individual level section, some organizational resources are essential antecedents of institutional change initiatives. This is demonstrated in DiMaggio's (1988) definition of institutional entrepreneurs. The findings indicate that lack of IT resources can be a challenge for administrative innovation involving changes in the system. The lack of IT resources is manifested by the non-availability of technical tools and staff. Employees and managers stressed that this deficiency might deter the development of administrative innovation. For example, in the findings (Section 4.6.3), one of the participants reported that a lack of IT staff caused delay in the implementation of ideas involving minor technical changes. Thus, it may hinder institutional work.

In addition, in this study, it appears that the development process of administrative innovation is mostly governed by informal rules and practices which can be considered as institutional norms rather than formal rules. The findings show that there is some ambiguity and lack of clarity in relation to the process of sharing and implementing ideas of administrative innovation.

For example, lack of clarity, as mentioned in the findings chapter (Section 4.6.3), can deter the development of some administrative innovation. Employees may feel discouraged when there are no clear guidelines regarding communicating ideas and initiating a change. Although the findings reveal that ideas involving technical changes can be presented formally, by proposals or official request forms, this is only applicable to ideas of changing the system such as adding new features. However, there are no clear guidelines to formally request changes related to the other forms of administrative innovation. Employees often communicate their ideas verbally with their team or team leaders because they perceive this to be the

traditional way of how ideas should be communicated. This finding suggests that employees follow the established norms to share ideas that do not involve technical changes.

The findings also indicate that the long approval and implementation process involves institutionalized practices that affect the willingness of employees to engage in administrative innovation. Employees' expressed their concern about the ingrained approval and implementation process which is perceived as time consuming and involving many steps (Section 4.6.3). It appears that most changes, even minor changes, can go through the same institutional process and therefore require a long time to be approved and implemented. This implies that administrative innovation is developed within a substantially institutional context.

From the perspective of IE, there is a debate in the literature regarding the influence of the degree of institutionalization on actor agency. For instance, some studies suggest that strategic action is more likely to arise in relatively highly institutionalized contexts (Albertini & Muzzi, 2016; Beckert, 1999), while other studies argue that a low level of institutionalization provides more opportunities for IE (Fligstein, 1997).

However, the findings of this study are more aligned with Dorado's (2005) view on the degree of institutionalization. Dorado (2005) argues that substantial institutionalization, compared to minimal and extreme institutionalization, provides more room for agency and, therefore, for IE (Leca, Battilana & Boxenbaum, 2006). As mentioned above, it appears that administrative innovation occurs within a substantially institutional context which is governed by both formal and informal rules and norms.

Based on the findings, this study suggests that administrative innovation may provide opportunities for employees to engage in institutional work. It argues that institutional change can emerge from everyday work activities and is not based solely on radical changes and technological breakthroughs (Hardy & Maguire, 2008). In this research, it was found that

administrative innovation may lead to deviation from established practices as it involves changes in daily work practices. Thus, it appears that administrative innovation can influence or change existing institutions. In particular, administrative innovation may lead to the de-institutionalization of existing practices.

Several examples of manifestations of administrative innovation reported in the findings chapter (Section 4.5.2) can help to demonstrate how de-institutionalization can result from minor changes related to daily practices as a result of interacting and making sense of HRIS (Powell & Colyvas, 2008). The findings highlight that HRIS plays an important role in the development of administrative innovation. Therefore, HRIS can contribute to the de-institutionalization process. This study reveals that administrative innovation is manifested in technological, operational and social changes following the adoption of HRIS.

According to the findings, administrative innovations may de-institutionalize organizational level practices. For example, the idea of creating e-forms has changed the traditional way of internal communication. To illustrate this, organizational members used to request official letters such as a salary certificate by signing and sending paper forms to the HR department which takes time to be received and processed. The implementation of e-forms has changed the way organizational members communicate with the HR department.

Another example of ideas that resulted in changing institutional norms is the introduction of a notification email for employee leave. As explained in the findings chapter, an automatic email notification was implemented to inform employees about their leaves' requests. The notification alerts the employees whether their request has been approved and processed or rejected. Employees believe that this change has strengthened the use of emails in the organization as a means of communication.

Another idea that lead to the de-institutionalization of practices in the HR department is the authorized signature for internal communication. The idea behind this is to provide more

authority to team leaders to perform certain basic managerial tasks and to process internal requests. This idea challenged the existing belief system that authority and control are only possessed by management in the organization. As a result, this idea helped to lower the number of steps and to reduce the amount of time required to complete the tasks.

Introducing regular formal meetings is another idea that changes the usual and expected way of doing things in the organization. Based on the findings, there is a lack of formal meetings in the organization. Therefore, some employees initiated an idea to reinforce the importance of having regular meetings within the department. Meetings are perceived as an important way of sharing their knowledge about the system, the challenges they encounter, and the ways of dealing with the challenges.

However, the findings uncover some challenges to the process of de-institutionalization. For example, some organizational members might reject the proposed changes. A possible reason for this rejection is that they prefer to stick to existing procedures and the usual way of doing work. An interesting side finding was that older and more experienced employees tended to reject change more than new employees. The organization fosters de-institutionalization from existing systems and practices by employing 'parallel implementation' in order to minimize the rejection of change.

This section has discussed the findings related to organizational barriers and the implementation of administrative innovation. It related the perceived organizational barriers such as experiencing inertia (or silence) and lack of IT resources to the relevant concepts within IE. In addition, it related the manifestations of administrative innovation to the concept of de-institutionalization. The next section will discuss findings related to the sectoral level as the outer context within which administrative innovation develops.

5.9 Sectoral level

It is essential to understand the characteristics of the context in which IE occurs (Albertini & Muzzi, 2016). The reason for this is that the context can affect the abilities of individuals to initiate change and the way that the process of change unfolds. In other words, the context can determine the practices that organizational members follow to implement changes (Dorado, 2005; Leca et al., 2006). Thus, this section focuses on the findings related to employees' perceptions regarding the institutional context of the organization and the public sector to which it belongs. It is crucial to account for the sectoral conditions because as individuals are embedded in the organization, the organization itself is also embedded in a sector that shares common culture, norms and rules (Battilana et al., 2009).

In this study, it appears that the research context is a substantially institutionalized context. Despite focusing on a specific type of public sector organizations, which is an independent organization, the organization still operates within a stable set of formal and informal rules and norms. These informal rules constitute the institutional logics of the context.

Institutional logics refer to the set of context-specific norms and practices guiding the behaviour of organizational members (Tracey, Phillips, & Jarvis, 2011). In relation to institutional logic, less research has been done on hierarchical context such as the public sector where institutional logics are supported by dominant actors, and where institutional change is deemed more challenging (Leca et al., 2006).

In light of IE theory, it is argued that actors' awareness (reflexivity) of their context and the various institutional logics is essential to understand IE (Battilana et al., 2009). The findings of this research reveal different examples of established institutional logics that can act as both an enabler and inhibitor of administrative innovation. For instance, having job security, as

explained in the findings chapter (Section 4.2), appears to be a common perception about working in a public sector organization. Based on the conducted interviews, it is noted that employees may act differently to this institutional logic. For example, on the one hand, some employees try to come up with new ways to perform their tasks and perceive task-related mistakes as learning opportunities. On the other hand, employees also mention that job security can be perceived as an excuse for negligence and irresponsibility.

Another example of institutional logics is the established work routine, which can be viewed as “repeated patterns of behavior that are bound by rules and customs and that do not change very much from one iteration to another” (Feldman, 2000, p. 611). As outlined in the findings chapter (Section 4.2), participants perceive that work routine in the public sector may have an impact on employee initiative. In addition to work routine, bureaucratic procedures appear to have an impact on employees’ abilities to generate ideas of administrative innovation and to implement changes. It is noted that some employees perceive routines and bureaucracy as being restrictive and limiting their ability to initiate changes and thus to innovate. However, it is argued that although work routine provides stability to the institutional context, institutional change is still possible (Dorado, 2005). Changing work routines can be in a form of incremental change that evolves over time (Dorado, 2005). This is supported by the findings of this study as administrative innovation involves changes in day-to-day work practices following the adoption of HRIS. As evident in the findings, this study reflects a wide range of manifestations of administrative innovation that result in improvements via changes in IS and work processes and tasks.

In addition, employees’ negative perceptions about the value of their participation in the organization can discourage them from engaging in administrative innovation. Some employees feel that their organization values attendance more than participation and productivity. This perception may negatively affect employees’ willingness

to initiate administrative innovation in the organization. This is considered as an institutional logic because it is not based on formal rules.

In relation to the innovation literature, the findings of this study contradict previous studies which claim that the “public organizations are built on hierarchical structures and rigid processes and mostly lack any type of innovation culture” (Reibenspiess et al., (2019), p. 2). The findings of this research revealed that independent public sector organizations, although still featuring a substantial bureaucratic work environment, allow a considerable degree of innovation.

To summarize, this section has discussed the findings related to the contextual conditions from the perspective of institutional logic. It illustrated how employees’ perceptions of their institutional context can enable or hinder administrative innovation. Different perceptions were discussed in relation to job security, work routine, bureaucratic procedures and organizational value.

5.10 Integrating the emergent theory with the existing knowledge

The aim of the chapter is to integrate the emergent theory presented in the findings chapter (Figure 14), with relevant aspects of a formal theory in order to deepen understanding of the development process of administrative innovation. After revisiting the literature, IE is selected as a relevant theoretical lens to view the emergent theory.

In the beginning of the chapter, the conditional/consequential matrix (Figure 15) was developed to demonstrate the different levels of influences that are relevant to the emergent theory. In addition, the matrix serves as a structure to aid discussion of the findings within the

existing aspects of IE. It helps to better illustrate how the emergent theory relates to existing knowledge of IE, IS, and innovation.

As a result of applying IE as the theoretical lens, the integrative diagram was updated to reflect the integration of findings with relevant aspects of IE theory (Figure 16). The diagram helps to visualize how the integrative diagram of the development process of administrative innovation fits within the perspective of IE.

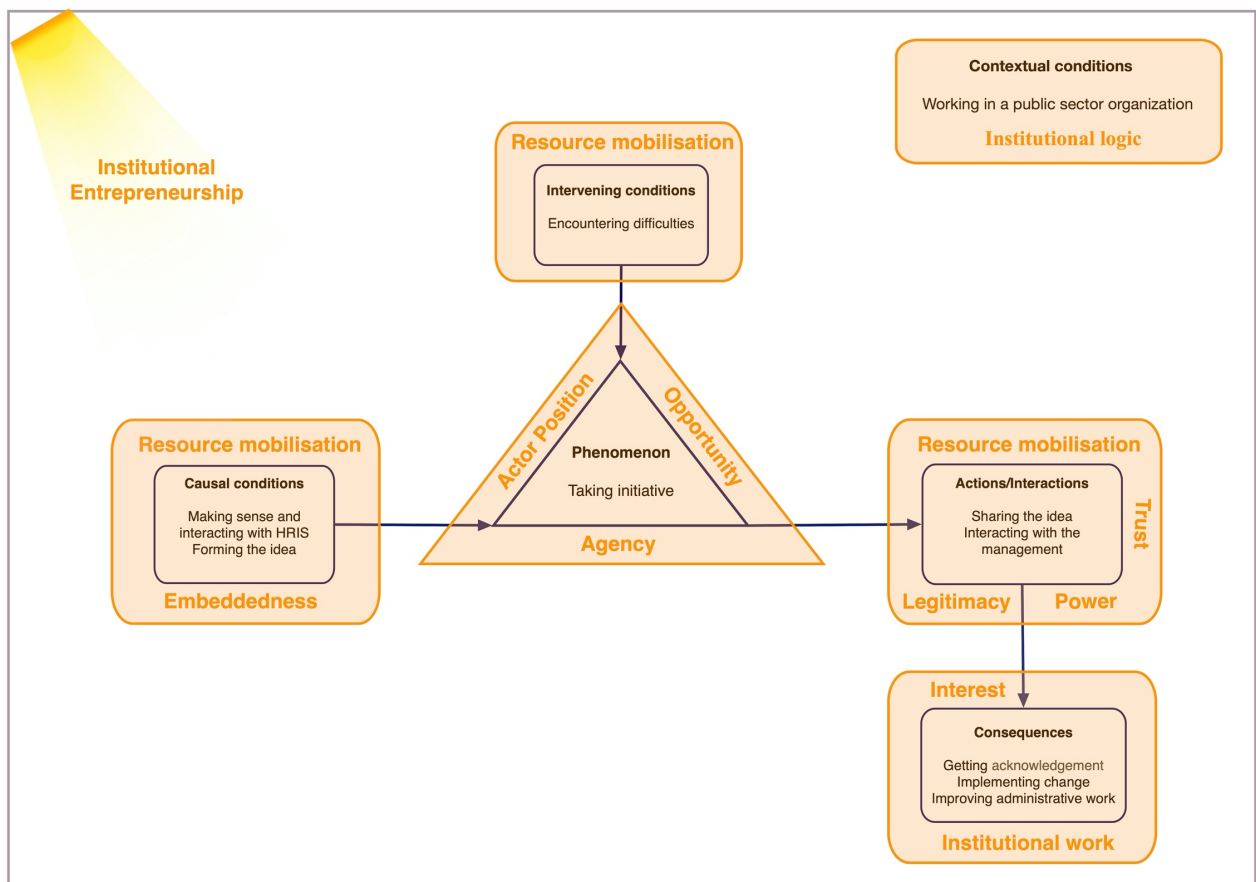


Figure 16 - Integration of the emergent theory with institutional entrepreneurship

In the diagram, the causal conditions represent the perceived explanation of why employees take initiative toward administrative innovation. By viewing these conditions from the perspective of IE, HRIS can be considered as an organizational resource. Employees can utilize their knowledge of HRIS to conceive new ideas to improve their everyday work practices and tasks. In addition, embeddedness helps to explain the findings related to how

employees, whether highly embedded or not, are able to participate in administrative innovation.

Taking initiative, which is the central category of the development process of administrative innovation, can be understood based on the concepts of agency, actor position, and opportunity. Agency is essential to understand how employees take initiative that can lead to administrative innovation. Actor position illustrates how ordinary employees are more likely to introduce ideas that can bring about change in work tasks and processes because of their position that allows them to have a rich understanding of their HRIS and work tasks. The concept of opportunity explains how task autonomy represents an opportunity for employees to generate new ideas and new ways of performing their work.

The concepts relevant to understanding the actions and interactions are legitimacy, resource mobilization, power and trust. For example, sharing the idea can represent a way of gaining legitimacy. Resource mobilization explains how people and knowledge are considered as essential resources for initiating administrative innovation. Power and trust help to better understand the findings related to the interaction between employees and management.

The intervening conditions are explained from the perspective of resource mobilization. This illuminates how a lack of organizational resources, such as IT resources, may affect the development process of administrative innovation.

The consequences represent the expected outcomes of taking initiative. Interest is concerned with explaining the outcome that employees expect to realize as a result of taking initiative in terms of acknowledgement and implementation of their ideas. Institutional work represents the anticipated improvement or change in the administrative work that can establish an institutional change.

The context is viewed from the perspective of institutional logic, to understand how the different conditions related to public sector affect the development of administrative innovation following the adoption of HRIS.

5.11 Chapter summary

In short, this chapter has discussed the emergent theory of administrative innovation following the adoption of HRIS in light of IE theory. As a first step, the findings of the study were integrated within the conditional/consequential matrix. Subsequently, based on the matrix, the chapter was structured into different levels to illustrate the multidimensional nature of the phenomenon. The levels of the matrix (Figure 15) are individual, team, professionals and management, organizational and sectoral level. Each level is discussed from the perspective of IE and the relevant literature. Therefore, the findings of this study are discussed in relation to key concepts from IE such as institutionalization and institutional change.

Subsequently, the link between the emergent theory of administrative innovation and the key concepts of IE was explained (Section 5.10) and illustrated in Figure 16. In conclusion, IE can contribute to a much richer understanding of administrative innovation emerging in the context of HRIS post-adoption.

6 Conclusion

6.1 Introduction

The previous chapters presented the findings and discussed the emergent theory of the development of administrative innovation following the adoption of HRIS in public sector organizations. Based on the findings and the discussion, this chapter presents the conclusion of this study. First, it discusses the main findings of the thesis in light of the research questions. Then, it discusses the original contribution to knowledge of this study. Subsequently, it provides a set of recommendation for practice. Finally, it identifies the limitations of this research along with the possible opportunities for future research.

6.2 Addressing research questions

In this section the research questions are revisited to highlight the extent to which they were addressed and to highlight the main findings of this study. First, a holistic answer to the main research question is provided. Then, the subsequent research questions are addressed based on the findings of this research.

This study takes an exploratory and explanatory approach to investigate the development of administrative innovation in relation to post-adoption usage of HRIS in public sector organizations. The main research question that guided the research process is: **How does administrative innovation develop following the adoption of HRIS in the context of public sector organizations?**

By following the essential procedures of the grounded theory methodology to investigate the phenomena, this research involved thirty-two interviews with HRIS users from different organizational levels, in the case organization, who use HRIS in their daily work. As a result of the rigorous application of the methodology with regard to theoretical sampling and constant comparison, an emergent theory was developed and integrated with relevant aspects

of a formal theory which is IE. The integration of the emergent theory with IE assists in addressing the research questions by providing an in-depth explanation of the development process of administrative innovation following the adoption of HRIS in the public sector. Thus, the main research question can be answered from the perspective of IE as follows.

Administrative innovation develops within a substantially institutional context. Thus, it is affected by the existing institutional logic in the public sector. Taking initiative is the heart of the development process of administrative innovation. It can be viewed as an entrepreneurial activity initiated by ordinary employees to evoke changes and diverge from existing work practices.

Taking initiative requires resource mobilization, and the resources in this case are HRIS and work-related knowledge. Employees can interact with HRIS and utilize their knowledge of HRIS to conceive new ideas to improve their everyday work practices and tasks. Regardless of the level of employees' embeddedness, employees are able to participate in administrative innovation. Thus, employees have the agency to introduce ideas of administrative innovation that challenge the existing ways of working in the organization. Employees may take initiative to respond to an existing opportunity such as having latitude or solving an existing problem.

In terms of the actor's position, it is evident that ordinary employees are more likely to introduce ideas that can bring about change in work tasks and processes because of their position that allow them to have a rich understanding of HRIS and work tasks.

As part of the development process of administrative innovation, employees engage in interactions with organizational members. These interactions are essential to gain legitimacy for their initiatives. Power and trust also play a key role in the interaction between employees and the management. Some intervening conditions may inhibit the resource mobilization and

hence, affect the development of administrative innovation such as the lack of organizational resources.

The consequences of the development process include administrative innovation which is manifested in technological, operational and social changes that may change existing institutional norms and practices following the adoption of HRIS. In addition, consequences may also include realizing interest in terms of implementing the ideas and being recognized.

In order to illustrate how the research objectives were accomplished, the following section provides a more detailed discussion by answering the subsequent research questions.

Question 1: What are the manifestations of administrative innovation related to the use of HRIS in public sector organizations?

This research shows a significant evidence of administrative innovation developed following the adoption of HRIS in the public sector organization. Therefore, it challenges the common assumption that view the conditions of the public sector as inimical to innovation.

The findings present the manifestations of administrative innovation which is considered as resulting from mobilizing essential resources comprising the work-related knowledge and experience of HRIS. It was found that administrative innovation is manifested through a variety of changes that may lead to institutional change. Administrative innovation has three dimensions that may result in changing institutions and work norms. The three dimensions of administrative innovation were identified in the findings including technological, operational and social dimensions (as explained in Section 4.5.2)

First, the technological dimension, which is concerned with administrative innovation that involves technological changes in HRIS. It includes the development of new systems or new features, and modifications to existing systems. Examples of this type of innovation

include the development of the bonus system and the implementation of supervisor self-service features.

Second, the operational dimension, which related to administrative innovation that involves changes in tasks and organizational processes. In terms of tasks, administrative innovation can be related to task allocation, management, and performance. In terms of organizational processes, administrative innovation can involve changes in internal organizational processes. An example of this is the creation of e-forms as a way to enhance internal communication and minimize delays.

Third, the social dimension, which involves changes in organizational culture and work norms. This type of innovation may lead to changing the usual and expected way of doing things in the organization. An example of ideas involving a social dimension is the implementation of leave notification emails that has strengthened the use of emails in the organization as a means of communication. In addition, the introduction of regular meetings between employees to share their knowledge about the system, the challenges encountered, and the way of dealing with challenges.

This research also reveals that administrative innovation is not unbounded and the development process is impacted by different enablers and barriers which are addressed in the following question.

Question 2: Who initiates administrative innovation following the adoption of HRIS in a public sector organization, and what are the perceived enablers and barriers?

This research shows that most ideas of administrative innovative are initiated by employees. The emergent theory of taking initiative illuminates the individuals who carry out the process of administrative innovation. Hence, it embraces the importance of human agency in the innovation process. It also reveals the conditions that can facilitate or prevent the

development of administrative innovation. The most relevant categories to this question are making sense of and interacting with HRIS, forming the idea, taking initiative and encountering difficulties.

In terms of enablers, the findings reveal that employees (whether highly embedded or not) can initiate administrative innovation as a result of resource mobilization. The resources are essential in the development process and are represented by work-related knowledge and experience of HRIS. The findings uncover three main practices for generating administrative innovation ideas following the adoption of HRIS: HRIS interactions, individual practices and skills, and work-related practices.

With regard to HRIS, the findings reveal that HRIS interaction facilitates the generation of innovative ideas in relation to administrative innovation. It was found that sense-making and interacting with HRIS serves to influence employees' participation in administrative innovation. In addition, it was found that ideas may emerge from informal learning that employees can engage in through their daily interaction with the system, including exploratory learning and exploitative learning.

In relation to individual practices and skills, the findings reveal that individual practices and skills such as having detailed knowledge, drawing on previous experiences and discovering deficiencies may allow employees to contribute ideas for improving administrative work. For example, it was found that having a detailed knowledge of tasks and work processes may assist employees in generating ideas to innovate.

In addition, the findings reveal that ideas can emerge from work related practices such as problem solving, fulfilling work needs and requirements, brainstorming, and job rotation. For example, problem solving was perceived as an effective way to stimulate thinking about new ideas. It was found that encountering problems or challenges in the work presents an

opportunity for employees to think efficiently and to come up with new insights which allow them to exploit HRIS to a greater potential.

In terms of the perceived barriers, the findings reveal that employees encounter different barriers that may inhibit the development of administrative innovation. Barriers were divided based on three perspectives: personal, interpersonal, and organizational barriers.

First, personal traits and perceptions can affect employees' abilities to volunteer ideas. For example, employees may possess interesting ideas to improve work processes and tasks but shyness or self-doubt may prevent them from voicing their opinions.

Interpersonal barriers, are related to gaining legitimacy and an employee's interaction with colleagues and management. For example, one of the interpersonal barriers that emerged in the findings is concerned with dealing with negative colleagues who have negative thoughts about their work. It is found that this may discourage employees from pursuing their ideas and initiating change. Hence, they may not be able to legitimize their ideas.

Organizational barriers are related to the institutional context in which administrative innovation develops. The findings present some policies and procedures that affect administrative innovation. These include inertia, lengthy procedures, lack of clarity, lack of IT resources and time constrains.

Other barriers identified in the findings are related to the institutional logic in the public sector. Some conditions of the public sector are perceived to hinder the development of administrative innovation such as lack of flexibility and the dominance of routines and bureaucratic procedures.

Question 3: How do initiators of administrative innovation related to HRIS interact with stakeholders in the context of public sector organizations? And what are their motivations?

As part of the development process of administrative innovation, the employees interact with the organizational members including team members, professionals (HRIS technicians) and the management through various actions and interactions. The categories that represent this process are: sharing the idea and interacting with the management.

Sharing the idea is a category that includes conditions related to why and how employees often decide to share their ideas that are related to administrative innovation. The study reveals that idea sharing is a way of gaining legitimacy for administrative innovation. For example, the findings show that employees share their ideas to obtain professional advice from experienced employees or HRIS technicians.

This process may necessitate having confidence in their abilities to be able to talk about their innovative ideas. In addition, the strategies of sharing ideas involve, for example, sharing the idea with team members or sharing the idea directly with their supervisor or the management.

Interacting with management is an essential strategy especially in order to formalize ideas of administrative innovation. The findings show that managers have the power to promote the implementation of administrative innovation or to prevent it. The findings also highlight that employees' relationships with their supervisors or managers can influence their decision to volunteer innovative ideas. In addition, trust is perceived as an important factor in employees' communications with management. The findings show that the strategies supervisors use to encourage employee participation in administrative innovation include conducting meetings and having an open-door policy. Moreover, the findings shed light on employees' perceptions of the challenges related to interacting with the managers such as fear of management and having different perspectives in relation to work processes and tasks.

In terms of motivation, the study highlights the influence of intrinsic motivation as the main interest that drives employee engagement in administrative innovation. The categories striving to improve and getting acknowledgement form the types of motivations for employees to initiate a change in the administrative work. Striving to improve is concerned with having a desire to change and to take innovative ideas forward. The findings reveal that having the desire to make an effort in order to change something drives the employees to take initiative and share their ideas when they have an idea. Getting acknowledgement, employees seek recognition for their participation in administrative innovation.

Question 4: How do these interactions, motivations, perceived enablers and barriers influence the development of administrative innovation in the context of public sector organizations?

The findings of this study reveal that employees may have innovative ideas in relation to improving their work practices and tasks following the adoption of HRIS, and hence it is important to understand what influences their decision in taking the ideas forward.

The aforementioned interactions, motivations, perceived enablers and barriers influence the core category 'taking initiative'. Taking initiative is the central process in the development of administrative innovation. Employees take initiative in order to transform their ideas into innovations and, thus, to improve their work processes and tasks.

The process of taking initiative occurs within an institutional context based on casual conditions which consists of idea origination and HRIS interaction. In addition, it involves idea sharing and interacting with different organizational members to legitimize the initiative. It may also be affected by the obstacles which are the intervening conditions. The consequences of taking initiative may involve institutional change by improving the administrative work. This may also involve getting acknowledgment.

It is essential to highlight the importance of the contextual conditions in this process. The context is represented by the category working in public sector organization. The findings reveal that independent public sector organizations, although still featuring a substantial bureaucratic work environment, allow a considerable degree of innovation.

6.3 Research contribution

This section highlights the contribution of this research in terms of the theoretical contribution to existing literature on IS post-adoption, EDI and institutional entrepreneurship. It also highlights the methodological contribution of this research.

6.3.1 Theoretical contribution

This research contributes to existing knowledge on four areas: cross-integration of disciplines, IS post-adoption, employee driven innovation and IE.

First, this study contributes to knowledge based on the cross-integration of the two disciplines that are often separated, IS post-adoption and innovation, through developing a theory that integrates elements of both disciplines. By investigating innovation emerging in the context of HRIS post-adoption, this study integrates the literature on IS post-adoption with innovation literature, in particular administrative innovation and employee driven innovation. In addition, in relation to IE, applying the theoretical lens to the emergent theory allows positioning the theory within the wider literature of IE.

Second, it contributes to IS post adoption literature by explaining how administrative innovation manifests within the context of HRIS post adoption. The findings of this study provide a novel contribution by reflecting on a wide range of manifestations of administrative innovation. The study reveals technological, operational and social changes emerging following the adoption of HRIS in the public sector.

With respect to administrative innovation, the study highlights how making sense of and interacting with HRIS facilitate the generation of innovative ideas related to improving work processes and tasks. As emphasized by Jaspersen et al., (2005), “we have insufficient understanding of the technology sensemaking processes that transpire during the post-adoptive context” (p. 544). Thus, the findings enrich the understanding of the role of HRIS as an enabler of administrative innovation and of how change occurs in the context of post-adoption.

Third, this study contributes to the emergent body of knowledge on EDI. Due to the lack of qualitative research that is required for in-depth understanding of the organizational context and practices of EDI (Aasen et al., 2012), this study contribute to the literature on EDI by employing a qualitative and inductive approach and through generating a grounded theory. The theory of taking initiative uncovers the activities related to how innovation is initiated in the lower organizational level following the adoption of HRIS to how it gets implemented. It offers an interesting insight to bridge idea generation and idea implementation which are relatively isolated (Černe et al., 2016). As Anderson, Potočnik and Zhou (2014) emphasize, “the subfields of idea generation and idea implementation remain doggedly disconnected from one another. Our unambiguous call is for these two disparate subfields to become far more integrated in future” (p. 1317).

With regard to public sector innovation, the theory of taking initiative illustrates how the process of EDI unfolds in public sector organizations. The findings of this study provide strong evidence against the notion that public sector organizations are inimical to innovation (given their rigid hierarchy and bureaucratic environment). The study highlight that employees have the agency to mobilize resources and participate in administrative innovation that affect the existing organizational norms.

Fourth, discussing the emergent theory in the light of IE contributes to existing knowledge by locating the theory within the wider theoretical context of IE. In addition, IE

enriches the understanding of the emergent theory of taking initiative and enhances its contributions to the fields of IS, innovation and the public sector. Hence, this study addresses a recent gap in relation to making more explicit linkages between employee driven innovation, IS, and the public sector. As highlighted by Reibenspiess et al. (2019): “work on employee-driven bottom-up generation of innovation is scarce in the Information Systems (IS) field and public sector research” (p. 3).

Furthermore, by employing institutional theory as a theoretical lens, this study contributes in responding to recent calls for focusing on micro implications related to the individual level (Powell & Colyvas, 2008; Shipton et al., 2017). This study advances the understanding of IE theory particularly in relation to the paradox of embedded agency. This study reveals conditions that enable individuals to innovate, even from within highly institutionalized organizational settings. In addition, this study highlights that engaging in employee-driven administrative innovation following the adoption of HRIS may result in institutional change. Hence, this study extends previous research on institutions and IE which recommended greater attention to bottom-up processes of institutional creation (Suddaby, 2010).

It is acknowledged that innovation is a highly complex process that is rarely explained in detail in the literature (Crossan & Apaydin, 2010; Haapasaari et al., 2018; Van de Ven & Poole, 1990). Therefore, this research contributes to the literature by deepening the understanding of the development of administrative innovation following the adoption of HRIS in public sector organizations. This research proposes the theory of taking initiative to represent the development process as a whole, in terms of the causes, actions and interactions, intervening conditions and consequences within a specific context.

6.3.2 Methodological contribution

According to Bartunek, Bobko and Venkatraman (1993), the methodological contribution of the study can be discussed based on three requirements: 1) importance and significance, 2) adequate conceptual grounding, and 3) adherence to methodologically sound and accurate strategies.

First, in terms of importance and significance, which is concerned with the ‘value-added’ contribution based on the choice of methodology (Bartunek et al., 1993), the researcher should illustrate how the adopted methodology generates knowledge about particular phenomena more effectively than other methodologies. It is also essential for the researcher to highlight how the adopted methodology generates knowledge that can further enrich the existing knowledge domain about the phenomena (Bartunek et al., 1993). In this study, grounded theory was selected as the methodology for conducting the research (a detailed discussion of the justification is provided in Section 3.5.2). Grounded theory provides an innovative approach to study the innovation process. Based on the inductive nature of grounded theory, it stimulates creative thinking and provides new insights in relation to the phenomena under investigation (Strauss & Corbin, 1998). The adoption of grounded theory allowed the researcher to theorize the development of administrative innovation in the context of HRIS post-adoption, which is a process that is not completely explored in the existing literature. Therefore, this study can contribute to the existing body of knowledge on innovation and IS post-adoption by providing in-depth theoretical understanding of how and why administrative innovation develops following the adoption of HRIS in public sector organizations.

Second, in relation to adequate conceptual grounding, it is essential to ensure that the adopted methodology has an adequate conceptual foundations to be able to demonstrate the complexities of the phenomena under study (Bartunek et al., 1993). It is evident that grounded theory has a rich conceptual foundation, it supports the generation of inductively derived

theories. In this study, the adopted procedures of grounded theory, such as constant comparative analysis and microanalysis, allowed the researcher to carefully examine the data in order to understand and represent the perceptions of participants in relation to administrative innovation. As a result, different concepts and categories emerged from the data. Engaging in constant comparison helped the research to ensure that the concepts and categories are grounded in data. Consequently, a substantive theory was generated to represent the development process of following the adoption of HRIS in public sector organizations.

Third, in terms of adherence to methodologically sound and accurate strategies, this research adheres to the procedures of grounded theory, in particular the Straussian version of grounded theory. By the rigorous application of the procedures and by being aware of the debate in the literature regarding the various versions of grounded theory, the researcher applied the analytical tools based on their fit and relevance to the data. In addition, a detailed explanation of the procedures, in terms of the collection and analysis of data and the theoretical integration, is provided and which could contribute in guiding other researchers in their application of the methodology.

6.4 Practical implications and recommendations

This research offers an explanation of the development of administrative innovation in relation to post-adoption usage of HRIS in public sector organizations in a form of an integrative framework (Figure 16).

This study highlights that despite the common belief concerning the scarcity of innovation in the public sector, there are various manifestations of administrative innovation taking place following the adoption of HRIS in a public sector organization originating from employees. Hence, ordinary employees can be a fruitful source of innovative ideas based on their rich knowledge and experience.

The results of this study explain the process of taking initiative that is central to the development of administrative innovation. Consequently, by examining the interaction between initiators of administrative innovation and organizational members, this research reveals the manifestations of administrative innovation that includes technological, operational and social changes. In addition, it identifies the motivations of employees to initiate administrative innovation, and the enablers and barriers in the context of public sector organizations.

The results of this study provide a practical insight that is beneficial for organizations aiming to develop administrative innovation. Administrative innovation can allow organizations to utilize IS to a greater potential. This study sheds the light on EDI and provides evidence of the important role of ordinary employees in the context of administrative innovation emerging in HRIS post-adoption. Thus, it can help in increasing awareness of the key role of employees in innovating and advancing the use of HRIS.

In addition, this study provides an understanding of the various practices that allow employees to generate innovative ideas to improve their work processes and tasks as a result of their knowledge of everyday work tasks and their interaction with HRIS. This research highlights the importance of intrinsic motivations to enhance idea generation and participation in administrative innovation. This research also identifies the enablers of administrative innovation in terms of HRIS interactions, individual practices and skills, and work-related practices. In addition, barriers that may be encountered in the development processes of administrative innovation are identified to explain what hinders innovation. Hence, the results of this study can help to improve the awareness and knowledge of administrative EDI.

The findings of this research provide insights to help organizations understand innovation developed in the post-adoption phase of IS. Thus, this study may potentially help in encouraging EDI and in extending the use of IS in similar types of organizations. Therefore,

based on the significance for practice, a number of recommendations are advanced on how to stimulate and manage EDI in public sector organizations. In general, public sector organizations should have a supportive environment for innovation and should:

1. Provide clear guidance of how everyday innovation can be shared and managed.

The process of idea sharing is an essential part of the development of administrative innovation. Organizations should provide guidance in relation to what types of ideas can be initiated and how to communicate ideas in the organization.

2. Improve communication between employees and management. This can be achieved through conducting more formal and informal meetings, to keep employees engaged and encourage them to voice their ideas, regardless of how small the innovation is.

3. Provide more incentives to employees to participate in administrative innovation.

The organizations need to consider both financial and non-financial incentives in order to motivate employees to come up with ideas to improve work processes and tasks.

4. Provide recognition and reward for initiators of administrative innovation.

Acknowledgment and recognition for participation in initiating change is essential to make employees feel that their contribution is valued and to encourage them to volunteer more ideas to improve their work.

5. Improve the resources to support administrative innovation. The strategies to

support administrative innovation include having adequate IT resources to follow through innovative ideas and implement administrative innovation that involve technological changes.

6. Improve employees' knowledge about the work. This can be achieved through, for

example, job rotation which can provide employees with deeper knowledge about the work processes and the ways HRIS is utilized in the organization.

- 7. Provide general and HRIS-specific training.** Training is essential as it can lead to upgrading the different skills of employees, such as their communications and technical skills. Training can also serve as a way of motivating employees to take initiative and participate in the organization.

6.5 Limitations and directions for future research

All research has limitations; therefore, this section acknowledges the limitations faced in conducting this research. One of the limitations is that this study was confined to a single public organization in Kuwait. Therefore, the generalizability of results to other contexts may be limited. However, this study does not aim for generalization to other contexts and populations. Instead, it aims to gain in-depth knowledge about the development of administrative innovation following the adoption of HRIS and to generalize theoretically. Theoretical generalization (as discussed in Section 3.10.2) is concerned with relating the emergent theory to a higher-level theory in the literature. This helps to illustrate that the emergent theory have a broader theoretical significance beyond the specific case from which the data was generated (Saunders et al., 2016). In this research, the emergent theory of the development of administrative innovation following the adoption of HRIS in the public sector was related to the relevant concepts of IE.

In addition, the number of participants can be considered as a research limitation. However, as this research follows grounded theory procedures, participants were recruited based on theoretical sampling and theoretical saturation. In this research, the iteration of data collection and analysis continued until categories became theoretically saturated. Theoretical saturation occurs when the analysis does not reveal new relevant data and each category is developed with its properties (Strauss & Corbin, 1998). In this study, theoretical saturation was reached after thirty-two interviews with HRIS users.

This study offers possible insights for future research related to IS post-adoption and employee driven innovation. One possible avenue for future studies is to further develop the emergent theory of the development of administrative innovation following the adoption of HRIS. The emergent theory includes different interrelated categories that represent the whole development process of administrative innovation. Thus, future studies can go deeper into these identified categories to further improve an understanding of the phenomena. For example, the findings of this study revealed different barriers related to administrative innovation, and future studies could focus on each of the barriers to better understand its influence on the development process.

In addition, future research can investigate employee driven innovation in other contexts, as this study only focused on HRIS post-adoption in an independent public sector organization. Studies can investigate the development of innovation in other forms of public organizations. Other sectors and other types of IS may also offer interesting insights.

6.6 Chapter summary

This chapter provided the conclusions of this research. The first section restated the research questions to summarize the main findings and to illustrate the extent to which the research questions were addressed. The findings of this study revealed that administrative innovation in the public sector is often employee driven. Therefore, in this research, employees are considered as the main initiators of administrative innovation following the adoption of HRIS. The findings reveal more about the centrality of employees than the management regarding their actions and interactions and how they initiate a change in the administrative work. Based on the emergent theory of taking initiative and the application of IE as a theoretical lens, this

study uncovers how the process of EDI administrative innovation unfolds in the context of public sector organizations following the adoption of HRIS.

The second section established the theoretical contribution of the research in relation to IS post-adoption literature, innovation literature and IE. It also explained the methodological contributions of the research in terms of significance, adequate conceptual grounding, and adherence to the procedures of Straussian grounded theory. The third section discussed the practical implications of this research and presented a set of recommendations. Finally, the last section acknowledged the limitations of this study and suggested fruitful areas for future investigation.

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Appendices

Appendix 1: Interview guide

Interview guide – Employees	
Background	<ul style="list-style-type: none"> . Why don't you begin by telling me a little about yourself and your background? <ul style="list-style-type: none"> ○ What is your educational background? ○ How long have you been working in the organization? ○ What are your current responsibilities? ○ Is the organization currently working on or recently launched a new project or a system?
HRIS Experience And HR tasks	<ul style="list-style-type: none"> . Can you please tell me about your experience of using HRIS in your job? <ul style="list-style-type: none"> ○ How long have you been using the system? ○ What is your current understanding of HRIS? . How do you use HRIS in your current position? <ul style="list-style-type: none"> ○ Can you please give me an example of how does HRIS help you to perform your tasks? ○ How frequently do you use the system? And to what extent is HRIS integrated into your daily tasks? . How do you feel about the current HR process and tasks supported by HRIS? <ul style="list-style-type: none"> ○ How has the process changed during the years? ○ Do you feel that the processes can be improved? And how? ○ What role do you think you can take in the improvement process? . After using HRIS and understanding the system, have you been able to do an existing task differently? <ul style="list-style-type: none"> ○ Why did you choose to do it differently? ○ How is it different? Please explain ○ Did you inform your supervisor or your co-workers about the change? And how did they respond? ○ And have been able to do a new task that the system not originally design?
Initiatives	<ul style="list-style-type: none"> . Based on your understanding and experience of HRIS, did you come up with a new idea related to HRIS and work tasks and processes? <i>If yes,</i> <ul style="list-style-type: none"> ○ Can you give an example of this and describe your involvement. ○ How has the knowledge gained from HRIS usage influenced your idea? ○ How did you share your idea? ○ Have you developed the idea by yourself based on your experience, or by collaboration with other co-workers? ○ What would you consider the impact of your idea? Please explain <ul style="list-style-type: none"> ▪ Would you describe it as a minor or a major change? And why?

Interview guide – Employees

	<ul style="list-style-type: none"> . Has your idea been implemented or rejected? And how do you feel about it? <ul style="list-style-type: none"> o <i>If implemented,</i> o <i>Can you describe the process of translating your idea into concrete action?</i> o <i>what improvements has your idea made?</i> o <i>How was the idea communicated to the other employees? And how did they respond?</i> o <i>How have you been recognized or rewarded? And how do you feel about it?</i> o <i>If rejected, why do you think it has not been approved?</i> o <i>What lessons have you learned from this experience?</i> <i>If no,</i> . From your personal experience, would you be willing to volunteer ideas to improve processes and tasks? And why? . If you have an idea or a suggestion for improving a process or a task, how would you share it?
<p>Motivations</p>	<ul style="list-style-type: none"> . How do you think the organization provides support for employees to volunteer ideas? Please explain. <ul style="list-style-type: none"> o How employees are encouraged to share their ideas? o How employees are recognized for their contribution? . As an employee, what would encourage you to share your ideas and initiate a change? . What is your perception about incentives? How is it offered in your organization? <ul style="list-style-type: none"> o From your point of view, how important is it for encouraging employees to volunteer ideas for improvements? And why?
<p>Interaction</p>	<ul style="list-style-type: none"> . Are there regular meetings to discuss and share ideas regarding HRIS usage and related HR practices? <ul style="list-style-type: none"> o How often meetings are held? o Who can participate in the meetings? o What are the usual outcomes of the meetings? How do they help the development of new or improved processes and tasks? . How often do you engage in informal meetings? . In your opinion, do you think ideas are more likely to be shared during formal or informal meetings? And why? . From your personal experience, can you describe how new ideas are communicated in the organization? And how can ideas be formalized? <ul style="list-style-type: none"> o Who is involved in the decision-making process? o What do you think of the current process?
<p>Change</p>	<ul style="list-style-type: none"> . Have you recently experienced a change in existing process and tasks? <ul style="list-style-type: none"> o What was the change and how did it affect the way you perform tasks now? o Does it involve a totally new process or improvements to the existing

Interview guide – Employees

	<ul style="list-style-type: none"> process? ○ Who initiated it? And how did you react to this change? ○ How do you think the change process was managed? (how was proposed on them, what could be differently)
Source	<ul style="list-style-type: none"> . In your opinion, at the organizational level, who do you think is more likely to introduce ideas that involve new way of doing things? . Do you think it is better to implement the ideas initiated by the management or to generate ideas from employees? And why?
Obstacles	<ul style="list-style-type: none"> . Based on your personal experience, what challenges would be encountered when initiating an idea for a change? <ul style="list-style-type: none"> ○ How would you describe the reaction of other employees when an idea is initiated to change an existing process that employees are used to? Do you have an example? ○ How would you react to a change? . What obstacles do you think you would face in convincing the organizational stakeholders about the usefulness of your idea? And why? (Management support, incentives, resistance, requirements, unclear process, organizational structure) <ul style="list-style-type: none"> ○ In your opinion, how can these obstacles be overcome?
Work group	<ul style="list-style-type: none"> . Have you collaborated with your co-workers to generate ideas to improve your tasks and processes? Please explain
Management support	<ul style="list-style-type: none"> . How would you consider your relationship with your supervisor influences your decision to volunteer ideas?
Context	<ul style="list-style-type: none"> . What do you think about the working environment at the public sector organizations in general and more specific at your organization?
Recommendation	<ul style="list-style-type: none"> . In your opinion, how can organizations promote new ideas and positive change as a result of HRIS adoption? . If you were a decision maker, what would you do differently? And why?
Documents	<ul style="list-style-type: none"> . I would like to read documents concerned with changes in HR tasks or processes, which documents would you recommend? . And would you give me permission to consult it?
Closure	<ul style="list-style-type: none"> . Is there anything else you would like to add regarding new ideas and HRIS usage?

Interview guide – Management

Background	<ul style="list-style-type: none"> . Why don't you begin by telling me a little about yourself and your background? <ul style="list-style-type: none"> o What is your educational background? o How long have you been working in the organization? o What are your current responsibilities? o How many employees are you currently supervising?
HRIS Experience	<ul style="list-style-type: none"> . Can you please tell me about your experience of using HRIS in your job? <ul style="list-style-type: none"> o How long has HRIS been installed at the organization? And how long have you been using HRIS personally? o How do you use HRIS in the organization? And what HR processes and tasks supported by HRIS? o What is your current understanding of HRIS? . How do you use HRIS in your current position? <ul style="list-style-type: none"> o Can you please give me an example of how does HRIS help you to perform your tasks? o How frequently do you use the system? And to what extent is HRIS integrated into your daily tasks? . How do you feel about the current HR processes and tasks supported by HRIS? <ul style="list-style-type: none"> o How has the process changed during the years? o Do you feel that the processes can be improved? And how? o What role in you think you can take in the improvement process?
Initiatives	<p>As initiators of change:</p> <ul style="list-style-type: none"> . Based on your understanding and experience of HRIS, did you come up with a new idea related to HRIS and work tasks and processes? <i>If yes,</i> <ul style="list-style-type: none"> o Can you give an example of this and describe your involvement? o How has the knowledge gained from HRIS usage influenced your idea? o How did you share your idea? o What would you consider the impact of your idea? Please explain <ul style="list-style-type: none"> ▪ Would you describe it as a minor or a major change? And why? <p><u>For middle or lower level manager:</u></p> <ul style="list-style-type: none"> . Has your idea been implemented or rejected? And how do you feel about it? <ul style="list-style-type: none"> o <i>If implemented,</i> o <i>Can you describe the process of translating your idea into concrete action?</i> o what improvements has your idea made? o How was the idea communicated to the employees? And how did they respond? o How have you been recognized or rewarded? And how do you feel about it?

Interview guide – Management

	<ul style="list-style-type: none"> ○ <i>If rejected, why do you think it has not been approved?</i> ○ <i>What lessons have you learned from this experience?</i> <p><i>If no,</i></p> <ul style="list-style-type: none"> . From your personal experience, would you be willing to volunteer ideas to improve processes and tasks? And why? . If you have an idea or a suggestion for improving a process or a task, how would you share it?
<p>Employee initiative</p>	<ul style="list-style-type: none"> . From your experience, can you give an example of your involvement in implementing ideas initiated by employees? <ul style="list-style-type: none"> ○ Can you walk us through what happened from when you knew about their idea to when the idea is implemented? ○ How did you know about their idea? ○ Why did you decide to implement the idea? ○ What did the implementation process involve? ○ How was the idea communicated to the top management? (for middle and lower management) ○ How was the idea communicated to the other employees? And how did they respond? ○ What improvements did the idea make? ○ Would you consider it as a successful idea? If yes, why was it successful? ○ How did you reward the employees who came up with the idea? . From your perspective, what would make you reject an idea? . Can you give an example of an idea that was rejected? Please describe the situation. <ul style="list-style-type: none"> ○ How did you communicate your decision to the employees? ○ How did they handle it? ○ Can you talk more about some of the reasons why it was rejected?
<p>Context</p>	<ul style="list-style-type: none"> . How do you think about the working environment at the public sector organizations in general and more specific at your organization? (Note: how is it different than the private sector)

Interview guide – Management

<p>Motivations</p>	<ul style="list-style-type: none"> . As a manager or a supervisor, how do you encourage employees to volunteer ideas, and how do you handle their ideas? <ul style="list-style-type: none"> ○ How are employees encouraged to share their ideas? ○ How employees are recognized for their contribution? . What is your perception about incentives? How is it offered in your organization? <ul style="list-style-type: none"> ○ From your point of view, how important is it for encouraging employees to volunteer ideas for improvements? And why?
<p>Interaction</p>	<ul style="list-style-type: none"> . How new ideas can be identified or discovered? . Are there regular meetings to discuss and share ideas regarding HRIS usage and related HR practices? <ul style="list-style-type: none"> ○ How often meetings are held? ○ Who can participate in the meetings? . How often do you engage in informal meetings? . In your opinion, do you think ideas are more likely to be shared during formal or informal meetings? And why? . Can you describe how new ideas are communicated in the organization? And how ideas can be formalized? <ul style="list-style-type: none"> ○ Are there any policies or guidelines related to this? Please explain ○ Who is involved in the decision-making process? ○ What are the different criteria being used for the selection and prioritization of ideas? ○ What do you think of the current process?
<p>Change</p>	<ul style="list-style-type: none"> . Have you recently experienced a change in existing process and tasks? <ul style="list-style-type: none"> ○ What was the change and how did it affect the way you perform tasks now? ○ Does it involve a totally new process or improvements to the existing process? ○ Who initiated it? And how did you react to this change? . How are the change processes managed in the organization?
<p>Source</p>	<ul style="list-style-type: none"> . In your opinion, at the organizational level, who do you think are more likely to introduce ideas that involve new way of doing things? . Do you think it is better to implement the ideas initiated by the management or to generate ideas from employees? And why?

Interview guide – Management

Obstacles	<ul style="list-style-type: none">. Based on your personal experience, what challenges would be encountered when initiating an idea for a change?<ul style="list-style-type: none">o How would you describe the reaction of employees when an idea is initiated to change an existing process that employees are used to? Do you have an example?o How would you react to a change?. What obstacles do you think employees would face to convince their ideas to the organizational stakeholders? And why? (Management support, incentives, resistance, requirements, unclear process, organizational structure)<ul style="list-style-type: none">o In your opinion, how can these obstacles be overcome?
Recommendation	In your opinion, how organizations can promote new ideas and positive change as a result of HRIS adoption?
Documents	I would like to read documents concerned with changes in HR tasks or processes, which documents would you recommend? And would you give me permission to consult it?
Closure	Is there anything else you would like to add regarding new ideas and HRIS usage?

Appendix 2: Ethical Approval



Downloaded: 04/05/2017
Approved: 28/04/2017

Bedour Alboloushi
Registration number: 150254973
Information School
Programme: Information Studies - PhD

Dear Bedour

PROJECT TITLE: The Development of Administrative Innovation in Relation to Post-Adoption Usage of Human Resource Information Systems in Public Sector Organizations
APPLICATION: Reference Number 012494

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 28/04/2017 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 012494 (dated 24/04/2017).
- Participant information sheet 1027370 version 5 (24/04/2017).
- Participant information sheet 1027369 version 5 (24/04/2017).
- Participant consent form 1027372 version 2 (13/04/2017).
- Participant consent form 1027371 version 2 (13/04/2017).

If during the course of the project you need to [deviate significantly from the above-approved documentation](#) please inform me since written approval will be required.

Yours sincerely

Matt Jones
Ethics Administrator
Information School

Appendix 3: Information sheet (English and Arabic versions)

The University of Sheffield Information School	The Development of Administrative Innovation in Relation to Post-Adoption Usage of Human Resource Information Systems in Public Sector Organizations
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Researchers

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Purpose of the research

The aim of this research is to investigate the development of innovation in the administrative work after the adoption of human resource information systems (HRIS). The context for this study is the public sector organizations.

Who will be participating?

In this study, we are inviting HRIS users from different organizational levels, at the Central Bank of Kuwait, who use HRIS to perform their work.

What will you be asked to do?

You will be asked to participate in a face-to-face interview. The interview will take about 45 mins to 1 hour. It involves questions and discussion about your experience of using HRIS and your involvement in any innovative activities that follow from the use of HRIS. For example, to what extent is HRIS integrated into your daily tasks? And have you been involved in initiating new ideas to improve an existing task as a result of using HRIS?

What are the potential risks of participating?

The risks of participating are the same as those experienced in everyday life. The participation in this study is not associated with specific risks. Your anonymity is preserved and personal information will not be disclosed.

What data will we collect?

We will collect your answers to the interview questions. The interview will be audio recorded for research purposes. No financial data or records related to the organization nor employees' personal data will be collected.

What will we do with the data?

The interview will be transcribed and anonymized. After that, data will be analyzed to be included in the PhD research and connected publications for academic purposes. All data will be secured and password protected. Access is limited to the researcher and her supervisors. In addition, interview recordings will be destroyed once the research has been completed. Anonymized data will be kept for a period of five years and may be used, by the researcher and the supervisory team, in publications and for future subsequent studies. After this period all data will be destroyed.

Will my participation be confidential?

Your participation is strictly confidential. We are anonymizing the data and coding interview transcripts with a random number. The name of the organization will be anonymized. Your identity will be kept confidential and identifying details such as names, job titles and other personal information will not be disclosed.

What will happen to the results of the research project?

The results of this study will be included in a PhD thesis. Information gained during the research project may additionally be published in connected publications such as academic journals, conference papers, book chapters, etc.; and used for subsequent research. Confidentiality will be maintained and no identifiable information will be revealed in the thesis or any publications.

جامعة شيفيلد كلية المعلومات	تنمية الابتكار الإداري فيما يخص أنظمة الموارد البشرية بعد اعتمادها في مؤسسات القطاع الحكومي
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فريق البحث

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الهدف من البحث

يهدف هذا البحث لدراسة تنمية الابتكار في العمل الإداري بعد اعتماد أنظمة الموارد البشرية في القطاع الحكومي في الكويت

من سيشارك في البحث؟

ندعو مستخدمين نظام الموارد البشرية من مختلف المستويات التنظيمية الذين يستخدمون النظام لأداء مهامهم الوظيفية للمشاركة في البحث

ماذا تتضمن المشاركة؟

سيطلب منك المشاركة في مقابلة شخصية تستغرق حوالي ٤٥ دقيقة إلى ساعة. تتضمن المقابلة أسئلة ومناقشة حول خبرتك في استخدام نظام الموارد البشرية وحول مشاركتك في أي أعمال ابتكارية ناتجة عن ذلك. مثال: إلي أي مدى يرتبط النظام في المهام اليومية الخاصة بك؟ هل شاركت في بدء أفكار جديدة لتحسين مهمة قائمة نتيجة لاستخدام النظام؟

ماهي المخاطر المحتملة في حال المشاركة؟

مخاطر المشاركة هي نفس المخاطر التي تواجه في الحياة اليومية. لا ترتبط المشاركة في هذه الدراسة بمخاطر محددة. سيتم الحفاظ على هويتك مجهولة ولن يتم الكشف عن أي معلومات شخصية.

ماهي البيانات التي سيتم جمعها؟

سنجمع إجاباتك على أسئلة المقابلة. وستكون المقابلة مسجلة صوتياً في حال موافقتك لأغراض البحث العلمي فقط. لن يتم جمع أي بيانات مالية أو بيانات خاصة تتعلق بالجهة أو بيانات شخصية للموظفين.

ماذا سيحدث للبيانات؟

سيتم كتابة المقابلة وستكون مجهولة المصدر. بعد ذلك، سنقوم بتحليل البيانات ليتم تضمينها في رسالة الدكتوراه والتقارير المتصلة لأغراض أكاديمية. سيتم حفظ كل المعلومات التي تجمع في هذه الدراسة في مكان آمن وستكون محمية بكلمة سر. ولن يطلع عليها سوى الباحثة ومشرفيها. وستدمر جميع التسجيلات عند إكمال الدراسة. سيتم الحفاظ على البيانات المجهولة المصدر لمدة خمس سنوات مع الباحثة ومشرفيها ويمكن استخدامها في التقارير المتصلة بالبحث. بعد هذه المدة، سيتم تدمير جميع البيانات.

هل سنبقى مشاركتي سرية؟

مشاركتك في الدراسة سوف تبقى سرية تماماً. ستكون البيانات مجهولة المصدر وسيتم ترميز المقابلات بأرقام عشوائية، ولن يتم ذكر اسم الجهة في أي من مواد البحث. وسيتم الحفاظ على سرية هويتك، ولن يتم الكشف عن أي بيانات تعريفية مثل الأسماء، والمسميات الوظيفية وغيرها من المعلومات الشخصية.

سوف تكتب النتائج في أطروحة الدكتوراه، ومن الممكن نشر النتائج في الدراسات التابعة والمنشورات المتصلة مثل المجلات الأكاديمية، والمؤتمرات، والكتب... إلخ. وسيتم الحفاظ على السرية ولن يتم الكشف عن أي بيانات تعريفية في الأطروحة أو أي منشورات.

Appendix 4: Consent form (English and Arabic versions)

The University of Sheffield Information School	The Development of Administrative Innovation in Relation to Post-Adoption Usage of Human Resource Information Systems in Public Sector Organizations
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- I confirm that I have read and understand the description of the research project, and that I have had an opportunity to ask questions about the project.
- I understand that my participation is voluntary and that I am free to withdraw at any time without any negative consequences.
- I understand that if I withdraw I can request for the data I have already provided to be deleted, however this might not be possible if the data has already been anonymised or findings published.
- I understand that I may decline to answer any particular question or questions, or to do any of the activities.
- I understand that my responses will be kept strictly confidential, that my name or identity will not be linked to any research materials, and that I will not be identified or identifiable in any report or reports that result from the research, unless I have agreed otherwise.
- I give permission for the researcher and her supervisors to have access to my responses.
- I give permission for the researcher and her supervisors to re-use my data for future research as specified on the information sheet.
- I agree to take part in the research project as described above.

Participant Name (Please print)

Participant Signature

Researcher Name (Please print)

Researcher Signature

Date

Note: If you have any difficulties with, or wish to voice concern about, any aspect of your participation in this study, please contact Dr Jo Bates, Research Ethics Coordinator, Information School, The University of Sheffield (ischool_ethics@sheffield.ac.uk), or the University Registrar and Secretary.

جامعة شيفيلد كلية المعلومات	تنمية الابتكار الإداري فيما يخص أنظمة الموارد البشرية بعد اعتمادها في مؤسسات القطاع الحكومي
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- أؤكد أنني قرأت وفهمت شرح البحث، وأنه قد أتيت لي الفرصة لطرح الأسئلة حول البحث.
- أدرك أن مشاركتي اختيارية، وأن لي الحق في الانسحاب في أي وقت بدون أي عواقب سلبية.
- أدرك أنه إذا قمت بالانسحاب يمكنني طلب حذف البيانات التي أعطيتها، إلا أن هذا قد لا يكون ممكناً إذا تم بالفعل إخفاء الهوية أو نشر النتائج.
- أدرك إنني أستطيع الامتناع عن الإجابة عن أي سؤال إذا لم أرغب بذلك أو القيام بأي أنشطة مطلوبة.
- أدرك أن إجاباتي ستبقى سرية تماماً، وأن اسمي أو هويتي لن يتم ربطها بأي من مواد البحث، وأنه لن يتم الكشف عن هويتي أو تحديدها في أي تقرير ينتج عن البحث، ما لم أوافق على غير ذلك.
- أسمح للباحثة ومشرفيها الأكاديميين الاطلاع على إجاباتي.
- أسمح أن تستخدم الباحثة ومشرفيها الأكاديميين المعلومات التي أعطيتها في أبحاث مستقبلية كما هو موضح في ورقة المعلومات.
- أوافق على المشاركة في مشروع البحث كما هو موضح أعلاه.

توقيع المشارك	اسم المشارك
توقيع الباحث	اسم الباحث
التاريخ	

ملاحظة: إذا كان لديك أي صعوبات أو ملاحظات تخص جانب من جوانب مشاركتك في هذه الدراسة، يرجى التواصل مع الدكتور جو بيتس، منسق أخلاقيات البحوث، كلية المعلومات، وجامعة شيفيلد (ischool_ethics@sheffield.ac.uk)، أو مسجل الجامعة وأمين السر.

Appendix 5: Example of using NVivo

The screenshot shows the NVivo software interface. The top menu bar includes Home, Create, Data, Analyze, Query, Explore, Layout, and View. The left sidebar shows a tree view with categories: DATA (Files, Interviews, File Classifications, Externals), CODES (Nodes), CASES (Cases, Case Classifications), NOTES (Memos, Annotations, Memo Links), and SEARCH (Queries, Query Results, Node Matrices, Sets). The main pane displays a list of codes under the heading 'Having different perspectives'. The selected code is 'Having different perspectives...'. The right pane shows a 'Reference' view for this code, displaying two references with their respective coverage percentages and text excerpts.

Reference	Coverage	Text Excerpt
Files\Interviews\I16	2 references coded, 2.56% coverage	No my idea was not implemented, because the team leader has a different point of view
Reference 1	0.91% coverage	
Reference 2	1.65% coverage	The employees want to change, but the higher levels don't want to because they see it as a waste of time and that there are other more important things to do
Files\Interviews\I17	1 reference coded, 1.88% coverage	The most difficult thing is to make them [supervisors] understand my point. I feel worried because I want them to get my idea and comprehend it and not to think that I am just being arrogant
Reference 1	1.88% coverage	

The screenshot shows the NVivo software interface. The top menu bar includes Home, Create, Data, Analyze, Query, Explore, Layout, and View. The left sidebar shows a tree view with categories: DATA (Files, Interviews, File Classifications, Externals), CODES (Nodes), CASES (Cases, Case Classifications), NOTES (Memos, Annotations, Memo Links), and SEARCH (Queries, Query Results, Node Matrices, Sets). The main pane displays a list of memos under the heading 'Memo P#30'. The selected memo is 'Memo P#30'. The right pane shows a text view for this memo, displaying several paragraphs of text.

Memo P#30

He mentioned that lately they don't have regular meetings, but they are planning to do it soon because they are understand how important it is. He also mentioned that suggestion often come from the lower organization level to the higher level (bottom-up process). He talked about his way of motivating his employees, he said he usually ask them about their opinion, and sometimes he assign tasks and ask them to do it their way. This is to give them more confidence and let them think of new ways to complete the tasks.

He also talked about what the organization should do more to encourage employee to share their ideas. He said that he is thinking about an idea which is about having an 'open day' where employees can make presentation and share their ideas with the managers and colleagues.

He has not request this yet but he thinks that it is possible and should be done in this organization. He believes that the only barrier facing anyone who has an idea or a suggestion is related to communication channels. Similar to previous interviews he believes that both types of incentives are important.

He feels there is a need to emphasize more on 'Thank you letters' (appreciation letters) to be given to the employees as a recognition for their contribution. He doesn't like the idea of suggestion box inside the section or the department (similar to #p26). He said that they don't need suggestion box for internal process. Suggestion box can be used for ideas that affect the organization as a whole and that they already have one. (he was the first to mention that they already have one) So after my interview with managers,

I feel like I need to know more from the employees. For example, do the employees know about the suggestion box? What ideas did they share on the box (if any)? In addition, I also want to know what they think about the "Employee of the Year" award? Does it motivate them? I will look for documents discussing this award to know more details about it.

Identifier:

M: management , **JR:** junior Employee (0 – 3 years of experience),

INT: Intermediate level employee (3 -10 years of experience),

SR: Senior employee (10 and more), **TECH:**HRIS Technician

Appendix 6: Sample of the code list

Open Coding	Axial Coding	Description	Identifier	E.g. Raw data
Being incapable of using HRIS	Making sense and interacting with HRIS	The inability to use the system	INT	To this day, there are employees and managers who don't know how to use the system We have old people working with us who are not that good with the computer and the system. There was a senior employee who did not even know how to log-in
Having better information access		HRIS provided easier and faster access to information	INT	Especially in recruitment, it is now easier to access and search for the applicants' information with one-click without the need to go back to the files and look through all the papers
Minimizing human errors		Reducing data entry mistakes	INT	We are minimizing human mistakes. For example, we had some mistakes before like entering the details of an employee's leave incorrectly. I mean for example by entering a wrong date and starting a leave on Saturday or ending a leave on a Friday and in this case the weekend shouldn't be counted as annual leaves. These mistakes caused problems for us and for the employees as well.
feeling more independent		Being knowledgeable and more technically competent	SR	I am very capable to use the system in performing my tasks. I feel that I am well trained based on my work experience in this organization and also based on my previous experiences ... I've been working on the same system for a while ... I don't need a lot of help to use it.
Becoming more paperless		One of the advantages of using HRIS is reducing paper consumption	M SR	The system reduced the amount of papers we use to almost 90% less Our work has really improved and we reduced the paperwork a lot.
Building trust on the system		Relying on the system	INT JR	they are always worried if the system is wrong or if there is a data entry mistake. Because they still don't have trust, they are doing their work on the system and on papers as well
Saving time and effort		reducing the amount of effort required to perform the tasks	INT	the work has improved a lot. and among the simplest but yet powerful improvements I can think of is that the system saved us time and effort, and organized our operations. Everything is clearer by using the system

Open Coding	Axial Coding	Description	Identifier	E.g. Raw data
Automating processes	Making sense and interacting with HRIS	Performing processes using the system	INT	almost everything now is done electronically, our job now is more about observing rather than doing everything manually.
Working in parallel		Performing work on the system and on paper simultaneously	INT	We need to have a softcopy and a hardcopy of everything. This is very frustrating,
Improving work		HRIS leading to improved efficiency and effectiveness of work	M	Actually, the Oracle system gave us options to better develop our systems and all sections became linked and integrated. All the data is taken from one centre, which is the Oracle system.
Realizing the potential of employees	Forming the idea	Emphasizing the ability of employees to come up with new ideas and initiate changes	TECH	Recently, I have noticed that most of the ideas are initiated from the employees' level. Ideas we worked on previously were from the management level, this was because employees were not used to the system yet. But recently, like within the last two years, employees started to come up with many ideas. After using the system, understanding well how it works, and realizing how it can make their daily tasks easier, they started to come up with new ideas
Having detailed knowledge of tasks		To understand the details of tasks	INT	the employee performs the tasks and knows the details of the details. This means when you work in fine detail, you can come up with new thoughts and suggestions that you can present. This is because the manager does not know the precise details of the tasks.
Brainstorming		Thinking together and suggesting different ideas	TECH	I would involve my employees and conduct monthly meetings to share information and to have a group brainstorming
Originating from employees		Ideas that are initiated by employees	M INT	This always the case, improvement suggestions often come from the lower organization level to the higher level, from the employee whose hands are performing the task But we as youth, we want to change, we want things to be easier, and we hope that one day we will not have any paper on our desks and everything will be done electronically.
Being introduced by management		Ideas that are initiated by the management	M	Sometimes, we improve our work based on the requirement of the committee. The committee consists of supervisors and managers. Sometimes, they present their point of view and request changes to be made to the procedures in the department.

Open Coding	Axial Coding	Description	Identifier	E.g. Raw data
Being introduced by technicians	Forming the idea	Ideas that are put forward by HRIS technicians	TECH	So, we suggested to them an idea to make the manager or the supervisor evaluates his employees through the system and not on papers.
Exploratory learning: Exploring new features		To examine the unused features on the system	JR	While working on the system, I noticed that there are reports that we have not used previously. These reports show the attendance data. So I created an excel workbook and integrated the data into excel. This feature allowed me to create reports to view attendance, lateness, and overtime. It included charts that makes it easier to compare between employees in relation to attendance and helps the supervisor in evaluation process.
Exploitative learning: Doing a task differently		Performing a specific task in a different way	JR	I am doing a certain task different than my co-workers - I created an excel sheet that contains different formulas ... Other co-workers do this task manually which takes them a lot of time and effort. But I use the excel sheet to make this and it gives me all the results instantly
Fulfilling work needs		Being aware of the different requirements and needs	TECH	I think that ideas are generated based on work needs, sometimes they need certain information and they feel that they are entitled to change, so they begin to present suggestions on how to improve.
Discovering deficiencies		To find the flaws in the system or the process while performing the tasks	SR	I have a role in improving the work, because sometimes while I am working I discover things that are missing, or defects that exist in the system or in the procedure. So then I try to solve it.
Facing work processing challenges		Dealing with challenging work practices that requires deep thinking and experimenting with different solutions	M	There were also many complaints that the staff were always busy and did not respond to the calls and inquiries in sufficient time and that was because of the pressure of work
Encountering a problem		ideas may result from confronting problems at work	M	I always keep thinking how I can employ the system to solve the problem. The idea that I look for is not only to solve the problem but also to improve the process at the same time
Having a holistic understanding of the work		Understanding how things work in HR department as a whole including systems, processes and tasks	M	... a staff member who print reports might feel unproductive but I can tell that he has the ability to design reports, so I can rotate him to another section where he can be creative. With his experience in reports and his designing skills, they will have a bomb of creativity...

Open Coding	Axial Coding	Description	Identifier	E.g. Raw data
				and increases the experience of employees in the organization itself
Being exhausted and stressed	Forming the idea	Employees need more time to free their mind and to be able to think creatively	SR	The procedure is very long and takes a lot of the employee's time and actually can kill the employee ... and this is causing delays for the other tasks and making the employee tired. So reducing the steps of the procedures will give me a chance to free my mind and make me think of what could be changed or improved.
Drawing on previous knowledge and expertise		Generating ideas based on their previous accumulated knowledge and expertise outside the organization.	SR	I was working in an organization whose network is larger than the network of this organization and includes many departments... they have a special link to the HR system that the employees can access when they are outside the organization anywhere and anytime.
Experiencing inertia	Encountering organizational barriers	Encountering difficulties	INT	the current situation has been very stagnant – Currently, no one is suggesting ideas
			M	To be honest, until now no one came to me with a suggestion or a new idea
Having lengthy procedures			INT	The time it takes to implement an idea. It means that you can submit a proposal today, but for the management to decide whether to accept or reject the idea, it will take a long time - I think it is taking a very long time and requires many approvals
Lacking clarity in the process			JR	No, the process is totally blurry, by default we do it by talking to our direct supervisor firstly. But in regards to having a specific process, or writing a proposal, or for example what approvals are needed, it is totally blurry, everyone is doing it differently
Lacking IT resources			INT	Nothing is clear. I mean you can talk about it or write a proposal. It is unclear, there is no specific system for suggestions or even complaints
		The unavailability of adequate IT recourses like tools and staff	TECH	We also don't have enough resources, meaning that we are currently two technicians working on HR system. and the two of us are not just responsible for HR system, we are currently working on approximately 7 or 8 systems on other departments. Some systems also deal with external organizations as well, and this causes more stress on us.

Open Coding	Axial Coding		Description	Identifier	E.g. Raw data		
Having time constraints			Being limited in time	TECH	Sometimes during the development stage, the employees bring up new ideas but we reject it due to the lack of time. Sometimes, there are really great ideas and from the inside I really like them but unfortunately I have to reject them because we need to stick to the schedule.		
Having self-doubt	Encountering personal barriers	Encountering difficulties	Lack of confidence in their skills or experience	INT	They might see it as unimportant I am afraid that my idea won't work, or it is going to cause problems and issues		
Feeling Shy			Shyness that affect employee's ability to speak up	INT	To be honest, I feel shy to talk about it		
Having negative expectations			The impression employees get when they first join the organization Expecting negative outcomes	INT JR	I mean for example I can write a proposal for my supervisor, it is possible in some cases to discuss it with the management, but then nothing will happen. It will get shelved. This is my expectation I did not talk about it, this is because I know my ideas won't be implemented		
Having negative expectations Having a negative first impression			The impression employees get when they first join the organization	INT	I used to work in different companies during my internship and I saw different HR systems. So, when I first joined the organization I was shocked, because they were not using the system and everything was based on paperwork, especially in recruitment. But currently we implemented the I-recruitment system and everything is done electronically.		
Observing other negative experiences			Expecting negative outcomes based on the experiences of other employees	INT	I did not talk about it, this is because I know my ideas won't be implemented... From what I saw, many people before me had ambitions and wanted to change things but the ears that can hear them are missing		
Dealing with negative colleagues			Encountering interpersonal barriers		Interacting with people with negative thoughts about the workplace	JR INT	Another reason related is the prevailing idea that nothing proposed by the employee will be implemented so don't bother, I mean the existing negative energy Most of the time there will be an employee who says that your idea won't be implemented
Getting no attention					An employee who feels that his voice and opinion is not getting any attention	INT JR	because here they usually don't listen to us From what I saw, many people before me had ambitions and wanted to change but the ear that listens to them is unavailable

Open Coding	Axial Coding		Description	Identifier	E.g. Raw data
Not taking ideas seriously			Feeling that ideas are not treated seriously and taken into account	INT SR	<p>They don't really take our opinion into consideration</p> <p>I will only talk about it when I feel that the other person is taking my idea into consideration</p>