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The use of Grounded Theory in PhD research in knowledge management: a model four stage research design

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Abstract:

Purpose: New PhD researchers sometimes face challenges when attempting to follow Grounded Theory principles to conduct their studies. These challenges may lead them sometimes to change its features or even prevent them from using the approach at all. This paper argues that, although challenging to implement, Grounded Theory is congruent with the nature of PhD research. It aims to provide an example of the application of Grounded Theory in a typically time-limited PhD research project without the need to change any of its key features and principles.

Design/methodology/approach: The paper presents and discusses the research design adopted in ongoing PhD research which integrates the main guiding principles of Grounded Theory in a simplified four stage model of theory development

Findings: The proposed model four stage research design includes: i) an uncertainty stage, where the primary focus is formed; ii) an emergence stage, where the core categories, which are the foundations of the theory, emerge; iii) an ambiguity resolution stage, where the grey areas in the emerging theory are clarified and iv) a maturity stage, when relationships between categories are defined and theory is refined.

Originality/value: This research design can help new PhD researchers unfamiliar with Grounded Theory to develop a clear understanding of the process by simplifying and clarifying its main guiding principles, as well as integrating them into a clear phased approach that takes into account the iterative and non-linear nature of this methodology. It also places boundaries on the issues that should be dealt with within each of the phases of research adopting this methodology.

Research paper

Key words: Grounded Theory, qualitative research methods, knowledge sharing.

1. Introduction

Sociologists Barney Glaser and Anselm Strauss developed Grounded Theory as a methodological approach to generate theory inductively and grounded in empirical data (Strauss and Corbin, 1998). A theory developed through this methodological approach emerges from data and is grounded in it through a process of constant comparison analysis (Glaser and Strauss, 1967), hence its name. It was developed as a reaction to the then predominant functionalist and structuralist approaches (Howcroft and Hughes, 1999) and aimed to provide grounds for legitimating research based upon principles that differed from those of the predominant approaches by promoting thorough and sound guidance for qualitative research. Its key focus was to address what was referred to as an “[...] *embarrassing gap between theory and empirical research*” (Glaser and Strauss, 1967:vii), by advocating the need to “[...] *generate theory which is fully grounded in data*” (Dey, 1993:103).

Although it was developed in the field of sociology, within the American school of symbolic interactionism, it has been applied in numerous studies elsewhere (Goulding, 1998; Douglas, 2006) and, as Glaser(1992) asserted, is a general methodology that can be applied in many fields; there are examples in tourism and hospitality management (Connell and Lowe, 1997; Mehmetoglu and Altinay, 2006), medical studies (Charmaz, 1990)), psychology (Henwood and Pidgeon, 1995), information science (Ellis, 1989), information systems (Orlikowski, 1992; Galal, 2001; Doolin, 2004), knowledge management (Kirk and Vasconcelos, 2003) and discourse studies (Vasconcelos, 2007a; Vasconcelos, 2007b). It is, in effect, one of the most cited qualitative methodologies (Locke, 2001; Douglas,

2006). Its widespread adoption can be justified, according to Locke (2001:95-97), by its ability to “*capture complexity, linking well to practice, supporting theorizing of new substantive areas, and enlivening mature theorizing*”.

Selden (2005) discusses its use LIS research and points towards the influence of ‘the Sheffield tradition’ and of the Scandinavian school in the 1980s and in the 1990s (Selden, 2005:120). Sheffield provided a ground for qualitative studies with a phenomenological foundation, as envisioned by Tom Wilson in the first issue of *Social Science Information Studies* (Wilson, 1980) and an early ground for its adoption (Ellis, 1989, 1993; Vedi, 1986). In Scandinavia, Olaisen (1984) provided an early reference to the adoption of this methodological approach. In the United States, Mellon (1986) developed a model on library anxiety using Grounded Theory. The studies by Ellis, Vedi and Olaisen stem directly from their PhD research. Since then, numerous examples of the use of Grounded Theory in PhD research in the LIS field can be found, as referenced in Mansourian (2006) and Tan (2010).

Despite its wide adoption and its being the most widely-discussed and debated qualitative research approach, it is also seen as a difficult research methodology for new researchers.

“The Grounded Theory Approach could be better employed by a team of researchers or by a more experienced researcher” (Mehmetoglu and Altinay, 2006:31)

Huehls (2005:328) believes the difficulty of novice student researchers to grasp Grounded Theory is due to:

“the process reverses the order of empirical research – hypothesis generation followed by data collection. The idea that theories can be generated from data - let alone qualitative data - contradicts the scientific tradition they were taught in elementary school science.”

Furthermore, it has been argued that it is time consuming and therefore a risk prone approach for limited-time projects undertaken by inexperienced researchers as part of a PhD programme.

“This process of research is known to be highly time consuming, very intensive and require mature levels of reflexivity. This is of particular importance when inductive approach is adopted for a PhD programme. PhD programmes have characteristics that put students adopting such purist inductive approaches at great risk”. (Nunes and Al-Mamari, 2008)

Misapplication can also be one of the explanations for not recommending this methodology for PhD researchers. Becker (1993) noted that many purported Grounded Theory studies lack conceptual depth and are merely descriptive research as they are missing some of the key features of Grounded Theory. She claims that this problem is due to a number of reasons, such as the absence of discovering problematic situations based on the data, the non-deployment of the principle of theoretical sampling, and the disregard of simultaneous data collection and analysis. Wilson and Hutchinson (1996) argue that “*corruptions of the method in recent years place its credibility at risk, and findings generated are earning a reputation as trivial or obvious*”. As noted by Bryman (2001:391) that, although in effect Grounded Theory is by far one of the most cited methodological approach to qualitative research, it “[...] *may have been honoured more in breach than in observance*” and has been deployed in many different ways.

Rather notably, its two proponents diverged later on significantly the nature of Grounded Theory and on how its principles and methods should be interpreted and deployed. In its original formulation (Glaser and Strauss, 1967), it was intended as a flexible approach to generate theory from data, based upon the three generic principles of theoretical saturation, constant comparison method of analysis and theoretical saturation. The subsequent reformulation of Grounded Theory by Strauss and Corbin (1992) placed much stronger emphasis on its proceduralisation and formalisation into a series of techniques, particularly in the codification of data. Core to this version of Grounded Theory is what Strauss and Corbin (1990) refer to as the ‘paradigm model’, defined as a systematized cause and effect schema to explain the inter-relationships between broader categories and sub-categories. Glaser (1992) considered that the new version proposed by Strauss and Corbin was too prescriptive and emphasized too much the role of coding, whereas the original essence and intention of Grounded Theory was to focus on theory development: “*Anselm’s methodology is one full of conceptual description and mine is Grounded Theory. They are very different, the first focusing on forcing and the second on emergence. The first keeping all of*

the problems of forcing data, the second giving them up in favour of emergence, discovery, and inductive theory generation“(Glaser, 1992:122).

In response to the literature that highlights the divergence, confusion and difficulty faced by PhD researchers when adopting Grounded Theory, Tan (2010) presents a clarification of four common issues faced by researchers when exploring Grounded Theory at an initial stage of their research: i) whether to adopt it as a methodology or a method; ii) what is the role of the literature in it; iii) how coding and categorisation are undertaken and iv) what is the nature of the emerging theory. She discusses how these four different issues are interpreted in different versions of Grounded Theory and stresses that researchers should consider where they stand in terms of the different versions of Grounded Theory.

This paper also aims to address the concerns with the practicality of adopting Grounded Theory in PhD research and presents a research design model where this methodological approach is adapted to demonstrate its application within time-limited research projects, such as PhD studies, without the need to change or drop any of its key principles. This model for Grounded Theory, which is in line with its original flexible concept, can help PhD researchers that are not familiar with this approach to develop a clear understanding of the process by simplifying and clarifying its main guiding principles.

2. Background to the research: cooperation through knowledge sharing within the religious tourism and hospitality industry in Saudi Arabia

The context for the research that is presented as an example in this study is an ongoing doctoral study on the role of knowledge sharing in relationships between organisations that are characterised by the concurrence of competition and cooperation. The classical image of an organization as an autonomous entity has been replaced with another image in which it is part of a value net where clusters of organizations work together to develop and strengthen their competitive advantage at the same time as they compete with each other (Grangsjö and Gummesson, 2006). Interdependence and relationships between actors in an industry is a key approach to conduct business (Grangsjö, 2003). In a tourist destination, there are different organizations present and they need to collaborate with each other and maintain close contact even if they are competitors (Bolinger and Smith, 2001; Gronau, 2002; Scott and Laws, 2006). Knowledge sharing emerges as a key practice in the tourism and hospitality industry because of two notions: 1) the role that knowledge plays in competition and 2) the need for considering knowledge from an inter-organizational perspective (Scott and Laws, 2006). However, organizations within a destination need ensure that they not only generate and absorb knowledge but also share it in order for these sharing to be reciprocated as to maximize the competitive advantage for their destination (Lemelin, 2006). This cooperation through sharing knowledge between competitors within a destination leads to the development of collective strategies that can increase the competitiveness of a destination. This leads to the understanding that competition is not the only reason for economic development in a particular region but that cooperation and shared values also play a part in it (Grangsjö and Gummesson, 2006). As there is a limited number of studies in tourism and hospitality, there is a need for theory-generating approaches such as Grounded Theory in this area (Mehmetoglu and Altınay, 2006). Grounded Theory has been selected to conduct this research because of its proven effectiveness in developing in-depth understanding around issues and areas where little is known and where the focus is on the participants' experiences and their interaction (Glaser, 1998; Pauleen et al., 2007).

3. Research design: the Grounded Theory process in four stages

Glaser and Strauss (1967) have developed Grounded Theory to generate theory based on three foundations: i) the constant comparison method of analysis, where data collection and analysis occur simultaneously; ii) theoretical sampling, where data collection is driven by the emerging theory; and iii) theoretical saturation, where the collection of data continued until *“additional analysis no longer contributes to discovering anything new about a*

category”(Strauss, 1987:21). The methodology includes a number of elements and guiding principles in the research design. These are: the emergence of the research question, simultaneous data collection and analysis, the construction of data categories from empirical data, development of theory during each step of the data collection, and analysis and memo-writing as way of advancing theory (Pickard, 2007).

The research design adopted in the investigation described in this paper has four stages:

1. The uncertainty stage, where the primary focus emerges.
2. The emergence stage, where the core categories that form the foundations of the theory emerge.
3. The ambiguity resolution stage, where the grey areas in the emerging theory are clarified.
4. The maturity stage where the discussion of the findings against the literature takes place.

Fig. 1, below, represents the various stages of the research design and the various activities that each involves and their outcomes

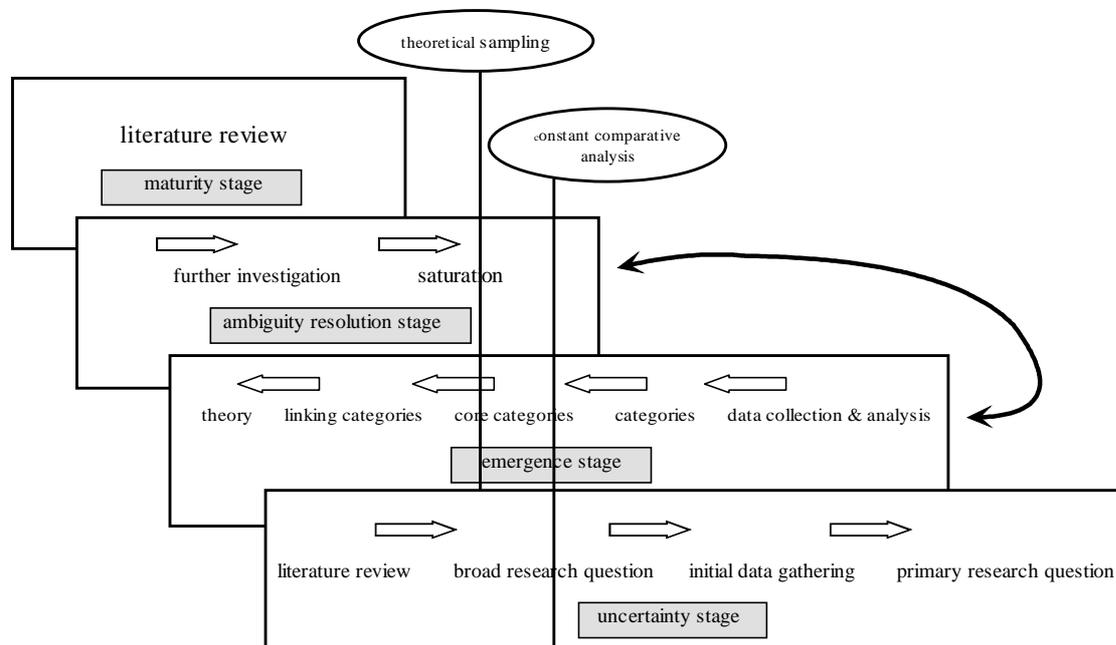


Figure 1: A four research design using Grounded Theory.

3.1 The uncertainty stage: formulating the research question

This first stage of the research design leads to the emergence and development of the primary research question through a systematic process of empirical inquiry. The originators of Grounded Theory, Glaser and Strauss (1967:33), state that “Both substantive and formal theories must be grounded in data. Substantive theory faithful to the empirical situation cannot, we believe, be formulated merely by applying a few ideas from an established formal theory to substantive area. To be sure one goes out and studies an area with a particular sociological perspective, and with a focus, a general question, or a problem in mind. But he can (and we believe should) also study an area without any preconceived theory that dictates, prior to the research, ‘relevancies’ in concepts and hypotheses.” With Grounded Theory, the research does not need to have an initial tight focus because, as an inductive approach, its purpose is to discover ‘what is going on and why’. The researcher can engage with the research with a very open and broad research question at the beginning of this initial stage. Dey (1993) suggests that undertaking Grounded Theory requires the adoption of an open mind over the phenomena under study as well as the data that is collected and analyzed. Furthermore, she explains that starting with an open mind does not mean a blank mind on a subject;

on the contrary, previous theories should be considered but should not pre-determine and pre-conceive the conceptualization of findings – this should be grounded in data: “[...] *there is a difference between an open mind and an empty head. To analyse data, we need to use accumulated knowledge, not dispense with it*”. Dey (1993:65). As stated by (Pickard, 2007:158), the research “*cannot begin with rigid, a priori assumptions concerning the context, the process or the issues*”.

This particular study started initially with a broad research question and it was acknowledged upfront that this would change and be reformulated in different terms.

What are the barriers to knowledge sharing in hotels in the religious tourism and hospitality industry in Saudi Arabia?

An initial review of the literature around issues of knowledge sharing in the tourism and hospitality industry was conducted and helped in contextualizing the research issues. The literature played an important role at the beginning of the research, although some interpretations of Grounded Theory assume that it should be ignored at the start the research:

“Inductive research lets reality tell its story on its own terms and not on the terms of extant theory [...] It may seem odd to ignore existing knowledge to be able to revise new knowledge, we are used to hear that knowledge is cumulative and that what we do must have support in previously published journal articles. Viewing all knowledge as tentative, however, researchers have to train themselves to listen to the reality without preconceived ideas.” (Gummesson, 2005:322).

The purpose of using the literature at the beginning of this research was to reduce the level of uncertainty regarding the context and the focus of the topic, which was one of the characteristics of the first stage. This was done as a vehicle for sensitization and is an entirely different approach from using it as a mean to define an *a priori* coding system or root categories (Calloway and Ariav, 1991; Baskerville and Pries-Heje, 1995; Fitzgerlad, 1997; Hughes, 1998; Howcroft, 1998; Nunes and Al-Mamari, 2008):

In reality, Glaser and Strauss(1967:46) themselves acknowledge the important role of extant knowledge in Grounded Theory, stating that this approach “[...] *will tend to combine mostly concepts and hypothesis which have emerged from the data with some existing ones that are clearly useful*”. What it should not do is to commit research to “[...] *one specific preconceived theory*”. The literature plays an important role at the beginning of Grounded Theory, but not to the extent that it leads to the formation of preconceived concepts and categories. The role of the literature at the beginning of the research is to provide a context and an overall picture of the research problem.

This review helped reduce the level of uncertainty on the subject and showed that issues around knowledge sharing in tourism and hospitality industry have been neglected in this literature. Most papers that focus on issues related to knowledge management in the tourism and hospitality industry are purely theoretical or conceptual, such as Kahle (2002) and Hawkins (2006). The fact that knowledge management has only recently been applied to the industry itself could be an explanation for this (Bouncken, 2002; Bouncken and Pyo, 2002). This literature review emphasized that there is a need for empirical studies, rather than just theoretical and conceptual approaches, to understand the role of knowledge management in this context.

However, although the degree of uncertainty over what constituted key issues on the subject was reduced, the research still lacked a specific focus.

A pilot study was then devised to help formulate this focus. Although sampling in Grounded Theory is defined as theoretical, as it is driven by the emerging theoretical framework, it can involve purposeful sampling at the initial stage of the research. For Denscombe (2007), the criterion of the selection of the initial sample is based on its relevance, targeting the sample which is expected to provide relevant information on the issues under investigation. In the case of this research, 10 middle managers working in differently rated hotels in the religious tourism destination were selected. The choice of middle managers was based on their mediating role between the core and the periphery of the organization (Vasconcelos, 2007a; Vasconcelos, 2007b). Consequently, they may have particularly interesting insights to provide, because they have contact with and mediate across different levels of the

organization. In-depth interviews were conducted with this original sample of respondents in order to gain data. Although it is desirable to analyze data as it is collected, the initial data analysis process was compressed in time due to the fact that data was being collected in Saudi Arabia, whereas the main researcher was primarily based in the United Kingdom, where the research was being supervised. Afterwards, the outcomes of a more systematic data analysis stage pointed towards an interesting aspect of interdependency in the relationships between competitors, which leads them to cooperate through knowledge sharing. This led to a subsequent exploration of the literature around the theme as well as to the reformulation of the primary research question and a more focused direction given to this research into:

In what ways do competing hotels in the religious tourism destination in Saudi Arabia cooperate through sharing their knowledge?

The aim of this research was then to discover how hotels in the religious tourism and hospitality industry in Saudi Arabia cooperate through sharing their knowledge within competitive relations and to understand the rationale for this apparent paradox.

3.2 The emergence stage: answering the primary research question

The second stage of the research design is considered its main stage because it seeks to answer the primary research question resulting from the previous stage through systematic data collection and analysis. This stage started by focusing on the emerging categories from the initial data gathering. A variety of the key activities during this phase, including theoretical sampling, concurrent data collection and analysis, the construction of categories and the emergence of a theoretical framework will be discussed in the following sections.

3.2.1 Theoretical sampling

Theoretical sampling informs this stage and continues through until the end of the following stage – ambiguity resolution. Theoretical sampling is the process whereby data is collected, coded and analyzed in order to decide where to sample next in accordance with emerging codes and categories (Glaser, 1978). At this stage, there is no pre-definition of what the sample should be or of how large it should be or what sites exactly should / would be included because, as Glaser (1992:102) stated, In GROUNDED THEORY: “Groups are chosen as they are needed, rather than before the research begins”; “The analyst who uses theoretical sampling cannot know in advance precisely what to sample for and where it will lead him” (Glaser, 1978:37).

Researchers may at this stage ask for more questions or drop false leads (Stern, 1994). The aim of theoretical sampling is “to maximize opportunities to compare events, incidents, or happenings to determine how a category varies in terms of its properties and dimensions” (Strauss and Corbin, 1998:202). The emerging categories from the previous stage lead to decisions on what and where to sample next.

In the case of this investigation, hotels which had several layers of management were selected. This selection is guided by the category of *sharing knowledge among competitors*. The selection of the managers relates to the fact that the decisions on engaging with either competition or cooperation (of which knowledge sharing is one of its forms) or both of them, among organizations are usually related to different management options (Cosgrave, 1996; Harrison and Pelletier, 2000; Gallen, 2006). At that point, there was awareness that other stakeholders and agents might be included in future data collection and analysis.

A first site (hotel) was selected based on a timetable of availability. It was the first available appointment in the data collection timetable and initial interviews took place. Data from these interviews showed that this organization only had relationships, whether cooperative or competitive, with a specific group of hotels within the same rating (5*), forming an informal club amongst themselves. This then led to the decision to focus on the same market. As the research aims to investigate the cooperative practices amongst competitors through knowledge sharing, hotels which form relationships of this nature with each other were targeted, Sampling of the data in these contexts was based on theoretical relevance (Denscombe, 2007).

3.2.2 Concurrent data collection and analysis

Concurrent data collection and analysis is one of the key principles of Grounded Theory, which involves a strong interplay between data collection and data analysis that occur concurrently in an iterative manner (Cutcliffe, 2000). This practice provides initial categories of analysis and directions to the next data collection stage in terms of what additional data is needed and where and with whom it should be collected. In brief, decisions are taken based on the empirical data (Pickard, 2007). Therefore, analysis in this research took place as data collection was being carried out and, conversely, this process of analysis drove the process of data collection. The data collection and analysis processes at this stage were organized around a timetable that included conducting two interviews a day and spending the next five days transcribing and analyzing. The reason for alternating data collection with analysis in such a research, is that *“not only does this allow for sampling on the basis of emerging concepts, but also enables validation of concept and hypotheses as these are being developed. Those found not to fit can be then discarded, revised, or modified during the research process”* (Strauss and Corbin, 1998:46). Simultaneous data collection and analysis allows the researcher to compare the incidents and, consequently, revise interview questions during this stage and add new questions or discard other questions.

3.2.3 Constructing categories from empirical data and emerging the theory

Following the constant comparative method, coding took place by selecting, labelling, separating, compiling and sorting data to be ready for analytical accounting (Charmaz, 1994; Charmaz, 2006). During this process, incidents were compared with each other within each of the categories of data. As a result of this constant comparison, theoretical properties of the categories emerged (Glaser and Strauss, 1967). This process of developing categories from data ensures that the researcher does not create them without empirical evidence (Pickard, 2007). The process of coding and comparison then continued at a higher level of abstraction. This time, incidents were compared with the properties of categories that emerged from the initial phase of comparison.

Example:

‘Club membership’ is one of the categories which emerged as a result of comparing managers’ responses to the idea of cooperation among hotels. This is an example of the initial stage of constant comparative analysis; here, it needed to be entirely open and had no preconceived codes.

“I only take information from hotels which have similar star rating as mine, they share the same market.” (2:5:7)

“[five star hotel name], [five star hotel name], [five star hotel name], and [five star hotel name]. Cooperation happens with this type of hotels.”(1:7:11)

“[...] five star hotels because of the market. We share one market.” (1:5:6)

“You talk with people who are involved in your market because of similar category” (1:5:6)

The properties of *‘Club membership’* emerged as the researcher *“starts thinking in terms of full range of types or continua of the category, its dimensions, the conditions under which it is pronounced or minimized, its major consequences, its relation to other categories, and its other properties”* (Glaser and Strauss, 2006:106). Hotel star rating has to do with factors such as service, clients, prices and technology; when participants mentioned hotel star rating, they actually mean these factors – they use the short designation of star rating to mean all these factors.

It becomes apparent now that having similar services, clients, prices and technology not only encourages five star hotels to communicate, but leads them to identify with each other as part of the same club, with the status of elite organizations.

“I communicate with managers in five star hotels because our service is very similar. Three star hotels have different level of service so their thoughts and minds maybe different from us. I mean for example I have certain standards for the products I buy or the material I use. These standards are different than the ones in three star hotels. The difference in standards makes it difficult to share our ideas and thoughts” (1:2:11)

Theory emerges when different categories and their properties are integrated through constant comparison at this higher level of abstraction stage (Glaser and Strauss, 1967; Stern, 1994) involving a smaller set of “*higher level concepts*” (Glaser and Strauss, 2006:110). At this stage, links between the categories were developed in order to form an explanatory framework for the patterns of interaction within the relationships between different managers in the group of participating organizations. The reduction and comparison process led to the development of the core theme, which was the basic foundation of the theory in this research. The core theme was that *knowledge sharing takes place among competing hotels through social networks that assume the nature of a club geared towards protecting the elite status of these hotels.*

3.3 The ambiguity resolution stage: achieving theoretical saturation

Although in the previous stage the foundations for an explanatory framework emerged, there was also some ambiguity related to the core theme. This required further investigation in order to clarify these elements of ambiguity. To illustrate this, competing five star hotels cooperate through five main knowledge sharing practices. These take place through social networks. There was some ambiguity related to the communication practices among the members involved in these social networks. Data showed that there are different communities involved in the social networks. They are formed based on the background of members and practices they undertake such as finance management, engineering and maintenance human resource management. At that point, it was not clear whether communication exists only within a certain community or stretches across different communities. The question arose on whether members of a certain community limit their communication to members involved in their community only or they speak with those involved in other communities. In order to clarify these elements of ambiguity, interviews were conducted with the same participants focusing on these aspects. As the core theme emerged, selective coding took place at this stage. This means “*the analyst delimits his coding to only those variables that relate to the core variable in the sufficiently significant ways to be used in a parsimonious theory. The core variable becomes a guide to further data collection and theoretical sampling*” (Glaser, 1978:61). This stage helps to remove the grey area in the emerged theory. Depending upon the properties of theory and the circumstances of specific research projects, there may be a need to include further ambiguity resolution stages in the integrated in the research design of a project. These stages continue “*until the researcher has sufficiently elaborated and integrated the core variable, its properties and its theoretical connections to other relevant categories*”(Glaser and Holton, 2004) and until the researcher has achieved theoretical saturation which “*occurs when in coding and analyzing both no new properties emerge and the same properties continually emerge as one goes through the full extent of the data*” (Glaser, 1978:53). Finally, relationships among categories need to be well established and identified in order to achieve theoretical saturation.

3.4 The maturity stage: discussion against the literature

Theoretical saturation, which started to take place in the previous stage, should be achieved in this stage where the relationships between categories are refined, the literature is integrated with the emerged theory and theory is consolidated. The literature is used in this stage in two ways and to serve two different purposes. The first is to help in clarifying the relationships between categories, which is one of the indicators of theoretical saturation. The second purpose for reviewing the literature at this stage is to discuss the findings and place them in the context of previous work as well as the broader field of knowledge to which they contribute. As with most inductive approaches, extensive exploration of the literature is made at this stage, whereas with hypothetical deductive approaches, this is the main focus at the beginning of the research. Furthermore, the findings can be used to discuss the literature and illustrate areas of divergence between the findings and previous studies (Strauss and Corbin, 1998):

“Bringing the literature into the writing not only demonstrates scholarliness but also allows for extending, validating, and refining knowledge in the field” (Strauss and Corbin, 1998:52).

4. Conclusion: lessons learned

Many PhD researchers may discount using Grounded Theory because it is time consuming. Furthermore, they may be concerned by the uncertainty that characterises the initial stages of the research. Grounded Theory literature does not seem always to be easily understandable. This paper has argued that Grounded Theory is congruent with the nature of PhD research and that it is possible to manage its use in time-constrained research while respecting its key principles, as demonstrated by many examples of doctoral research in LIS that adopt this methodology. It has provided an example of a four stage research design developed during a PhD research project.

It cannot be denied that the application of Grounded Theory, as used in the current study, was challenging in many ways. These challenges stem from the fact that researchers cannot predict and pre-define from the beginning of the research the precise research plan because this approach *“does not lend itself to precise planning”* (Denscombe, 2007:104). This emergence of the research design is due to the adoption of the principles of theoretical sampling and theoretical saturation. Theoretical sampling implies itself that it is difficult to predict the nature and size of the sample. Grounded Theory researchers need an ability to deal with ambiguity and emergence, which enables them *“to wait for the conceptual sense making to emerge from data”* (Glaser, 1999:838). Furthermore, it was not easy to deal with the challenges of concurrent data collection and analysis, which counteract linear approaches to research. In this approach, it is strongly recommended not to have two separate linear stages of data collection and data analysis because this results in difficulty *“to determine the theoretical shape and to recognize the saturation. Simultaneous collection and analysis of data and the emergent theoretical structure help to orient further data collection. It helps to find key words and key persons, to outline the research phenomenon and to recognize the process in an attempt to control the study”* (Backman and Kyngas, 1999:149).

The above mentioned challenges are inherent to open-ended qualitative research and they should not prevent time constrained research, such as PhD, studies from using Grounded Theory. Overcoming these challenges requires an understanding of the principles that guide Grounded Theory and of how they can be integrated in the research process and design. This paper has tried to provide a practical example of a research design adopted in an ongoing PhD research by integrating its main guiding principles into a simplified four stage model in theory development, leading from uncertainty to emergence and ambiguity resolution, through to maturity. The four stage research design that was devised was useful in identifying a clear process for the research and in placing boundaries on the issues that should be dealt with within each of the phases of research. This involved the development of a framework for integrating various elements and principles of Grounded Theory into different stages, in such a way that they aimed at the resolution of the challenges inherent to each phase. By doing so, it acted as a vehicle for making sense of the elements of ambiguity inherent to early stages and allowed to achieve clear outcomes at each stage, leading to the increased consolidation of the emergent conceptual and theoretical framework.

The interplay between the literature and the empirical findings played an important role in this process at different stages of the research design. At an initial stage, the literature provided a context for the research and pointed towards potential areas of focus, thus reducing the uncertainty that characterises this stage. At the emergence and ambiguity resolution stages, it allowed theoretical sensitisation of research findings and of the conceptual framework. At the maturity stage, it was used intensively to help refining relationships between categories and placing the emerged theoretical framework in the context of other work, thus allowing its consolidation. In this context, the role of the literature is that of theoretical sensitisation at the beginning of Grounded Theory, but not to the extent that it leads to the formation of preconceived concepts and categories. This exemplifies the difference suggested by Dey (1993:65) between entering the research process with an *‘open mind’* and following it with an *‘empty head’*.

The value of an approach such as Grounded Theory for PhD research is twofold: it provides` a set of methodological principles that i) enable the exploration of phenomena and situations without the straight jacket of a preconceived theoretical proposition, while ii) , if appropriately adhered to, helping to achieve analytical rigour and coherence in the interpretation of results. It should be stressed, however, that the mere claim of adoption of Grounded Theory or a mechanical application of its principles is enough to ensure the quality of research findings. There is a danger of over proceduralising and formalising the process of analysis leading to the development of rigid codification schema in mechanistic applications of Grounded Theory that emphasize codification over interpretation (Vasconcelos, 2007b). The rigour of open-ended qualitative research requires a balance between analytical categorisation, the

interpretative effort and frameworks (McAuley, 2004) that are deployed in sense-making of the analysis and the theoretical sensitisation of findings.

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