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Rigour in the Management Case Study Method: A Study on Master's Dissertations

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Abstract: Many authors argue that the case study is a valid and advantageous research method for certain studies, having been used as a method of academic research in the field of social sciences as well as in management. This research method is an integrated system and offers the opportunity for a holistic view that combines data collection methods such as archival searches, interviews, questionnaires and observation. The data collection needed to build a case study is labour-intensive, can last months or even years, and data overload seems almost inevitable. The case study is an empirical inquiry that investigates a contemporary phenomenon within a real-life context. In this research method, qualitative data usually predominates, but quantitative data often appears in case studies. Some research studies consider the case study to be a research method for validating and constructing theory. Other research highlights that all social science studies must start with a theory based on a review of the literature relating to the subject under investigation and this theory must then be validated through the study of a specific object, phenomenon or social problem. The key point is that before a theory can be validated, it must be constructed. In other words, a theory or theoretical framework first emerges not through a deductive process but through the inductive approach of studying an empirical case or object, and finally all theories are initially based on a case or object. This type of research has traditionally been considered soft, due to the inexistence of criteria that allow to evaluate its validity as a method to study a phenomenon in its real context. The present work is part of this theme and intends to contribute to diminish the perception about the lack of rigour associated with the case study. The present research focuses on the analysis of the methodological rigour of defended master's dissertations. In this context an investigation was undertaken of master's dissertations in the management area of a higher education management institution that use the case study as the research method. In order to achieve our goals, four hundred and forty-two master's dissertations defended in management scientific master's degrees in a Portuguese higher education institution which specializes in the area of economic and business sciences were analysed. The results of the qualitative research indicate that 40.0% of the dissertations focus on case studies. The results obtained lead us to conclude that in general the dissertations analysed present a high level of methodological rigour with respect to the object of study and a moderate level with respect to data analysis and results. The most critical aspects are the way data are collected, namely the use of multiple sources of evidence in less than half of the cases, which makes triangulation of data impossible.

Keywords: Case study method, Rigour in qualitative research, Management scientific research, Master's dissertations, Economic and business sciences, University in Portugal

1. Introduction

The aim of this study was to analyse the methodological rigour of master's dissertations that used the case study method in their research strategies, as there has been an increase in management areas (Caldwell, 2019). Despite the increase in the number of dissertations based on a case study, this type of research has traditionally been considered soft, due to the lack of criteria to assess its validity as a method that allows study of a phenomenon in its real context (Yin, 2014).

Within the scope of this study, the following research questions were asked:
Q1: Are the master's dissertations anchored in the case study rigorous from a methodological point of view?
Q2: Is there a relation between the phenomenon studied and the context in which it is inserted?

The present work intends to answer these research questions and contribute to reduce the perception regarding the lack of rigor associated with the case study.

Academic discussion regarding the case study as a research method is a current topic that has registered increasing interest on the part of researchers. The focus has been on its rigour in qualitative research globally (e.g., Heale and Twycross, 2015; Gustafsson, 2017; Harrison et al., 2017; Harley and Cornelissen, 2019; Hoorani, Nair and Gibbert, 2019; Rashid et al., 2019; Alam, 2020; Johnson, Adkins and Chauvin, 2020; Molina-Azorin and Fetters, 2020), as well as its application in different research fields in particular in management and in different

areas of management (Ketchen, Craighead and Cheng, 2018; Goffin et al., 2019; Myers, 2019; Verleye, 2019; Gephart and Saylors, 2020; Harrison, Reilly and Creswell, 2020; Shufutinsky, 2020).

This academic discussion started some years ago and continues in the present, increasing the number of studies on this theme that incorporate the case study method in different areas of management as a valid methodology to be applied in research studies with certain characteristics or as part of studies with various research methodologies (Harrison et al., 2017; Yin, 2017; Ketchen, Craighead and Cheng, 2018; Goffin et al., 2019; Gephart and Saylors, 2020; Holmlund, Witell and Gibbert, 2020).

In this sense, four hundred and forty-two master's dissertations defended in management scientific master's degrees in a Portuguese higher education institution which specializes in the area of economic and business sciences were analysed. After the first analysis, the results show that 40% of the total of the dissertations (442) focus on case studies, which proves their predominance in the research area of management.

After this introduction, this research work presents a literature review that includes the main studies related to the theme under study. An explanation of the methodology applied in this study then follows, with subsequent analysis of the results. After this, the discussion of the findings is presented, followed by the conclusion and finally the bibliographic references.

2. Literature review

2.1 Case study method definition and advantages

It is important to start with the definition of a case study. Gustafsson (2017) compile various definitions. A case study can be an intensive study about a person, a group of people or a unit, which is aimed to generalize over several units. In a case study, the focus is based on a specific unit.

Thomas (2011) states that a case study is an analysis of systems that are studied with a comprehensive view by either one or several methods. On the other hand, Cesar, Antunes and Vidal (2010) explain that the aim of a case study method is not to analyse cases, but it is a good way to define cases and to explore a setting in order to understand it. Cresswell (2013) consider that it explores a real-life, contemporary bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information.

Other authors consider that the case study research method is an integrated system and combines archival searches, interviews, questionnaires, and observation (Gehman et al., 2018). This vision is shared by Gephart and Saylors (2020), who define it as a method which provides a history of an event or phenomenon over time using multiple data sources and helps to answer questions out of control from researcher related with the phenomenon studied. The case study contributes to a better understanding of the individual phenomena, and the organizational and political processes of society (Piekkari and Welch, 2011; Harrison et al., 2017). It is a tool which is used to understand the form and reasons that led to a given decision. This research method is used to validate a theory, through the study of a specific object, phenomenon or social problem (Yin, 2017).

Alam (2020) highlights a feature of case studies which allow “what” questions along with “why” and “how” to be answered. Therefore, the formation of research questions which ask “what” should be for exploring comprehensive responses. Yin (2013) stated that this method is a better option when “how” or “why” questions are to be answered, if the researcher has little control over events and the focus is on a current phenomenon in a real-life context.

Rahman (2017) studies the advantages and disadvantages of using qualitative and quantitative approaches and methods. Among the main advantages of qualitative research, the author states that it: (i) produces a detailed description of participants’ feelings, opinions, and experiences and interprets the meanings of their actions; (ii) interprets the human experience holistically and understands it in specific settings, because being an interdisciplinary field it covers a wide range of epistemological viewpoints, research methods and interpretive techniques for understanding human experiences; (iii) allows the study of individual cases or events; (iv) enables researchers to discover the participants’ experience; (v) includes methods such as participant observation, unstructured interviews, and direct observation, describing records that are most commonly used for collecting data; (vi) has a flexible structure that can be constructed and reconstructed. The handicap highlighted is that it

focuses on meanings and experiences and on the participants' experience rather than any other imperative issues in the context.

The data collection needed to build a case study is labour-intensive, can last months or even years, and data overload seems almost inevitable (Miles, Huberman and Saldana, 2014). In this research method, qualitative data usually predominates, but quantitative data often appears in case studies. Other authors consider the case study a research method to validate and construct theory. Rashid et al. (2019) highlights that all social science studies must start off with a theory based on a review of the literature relating to the subject under investigation and this theory must then be validated through the study of a specific object, phenomenon or social problem. The key point is that before a theory can be validated, it must be constructed. In other words, a theory or theoretical framework first emerges through the inductive approach of studying an empirical case or object, not through a deductive process.

We finish this overview with the definition of Yin (2017), one of the best known authors in this research field, according to which a case study is an empirical inquiry that investigates a contemporary phenomenon within a real-life context. For this author, the case study is the opportunity to shed empirical light on some theoretical concepts or principles. His studies highlights the use of a case study when the main research questions are "how" or "why" questions, when the author has little or no control over behavioural events, and the focus of the study is a contemporary phenomenon. Additionally, the author declares that the case study method has variations including single or multiple cases, can be limited to quantitative evidence or can be part of a mixed-methods study. He also defines three types of case studies used for research purposes: explanatory case studies, descriptive case studies and exploratory case studies (Yin, 2013; 2017).

According to Yin (2014), the researches that use the case study also present some weaknesses, namely when it is intended to make comparisons or predictions over time. In this context, it states that to maintain methodological rigor it is necessary to take into account six main sources of evidence: (i) documentation, (ii) archival records, (iii) interviews, (iv) direct observations, (v) participant observation and (vi) physical artifacts. Should also keep in mind that each of these sources has its strengths and weaknesses. In addition to the sources of evidence, the author defends the need for a database of case studies (e.g., reports of final case studies) and an evidence chain (e.g., the connection between the questions asked, the data collected and the final conclusions), because only through the triangulation of information collected through the various elements is it possible to guarantee methodological rigor (Yazan, 2015).

2.2 The case study method in the management field

Research in the management field has been changing in recent years and new approaches are constantly being developed. As new concepts appear, exploratory research which takes a theory-building perspective is needed and the case study is highly appropriate and has been considered the most commonly used. In several disciplines, the need for higher quality case study research has been recognized (Goffin et al., 2019).

Gephart and Saylors (2020) reveal that case study research is used and studied in different management areas such as operations management (Barratt, Choi and Li, 2011), industrial marketing (Piekkari and Welch, 2011) information systems (Johnson, Adkins and Chauvin, 2020) and finally supply chain management (Flynn, 2008).

Goffin et al. (2019) present the Case Study Evaluation Template (CASET), which can be used to assess the quality of the case study research and includes four categories: research design, data collection, data analysis and post-hoc reflection on rigour. The final criterion in CASET was to ascertain if the authors of a case study had reflected on the rigour of their research, like measures to ensure validity and reliability (study replication).

2.3 Rigour in Case Study

The importance of rigour in case study methods is highlighted by several authors such as Miles, Huberman and Saldana (2014) and Yin (2014) and researchers agree on the importance of the use of different methodologies to increase knowledge (Gehman et al., 2018) and that the use of this methodology to build theory has been maturing in management research (Gephart and Saylors, 2020).

The rigour associated with the case study method is a topic that has been studied and that has appeared frequently in the literature review related to the management area (Johnson, Adkins and Chauvin, 2020).

Consequently, it seems pertinent to list some authors who have published studies on this angle, as shown in Table 1.

Table 1: Rigour in the case study in the management field

Authors	Key Ideas
Gehman et al. (2018)	In this study the authors compare three qualitative approaches to theory building. We highlight here the overview of Katy Eisenhardt (Eisenhardt and Graebner, 2007), which mentions the importance of the case study to build new theory that is testable, generalizable, logically coherent and empirically valid. It is particularly useful for answering "how" questions, may be either normative or descriptive, and either process (i.e., focused on similarity) or variance based. Theory building from cases is appropriate in several different research situations and sometimes the goal is to elaborate on an existing theory.
Goffin et al. (2019)	The case study method is highly appropriate for innovation management.
Harley and Cornelissen (2019)	The authors conceptualize how rigour, as an essential quality of reasoning, may be defined and qualify alternative methodological criteria for how the rigour of any particular piece of research might be assessed.
Rashid et al. (2019)	Qualitative case study methodology enables researchers to conduct an in-depth exploration of intricate phenomena within some specific context. This article presents a checklist comprised of four phases: foundation phase, pre-field phase, field phase, and reporting phase.
Takahashi and Araujo (2019)	The case study approach has been widely used in management studies and the social sciences more generally. This paper aims to discuss opening up research opportunities in case study research, its various applications, as well as the criteria for rigour and validity.
Verleye (2019)	Designing, writing-up and reviewing case study research. "the multitude of paths to rigorous research – in service research based upon a case study approach. This article offers a framework for reviewing case study research in terms of rigour and creativity"
Walker and Baxter (2019)	Compares citation practices in case study research in accounting and management with a focus on citations of Robert Yin. The results build on previous studies that analyse how scholars apply case study methodology, encouraging researchers to adopt greater transparency.
Harrison, Reilly and Creswell (2020)	Contributes with a mixed methods framework in order to contribute to rigour as an interdisciplinary baseline for quality evaluation.
Johnson, Adkins and Chauvin (2020)	The authors highlight the quality indicators and attributes of rigour, as well as the best practices in qualitative research design.
Molina-Azorin and Fetters (2020)	Describes how mixed methods and case study research approaches can be applied together to enhance case descriptions and interpretations.
Shufutinsky (2020)	Study about transparency and rigour in qualitative organizational research methods, that that can be used in qualitative inquiry in order to increase transparency, rigour, credibility and trustworthiness of the research processes.

Author's elaboration (2020)

In the present study, the authors investigated the rigour of master's dissertations that used the case study as an investigation method of a management university.

In this case, the data was analysed according to the postulate of Marques, Camacho and Alcantara (2015) to assess the methodological rigour of investigations anchored in a case study. Additionally, the following parameters were evaluated: understanding of the real context phenomena and the existence of a relation between the studied phenomenon and the real context according to Yin (2017). Other parameters from different authors were studied: a description of the strategy used to explore and test the theories (Cesar, Antunes and Vidal, 2010); the research question typology (Godoy, 2006); the case study type (Harrison et al., 2017); the representativeness of the objective of the work (Stewart, 2014); the data collection sources (Ajayi, 2017); the existence of data triangulation (Heale and Forbes, 2013); an explanation of the procedures (Bhakar and Sikarwar, 2014); analysis of psychometric indicators (Hair et al., 2018); an explanation of the analyses performed (Heale and Twycross, 2015); a comparison with previous studies (Labani, Wadhwa and Asthana, 2017); and suggestions

for future studies (Inayatullah, 2013). Below are more details of the study carried out and the results obtained. Table 2 summarizes the main authors and concepts studied.

Table 2: Categories for the analysis of methodological rigor and respective authors

Categories	Authors
Study object	Godoy (2006); Cesar, Antunes and Vidal (2010); Yin (2017), Caldwell (2019); Hoorani, Nair and Gibbert (2019)
Data collection	Cesar, Antunes and Vidal (2010); Yin (2010); Ajayi, (2017); Hoorani, Nari and Gibbert (2019); Alam (2020)
Data Analysis	Godoy (2006); Hair et al. (2018)
Results	Cesar, Antunes and Vidal (2010); Labani, Wadhwa and Asthana (2017)

Adapted from Marques, Camacho and Alcantara (2015)

3. Methodology

The methodological procedure used in the present investigation is anchored in the mixed paradigm. With qualitative analysis it was possible to contextualize and collect information about the object of the study, the data collection, its analysis and respective results (Bogdan and Biklen, 2013); these data were subsequently coded and analysed quantitatively. The present work focuses on the analysis of master's dissertations defended in a Portuguese higher education institution which specializes in the area of economic and business sciences, in the post-Bologna period (between 2007 and 2019): a total of 442 defended dissertations. After the first analysis, it was found that 40.0% of the dissertations focus on a case study, which proves their predominance in the area of management (Figure 1). In this institution, the number of master's students (2nd cycle) was 1000, which represented about 30% of the total students who attended this institution in the period under analysis, with the remaining 70% being 1st cycle students.

Afterwards, a detailed analysis of the theses defended in the last five years (n = 100) was carried out, and it can be stated that 15.0% of them concern the trade/retail sector, followed by the manufacturing sector (13.0%) and small and medium-sized enterprises (SMEs; 10.0%).

It was also possible to ascertain that the average of the dissertations defended varies between 12 and 18 (M = 15.66; SD = 1.38), with the public management course presenting the highest values (M = 17.20; SD = 0.83), followed by the master's in human potential management (M = 16.90; SD = 1.28) and the master's in transport and logistics management (M = 16.33; SD = 0.57).

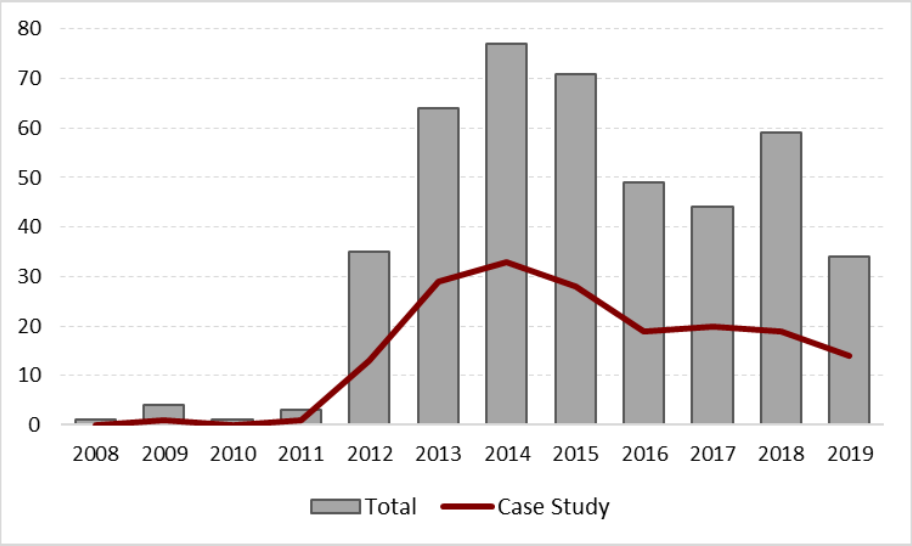

Figure 1: Evolution of master's dissertations defended between 2008 and 2019

The data was analysed according to the postulate of Marques, Camacho and Alcantara (2015) to assess the methodological rigour of the investigations that are anchored in the case study. Thus, the following parameters are evaluated:

1. Understanding of the real context of the phenomenon (Yin, 2017);

2. Existence of a relation between the studied phenomenon and the real context (Yin, 2014);
3. Description of the strategy used to explore and test the theories (Cesar, Antunes and Vidal, 2010);
4. Research question typology (Godoy, 2006);
5. Case study type (Harrison et al., 2017);
6. Representativeness of the objective of the work (Stewart, 2014);
7. Data collection sources (Ajayi, 2017);
8. Existence of data triangulation (Heale and Forbes, 2013);
9. Explanation of the procedures (Bhakar and Sikarwar, 2014);
10. Analysis of psychometric indicators (Hair et al., 2018);
11. Explanation of the analyses performed (Heale and Twycross, 2015);
12. Comparison with previous studies (Labani, Wadhwa and Asthana, 2017);
13. Suggestions for future studies (Inayatullah, 2013).

After analysing the content of the dissertations, the variables were recoded, with one (1) being assigned to the presence of the referred criteria and zero (0) to their absence.

The data were grouped into four dimensions (Marques, Camacho and Alcantara, 2015) in order to facilitate the reading, with the aim of assessing the methodological rigour of the analysed dissertations, regarding:

1. The object of study (criteria 1 to 6);
2. Data collection (criteria 7 to 9);
3. Data analysis (criteria 10 and 11);
4. Results (criteria 12 and 13).

4. Results

In the first phase, the dissertations anchored in the case study were analysed from a qualitative point of view in order to identify the criteria referred to in the methodology. The data resulting from this first analysis were coded and analysed quantitatively, with the results being presented in the order of the criteria recommended by Marques, Camacho and Alcantara (2015).

The quantitative analysis of the data obtained from the qualitative study revealed that all the dissertations analysed (n = 100) seek to understand the phenomenon studied in its real context (criterion 1) and that there is a connection between this phenomenon and the context in which it is inserted (criterion 2). It was also possible to verify that 45.0% of the dissertations explain the strategy used to explore and test the theories related to the object of study and the need to proceed with the case study to investigate the proposed phenomenon, which would not be possible with other strategies (criterion 3).

The results mentioned are evident in the excerpts that are transcribed below:

> *"The present dissertation resulted from a research work carried out in a logistics and express delivery company, which was operationalized through a case study. This methodology allowed us to evaluate how the company's image influences the opinion of its external public, because only by collecting the data in a real context is it possible to intervene in a context that is not clearly defined"* (Dissertation No. 14).

> *"In methodological terms, we opted for a case study, in order to understand how, with regard to leadership styles, theory combines with practice of the supervisors of the organization under study"* (Dissertation No. 68).

The fourth criterion sought to ascertain the typology of the research question and it was found that questions starting with "how" appeared in 79 dissertations, followed by questions of the "what" type with 14.0%, those that start with "why" with 3.0%, and 4.0% which have no questions.

These results can be corroborated in the following excerpts:

> *"How do employer branding strategies influence the company's internal and external environment?"* (Dissertation No. 34).

> *"How can logistics affect the company's competitiveness?"* (Dissertation No. 13).

When analysing the type of study (criterion 5), we found that 51.0% of the dissertations fall into the descriptive type, 34.0% in the exploratory type and 15.0% in the experimental type (cause-effect).

These values can be confirmed in the following segments:

> *"This is an exploratory and descriptive study, so it is not intended to generalize any conclusions to a more comprehensive group, in addition to the organization itself, and the results found may serve as a reflection or as a starting point for intervention in other organizations"* (Dissertation No. 46).

> *"This investigation is part of a descriptive typology, since the data are collected by analysing reports, balance sheets, balance sheets and internal publications of the organization, from which an analysis of the frequencies of the variables under study was made"* (Dissertation No. 86).

By means of the sixth criterion it was possible to ascertain that the study is representative for the purpose of the investigation in 29.0% of the dissertations analysed, with 91.0% justifying the choice of a single case and 9.0% for choosing multiple cases, as can be seen in the following fragment:

> *"The educational establishment chosen has a total of 201 students, spread over 10 classes. Nine children whose parents did not authorize participation in the study and one child with Asperger's disorder were excluded. Thus, 191 students participated in the present investigation, which is equivalent to a response rate of 95.0%. This allowed us to guarantee the representativeness of the sample for the subject under study"* (Dissertation No. 3).

The analysis of the criteria related to data collection (criterion 7), revealed that the data were collected from various sources in 40.0% of the dissertations, with documentary analysis standing out in relation to the rest (65.0%), followed by interviews (45.0%) and finally questionnaires (37.0%). It was also possible to ascertain that there was triangulation of data in 22.0% of the cases (criterion 8), as can be seen in the passage below:

> *"The methodological procedure seeks to give work, rigour, objectivity and reliability, so quantitative and qualitative techniques will be applied. We tried not to condition data collection to a single method to reduce the bias of the results and subjectivity in the interpretation of the results, as well as to collect a set of information that would better answer the questions presented in this study. In this context, a questionnaire survey will be used due to its precise and formal nature of construction and practical application; and semi-structured interviews that allow the collection of richer, more in-depth and detailed information"* (Dissertation No. 18).

Regarding the procedures (criterion 9), the results show that they were accurately explained in 99.0% of the dissertations, as can be seen from the following example:

> *"First, a vast literature review was carried out on the subject under study and from which the questions contained in the interview guide were outlined. The information was collected individually in a space suitable for that purpose, at the premises of the participating companies. All interviews were recorded and, once again, it was stressed that the data collected is intended for academic purposes only and that it will not be disclosed to third parties. After data collection, the interviews were transcribed in full, so that they could be treated. Subsequently, content analysis was performed, following the steps recommended in the literature, namely: (i) pre-analysis; (ii) exploration of the material; (iii) treatment of results, inference and interpretation"* (Dissertation No. 36).

The tenth and eleventh criteria are dedicated to data analysis, and it was found that 82.0% of the dissertations used a qualitative approach, 38.0% opted for a quantitative approach and 20.0% used a mixed methodology. These results can be seen in the following texts:

> *"In this work, we chose to follow a qualitative content analysis, based on the five steps suggested by Bardin (2011): (i) transcription of the interviews; (ii) reflected reading and analysis; (iii) identification and description of the information units mentioned by the participants (initial coding); (iv) inductive analysis of the identified units and their grouping (axial coding)"* (Dissertation No. 58).

> *"The data were analysed using a mixed methodology, as we believe that the combination of quantitative and qualitative techniques makes the research stronger and reduces the bias of the results"* (Dissertation No. 61).

It is important to mention that in a universe of 38 dissertations in which data were analysed quantitatively, only 21.1% (n = 8) study the psychometric properties of the instruments used in order to guarantee their level of scientific and the robustness of the constructs evaluated by them. It was also possible to ascertain that the explanation about the analyses carried out is present in 74.0% of the dissertations. The passages presented allow these results to be validated.

> *"First, an exploratory factor analysis was carried out using the main component methodology and the psychometric properties of the resulting factors were analysed in order to guarantee the robustness and reliability of the scale"* (Dissertation No. 65).

> *"The analysis of internal consistency was performed using Cronbach's alpha coefficient, which revealed that all dimensions of the questionnaire have values greater than 0.75. This suggests that, from the point of view of fidelity, the questionnaire proves to be quite adequate"* (Dissertation No. 99).

The last two criteria focus on the results, namely the comparison of the data obtained with previous studies and the attention to points that still need to be continued in terms of research. In this context, it was found that 65.0% of the dissertations do not consider what has already been done on the investigated topic, as they do not compare their findings with previously published studies (criterion 12). On the other hand, 81.0% of the cases presented suggestions for future work, which can be explained by the fact that most studies are descriptive or exploratory and do not explain the cause-effect relationships between the variables analysed (criterion 13). These conclusions are confirmed by the following text segments:

> *"In the particular case of this study, it is recommended to include instruments that allow the motivation and professional satisfaction of employees to be assessed in order to ascertain whether the organizational commitment is influenced by these variables"* (Dissertation No. 1).

> *"It is suggested that future studies also consider the possibility of collecting data that allows the subjective and objective organizational performance to be measured, using economic and financial information. This variable could give us information about the real return on investment in a time frame to be defined. It would also be pertinent to carry out longitudinal studies that would allow analysis of the relationship between the variables under study, over time"* (Dissertation No. 54).

Additionally, the level of methodological rigour of the dissertations analysed was studied. For this purpose, the 13 criteria were grouped into the four dimensions postulated by Marques, Camacho and Alcantara (2015): (i) object of study; (ii) data collection; (iii) data analysis; (iv) results. As previously mentioned, all criteria were evaluated on a dichotomous scale (0 = absence of the criterion and 1 = presence of the criterion), the score being calculated by adding all the requirements found for each dimension. The maximum score depends on the number of requirements that composes each dimensions.

To evaluate the level of methodological rigour of the assessed dissertations, the results obtained were divided into quartiles, with the following classification being attributed: (i) low level methodological rigour (LMR), (ii) moderate level methodological rigour (MMR), (iii) high level methodological rigour (HMR) and (iv) very high level methodological rigour (VHMR) obtaining the results shown in Table 3.

Table 3: Methodological rigor of the dissertations analysed

	LLMR	**MLMR**	**HLMR**	**VHLRM**
Study object	4.0%	37.0%	43.0%	16.0%
Data collection	59.0%	21.0%	15.0%	5.0%
Data analysis	25.0%	66.0%	7.0%	2.0%
Results	19.0%	46.0%	31.0%	4.0%

Author's elaboration

The results suggest that the dissertations defended in the analysed higher education institution, between 2015 and 2019, in terms of the object of study present 4.0 % of LLMR, 37.0% of MLMR, 43.0% of HLMR and 16.0% of VHLRM. With regard to data collection, it was found that 59.0% of master's dissertations have 59.0 % of LLMR, 21.0% of MLMR, 15.0% of HLMR and 5.0% of VHLRM. In relation to data analysis, verify that 25.0% of master's dissertations have 59.0 % of LLMR, 66.0% of MLMR, 7.0% of HLMR and 2.0% of VHLRM. Finally, concerning results ascertain that master's dissertations have 19.0 % of LLMR, 46.0% of MLMR, 31.0% of HLMR and 4.0% of VHLRM.

5. Discussion

The results obtained were analysed according to the thirteen criteria compiled by Marques, Camacho and Alcantara (2015) from works carried out by several authors (ex: Heale and Forbes, 2013; Inayatullah, 2013; Yin, 2014).

The first six criteria analysed the dissertations in relation to their object of study, which proved to be the criterion with greatest methodological rigour. This result may be due to the fact that in all cases the phenomenon studied is investigated in its real context (criterion 1) and that there is a connection between the context and the phenomenon (criterion 2). The results are in line with those obtained by Marques, Camacho and Alcantara (2015), according to which there are certain phenomena that are not possible to study using other strategies, which emphasizes the importance of choosing the case study.

Regarding criterion 3, it was found that less than half of the dissertations explain the strategies used; these results can be explained by the authors' lack of knowledge about the importance of detailing this type of information, as stated by Alsharari and Al-Shboul (2019).

As far as the typology of the research question is concerned (criterion 4), the results were similar to those achieved by Yin (2014) in his works, and it was found that most of the questions asked are of the "how" type, which may be related to the lack of control that the researcher has over the studied phenomenon.

Regarding criterion five, the type of study carried out, the results obtained prove that the descriptive type was the most used, as concluded by Consoli et al. (2008), who developed a research work on the case study in the areas of management and marketing and concluded a high existence of research using the method for descriptive and exploratory purposes.

The explanation of the number of cases examined is important to provide evidence about their representativeness in relation to what is intended to be investigated (criterion 6). However, less than half of the dissertations are written with this criterion in mind, which suggests that there is no concern in justifying the choice of a single case or multiple cases. According to Yin (2014), the single case study is appropriate when it: (i) represents a theory that can be confirmed, challenged or expanded; (ii) characterizes an extreme or peculiar case; (iii) it is representative of the object of study; (iv) is revealing and previously inaccessible to investigation; and (v) is longitudinal. The choice of multiple cases, in turn, is justified when there is a need to replicate studies that can predict similar results (Stewart, 2014). In recent years, this type of methodology has been common practice in the area of economic and business sciences, namely in terms of sustainable supply chain management. This can be corroborated by the study developed by Walker and Jones (2012), which used seven UK companies from different sectors (e.g., aerospace, retail, pharmaceutical, food and beverage) to identify the best practices for a better performance.

Criteria seven to nine focus on data collection, namely the sources of evidence, the possibility of triangulating the data and explaining the procedures. Thus, it was found that out of forty dissertations, the authors used more than one source of evidence (criterion 7), which allows the veracity of the information used in the analyses to be confirmed by means of data triangulation (criterion 8; Cesar, Antunes and Vidal, 2010). Heale and Forbes (2013) add that the use of multiple sources of evidence ensures that the case is investigated thoroughly and ensures the reliability of the data.

Criterion nine had as its main objective understanding if the way the data were collected is properly explained (e.g., how it was operationalized, where it occurred, what the steps were); it was found that this requirement was present in 99.0% of cases. According to Bhakar and Sikarwar (2014), detailed description of the procedures contributes significantly to increasing the methodological rigour of the investigations, since it allows their replication.

The analysis of psychometric indicators was assessed using criterion ten, as it is considered that their presence increases the validity and accuracy of the data evaluated (Hair et al., 2018). However, the authors note that from the 38 quantitative approach dissertations, only eight of them analyzed the psychometric properties of the instruments used. A possible explanation for this type of problem may be the lack of knowledge about the need

to ensure the methodological rigour of the investigations that use a case study (Marques, Camacho and Alcantara, 2015).

Criterion eleven focused on explaining how the analyses were performed, as according to Alsharari and Al-Shboul (2019), the presence of this requirement helps to confer internal validity to the investigation. In our study, this criterion is present in 74.0% of the dissertations, which is a relevant point in qualitative research (Yin, 2014).

The methodological results, namely their comparison with the findings, was assessed using criterion twelve, which revealed that only thirty-five of the analysed dissertations evidence the contribution of the literature to corroborating the results obtained. These results suggest that the authors treat their studies in isolation and without considering what has already been done on the subject investigated. Similar conclusions were found by Cesar, Antunes and Vidal (2010), according to which, the researchers do not compare their results with previous studies because they did not consider it relevant to include this information in their work.

The last criterion analyses the existence of information regarding future lines of investigation in the scientific master's dissertations in management and marketing. In the analysis carried out, 81.0% of the cases contain this information. According to Inayatullah (2013), these results are expected, since the case studies address specific points that are analysed in depth and there are untested variables that could complement the results obtained with further investigation.

Finally, it was possible to ascertain that despite the identified gaps, more than half of the dissertations defended between 2015 and 2019 present high methodological rigour regarding the object of study and moderate regarding data analysis and results. The most critical aspects are related to the way the data are collected, namely the use of multiple sources of evidence in less than half of the cases, which makes triangulation of data impossible. Similar results were found by Gil, Licht and Oliva (2005) when analysing the case studies presented at a conference in the area of management.

6. Conclusion

The present work focuses on the use of the case study research method and analysis of the methodological rigour of the master's dissertations defended in the last five years in a private higher education institution, in the scientific area of management.

The following points show the results obtained:

1. There is a concern with understanding the phenomenon studied in its real context;
2. There is a connection between the phenomenon studied and the context in which it is inserted;
3. Despite its importance for validating methodological rigour, less than half of the dissertations explain the strategy used;
4. Most dissertations start their research questions with "How", which allows them to explore areas where research is scarce;
5. A small number of studies used the experimental type, so that the cause-effect relationship between the variables was presented in less than 10.0% of the cases;
6. There are few cases that state that the study is representative for the purpose of the investigation, most of which focused on a single case;
7. Many studies are based on only one source of evidence;
8. There is little triangulation of the data collected which does not allow confirming the accuracy of the information used in the analyses like it would be expected at this academic level;
9. With the exception of one case, all dissertations explained the procedures in detail;
10. The analysis of psychometric indicators was very low;
11. Explanation of the analyses carried out is present in most of the dissertations;
12. There is limited comparison with previous studies; and
13. There is a high number of cases where suggestions for future work are presented.

Consequently, we can conclude that, in general, the dissertations examined present a satisfactory level of methodological rigor in most of the dimensions considered. Thus, it is possible to state that the results obtained allow to answer the first research question. It was found that, with the exception of the data collection

dimension which presents low values (59.0%), 86.0% of the dissertations analysed show a level of methodological rigor ranging between moderate and very high in terms of the object of study, 81.0% in the results dimension and 75.0% in terms of data analysis (Marques, Camacho and Alcantara, 2015).

It was also verified that all the dissertations analysed seek to understand the phenomenon studied in its real context , which allows to answer affirmatively to the second research question. This point is crucial to guarantee the quality of the research, since the case study must represent the reality that one seeks to understand (Yin, 2017).

It is important to note that at the university under study the completion rate of dissertations (in relation to the number of master's students enrolled in the programs) has evolved from just over 20.0% in the pre-Bologna period, to around 50.0% in the period under analysis, or that is, in post-Bologna.

As limitations of the present study, it is important to note that a convenience sample was used, which has the disadvantage of not allowing inferences at the population level. In addition, the data were collected in a single educational institution, which includes, among others, scientific master's degrees (2nd cycle) in the management area. It should also be noted that the results found are valid for that period and for the dissertations analysed and cannot be generalized. Another limitation is related to the choice of evaluation criteria, as it appears that there is still little consensus among authors on the analysis of the case study as a research strategy or as a method of data collection (Yin, 2017).

Recognizing that this study does not allow conclusions to be drawn or definitive answers to be provided, we believe that it may contribute to this reflection around methodological rigour in case studies. The high agreement found between the results presented here and many other studies (e.g., Cesar, Antunes and Vidal, 2010; Yin, 2014; Marques, Camacho and Alcantara, 2015) suggests that the general lines of this study are valid.

Taking this into account, it is considered pertinent to extend the analysis to all dissertations anchored in the case study (n = 177) that were defended between 2009 and 2019, in order to understand the evolution of their methodological rigour. A similar analysis is also suggested for the remaining 265 dissertations defended at that educational institution to compare the methodological rigour of the works presented, according to the methodology used.

References

Alsharari, N. and Al-Shboul, M., 2019. Evaluating qualitative research in management accounting using the criteria of "convincingness". *Pacific Accounting Review*, 31(1), pp.43-62. https://doi.org/10.1108/IJPSM-10-2018-0217.

Ajayi, V. O., 2017. *Primary sources of data and secondary sources of data.* PhD. Benue State University

Alam, M. K., 2020. A systematic qualitative case study: Questions, data collection, NVivo analysis and saturation. *Qualitative Research in Organizations and Management: An International Journal*, 15, pp.1-31. https://doi.org/10.1108/QROM-09-2019-1825.

Barratt, M., Choi, T. and Li, M., 2011. Qualitative case studies in operations management: Trends, research outcomes, and future research implications. *Journal of Operations Management,* 29(4), pp.329-342. https://doi.org/10.1016/j.jom.2010.06.002.

Bhakar, S. and Sikarwar, T., 2014. *Handbook for Writing Research Paper*. Delhi: Bharti Publications.

Bogdan, R. and Biklen, S., 2013. *Qualitative research in education: an introduction to theory and methods*. Porto: Porto Editora.

Caldwell, D., 2019. *Alexander L. George: A Pioneer in Political and Social Sciences*. New York: Springer.

Cesar, A., Antunes, M. and Vidal, P., 2010. Case study method in accounting research: a comparison of its methodological rigor in national and international publications. *Revista de Informação Contábil* [*Accounting Information Magazine*], *4*(4), pp.42-64. https://doi.org/10.1590/1808-057x201500280.

Consoli, M., Musetti, M., Scare, R. and Fratantonio, W., 2008. *A discussion on the use of case studies as a research method in managerial sciences*. Rio de Janeiro: ANPAD.

Creswell, J. W., 2013. *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.

Eisenhardt, K. M. and Graebner, M. E., 2007. Theory building from cases: Opportunities and challenges. *Academy Of Management Journal*, 50(1), pp.25-32. https://doi.org/10.5465/amj.2007.24160888.

Flynn, B., 2008. Having it all: Rigor versus relevance in supply chain management research. *Journal of Supply Chain Management,* 44(2), pp.63-67. https://doi.org/10.1111/j.1745-493X.2008.00056.x.

Gehman, J., Glaser, V. L., Eisenhardt, K. M., Gioia, D., Langley, A. and Corley, K. G., 2018. Finding theory-method fit: A comparison of three qualitative approaches to theory building. *Journal of Management Inquiry*, 27(3), pp.284-300. https://doi.org/10.1177/1056492617706029.

Gephart, R. P. and Saylors, R., 2020. Qualitative Designs and Methodologies for Business, Management, and Organizational Research. In: *Oxford Research Encyclopedia of Business and Management*. [online]. Available at <https://oxfordre.com/business/view/10.1093/acrefore/ 9780190224851.001.0001/acrefore-9780190224851-e-230> [Accessed 27 December 2020].

Gil, A., Licht, R. and Oliva, E., 2005. Case study method in business administration research. *Revista de Administração e Contabilidade da Unissinos* [*Unisinos Magazine of Administration and Accounting*], 2(1), pp.47-56.

Godoy, A., 2006. Qualitative case study. In: C. Godoi, R. Melo and A. Silva, orgs. 2006. *Qualitative research in organizational studies: paradigms, strategies and methods.* São Paulo: Saraiva. pp.115-146.

Goffin, K., Åhlström, P., Bianchi, M. and Richtnér, A., 2019. Perspective: State-of-the-art: The quality of case study research in innovation management. *Journal of Product Innovation Management*, *36*(5), pp.586-615. https://doi.org/10.1111/jpim.12492.

Gustafsson, J., 2017. *Single case studies vs. multiple case studies: A comparative study* [pdf]. Available at <https://www.diva-portal.org/smash/get/diva2:1064378/FULLTEXT01.pdf> [Accessed 28 December 2020].

Hair, J., Black, W., Babin, B., Anderson, R. and Tatham, R., 2018. *Multivariate Data Analysis*. Upper Saddle River, NJ: Pearson Prentice Hall.

Harley, B. and Cornelissen, J., 2019. Reframing Rigor as Reasoning: Challenging Technocratic Conceptions of Rigor in Management Research. In: T. B. Zilber, J. M. Amis and J. Mair, eds. 2019. *The Production of Managerial Knowledge and Organizational Theory: New Approaches to Writing, Producing and Consuming Theory.* Bingley: Emerald Group Publishing Limited, pp.59-76.

Harrison, H., Birks, M., Franklin, R. and Mills, J., 2017. Case study research: Foundations and methodological orientations. *FQS*: *Forum Qualitative Social Research*, 18(1), pp.1-17.

Harrison, R. L., Reilly, T. M. and Creswell, J. W., 2020. Methodological Rigor in Mixed Methods: An Application in Management Studies. *Journal of Mixed Methods Research*, 14(4), pp.473-495. https://doi.org/10.1177/1558689819900585.

Heale, R. and Forbes, D., 2013. Understanding triangulation in research. *Evidence Based Nursing, 16*(4), 98. http://dx.doi.org/10.1136/eb-2013-101494.

Heale, R. and Twycross, A., 2015. Validity and reliability in quantitative research. *Evidence Based Nursing, 18*(3), pp.66-67. http://dx.doi.org/10.1136/eb-2015-102129.

Holmlund, M., Witell, L. and Gustafsson, A., 2020. Getting your qualitative service research published. *Journal of Services Marketing,* 34(1), pp.111-116. https://doi.org/10.1108/JSM-11-2019-0444.

Hoorani, B. H., Nair, L. B. and Gibbert, M., 2019. Designing for impact: The effect of rigor and case study design on citations of qualitative case studies in management. *Scientometrics*, 121(1), pp.285-306. https://doi.org/10.1007/s11192-019-03178-w.

Inayatullah, S. (2013) *Futures studies: Theories and methods* [online]. Available at <https://www.researchgate.net/publication/281595208_Futures_Studies_Theories_and_Methods> [Accessed 20 December 2020].

Johnson, J. L., Adkins, D. and Chauvin, S., 2020. A review of the quality indicators of rigor in qualitative research. *American Journal of Pharmaceutical Education*, 84(1), pp.138-146. https://doi.org/10.5688/ajpe7120.

Ketchen Jr, D. , Craighead, C. and Cheng, L., 2018. Achieving research design excellence through the pursuit of perfection: Toward strong theoretical calibration. *Journal of Supply Chain Management*, 54(1), pp.16-22. https://doi.org/10.1111/jscm.12156.

Labani, S., Wadhwa, S. and Asthana, W., 2017. Basic Approach to Data Analysis and Writing of Results and Discussion Sections. *Journal of Medical Sciences, 3*(1), pp.6-15. https://doi.org/10.4103/ mamcjms.mamcjms_50_16.

Marques, K., Camacho, R. and Alcantara, C., 2015. *Assessment of the Methodological Rigor of Case Studies in the Field of Management Accounting Published in Journals in Brazil*. *Revista de Contabilidade & Finanças* [Accounting & Finance Magazine], 26(67), pp.27-42. https://doi.org/10.1590/1808-057x201500280.

Miles, M. B., Huberman, A. M. and Saldana, J., 2014. *Qualitative data analysis: a methods sourcebook*. Thousand Oaks, CA: Sage.

Molina-Azorin, J. F. and Fetters, M. D., 2020. In This Issue: Mixed Methods Case Study, Fractal Heuristics and Integration, Methodological Rigor and Quality, Q Methodology, and Game Heuristics in Journal of Mixed Methods Research. *Journal of Mixed Methods Research*, 14(4), pp. 427-429. https://doi.org/10.1177/1558689820956400.

Myers, M. D., 2019. *Qualitative Research in Business and Management*. Thousand Oaks, CA: Sage.

Piekkari, R. and Welch, C., 2011. Pluralism in international business and international management research: making the case. In: R. Piekkari and C. Welch, eds. 2011., *Rethinking the case study in international business and management research*. Cheltenham, UK: Edward Elgar, pp.3-23.

Rahman, M. S., 2017. The advantages and disadvantages of using qualitative and quantitative approaches and methods in language "testing and assessment" research: A literature review. *Journal of Education and Learning*, 6(1), pp.102-112. http://dx.doi.org/10.5539/jel.v6n1p102.

Rashid, Y., Rashid, A., Warraich, M. A., Sabir, S. S. and Waseem, A., 2019. Case Study Method: A Step-by-Step Guide for Business Researchers. *International Journal of Qualitative Methods*, 18, pp.1-13. https://doi.org/10.1177/1609406919862424.

Shufutinsky, A., 2020. Employing use of self for transparency, rigor, trustworthiness, and credibility in qualitative organizational research methods. *OD Practitioner*, *52*(1), pp.50-58.

Stewart, A., 2014. Case study. In: J. Mills and M. Birks, eds. 2014. *Qualitative methodology: A practical guide* Thousand Oaks, CA: Sage, pp.145-159.

Takahashi, A. R. W. and Araujo, L., 2019. Case study research: opening up research opportunities. *RAUSP Management Journal*, 55(1), pp.100-111. https://doi.org/10.1108/RAUSP-05-2019-0109.

Thomas, G., 2011. A typology for the case study in social science following a review of definition, discourse, and structure. *Qualitative Inquiry*, 17(6), pp.511-521. https://doi.org/10. 1177/1077800411409884.

Verleye, K., 2019. Designing, writing-up and reviewing case study research: an equifinality perspective. *Journal of Service Management*, 30(5), pp.549-576. https://doi.org/10.1108/JOSM-08-2019-0257.

Walker, C. and Baxter, J., 2019. Method Sequence and Dominance in Mixed Methods Research: A Case Study of the Social Acceptance of Wind Energy Literature. *International Journal of Qualitative Methods*, 18, pp.1-14. https://doi.org/10.1177/1609406919834379.

Walker, H. and Jones, N., 2012. Sustainable supply chain management across the UK private sector. *Supply Chain Management: An International Journal*, 17(1), pp.15-28. https://doi.org/10.1108/13598541211212177

Yazan, B., 2015. Three Approaches to Case Study Methods in Education: Yin, Merriam, and Stake. *The Qualitative Report,* 20(2), pp.134-152. https://nsuworks.nova.edu/tqr/vol20/iss2/12

Yin, R. (2010) *Case study: planning and methods*. Porto Alegre: Bookman.

Yin, R. (2013) Validity and generalization in future case study evaluations. *Evaluation*, 19(3), pp.321-332. https://doi.org/10.1177/1356389013497081.

Yin, R. (2014) *Case Study Research: Design and Methods*. Thousand Oaks, CA: Sage.

Yin, R. (2017) *Case Study Research and Applications: Design and Methods*. Thousand Oaks, CA: Sage.

Reflexivity as a Vital Skill for Future Researchers and Professionals

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Abstract: The emergence of a reflective paradigm in higher education in the last two decades, has been emphasised as a necessary skill both for future business professionals and researchers. The development of these skills should therefore be included in business school curricula. The ability to critically reflect has been identified as a crucial part of employability. This calls for developing pedagogical approaches that will stimulate students' critical thinking skills, encourage self-review as well as convey practice realities. This paper presents an application of such pedagogical methods applied in a set of course activities aimed specifically at developing reflexivity and self-efficacy of undergraduate business students, within the context of a university of applied sciences. It also demonstrates that the pedagogical solutions applied not only resulted in the desired learning outcomes, but also produced additional benefits to the students. A pedagogical approach was created and incorporated into one semester International Business Communication course taught to undergraduate international business students. It aimed at developing critical thinking skills, and reflexivity. It was incorporated in three activities: (1) introducing the students to the concept of reflexivity (reflecting on reflection), (2) writing reflectively about own cultural identity (reflection in action), (3) story writing and storytelling (reflecting on action). The methodological approach used was qualitative interpretation, and the method applied was narrative analysis of the data generated by reflective narratives created by the students. The findings showed that reflexivity was identified as a new concept, both necessary and helpful in self-development. Reflecting on one's own cultural identity created different types of awareness, which contributed to developing deeper knowledge about one's own cultural identity. Reflecting on story writing and storytelling showed the following learning benefits: discovering creative potential, as well as developing confidence in dealing with new, unexpected, and challenging situations. Moreover, the following additional learning benefits were identified: enhanced openness towards the immediate environment, improved understanding of otherness, and the applicability of the above skills for business professionals and researchers.

Keywords: Reflexivity, professional skills, qualitative research skills,

1. Introduction

In qualitative research reflexivity is considered one of the ways qualitative researchers should ensure rigor and quality in their work; it is also a vital part of ensuring trustworthiness (Teh & Lek, 2018). Reflexivity as a process is introspection on the role of subjectivity in the research process. It is a continuous process of reflection by researchers on their values (Parahoo, 2006) and of recognising, examining, and understanding how their "social background, location and assumptions affect their research practice" (Hesse-Biber, 2007, p. 17). It can also be "some of the most challenging and important work in qualitative research" (Mitchell et al. 2018, p. 673). For a researcher, as well as the reader it is vital to describe contextual intersecting relationships (e.g., race, socio-economic status, age, cultural background) between the participants and him/herself. Berger (2015, 220) claims that "Researchers need to increasingly focus on self-knowledge and sensitivity; better understand the role of the self in the creation of knowledge; carefully self-monitor the impact of their biases, beliefs, and personal experiences on their research; and maintain the balance between the personal and the universal".

Apart from its value in qualitative research Warton (2017, in Bolton 2018, 2) identified reflexivity as a vital skill that future professionals must develop, describing it as "a key element of employability in today's professions", and a professional imperative (McKay, 2008).

2. Literature Review

Dewey (1933) identified reflection as a different manner of thinking, in which reflection stemmed from doubt, hesitation or confusion triggered by a situation one experienced. According to Dewey, reflection begins with an experience and therefore facilitates learning from that experience, i.e., learning from doing. Dewey also claimed that reflective thinking moved people away from routine thinking/action (guided by tradition or external authority) and towards reflective action (involving careful, critical consideration of taken-for granted knowledge).

Dewey's concepts provided a basis for the concept of 'reflective practice' developed by Schön (1983). Adopting a metaphor of swampy lowlands Schön (1987) identified ways in which professionals could become aware of

their implicit knowledge and learn from their experiences. Schön identified two types of reflection: reflection-on-action (after-the-event thinking) and reflection-in-action (thinking while doing).

The metaphor of swampy lowlands implies that students as learners and future practitioners are always immersed in their work environments where they gain experiences from which they learn. They learn by trial and error, which allows them freedom in trying to find diverse solutions to any given problem. Being a part of swampy lowlands requires road maps and paths. These Argyris and Schön (1974) call theories-of-use. Theories-in-use, on the other hand, are what people do habitually and without much thought. In addition, people also employ espoused theories, which are what they believe they do. By critical reflection people can bring these two theories into congruence.

In addition to the above, there are other theories, frameworks and models that describe reflective processes. For example, the single loop (reflection) and double loop (reflection and reflexivity) theory proposed by Argyris and Schön (1974). Single loop develops awareness and calls for actions but leaves underlying deeper structures untouched. Similarly, Gibb's model (1998) focuses on a single event and adds thoughts, feelings and sensemaking. Johns (2013) developed a set of cues that focus on the description of an event, one's feelings, one's knowledge and one's personal values. Lastly, and similar to the concept of the double loop, Smith et al (2015) proposed a set of questions known as DATA (describe, analyze, theorize and act).

The above models are limited and thus present a danger that reflectors will limit their answers to the questions without developing their own narratives. Dewey's five-step model that allows for a wider perspective and openness are helpful, but as it examines only a personal experience, it does not accurately reflect reality.

Johns' Model of Structured Reflection (1994), used mostly in the health care field, offers a more reflexive approach. It is over-prescriptive and therefore has its disadvantages. It imposes an external framework and consequently leaves little scope for individuals to draw on their own intuitions, values and priorities. Johns has revised and developed his model, moving away from its prescriptive character in order to offer more holistic elements to encourage deeper reflection. Johns describes reflection as being "mindful of self" – whether during or after experience. He further claims that it is a "developmental process of paying attention to and learning through everyday experiences, with the goal of realizing a vision of practice as a lived reality." (Johns 2007).

I draw partly on Johns' reflective approach, but also incorporates Schön's (1987) concept of swampy lowlands and Brookfield's (2009) critical reflection that uncover and investigate the paradigmatic, prescriptive, and causal assumptions that inform how individuals practice and experience.

Students are often asked to provide feedback on the courses they complete. Although the feedback questions require the students to assess their own participation in the learning process, they do not contain a deep level of reflection. Moreover, learning diaries, which are often incorporated into courses, have a prescriptive approach whereby students are guided along throughout their reflection. Boud and Walker (1998) warn against such a 'manual' approach as it demands very little thinking, and it produces shallow reflection, and little learning for the student. Moreover, assessment of such a task is also problematic, given the personal nature of reflections.

I, therefore, conclude that neither providing feedback nor writing learning diaries provide a sufficient platform for students to develop reflexivity or boost their critical thinking. This paper contributes to filling the gap by proposing a pedagogical approach which by means of encouraging students to think critically and reflect, thus enhancing their reflective skills both as future practitioners and qualitative researchers.
Additionally, it strengthens their confidence and self-efficacy.

3. Methodology

The methodological approach stems from qualitative interpretation, and the method applied was narrative analysis of the data generated by the students' reflective narratives. A set of three activities was designed and incorporated into a one semester International Business Communication course. The course was taught to 120 first year BA international business students. I adopted constructivist perspective, as it emphasises the learners and their learning process first, downplaying my dominance as a teacher. This meant that my role as a teacher was to encourage the students to learn by doing, by interacting and exchanging knowledge with others, and

through such learning experiences, develop and transform their views of themselves and reality. The students reflected on reality in conversations with others, and by the use of the language which came into being through discussions, argumentations and sharing views and opinions with others.

In order to ensure "qualitative rigour" (Gioia et al. 2013), while keeping an open mind, I adhered to a "systematic inductive approach to concept development" as devised by Gioia et al. (2013, 16). This approach allowed me to combine rigour and openness, as it assumed that the world is socially constructed by people who are "knowledgeable agents" (17).

In my analysis of the narratives I first attempted to elicit possible themes that might emerge. To better understand the way themes and categories differ I found the definition, proposed by Vaismoradi et al. (2016, 102) helpful. "Theme refers to a more implicit and abstract level, which requires interpretation. Category refers to explicit content of text and is a simple description of the participants' accounts". In the process of thematic analysis, particularly at the categorisation level, I found the model of three components: (i) origination, (ii) verification, (iii) nomination) proposed by Constas (1992) suitable.

Based on the model, I considered the students' narratives as primary sources of the categories. The verification stage supported the creation and application of the categories that emerged. In the last stage, nomination I finalised naming of the categories which were partly identical to the ones I identified in the origination stage. I saw categories as descriptors of themes.

The purpose of themes was to elicit the essence of the participant's experiences. I also understood themes as threads of underlying meaning with a common point of reference, with a high degree of generality. The meanings, as conveyed by the participants I implicitly discovered at the interpretative level. At this stage I followed the stages of theme development model proposed by Vaismoradi et al. (2016), which contains four stages: (i) initialisation, (ii) construction, (ii) rectification, (iiii) finalisation.

After reading and re-reading the reflective narratives I highlighted meaning units, coded them using the informant-centric codes, as my data analysis was driven by the voices of the students. Following Saldana (2009), I applied in vivo codes. In the first-order analysis I adhered very faithfully to the words and phrases used by the students. The codes were the words of the students themselves. The initial coding resulted in approximately 150-200 first-order codes per narrative. To reduce the number of codes I conducted a second phase of the analysis where I grouped these codes according to the similarities and relationships between them. This reduced the number of codes to about 50 per narrative. I was aware of the importance of my immersion in the data and its impact on the validity of the findings. I carried out additional reading of the narratives, and listed meaningful, recurrent ideas and key issues in data. Next, I tried to recognise explicit and implicit ideas in the narratives based on my own judgement.

At the construction phase I reflected on the process of organising codes. I compared them in terms of similarities and differences and clustered them into groups. In the rectification phase I checked and confirmed the clusters of codes in relation to the themes and categories yet again. I was aware that simultaneous immersion and distancing form the data may prevent me from taking a critical approach towards data analysis, thus hindering my ability to remain rigorous.

4. The process

The three activities aimed specifically at developing students' critical reflective skills. They were incorporated throughout the course and were connected to other components of the course. This connection was purposeful as it facilitated learning and developing other skills at the same time (public speaking, presenting, academic writing, academic analytical skills). The activities were grouped into three parts: (1) introducing the students to the concept of reflexivity (reflecting on reflection), (2) writing reflectively about one's own cultural identity (reflection in action), (3) writing reflectively (reflecting on action) on story writing and storytelling.

4.1.1 Introduction to reflexivity, learning about and reflecting on reflection (activity 1)

The primary aim of the first activity was to introduce the students to the concept of reflexivity. The secondary aims were: 1) to develop the students' familiarity with the style of academic writing (close critical reading of an academic article 'Reflecting on reflexivity' by Linda Finlay (2008) and 2) to teach the students to write an academic summary.

The concept of the value of reflexivity as a professional and research skill was first introduced in an interactive lecture, during which the students were encouraged to ask questions and engage in a discussion. As part of the homework assignment the students were also asked to adopt what Finlay (2008) calls reflective practice as introspection, which invited students to engage in solitary self-dialogues in which they were asked to probe personal meanings and emotions. They expressed those dialogues by writing their own reflective narrative about the usefulness of reflection and reflexivity in learning, working, and carrying out research. To ensure as much freedom of expression as possible, there were no prescribed guiding questions, no length limitation, and no specific template to follow.

The assessment of this activity was based on the comprehensiveness of the academic summary and was graded on the scale 1-5. The personal reflection was not graded, but constructive feedback was provided.

4.1.2 Culture and I, writing reflectively about own cultural identity, reflection in action (activity 2)

The second activity introduced the students to the most salient theories in cultural studies. After an interactive lecture, as a follow-up the students were asked to write a reflective narrative: Culture and I. The students' task was to engage in intersubjective reflection (Finlay, 2008) which made them concentrate on relational cultural contexts, and the emergent and negotiated nature of their cultural encounters, as well as reflect on their own cultural identity. They were asked to tune into the cultural encounters and situations over the period of ten days. The students were asked to write their reflections in a form of notes, short paragraphs, separate sentences, or any other forms of communication, based on their observations and experiences. An electronic notebook was created to facilitate spontaneous writing using smartphones, tablets, etc. Similar to the previous activity, to ensure as much freedom of expression as possible there was neither a length limitation and nor a template to follow. Only a few general prompts and suggestions were given whose function was to guide the students. Here is an example of my instructions:

> *" This assignment is all about you and your cultural identity. Think about who you see yourself as interms of your cultural belonging/non belonging, what culture means to you, what you have experienced in different cross-cultural situations, and what you thought about it when it happened, how you felt, etc. The point of this assignment is to write thoughts, ideas, and reflections whenever something comes to your mind, every day, for example. Do not write it in one sitting. Real reflection happens all the time".*

The assessment of this activity was based on the extent of reflexivity and was assessed as pass/needs improvement.

4.1.3 Story writing, storytelling, writing reflective narratives, reflecting on action (activity 3)

The third activity, story writing and storytelling, aimed at enhancing students' confidence in expressing themselves, giving and receiving feedback, developing analytical and critical skills, in the process of what I coined 'creative discovery'. The students' task was to write a story (individually) prompted by a traditional 6-step story model (character/setting, the goal the character wants to achieve, the hindering powers, the assisting powers, turning point, resolution). The students were asked to follow a set of six cards, each corresponding to the steps of the story model, i. e, the first card depicted the character and the setting, the second card depicted the goals of the character, etc. *The images on the cards were often abstract and depicted images not directly associated with a character, or a setting. The students therefore were asked to let lose the reigns of their imagination and construct their stories however they wanted.*

After completing the individual task writing of the stories, the students worked in groups of four, where they shared their stories with three other students, thus engaging in what Ghaye (2000) calls a 'reflective conversation'. Through mutual collaboration and conversation, a participatory, dialogical approach to reflective practice was achieved. Comments, peer feedback and discussion followed. The groups of four identified the themes of each other's stories. The themes were collected and analysed in a general discussion by the whole class. Lastly, as part of the homework, the students were asked to write reflective narratives.

Similar to the previous activities, to ensure as much freedom of expression as possible there was no length limitation and no template to follow. Only a few general prompts and suggestions were given. Here is an example of my instructions: "After the storytelling activity carried out in class, write a reflection about the activity. Remember that reflective writing is like having a dialogue with yourself. Think about the creative process you went through, the themes in your story, the other themes in the group wonder why you made a story with these themes and not others. What do they mean to you? Think about sharing the stories within the group, how did

you feel doing this. What did you get out of this activity? Connect this activity to possible benefits you might have gained as a future businessperson and a researcher. Please do not write this reflection as simple answers to the topics above. They are only there to guide you in case you are lost. Write more!"

5. Findings

Introduction to reflexivity, reflecting on reflection (activity 1)

I was aware of some pedagogic concerns that teaching reflective practice entails. One of them was the developmental readiness of the students, and the extent to which forcing students to reflect may actually prove counterproductive. Some writers, for example Hobbs, 2007; Girffin, 2003, and Burrows, 1995 posit that learners need to be developmentally ready to engage in critical reflection and that some individuals may be incapable of doing so. The respective abilities of 'novices' and 'experts' are relevant here. There is evidence that novices, by definition lacking 'practical mastery', are inclined to follow models mechanically, and that such reliance on models lessens with experience (Gordon, 1984). As a result, the reflection that does occur can only be less effective.

The findings of the study support this claim. The majority of the students provided their reflections, but it was clear that they focused mainly on writing the summary, as this part of the assignment was graded. Their reflections were short and, in some cases, lacking.

Another relevant pedagogic concern was related to the compulsory element in reflective practice.When students are required to reflect through learning and assessment exercises, reflections can end up being superficial, strategic, and guarded. Where assessment lurks, any genuine, critical self-examination may well be discouraged. Even though the reflections in the study were not graded, less attention was paid to complete it in depth.

However, the reflective narratives of the students revealed themes that I placed into the following categories: Reflexivity, Writing academic summaries, and Reading academic articles. When talking about reflexivity itself the students described it as a collaborative activity and a vital skill.

> *"Reflective practice has been a vital aspect of formulating my perspectives and understanding howto improve my behaviour. "*

> *"Personally, I see this concept as an invaluable skill in academic and occupational settings as well as in life as a whole. Everyone does it organically to some extent, and I feel as though it cannot be forced. The idea of a novice not branching away from technical procedures rings true in my own life. I have been in many situations, specifically in academic settings, where I was able to improvise and come up with solutions on the spot only after getting my footing in the environment. I have been able to translate this to other parts of my life as well. I think the fact that I tend to be creative and "wing-it" a lot is somewhat just a part of who I have always been naturally, but it was also nurtured by the academic settings in which I inadvertently used skills and concepts consistent with reflective practice".*

The students also referred to reflexivity as an interesting subject and helpful in self-development.

> *"Self-reflection is a very important 'skill' that everyone should be able to do. It is a good thing when you can look at your past and reflect on what you've done so that you can better yourself for the future."*

> *"I have always found it very difficult to understand. Its thinking critically, but not exactly. So, what is it? I feel that this is partly because I´m just not that interested in the subject. This time I decided to give it a shot and see what happens. I read the article and found it difficult to understand. So, I read it many times over and I had to translate the words that were new to me. I started to realize why this subject is important and how it will affect your personal ability to grow as a professional. I was also taken by the fact that the author mentions that this subject really is complex and understanding it is hard. This gave me the opportunity to be more forgiving towards myself, for not trying hard enough to understand the definition of reflections."*

The students also mentioned learning aspects of the activity.

"I did not have any knowledge on this topic beforehand, so I do hope I have learned somehow more about reflecting."

"I do find that one's ability to able to use reflective practice can be really important and useful".

"Doing this assignment will help me in future to respect reflective practice and to try to take into consideration wider aspects like organizational, political and economic issues as well."

"Prior to reading this article, I would never have thought about the stages or types of reflection. I simply reflected by analysing what happened and then finding a solution. The article has broadened my knowledge of reflection and it offers some points that I will consider when reflecting in the future."

"This kind of practice will surely be helpful for future studies and work. I'm sure it is a vital skill to be able to point out the main subject from a conversation or from an article."

When referring to writing and reading academic article the students expressed difficulties, but also readiness to learn.

"The summary task was really hard because the academic text was very hard to understand. I'm sure, it will be easier when I get used to it."

"I have never written a summary before, but I think I did a good job as most (if not all) key ideasand subjects have been covered. It was good rehearsing the in-text referencing as it is something,I have previously never done either. All in all, I am happy with the result I have produced."

Table 1 illustrates the learning objectives set against the learning outcomes described by the themes identified by the students' narratives. It clearly shows that the learning objectives set by me in activity 1 were achieved. Even though the students found it difficult to read and understand the academic article, they submitted the completed assignment to the best of their abilities with enthusiasm and readiness to learn.

Table 1. Learning objectives vs outcomes, themes identified by the students

REFLEXIVITY

LEARNING OBJECTIVES	OUTCOMES
Introduction to the concept of critical reflexivity	New subject
Application of critical skills	Vital skill Collaborative activity Interesting subject Helpful in self-development
Developing reading and analytical skills of academic English Writing academic summaries Writing critical reflective narratives	Difficult, challenging

4.1.4 Writing reflectively about one's own cultural identity, reflection in action (activity 2)

The analysis of the reflective narratives Culture and I revealed different themes identified by the students, depending on the students' national belonging and the nature and longevity of their residence in Finland. The themes were clustered into four categories: Awareness and Negativity (among Finnish students), Awareness and Openness (among foreigners: temporary sojourners), Awareness and Cultural Identity Work (among foreigners: permanent residents), Awareness and Ambiguity (among students with mixed cultural roots).

The narratives of all the Finnish students showed enhanced awareness of their cultural identity characterised by negativity. However, the awareness also triggered varied thoughts and emotions depending on the students' previous experiences. Within the group of the Finnish students, the Finns permanently residing in Finland expressed, on the one hand anxiety and negative emotions about being Finnish, as well as a sense of not belonging in Finland. On the other hand, other students expressed strong adherence to being Finnish.

"I see myself very attached to my culture when I have guests. Today I had guests and, in my culture, especially in Carelian culture, it is very important to make your guests feel good and feed them well. I was able to see that in myself today."

"Finnish culture is a very prominent part of my cultural identity and thus when I go to the bus stop or metro stops I always smile at the fact that in Helsinki people don't really mind if they stand close to others or sit next to strangers, its normal here. Although, it is a ridiculous thing to do I do think it demonstrates how content we are with ourselves, we don't need or crave the closeness of others all the time and we are happy just being there and perhaps observing what is going on. I think it also shows trust is not just given but it has to be earned."

"I realised that Finnish customer service is so different compared to Finns' normal interaction and behavior. Finnish customer service is very open and happy and usually a salesperson is very talkative. Now that I think about it more, it feels odd."

"For a Finn, having your own space is important and it is really easy to see it in public places, such as trams, buses, gyms... I can also notice myself looking for a place that has less people around me".

" I've never felt myself as a true Finn. I've always felt a little more comfortable when talking to people with other cultural backgrounds, especially with Canadians. While I was admiring the scenery of small lakes and lush forests, and enjoying myself a Finnish craft beer, I thought to myself: This is one of the only few situations it feels good to be in Finland and being a Finn in general".

The Finnish students who had experiences of living outside of Finland expressed culture shock upon return. All the Finnish students pointed out a desire to travel abroad to learn and adopt different cultural habits. Most of the Finnish students, permanently residing in Finland, expressed negative emotions when referring to their cultural roots.

"I know it reads Finland in my passport but at certain age I tried to get rid of Finnish culture in me. I never felt I fit in Finnish society and always felt better abroad. Finnish culture seemed so dark, grim, and unhappy. At least in historical way. There were some Finnish culture traits that I adored or liked. The Finnish spirit, but then it all went down, and I don't see it anymore. "

Foreign students staying in Finland on a temporary basis (temporary sojourners) i.e. exchange students expressed strong cultural awareness characterised by openness. They were very curious about Finnish culture, they often made comparisons between habits and customs in their own cultures and Finnish culture, and often expressed preference of Finnish ways. They were eager to learn new Finnish ways. In many cases they identified experiencing culture shock especially regarding education. Here are excerpts from the narratives of exchange students. Exchange student from Austria:

"The Finns are never saying anything, and they are also not staring at me. They give you the privacy needed because they do that here in Finland. I have to say, it is really nice to have this amount of privacy in the gym here but sometimes it is also a bit boring because no one is ever having a conversation with you".

Exchange student from Russia:

"I personally think that in Finland is well-being on such a high level, that Finns do not appreciate it. Almost every day in the school there are a few Finnish classmates, who complain about almost everything. It annoys me so much, because I think that student at the university should have another attitude."

"Sometimes I am thinking about that, that maybe the school should have had more difficult entrance exams cause some people just should not be there. I do not feel comfortable if I say that it is too easy;

everyone stares at me because of what I said. There is lack of motivation among students, I think that is because of the fact, that the majority cannot imagine worse school system or condition of life. I can".

Exchange student from Slovakia:

"I recognised that the young people here are divided into 2 groups. The first one is, that the people are engaged or in serious relationship, and the second one is the extreme opposite, that they do want just the freedom and time for themselves. I wonder why it is so. In Slovakia, the majority of people in my age want to have the proper relationships, because they know that as they are aging it is more difficult to find someone who fits. Here the people think more about today, not future. Have no plans, goals, dreams".

Foreign students residing in Finland permanently, expressed cultural awareness characterised by cultural identity work. Their narratives revealed the following themes: amazement and frustration, adherence to and pride in their own culture, comparisons between their native cultures and Finland, attempts to combine both cultures.

"My culture is a combination of two different cultures, Finnish and Filipino. My values are a combination of the two, but I do not agree with all values of both cultures".

"Last 9 years I have been living in Finland and become Finn by passport. I don't feel myself belonging to modern Ukrainians and still cannot belong to Finns. My identity formed, by my past does not exist anymore. Currently I am on crossroad."

The final group of students, with mixed cultural identities. Their narratives expressed cultural awareness characterized by awareness and ambiguity, and revealed the following themes: tension and frustration (who am I?), a sense of being located in-between, a sense of necessity to reject one culture to create space for another (preferred) culture, and lastly, disappointment and confusion.

"I had an identity crisis until a family friend asked me: Where do you think you are from? It took me a while to formulate my answer, but I concluded that, I am mentally Japanese and physically Finnish. Specifically, I am mentally Japanese since I grew up with Japanese values, morals and mental behavior. On the other hand, I am physically Finnish since I use Finnish in my daily physical life. "

"Sometimes though, as I rely too much on being aware of where my heritage comes from, I feel that I easily loose grip of who I truly am, instead of where my heritage comes from. Even though cultural heritage is a big part of one's identity, I feel as if it may also hinder you from grasping who you are when all those stories of cultural diversity is stripped away?"

Table 2: Learning objectives vs. outcomes; themes based on students' reflections

CULTURE AND I

LEARNING OBJECTIVES	OUTCOMES
Becoming culturally self-aware	Awareness and ambiguity
Becoming culturally aware of others	Awareness and negativity
Developing cultural understanding	Awareness and openness
of self and others	Awareness and identity work
Learning the concepts of cultural studies	"Connecting theory to me"
Reflecting critically on own cultural identity	"Good to think of who one is"

4.1.5 Story writing, storytelling, writing reflectively, reflecting on action (activity 2)

The reflective narratives created by the students after the class activity revealed an abundance of themes. They were aggregated into the following categories: Unconventional Learning, Creativity, Surprise and Discovery, Expressing True Self and Knowing Others. Additionally, the students made clear connections of storytelling activity to business life (Storytelling and Business).

The following excerpts from the students' reflective narratives highlight the reflections on the unconventional way of learning and its connection to enhancing creativity and building confidence.

"I really enjoyed myself during the storytelling activity and I had a lot of fun doing this kind of essay writing. It really brought out my creative character and made me feel free to let my own thoughts and feelings out. It was very interesting to hear how the others solved this task and overall even though first I did not understand why this would help us, now I do".

"This assignment gave me more courage to read out texts written by me. Also, it was very different to other assignments we have had so it was great fun. In business life it must also be crucial to have imagination and courage, and I think these are the things I got out of this activity".

" I enjoyed this practice and hope to see more this kind of work. I can implement these to my future and to business too. You have to be very creative in marketing for example, but it goes to all business in general. How you write your CV, how you tell your personal story in interview etc. It was fun assignment, something to deviate from the norm".

The narratives also showed that the students felt encouraged to express themselves both by writing their stories and sharing them with their peers.

"I was confident about sharing my story, because we had to write it quick and I think it is not a problem to me to write stories. Of course, I was not 100% confident, but I got it trough. I did not really understand the meaning of this exercise, but it helped me to use my imagination and to be brave enough to share my story to others, even if it would be silly".

"Even though I have confidence, this situation demonstrates that I still have a long way to go before I can present any ideas with no fears".

"This session taught me to be brave and show my work to others no matter how silly I think it is because in the end of the day the people in my group also had an equally silly but thrilling story as well. Although sceptical at first on the importance of the story telling idea in the end I learnt a great deal on how even silly things have a meaning behind them and how you interpret it is one hundred percent on you without any limits and judgment. It will help me in the future to envision anything even thought it might not make sense in the beginning".

Expressing True Self and Knowing Others

"Business can be strenuous in whatever field you are specialising, but if you focus on releasing your emotions, whether it be through storytelling or reflective practice, a person is able to lighten their emotional load. Storytelling can be a 'less direct' approach to reflective writing, because instead of directly writing about your feelings, you are indirectly expression your emotions".

" This is also an invaluable tool in business because getting multiple perspectives on a problem can open many paths to a solution instead of just one".

"It showed me that lots of people have similarities even when they come from different cultures and backgrounds. By searching for those similarities, I should be able to form effective partnerships and teams in business which can hopefully propel me to success".

Creativity, Surprise and Discovery

"When I saw the cards I got handed out, first I thought it would be almost impossible for me to connect them into a story. But as I started writing, after a while I got into that magical world of the cards and I enjoyed it a lot".

"My story had a romantic way to it which I feel like reflects my personality. The colors and images really inspired my story. It was hard sometimes to connect some cards into the story, but I feel like it turned out well. When we were reading our stories in the small groups, I was so surprised".

"When I started, suddenly I could not stop writing. I wanted to have the story with deep meaning and interesting characters. It took me some time because my story was a bit long, but that did not bother me because I liked the process".

"This activity enhanced my imagination and creativity".

4.1.6 Storytelling and Business

The narratives demonstrated students making connections between storytelling and its value and application to situations in a business environment.

"I think storytelling is a very important part of business. You need to be able to present yourself, your company and the products you are selling to an audience and storytelling is a great way to do that. I want to specialise in marketing as a part of my degree, so I feel like the skill of storytelling will be even more important than it would be if I majored in finance. This might help me in marketing. To create a story. A word you want to spread to the world or a thing which makes people think".

"I can see that storytelling has very much to do with business. People in different roles need the skill to create a good story to support for example a product. With a good story it is possible to stand out from the others. People in marketing, sales, entrepreneurs, and so on can use storytelling in their lives and careers".

"For a businessperson it is important to be creative and sometimes the creativity has to come fast and I think that this activity was good for practicing that".

Through the activity of story writing and storytelling, the students experienced an opportunity to overcome the initial confusion when faced with the task of creating coherent stories based on abstract images. As they began the creative process of writing they realised that the task became not only easy but also, enjoyable. Enjoyment triggered creativity, and as the stories emerged the realisation of completing a seemingly impossible task created additional enjoyment.

The initial confusion by the requirements of the task was overcome by the process of writing and was superseded by discovery that, just by doing, one can overcome initial difficulties. This was followed by a discovery of the value of the assignment.

The non-judgmental environment of small groups in which the stories were shared, as well as positive peer feedback not only encouraged self-expression, but also created an opportunity to get to know one's self and others in a meaningful way. **Table 3** illustrates the learning objectives vs outcomes.

Table 3: Learning objectives vs. outcomes; based on students' reflections

STORYWRITING, STORYTELLING	
LEARNING OBJECTIVES	OUTCOMES
Encouraging creativity and innovative thinking Developing critical thinking	Confusion, surprise, discovery Building confidence Expressing True Self and Knowing Others by encouraging self-expression
Strengthening students' writing skills Enhancing listening skills Developing communication and argumentation skills Developing listening skills	

6. Discussion

During participation in the activities in class and when reflecting on them afterwards the students went through a developmental learning process during which they were asked to pay attention to their reactions, analyse and reflect on them in order to realise their part in the lived reality as well as their learning process (Johns, 2007). The activities created situations where the students investigated and reflected on their personal paradigmatic assumptions about themselves and others. By carrying out a critical reflection (Brookfield, 2009), they discovered, scrutinised and questioned the assumptions that informed the way they experienced, perceived, and practiced.

Dewey's (1933) concept of reflection as a manner of thinking that stems from doubt, confusion and hesitation resonated in the data obtained from the reflective narratives of the students. Faced with the task of creating a coherent story out of abstract and confusing images triggered a reaction and a sense of confusion (How can I do this? Why am I doing this in a business communication course?), followed by doubt (I do not think I can do it. I cannot write a story), and fear (What if I cannot do it?). All these reactions were triggered by a situation in which the students faced an experience of dealing with seemingly impossible tasks.

Despite the initial confusion, doubt, hesitation, and fear, prompted by the requirements of completing the storytelling assignment on time, the students begun the writing process. The fear they experienced at the beginning was overcome and turned into a positive, creative process as the stories begun taking shape on paper, and the unconscious learning process begun. The creative pull that the assignment called for, cleared the confusion, dispersed the doubts, and encouraged the students to overcome the fear.

They learned by doing and reflecting on the activity afterward. Their learning was not limited only to learning about the actual activity they took part in, but also about themselves as actors performing in that activity. They experienced another stage in the learning process: discovery and surprise. They discovered the potential of innovative ways of dealing with a difficult task and experienced a sense of surprise when they were able to perform successfully.

When reflecting on their own cultural identities the students experienced being lost in the swampy lowlands Schön (1987) where they became aware of their implicit knowledge of themselves, and where they were encouraged to reflect more deeply, which Johns (2007) describes as being about "mindful of self" .

The students went through a developmental learning process that lasted ten days. During this period, they were asked to pay attention to their everyday experiences, analyse and reflect on them to realise their part in the lived reality (Johns, 2007). They were also in a situation where they had to investigate and reflect on their personal paradigmatic assumptions about themselves and others. By carrying out a critical reflection (Brookfield, 2009), they discovered the assumptions that inform the way they experience perceive and practice.

Finally, the element of discovery and surprise of learning in a different and unconventional way moved the students' thinking away from routine and conventional ways of learning where the external authority of a teacher guides them in their learning. Instead they experienced deep levels of learning in a relaxed and fun atmosphere, where there were no wrong or right answers, and where any students' input was accepted and acknowledged as valuable, both by the peers and the teacher.

7. Conclusions

The three learning activities incorporated into International Business Communication were designed to answer the need to develop critical reflexivity skills of undergraduate business students, to prepare them for the demands of future working life as researchers and businesspersons.

The reflective narratives showed that storytelling proved to be an unconventional and innovative means to learn and discover. Whilst having fun the students developed and learned skills that were identified as crucial for future business professionals and researchers. These skills were critical analytical skills, empathy (self- and others awareness), awareness of the general environment, confidence in tackling challenging and unexpected tasks, creative problem solving, discovering, and believing in one's own creative potential. These skills significantly contribute to strengthening the reflexivity skills.

I see it as the first step in further development of deeper analytical and critical skills, cultural awareness, communication confidence and self-efficacy of young graduates as they face real-life practical situations in business as well as in academia.

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References

Argyris, M. and Schön, D. (1974) *Theory in Practice: Increasing Professional Effectiveness*. San Francisco, CA: Jossey-Bass.

Bandura, A. (1971) *Social Learning Theory*. General Learning Press.

Berger, R. (2015)" Now I see it, now I don't: Researcher's position and reflexivity in qualitative research". *Qualitative Research,* Vol 15, No.2 pp 219–234. doi:10.1177/1468794112468475

Boud, D. and Walker, D. (1998) "Promoting Reflection in Professional Courses: The Challenge of Context", *Studies in Higher Education*, Vol 23, No. 2.

Brink, K., E., and Costigan, R. (2015) "Oral Communication Skills: Are the Priorities of the Workplace and AACSB-Accredited Business Programs Aligned?", *Academy of Management Learning and Education*, Vol 14, No. 2.

Bolton, G., and Delderfield, R. (2018) *Reflective Practice, Writing and Professional Development,* Sage Publishing.

Brookfield, S. D. (2009) *Engaging Critical Reflection in Corporate America, in Practice: Insights from Community*, *Workplace and higher Education*. San Francisco, CA: Jossey-Bass.

Burrows, D.E. (1995) "The nurse teacher's role in the promotion of reflective practice", *Nurse Education Today*, Vol 15, pp 346-350.

Cavanagh, T. M., Leeds, C. and Peters, J. M. (2019) "Increasing Oral Communication Self-Efficacy Improves Oral Communication and General Academic Performance", *Business and Communication Professional Quarterly*. URL: https://doi.org/10.1177%2F2329490619853242

Clandinin, D. J., Lessard, S., and Caine, V. (2012) *Reverberations of Narrative Inquiry, how resonant echoes of an inquiry with early school leavers shaped further inquiries*. Centre for Research for Teacher Education and Development, University of Alberta (Edmonton/Canada).

Constas, M. A. (1992) Qualitative analysis as a public event: the documentation of category development procedures. *American Educational Research Journal*. Vol 29, No 2, pp 253-266. URL: http://dx.doi.org/10.102/00028312029002253

D'Aloisio, A. (2006) "Motivating Students Through Awareness of the Natural Correlation Between College Learning and Corporate Work Setting ", *College Teaching*, Vol 54, No.2 URL: https://doi.org/10.3200/CTCH.54.2.225-230

Dewey, J. (1993) *How We Think: A Restatement of Reflective Thinking in the Educative Process*. Boston, MA: DC Heath & Co.

Dodgson, J. D., (2019) "Reflexivity in Qualitative Research", *Journal of Human Lactation,* Vol 35, No. 2, pp 220–222. URL: sagepub.com/journals-permissions DOI: 10.1177/0890334419830990 journals.sagepub.com/home/jhl

Du-Babcock, B. (2006) "Teaching Business Communication Past, Present, and Future". *Journal of Business Communication, Vol* 43, No.3, pp 253-264.

Finlay, L. (2008)" Reflecting on 'Reflective practice' A discussion paper prepared for PBPL CETL", (www.open.ac.uk/pbpl.)

Gibbs, G. (1998) *Learning by Doing: A Guide to Teaching and Learning Methods*. London: FEU.

Gibbs, G (1988) *Learning by doing: a guide to teaching and learning methods*. Oxford: Further Education Unit, Oxford Polytechnic.

Gioia, D. A., Corley, K. G. and Hamilton, A. (2013) "Seeking Qualitative Rigor in Inductive Research", *Organizational Research Methods, Vol* 16, No. 1, pp 15-31.

Ghaye, T. (2000) "Into the reflective mode: bridging the stagnant moat", *Reflective Practice,* Vol 1, No. 1, pp 5-9.

Griffin, M. (2003) "Using critical incidents to promote and assess reflective thinking in preservice teachers". *Reflective Practice,* 4 (2), 207-220.

Hesse-Biber, S. N. (2007) *Handbook of feminist research: Theory and praxis*. Thousand Oaks, CA: Sage Publications Inc.

Hesse-Biber, S. N. and Piatelli, D. (2007) *Holistic reflexivity*. In S. N. Hesse-Biber (Ed.), *Handbook of feminist research*: *Theory and praxis* (pp. 493-514). Thousand Oaks, CA: Sage Publications Inc.

Hobbs, V. (2007) "Faking it or hating it: can reflective practice be forced?" *Reflective Practice*, Vol 8, No. 3, pp 405-417.

Johns, C. (2013). *Becoming a Reflective Practitioner*: 4th edn. Oxford: Wiley Blackwell.

McKay, E.A. (2008, Forthcoming) *Reflective practice: doing, being and becoming a reflective practitioner. Skills for Practice in Occupational Therapy*. Oxford: Elsevier Ltd.

Ortiz, J. (2016) "New graduate nurses' experiences about lack of professional confidence". *Nurse Education in Practice.* Vol 19. URL: https://doi.org/10.1016/j.nepr.2016.04.001

Palaganas, E. C., Sanchez Visitacion, M., C. and Caricativo, R. D. (2017) "Reflexivity in Qualitative Research: A Journey of Learning". *The Qualitative report*, Vol 22, No. 2.

Parahoo, K. (2006) *Nursing research principles, processes, and issues* (2nd ed.). Hampshire, UK: Palgrave Macmillan.

Schön, D. A. (1987*) Educating the Reflective Practitioner,* San Francisco, CA: Jossey-Bass.

Smith, T. L., Barlow, P. B., Peters, J. M., and Skolits, G. J. (2015) "Demystifying Reflective practice: using the DATA model to Enhance Evaluators' Professional Activities". *Evaluation and Program Planning*, Vol 52.

Smith, J. A. and Osborn, M. (2004) *Interpretative Phenomenological Analysis*. URL: https://doi.org/10.1002/9780470776278.ch10

Teh, Y. Y. and Lek, E. (2018) "Culture and reflexivity: Systemic journeys with a British Chinese family". *Journal of Family Therapy*, Vol 40, pp 520–536. doi:10.1111/1467-6427.12205

Tucker, M., J. and McCarthy, A. M. (2001) "Presentation Self-Efficacy: Increasing Communication Skills Through Service-Learning", *Journal of Managerial Issues, Vol* 13, No. 2.

Vaismoradi, M., Jones, J. Turunen, H., Snelgrove, S. (2016) Theme development in qualitative content analysis and thematic analysis, *Journal of Nursing Education and Practice*, Vol 6, No.5.

Wharton, S. (2017) "Reflection in university and the employability agenda: a discourse analysis case study". *Reflective Practice*, Vol 18, No. 4, pp 567-79.

Understanding the Relationships between Fields of Research

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Abstract: This paper suggests how mutual understanding and respect may be fostered between very different fields of research, which seem to have little in common. The meaning and value of each field, and the relationships among them, are revealed using Dooyeweerd's aspects. Dooyeweerd is rare among philosophers in having made an intensive study of the diversity and coherence of meaningfulness. In this way, researchers in one field can more fully understand the ways in which findings or research in other fields are meaningful. Dooyeweerd's inter-aspect relationships help us understand the types of relationship a field might have with others.

Keywords: Inter-field relationships; Interdisciplinary research; Integration of research fields; Aspects; Dooyeweerd's philosophy

1. Introduction

In a provocative article, Carr [2003] argues that "IT doesn't matter" - that information technology (IT) is of little consequence to business. In its early days (1970s - 1980s) IT provided competitive advantage to some firms who used it more adroitly than others (as a "proprietary technology"), but as IT became an "infrastructure technology" and all firms used IT, no further competitive advantage was possible. Carr sees parallels with railway, electricity and telegraph technologies, which at first gave competititve advantage but became mere infrastructure on which all firms depended. He predicted that IT is no longer a matter for company strategists.

Such seeming arrogance and disrespect provokes unhelpful responses; the information systems community, abuzz with indignation, responding with defensive reaction. Both arrogance and reaction sap goodwill and hinder inter-field communication, to the detriment of research and practice as a whole. In addition, Carr turned out to be wrong, in that branches of IT like social media became highly strategic to businesses.

Mutual respect is needed for interdisciplinary research and practice. Boden (1990) argued that there are grades of interdisciplinarity, culminating in "integrated interdisciplinarity" in which each participant has good understanding of what is meaningful in the other fields (Strijbos & Basden 2006). Most interdisciplinary research falls short of this. Interdisciplinary working requires knowledge of, and respect for, the methods and perspectives of other fields, and especially the intellectual contribution of colleagues from other disciplines [Urbanska et al. 2019]. In this paper we focus on perspectives and contribution, and intend to discuss methods later.

Respecting the perspective and intellectual contribution of a field requires understanding how they are meaningful. What is meaningful to one field might, at first sight, be meaningless to others; for example physicists and sociologists rarely find each others' findings meaningful in their own research. How can Carr find IT meaningful, when his entire argument is that it is not? To engender respect, we need a foundation for understanding ways in which reality can be meaningful and how they relate to each other.

This is the role of philosophy, "The Discipline of Disciplines" [Strauss 2009]. Unfortunately, most philosophies tend to be serviceable in only a limited range of fields - for instance Habermas and Luhmann in the social sciences, Marx in the societal, Heidegger in psychological and design, Aristotle and Liebniz in the natural sciences, etc., as Strauss [2009] shows. Few can truly do justice to what is meaningful across all fields. Dooyeweerd's [1955] philosophy, however, can do so, because it concerns itself with meaningfulness.

This is not a philosophical paper but rather it applies philosophy. It does not follow the normal structure of a scientific paper (literature review, research methods, research results, discussion) but rather presents a paradigm in the Kuhn's [1962] sense of "way of seeing things" [Masterman 1970].

So section 2 outlines what is needed of Dooyeweerd's philosophy for this discussion. Section 3 sets out what is meaningful in each kind of field, section 4 discusses implications for research that might apply across all fields, and section 5 concludes.

2. Dooyeweerd's Philosophy of Meaningfulness

Dooyeweerd's concern with meaningfulness was not only philosophical (meaning as the root of being and the presupposition of all philosophy) but also practical, in that he took more seriously than most the diversity of meaning we experience in everyday activity and in the pre-theoretical attitude of thought (intuition). Many philosophies try to reduce this diversity to one or two aspects, which leads to impoverished explanations and misleading diagnoses and remedies, and also to the kind of arrogance depicted above, as we shall see.

Instead, Dooyeweerd held to a non-reductionist approach [Clouser 2005]. His philosophy has been applied across the entire range of fields - mathematics and the natural, psychological, design, social and societal sciences [Basden 2020, Chapter 11]. What enabled him to take this approach might have been his radically different background emerging from Dutch Christian thinking [Basden 2020, Chapter 5].

2.1 Diversity of Meaningfulness

Dooyeweerd did not allow meaning to fragment but set out to understand in which ways things can be meaningful, and their associated kinds of fundamental law by which things occur and operate. From a penetrating study of what thinkers had written about them over the last 2500 years since the Greek philosophers, right up to the 20th century, Dooyeweerd [1955, II, 1-426] delineated fifteen fundamentally distinct aspects (ways of being meaningful) of reality as a whole.

Dooyeweerd believed [1955,I,3] that reality has a *numeric* aspect that we can study using arithmetic, statistics and its laws are those of algebra; a *spatial* and a *kinematic* aspect, whose laws are those of geometry, topology and mechanics; a *physical* aspect; a *biotic* aspect where we study life functions; a *psychical or sensitive* aspect, with its laws of psychology in its behaviourist forms; an *analytic* aspact in which conceptualization and logic are meaningful, a *formative* aspect to do with human deliberate forming of things in reality whether it is clay into a pot, ideas into an plot or model, or people into a social group, and which makes things like techniques, tools and technologies meaningful. There is a lingual aspect of reality to do with expression and signification; a *social* aspect to do with working together as a group or in relationships, in agreement; an *economic* aspect to do with frugal management of limited resources; an *aesthetic* aspect, to do with harmony and joy, delight and fun, humour and leisure; a *juridical* aspect to do with justice and due, whether formal justice as in the State and its laws and policies, or an informal justice as in appropriateness and proportionality, an *ethical* aspect of self-giving love that goes beyond what is due and governs attitudes in both individuals and across society, as pervading attitudes; and a *pistic* aspect (from the Greek pistis) of commitment, faith, vision, referring to what is ultimately meaningful and valuable.

Dooyeweerd's list of aspects is not intended as any final truth but rather as a provisional 'best guess', always open to expansion and modification as our understanding of reality progresses [Dooyeweerd 1955,II,556]. Some systems thinkers have also addressed the question of which aspects there are, usually as system levels [Bunge 1979], systems genera [Hartmann 1952], types of need [Maslow 1943], etc. Readers may employ those if they prefer, but Dooyeweerd's suite has advantages, in being more comprehensive and integrating classification with normativity [Basden 2020].

Dooyeweerd's suite of aspects is also more deeply grounded in philosophy in that aspects are not just properties but are irreducibly distinct spheres of meaningfulness and law, centred on a "meaning kernel", which underlie all being, functioning, normativity, possibility and time. The kernel of each is approximately expressed in its name and outlined in Section 3.

Each aspect defines a basic kind of law-like potential in which things can function, in a way that contributes to the good of the whole. Quantitative to physical laws are largely determinative while those of the biotic to pistic are increasingly non-determinative. THey also define a dysfunction or harm corresponding to the good (examples: disease v. health (biotic), confusion v. clarity (analytical), injustice v. justice (juridical)). Thus Dooyeweerd's aspects can be used to discuss kinds of quality and to guide practice, and ensure that normative issues are always considered during research.

So here we adopt Dooyeweerd's suite - though always provisionally.

2.2 Fields

Dooyeweerd developed a philosophy of science in which each broad scientific area focuses on a core aspect (or maybe several if interdisciplinary), for example the physical sciences on the physical aspect, the social sciences on the social, and theology on the pistic [c.f. Winch 1958]. This can explain why those working in one field (discipline or science) take little interest in the issues meaningful in different fields. Table 1 shows typical fields that focus on each aspect, and examples of some research questions meaningful therein.

Table 1: Dooyeweerd's suite of aspects and fields that focus on each

Aspect	Typical Field	Example Main Research Question
Quantitative	Arithmetic, Statistics	Is every even integer the sum of two primes (Goldbach Conjecture)?
Spatial	Geometry	Can an n-dimensional convex body admit an expansive homeomorphism? [Klee 1960]
Kinematic	Mechanics	How can we get linear motion from rotary motion?
Physical	Physics	What is the electric charge radius of the proton?
Organic-Biotic	Life sciences	How do cells determine what size to grow before dividing?
Psychical-Sensitive	Psychology	How does previous experience alter perception and behaviour?
Analytic	Analysis, Logic	What are the limits of understanding thinking as a form of computing?
Formative	Design sciences	How to optimally cut a cake so that every recipient feels they have a fair piece?
Lingual	Linguistics	How does grammaticalization function?
Social	Sociology	Does social media make us lonely?
Economic	Finance	Why is it that individuals or institutions in many countries hold only modest amounts of foreign equity?
Aesthetic	Aesthetics	What is the line between art and non-art?
Juridical	Jurisprudence	How may we compare Indian and Iranian laws?
Ethical	Ethical theory	Why do many people pursue hedonistic lifestyles?
Pistic	Theology	What is the relationship between belief, commitment, courage and motivation in each religion?

2.3 Inter-aspect and Inter-field Relationships

The core aspect distinguishes fields but how do they relate to each other? Though aspects are irreducibly distinct in their kernel meanings, they relate to each other in several ways, forming a "coherence of meaning" [NC,II, 4]. These inter-aspect relationships are inherent in aspects, not a social construction. Understanding them can assist (especially interdisciplinary) research. Dooyeweerd, unfortunately, did not clearly separate out different kinds of inter-aspect relationship that occur. He discussed them all together but Basden [2020, 52-55] has usefully attempted to distinguish the following, which is a summary with some implications for research added.

1. Simultaneity. The situations we research function in all aspects simultaneously. Research focuses on core aspect(s) for study, abstracting it from the situation [Clouser 2005; NC,I, 38-44]. Yet functioning in our core aspect(s) is affected by that in others in the following ways, so they need to be taken into account even while we focus.
2. No conflict. No aspect inherently contradicts or undermines the norms or functioning of others. So we should not expect conflicts. When conflicts appear, for example the belief that being ethical in business jeopardises business success, the researcher should question whether the meaningfulness or laws of an aspect has been misunderstood (e.g. economic aspect misunderstood as short-term profits) and then refresh their perspective and even paradigm.
3. Targeting. Functioning in one aspect 'targets' others. For example, when we say "An atom ..." or "An aspiration ...", we function in the lingual aspect and target the physical and pistic aspects respectively. Since our core aspect might function differently when targeting different aspects this can deepen our understanding. It might require different research methods.

4. Inter-aspect analogy. Each aspect contains echoes of what is meaningful in all the others. For example, causality is physical but is echoed in logical implication and historical bringing-about [Geertsema 2002]. Recognising such analogies can stimulate fresh ideas (for example the lingual analogy of information in quantum physics) and can then bring clarity, in that analogies of aspect X in aspect Y are governed by laws of Y, not X. Analogies should not be expected to be governed by the laws of their origin aspect.
5. Order of aspects. The aspects form a sequence of earlier to later (not lower to higher because, Dooyeweerd contended, all are equally important). Each is like a sphere of meaningfulness, which antecipates ("ante" = before [Strauss 2009]) or retrocipates others, as shown in Figure 1. The history of science/research shows something of the aspectual sequence, with the mathematical aspects being explored by the ancient Greeks, the natural sciences several centuries ago and then the social sciences. This order is important in inter-aspect dependency.

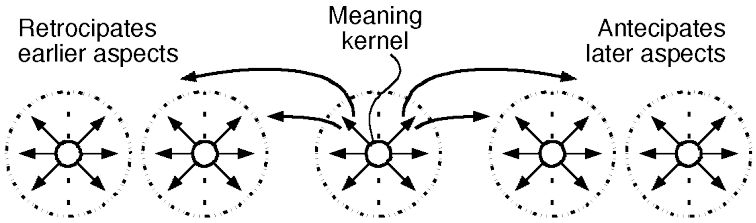

Figure 1: Aspects (spheres of meaning) in sequence

6. Inter-aspect dependency. Each aspect depends on other aspects, but differently for earlier and later. Foundational dependency (or retrocipatory dependency) means that functioning in an aspect depends on good functioning in an earlier aspect (e.g. as social does on lingual). The earlier aspects provide a substratum or foundation, as in Hartmann's notion of lower strata 'bearing' higher ones. Research into a core aspect soon takes account of the findings of research into earlier aspects.

Transcendental dependency (or antecipatory dependency [NC,III, 108]) works in the opposite direction, an earlier aspect depends on a later for the full opening up of its meaningfulness and potential. For example, our lingual functioning would be extremely limited if never employed in social activity. Taking account of the meaningfulness of later aspects widens out that of the core aspect. For example, irrational numbers are quantitative but antecipate (only make sense in the light of) spatial meaningfulness. Polanyi & Prosch [1975, 178] puts this well,

> *"Just as arithmetic is not logically rich enough for us to deduce a calculus from it, and words are not rich enough for us to deduce a grammar from them, so the laws of physics and chemistry would now be understood to be not rich enough for us to deduce the characteristics of sentience from them, and we should cease trying to do so."*

Given these inter-aspect relationships, no aspect can be reduced to others. (a) No aspect is self-dependent, on which all others depend [Clouser 2005]. (b) No aspect can be derived from others, even in combination. (c) Each aspect is equally important. Reductionism, which Dooyeweerd [NC,II, 335] characterizes as "deification of the temporal meaning-aspects," violates these and severs the relationships. As will be discussed later, it can engender arrogance and conflict and close down cross-fertilization of ideas. Reductions can seem to work for a time because of inter-aspect analogies [NC,II, 331-3], and can be useful in the early days of a field, but they ultimately do a disservice to both theory and practice.

A pattern emerges. At the birth of a field, researchers study what is meaningful in its core aspect, then they begin taking account of what is meaningful in earlier neighbouring aspects, and this brings the field to some kind of young maturity. This builds theoretical knowledge of what Dooyeweerd called the "closed structure" or "retrocipatory structure" of the aspect. To reach full maturity, what is meaningful in later aspects is taken into account, building knowledge of Its open, or antecipatory, structure. Both are illustrated for the lingual aspect below, and the latter for the quantitative aspect. Good researchers take all aspects into account, often intuitively, and understand the role each plays in their field.

It is often applications that stimulate this, because in 'real life' the functioning of each aspect is influenced by the others. Applied research is especially useful in supplying diverse targets, and forcing us to take antecipations into account. It is important, not only to businesses etc., but to pure research itself.

Section 3 goes through the aspects in turn to briefly discuss them, so that we can understand the potential relationships among fields.

3. Aspects and their fields

This section discusses the meaningfulness of each aspect and how it relates to others. Each aspect introduces something meaningful that cannot be understood in earlier aspects, but which depends on them and on later aspects for full understanding of its meaningfulness. Each section begins by introducing its kernel (by means of a collection of terms, because no one term can properly express it) and its relevance to business. Then Dooyeweerd's discussion of the aspect in his General Theory of Modal Spheres [NC,II, 1-426] is heavily summarised, so readers may delve deeper, but, since his coverage is variable, it is augmented with other material, especially for the lingual aspect. At the end, this discussion is applied to fields from all areas.

3.1 The Quantitative, Spatial and Kinematic Aspects

The mathematical aspects, quantitative, spatial and kinematic, are pre-physical, needing no physical manifestation.

The quantitative aspect concerns discrete amount, about which more and less are meaningful, and hence linear sequence. Its rationality and functioning include the arithmetic operations. Research in this aspect can be about fractions, prime numbers, probabilities, infinity and so on. What the amount is of (words, concepts, pebbles, sand, sides of a shape, etc.) is of little concern to the quantitative aspect itself, being only targets of its functioning - though some kinds of targets might nuance that functioning.

The spatial aspect concerns extendedness, about which shape, location and relationships like proximity and inside-outside are meaningful. Its rationality is geometric and topological (trigonometry transduces spatial to quantitative). There is a continuousness and simultaneity about spatial reality that is meaningless to the quantitative aspect. Spatial functioning depends on quantitative in number of dimensions and, for example, in number of sides of a shape.

The kinematic aspect concerns movement, making concepts like route, divergence and rotation meaningful. Movement depends on the spatial aspect and may be quantified as speed, but the kinematic aspect cannot be reduced to either.

These three aspects relevant to business as, for example, transport, location and accounting, and the quantitative aspect is also much used in statistical research methods. Though often treated as conceptual, Dooyeweerd believes that mathematical things like quantities, locations and movement 'exist' without conceptualisation or physicality, which they antecipate.

Dooyeweerd [1955,II, 79-106] discusses in some depth what the kernel meanings of these three aspects are, charting some of the history of mathematical thought. The original, basic meaningfulness offered by the quantitative aspect is that of 'how much' with the cardinal numbers in sequence, with fractions in between derived from them. Irrational numbers anticipate the spatial aspect, and differential calculus, the kinematic aspect. From the quantitative aspect alone, these can never be reached but only approximated. Dooyeweerd rejects the claim of some intuitionist mathematicians that they are mere human constructions, arguing instead that they are inherent in the anticipatory structure of the aspects (p.88). In similar vein he discusses imaginary numbers (p.93;104), infinity (p.87), infinitesimals (p.87), Cantors transfinite numbers (p.80-88), and so on.

Until we understand clearly the kernels of each aspect in their irreducible meaningfulness and inter-aspect relationships, researchers in mathematics will find trouble, especially when we presume that mathematics is based on logic. For example, when we try to reduce movement to a sequence of spatial points, we hit Zeno's paradox (Achilles-tortoise race). As Dooyeweerd poetically remarked, "The cosmic order takes revenge on the rationalistic trend of thought in mathematics which in theory eradicates the modal boundaries of meaning

between number, space, movement" (p.93). Because they were intuitively aware of this irreducibility, the Pythagoreans resisted the idea of irrational numbers, and Leibniz resisted negative numbers.

Dooyeweerd clarified that counting is not a quantitative function but an analytical one with a strong quantitative component, and that mathematical statements are not truths but lingual significations of what we believe about quantitative laws.

3.2 The Physical Aspect

The physical aspect concerns energy/mass, forces, causality and irreversibility, which are subject to laws of electromagnetism, gravity, thermodynamics, relativity, quantum mechanics, etc. Except at the microscopic level, physical laws are determinative and predictable. It is relevant in business as, for example, electric power, pollution and climate change emissions.

All these depend retrocipatively on the kinematic, spatial and quantitative aspects, so it is no surprise that mathematics pervades physics, chemistry, etc. Yet they cannot be reduced to mathematics, which knows nothing innately about forces or causality (except by analogy or targeting); for example fluid dynamics requires not just kinematics but forces and causality. Analogies of forces and causality are found in most fields, and recognising Dooyeweerd's distinction between original and analogical meaning helps us clarify concepts. Physical space that is bent by matter (General Theory of Relativity), and might even be discrete rather than continuous, is only an analogy, not original space [NC,II, 101], following physical not spatial laws. Chemistry, especially in biochemistry, antecipates plant biology and geology antecipates ecology. Quantum information might antecipate the lingual.

3.3 The Organic or Biotic Aspect

The organic-biotic aspect concerns life - cells, organs, bodies, organisms, ecologies, progeny and species, with functions like feeding, health, injury, growth, death, reproduction, self-maintenance, etc., which plants, animals and humans, but not rocks, exhibit. It is relevant in business as, for example, health, pandemics, etc"

In discussing why he chose life as the kernel, Dooyeweerd [NC,II, 107-111] prefigures later debates over whether procreation or self-maintenance define life, and could lend clarity concepts like autopoiesis [Maturana & Varela 1980]. Biotic functioning depends on physical, in bodily structures, in chemical processing. Analogies of growth and health occur throughout most fields.

3.4 The Psychical or Sensitive Aspect

The psychical aspect concerns sensorimotor stimulus and response, memory, recognition and animal feelings like hunger and fear - which are relevant to business in many ways. (Human feelings target later aspects e.g. wonder, the pistic). Functions like affordance [Gibson 1979] are psychical but target biotic and physical aspects.

Dooyeweerd [p.111-8] discusses why he expressed this aspect as feeling, rather than for example soul (psyche) or Erlebnisse, and then how it depends on biotic, physical and kinematic aspects. He discusses only organisms and not psychical functioning of neurones and their interaction.

Psychical recognition, such as of mates, antecipates analytical distinction, but obeys psychical not analytical laws. This offers a philosophical ground for distinguishing memory from concepts, and thus behaviourist from cognitive psychology.

3.5 The Analytic Aspect

The analytic aspect concerns distinction-making, in conceptualising, attention-giving, logic, etc. which, of course, are important in business. Dooyeweerd [NC,II, 118-125] mainly discusses logic, whose key law and rationality concerns "identity, contradiction and sufficient ground" [c.f. Clouser 2005]. Contradiction is analytical dysfunction. (Category errors, however, are not contradictions, but reductions of one aspect to another.) Analogies of identity are encountered in most fields.

Analytical functioning depends on psychical (mental) processing but cannot be reduced to it; neural studies have shown individual concepts do not map to individual neurones. Dooyeweerd discusses antecipations like logical form (formative), logical symbolism (lingual), and Occam's razor (economic) [p.121-4].

3.6 The Formative Aspect

The formative aspect concerns formative power as exhibited in human deliberate action and achievement, in history, construction, innovation, control (power-over), means and ends, planning, structures, techniques, tools, industry, technologies, etc. Its dysfunctions include laziness or wanton destruction. All these are crucial to business in many ways. Dooyeweerd called it the cultural or historical aspect, but in English these have different connotations. Formative power targets various aspects, with different things being formed, such as materials (physical), spatial arrangements, ideas (analytical), intentions (formative), data (lingual), institutions (social), etc.

Dooyeweerd extensively discusses this aspect in its manifestation as history and the problems of philosophical historicism [Dooyeweerd 1955,II,190-298], but most is irrelevant to us. He traces retrocipations in analytical identity (as in historical events) [p.229-32], psychical volition [p.244] and biotic genetics. Dooyeweerd discusses antecipations in the guise of historical development in fields centred on later aspects.

3.7 The Lingual Aspect and its Discourses

The lingual aspect's kernel is "symbolic signification", expressing meanings in symbols/signs, which may be subsequently interpreted - information carried by objects like words and sentences, boundary stones, texts, stories, languages, etc., which are generated by writing, speech, gestures, etc. It is important for business records, information and communications, including advertising.

Whereas the individual's meanings in psychical to formative functioning are fleeting and largely internal, lingual functioning externalises distinct meanings in some medium, so they are accessible to others and/or can be picked up later. Lingual laws include not only those of phonetics, vocabulary, grammar (syntax), in which we see dependence on psychical, analytical and formative aspects, but also those of semantics, and even those of pragmatics (the reason why an utterance occurs). Lingual functioning depends antecipatorily on social agreement over the meaning of words and phrases and on aesthetic allusion in idioms and jokes.

Dooyeweerd's discussion of the lingual aspect is sparse [NC,II, 221-7,284-5]. So we discuss it differently and more fully, by interpreting some of the main discourses of the field from an aspectual perspective. Some post-date Dooyeweerd.

The disciplines of literature and linguistics studied the lingual aspect, often with other aspects incorporated intuitively. Explicit consideration of lingual dependencies on earlier aspects may be found in the mathematician, Frege, asking how it is possible for (logical-mathematical) symbols to stand for (signify) anything, Morris and Skinner, treating language as stimulus and response of individuals (psychical aspect), and Chomsky, treating language as a (supervening) property of mental states that develops in the individual as internal "I-language" (psychical, analytical aspects). Piaget was interested in cognitive structures (analytical-psychical aspect) with a biotic foundation in child development.

Peirce is one thinker who closely explored the lingual aspect as such, with his triad of sign, signifier and signified. Being of the Pragmatist tradition, he also explored a link with the formative aspect, as did Austin, Searle and Wittgenstein. They were interested in what language achieves in everyday life in speech acts and language games. Gadamer, Derrida and Ricoeur also explored the lingual aspect as such, via the human activity of textual interpretation, revealing its hermeneutic cycle, relationships between texts and engagement with others via texts (antecipating the social).

In the antecipatory direction, we find Chomsky interested in social, external "E-language"; in showing this less interest than the internal I-language, was he tacitly acting out Dooyeweerd's distinction between antecipation and retrocipation? Habermas is one who ardently studied the role of the social aspect in lingual functioning, and the role of lingual in social functioning, in his Theory of Communicative Action. He tended, however, to conflate the two. He was also interested in norms that guide lingual functioning retrocipatorily, beyond the functionalist (formative) norms of mere achievement, including juridical-pistic norms of truth, sincerity and appropriateness, and aesthetic-pistic norms of dramaturgy. Arguably, Habermas had a broader aspectual view than most.

Though the information systems / technology field is interdisciplinary, Lee [2004] and Basden [2010] argue the centrality of the lingual aspect ("information"), but that it takes account of its neighbouring aspects, the formative in its manifestation as technology, the social as its fulfilment, and the economic as a common

application (business and management). Recently, the latter has extended to include the aesthetic application in "hedonic" use [van der Heijden 2004].

This (incomplete) picture of the field may be taken as an exemplar of how aspectual analysis of discourses in a field may be carried out. We see the discourses gradually opening up the "coherence of meaning" of the lingual with other aspects.

3.8 The Social Aspect

The social aspect's kernel, Dooyeweerd expressed as "social intercourse": 'we', togetherness, agreement, company, community, etc. Roles, relationships, groups, organisations, etc. are meaningful in the social aspect. The organisational side of business along with individuals' roles, is part of its social aspect.

Dooyeweerd's discussion of the kernel of the social aspect is surprisingly meagre [1955,II, 141,227-8], though he does have a lengthy discussion of social categories and institutions [NC,III, 565-624; Dooyeweerd, 1986]. His discussion of retrocipation to the lingual and formative aspects is limited to pointing out how social forms like lifting one's hat (a politeness of early 20th century Europe) are symbolic significations that are historically and culturally developed. Habermas' discussion of the dependency on the lingual shows greater depth, though with a tendency to conflate them. Luhmann recognised the irreducibility of the social to the lingual.

The social aspect introduces the possibility of social structures, raising the question of how this affects and is affected by individual agency (the macro-micro relationship). Giddens' Structuration Theory has therefore proven useful and may be affirmed, critiqued and enriched using Dooyeweerd, but that has yet to be worked out [Basden 2018, 297-9].

Many in the social sciences quietly presume that all post-social functioning can be reduced to (explained in terms of) the social, but Dooyeweerd argues that economics, aesthetics, juridicality, attitudes and faith cannot be reduced thereto but are antecipated by the social, as in social exchange antecipating exchange of goods, and social agreement antecipating aesthetic harmony.

3.9 The Economic Aspect

The kernel of the economic aspect is neither money, capital, productive labour nor competition, but frugality - the management of resources treated as limited - which, of course, lies at the core of business activity. Value and resource are concepts not explainable without the economic aspect. Anything can be treated as resource, by targeting other aspects: minerals (physical), vegetables (biotic), ideas (analytical), friends (social), etc. Most of Dooyeweerd's discussion [NC,II, 66-7,122-7,344-5,360-2] is devoted to economy of thought, logic, language, aesthetics and law.

This helps clarify ideas. Production adds a strong formative aspect. Currency is not primarily economic but lingual expression of quantitative transduction of value, hence problems with crypto-currencies.

Dooyeweerd does not much discuss 'the economy', though he does criticise much economic thought of his time for being dominated by a mechanistic view (physical aspect) [p.344]. Marx's error was to absolutize the economic aspect [NC,II,293]. That of capitalism is dysfunction in the ethical aspect [NC,III,595-6]. Treating economic growth as essential not only deifies the economic aspect, requiring sacrifice of what is valuable in other aspects, but it treats as absolute what is merely a biotic analogy. It may be the field of conservation and the new economics of Prosperity without Growth [Jackson 2009] that most closely express Dooyeweerd's understanding of the kernel norm of this aspect.

Dooyeweerd's view might become increasingly useful in a planet-limited future, with his acknowledgement of antecipation of juridical, ethical and faith aspects in the very heart of economics rather than a bolt-on; see Gunton et al. [2017].

3.10 The Aesthetic Aspect

The kernel of the aesthetic aspect, Dooyeweerd argued, is harmony (as in a symphony): playing together to generate something more than their sum. Style, fun, humour, art, leisure and sport are all meaningful in the aesthetic aspect. The aesthetic aspect is key to business coherence and holistic views.

Dooyeweerd's discussion is fragmented [NC,II, 66-7,128,139,345-8] and concerned mainly with antecipations and retrocipations, such as to the economic, in that superfluity (economic dysfunction) undermines good aesthetics. The aesthetic aspect's creativity depends strongly on the formative. The beauty in logic, engineering, language, etc. are aesthetic functioning targeting the analytical, formative and lingual aspects, while in "The great artists are shapers of style" [p.345], we see the formative aspect targeting the aesthetic. Seerveld [2001] and others argue that the kernel is allusivity, delight, etc. and the debate continues. Some believe there are two aspects there, but there might be an intuitive link between them.

3.11 The juridical aspect and fields

The juridical aspect concerns 'due', appropriateness or rightness. Topics meaningful therein include justice, rights, responsibility, proportionality, retribution (reward, punishment), impartiality, legality and their corresponding dysfunctions - all of which are important in business. Dooyeweerd argues that true justice depends on the aesthetic aspect (taking all into account) to achieve impartiality.

As Professor of Jurisprudence with practical experience of working in politics, Dooyeweerd developed an extensive philosophy of law, politics and the state. Chaplin [2011] develops this for contemporary contexts, to yield the beginnings of a conceptual framework that counters what he saw as a prevailing "narrow focus on institutions as opposed to behavior or processes" [p.161]. He discusses the identity of the state as being qualified by the juridical aspect and founded on the formative-historical aspect, along with important supportive roles played by other aspects. Because of its juridical qualification, the state's primary norm is justice, more than power, infrastructure-provision or defence. Chaplin believes Dooyeweerd's idea of legal pluralism is "original and fruitful" [p.210], though he questions Dooyeweerd's discussion of the tension between absolutism and democracy.

What we here call the target aspect helps to distinguish the different institutional spheres of sovereignty in society, for example family, church, economy/industry etc. (meaningful in the social, pistic and economic aspects respectively). This helps us judge (justly) between claims made by various spheres and can inform discussions of issues like worker participation in industry.

3.12 The Ethical Aspect

The ethical aspect goes beyond justice, rights and law to goodness and self-giving love. Mercy and forgiveness make sense only with the ethical aspect. Meaningful in this aspect are attitudes like generosity, self-sacrifice, vulnerability (hence trust), and their negatives, meanness, self-interest and self-protection. Buber's I-Thou relationship is somewhat self-giving.

In business the ethical aspect is exhibited, for example, in the attitude that pervades it: collaborative or competitive. The field called 'ethics' is often juridical in nature (e.g. privacy) or conflated with religion. Dooyeweerd [1955,II, 140-63] discusses the long confusion around legality and morality, including by Kant, Rousseau, Buber, Aristotle, the Scholastics, Heymans, Aalders, Brunner and others. Nietzschean or Foucauldian notions of power misunderstand the ethical aspect [c.f. Basden 2020, 160].

3.13 The Pistic Aspect

The pistic aspect concerns beliefs, commitments, aspirations, reliance (assumptions, presuppositions), motivations and ultimate meaningfulness. These range from those in religion and ideology to the tiny assumptions in everyday life such as sitting on a chair without testing it. Courage and faithfulness (and cowardice and disloyalty) are pistic functioning. These are important in business vision, motivation and perseverance. Dooyeweerd argued that the pistic aspect opens us to the Divine.

Good pistic functioning depends on ethical self-giving. However, the pistic aspect has no antecipations. Dooyeweerd [NC,II, 298-334] discusses the role of faith in the process of opening up all the aspects via their sciences. He argues cogently that pistic functioning is fundamental and inescapable in the working of all sciences, contrary to popular assumption that faith plays no role. Even the development and choice of paradigm [Kuhn 1962; Masterman 1970] is pistic functioning.

In [NC,I] he charts the course of two basic commitments at work in academia over the past 500 years, which he calls the Science Ideal and the Ideal of Personality, the former trying to mathematise or rationalise everything

into objective, deterministic laws like those in the natural sciences, and the latter emphasising freedom and human subjectivity. Dooyeweerd places himself within a third alternative, which he called "Christian", which views that dichotomy as false and always tending to deify specific aspects, whereas he wanted to value all aspects equally and welcome diversity in coherence and freedom within lawfulness. Such fundamental positions arise from what he calls "ground-motives," which constitute a "spiritual driving force that acts as the absolutely central mainspring of human society" in that it "not only places an indelible stamp on the culture, science, and social structure of a given period but determines profoundly one's whole world view" [Dooyeweerd 1979, 9].

3.14 Aspects Meaningful to Fields

With these insights we can clarify what each field finds primarily meaningful, as core and other aspects. Each field studies, and is guided by, the laws of its core aspect(s) rather than others. Table 2 gives a list of fields, with core aspect(s) in column 2 and other aspects in column 3, which are the main ones foundationally depended on, antecipated or analogies. "Target" indicates that a target aspect is also likely to be involved, which can be any aspect. For example, optometry is primarily concerned with the psychical aspect but requires considerable knowledge from the physical, spatial and biotic aspects to support the diagnosts of eye conditions and the prescription of glasses.

Nevertheless, it must be borne in mind that most aspects are meaningful in some ways in every field, so the clarification below is a simplification.

Table 2: Some fields and the aspects meaningful to them

Field	Core aspect(s)	Other aspects
Arithmetic	Quantitative	
Algebra	Quantitative	Lingual (symbols)
Statistics	Quantitative	
Bayesian Statistics	Quantitative	Pistic
Trigonometry	Quantitative	Spatial
Differential calculus	Quantitative	Kinematic
Geometry	Spatial	
Topology	Spatial	Kinematic
Geography	Spatial	Social
Phoronomy	Kinematic	
Mechanics	Kinematic	(Physical)
Animation	Kinematic	Psychical
Physics	Physical	
Astronomy	Physical	Spatial
Chemistry	Physical	
Materials Science	Physical	Spatial
Geology	Physical	Spatial (Biotic)
Biochemistry	Physical	Biotic
Physiology	Biotic	Physical
Biology	Biotic	
Anatomy	Biotic	Analytical, Physical
Surgery	Biotic	Formative
Health	Biotic	Social
Psychology (Behaviourist)	Psychical	
Neural studies	Psychical	Biotic
Optometry	Psychical	Physical, Spatial, Biotic
Psychoanalysis	Psychical	Lingual
Mental Health	Psychical	Social
Cognitive Psychology	Analytical	Psychical

Field	Core aspect(s)	Other aspects
Logic	Analytical	
Analysis	Analytical	Formative
Decision Sciences	Formative	Analytical
Engineering	Formative	
Technology	Formative	Target
History	Formative	Social
Computer Science	Formative	Analytical
Architecture	Formative	Physical, Spatial, Aesthetic
Linguistics, Semiotics	Lingual	
Information Science	Lingual	Analytical
Hermeneutics	Lingual	Analytical, Social
Sociolinguistics	Lingual	Social
Languages	Lingual	Social
Literature	Lingual	Social, Aesthetic
Media	Lingual	Social, Psychical
Information Technology	Lingual	Formative
Information Systems	Lingual	Social, Formative
Education	Lingual	Social, Psychical
Sociology	Social	
Organisational Studies	Social	Formative
Socioeconomics	Social	Economic
Economics	Economic	
Finance	Economic	Quantitative
Banking	Economic	Quantitative, Social
Business and Management	Economic	Social, Formative
Conservation	Economic	Biotic, Juridical
Art	Aesthetic	Formative
Painting	Aesthetic	Formative, Psychical, Spatial
Music	Aesthetic	Formative, Psychical, Kinematic
Drama	Aesthetic	Formative, Psychical
Sport	Aesthetic	Formative, Biotic
Leisure	Aesthetic	Psychical
Law	Juridical	
Security	Juridical	Formative
Politics	Juridical	Social, Pistic
Emancipatory studies	Juridical	Ethical, Social
'Ethics' ("business ethics")	Juridical	Ethical
Ethics	Ethical	
Attitude Studies	Ethical	
Theology	Pistic	
Standpoint Studies	Pistic	
Anthropology	Pistic	Social
Continental Philosophy	Pistic	Analytical
Analytic Philosophy	Analytical	Pistic

It is largely a field's main aspects that determine which research methods are appropriate, as will be discussed in a forthcoming article. This table does not represent the richness of each of the fields, because other aspects are important in each, but it does attempt to suggest which are the most important aspects, so that fields may

understand why other fields are important. In the discussion that follows we open up some of these more nuanced inter-field relationships.

Basden [2010] suggested that most fields focus on one core aspect and the nearest neighbours, as depicted in Figure 2a. While that is a useful approximation, the above table shows a more a more complex involvement of aspects, sometimes more distant from their core ones, as in music, depicted in Figure 2b. Figure 2a shows inter-aspect dependency, of the core aspect on its immediate neighbours, and emerging from the core aspect. Figure 2b shows not only that (good aesthetic functioning of music depends on good functioning in the economic and juridical aspects, not included in the table above, and shown by thinner lines) but also other inter-aspect relationships, in that music is a dynamic and highly sensory artform. It may be argued whether the relationship to the formative aspect is in fact inter-aspect dependency.

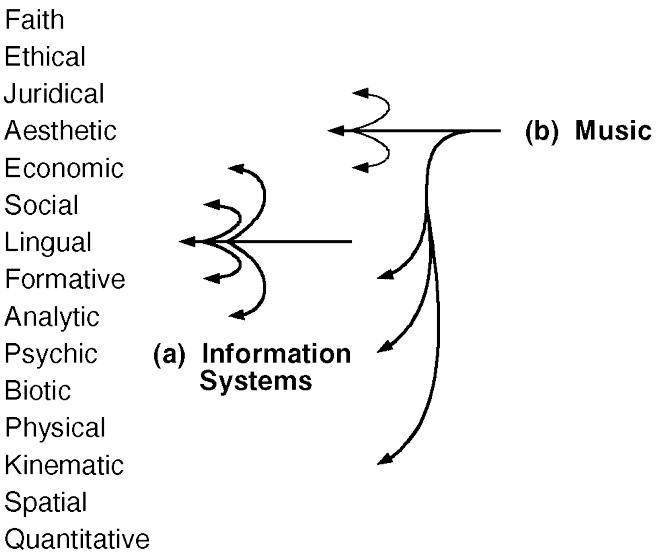

Figure 2: Fields and their aspects. (a) Information systems as depicted in Basden [2010]. (b) Music, as in the table above

4. Discussion

The above analysis has shown how we may understand the potential relationships among fields. Each field focuses its study and action on what its core aspect makes meaningful, often together with a few other aspects. This suggests that other fields that have those aspects as their core are likely to be referenced more.

The beauty of this approach is that it is common across all fields, from the mathematical, natural, psychological, design, social and societal sciences. This offers an integrative understanding, which can be highly useful in achieving full integrative interdisciplinarity [Strijbos & Basden 2006], and the mutual respect between fields that we seek. Three examples of how this works out must suffice, one of disrespect, one of respect and one of interdisciplinary working.

At the start of the paper we mentioned Carr's [2003] provocative paper "IT doesn't matter." His seeming arrogance may be rooted in two errors, both of which may be usefully understood via aspects. (1) He treats IT as a mere technology to be used, thus emphasising its formative founding aspect rather than its main, lingual, aspect, so misunderstands it. (2) He treats the economic aspect as of ultimate importance, completely overlooking the contribution made by the lingual aspect. Such "deification" [NC,II, 335] is harmful in arousing an unhelpful reaction and undermines one's own predictions.

This is the whole point of Dooyeweerd's insistence on "coherence of meaning," in that all aspects must work together in harmony. Both business and IT have equally-important parts to play in this. While it is valid for Carr to treat IT as serving the needs of business, is it not equally valid to treat business as serving the needs of technology by provisioning its research and development? Is it not even more valid to see them both as serving wider aims of the entire diversity of coherence of meaning, which includes climate and environmental responsibility?

We may contrast Carr's opinion piece with Davis' [1989] research that lead to his classic Technology Acceptance Model (TAM). Funded by IBM, Davis' research was designed to assess users' acceptance of IT tools in their workplaces. His final model is relatively simple: Degree of acceptance or use of a technology depends on Behavioral Intention to Use the technology and/or Attitude to Technology, which depend on Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Though making the same error as Carr, in emphasising IT's formative aspect, and restricting his context to that of business (economic aspect), he shows respect for other aspects and their fields in two ways.

One is that, although his main concern lies in the formative aspect, in being about both technology and its use to achieve tasks, he is explicit about other aspects (though by different names). He recognises the importance of the psychical aspect, emphasising the word "Perceived" in relation to ease of use and usefulness, and using psychological theories to build a model of individuals' attitude to, and thus acceptance of, IT. Though he assumed an organisational (social aspect) context, he recognises the need to research use in other settings. He also suggests the roles of beliefs and attitudes (pistic, ethical aspects) should be studied in future research.

The second is that TAM makes space for all other aspects at least potentially, in that PU and PEOU are to be measured by choosing "external variables." These are chosen by analysts who employ TAM to express what PEOU and PU mean in their contexts. In his context of 1980s organisational use, Davis used concepts like Understandable, Quality of work, Mental effort, which are meaningful in other aspects (lingual, ethical, psychical respectively). This may be seen as tacit recognition that a variety of aspects might be meaningful, different ones in different ways in different contexts, which lends TAM an element of modesty that may partly explain its later widespread success. Fields centred on those aspects can supply the variables needed.

Yousafzai et al. [2007] collected over 80 external variables used with TAM over the next decade, and Basden [2018, 200-202] shows their distribution throughout almost every aspect, for example, Age, Gender (biotic), Perceived enjoyment (aesthetic), Voluntariness (ethical). Whatever context, we can expect all aspects to feature in some way, so it is no surprise that revisions of TAM arose that incorporated some of these explicitly.

The research that led to them might, however, have been speeded up had the importance of all aspects been more explicitly recognised from the start. In such ways, careful consideration of Dooyeweerd's aspects by researchers, and of inter-aspect relationships, can make research even more fruitful than it currently is.

This is especially so in interdisciplinary research. Research in cognitive systems, for example, involves a plethora of concerns, as is evident in the collection of chapters in Nefti & Gray [2010]. Being a collection of the work of many researchers cooperating in this field, their book ranges over embodiment, environment, robots, architecture, computation, metrics, imitation, cooperation, strategy, and much more. How may we understand this seemingly fragmented interdisciplinarity? That is the question posed in its final chapter [Basden & Kutar 2010], which employs aspects to understand what each chapter is about and to plot an overall picture.

Most papers have two aspects that are most important to their topic. Chapter 13, for example, discusses the building of a cognitive model of investor behaviour, in order to enrich our knowledge of how investors make decisions, and may also be employed in agent-based artificial intelligence. So the paper links the economic aspect that makes financial investment meaningful with the analytical aspect of clarifying and conceptualising the various cognitive factors involved, such as risk, goals, demographics, personality and motivation. Chapter 4 likewise applies the analytical aspect to an application domain, which is the movements of humanoid robotic toys, in which the kinematic is the primary aspect. In contrast with both, Chapter 2 discusses how "morphological computation" about body parts and materials can help in controlling sensorimotor interaction of robots with the world around. This chapter is not about application of cognitive systems but about the physico-biotic and psychical aspects of how to build them. The overall picture is shown in Figure 3, in which each chapter, designated by its number, is shown as a relationship between aspects.

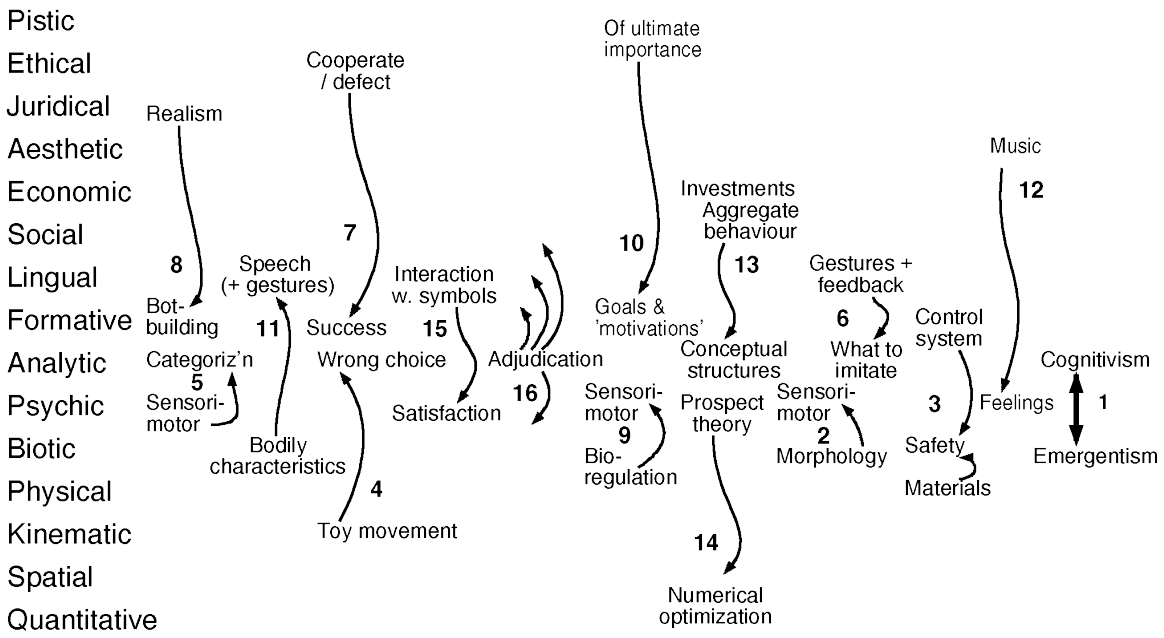

Figure 3: Aspectual profiles of cognitive modelling papers.
Based on Figure 1 of Basden & Kutar [2010].

What this picture shows is that (a) nearly every aspect is meaningful somewhere, which reveals the diversity of interests in cognitive systems, (b) there is nevertheless a coherent core to cognitive systems, meaningful in the psychical, analytic and formative aspects. Such an aspectual analysis can give an overall picture of interdisciplinarity as it occurs in real projects. It may perhaps be deepened by examining what kind of inter-aspect relationship(s) each arrow signifies, whether it is dependency in either direction, analogy or targeting (especially in application).

5. Conclusion

Understanding research fields in the way discussed above fosters attitudes of humility and service rather than arrogance or isolation, by turning our attention to equally-valid and equally-important aspects that are the domain of other fiels. Dooyeweerd allows us to address that head-on, not only by a general philosophical affirmation of meaningfulness but also by offering, in his suite of aspects, a conceptual tool with which to analyse in what ways things are meaningful. This avoids the sterile reactions of each party proclaiming their importance irrespective of others, and allows gentler, wiser consideration of the multiple importances of each. This approach might reduce tensions and fruitlessness invoked by arrogance and defensiveness between fields, and increase and encourage mutual respect and working together. It might help to enrich interdisciplinary working, from mere collaboration towards fuller integrated interdisciplinarity.

It now behoves researchers and thinkers in all fields to critically explore this approach further. Further research may be carried out to (a) explore more deeply the usefulness of aspect identification as in Table 2 and Figure 2 above; (b) assess to what extent fields whose core aspect is a secondary aspect of another field are referenced more; (c) survey inter-field arrogance and humility using aspects, as in the examples of Carr and Davis above; (d) enhance existing models in any field, but especially business, by augmenting them with factors that are meaningful in their missing aspects, as suggested for TAM above; (e) gain deeper experience of how to depict the diversity and coherence of interdisciplinary fields using aspects, as in Figure 3 above, perhaps distinguishing more clearly the various kinds of inter-aspect relationship. Then we can (f) evaluate to what extent this approach really is helpful across all fields, as has been suggested here - a topic for the philosophy of science.

References

Basden A. 2010. On Using Spheres of Meaning to Define and Dignify the IS Discipline. *International Journal of Information Management*, 30, 13-20.

Basden A. 2018. *Foundations of Information Systems: Research and Practice*. Routledge, London, UK.

Basden A. 2020. *Foundations and Practice of Research: Adventures with Dooyeweerd's Philosophy*. Routledge.

Bunge M. 1979. *Treatise on basic philosophy, Vol. 4: Ontology 2: A world of systems*. Boston: Reidal.

Carr N. 2003. IT doesn't matter. *Harvard Business Review*, (May), 1-10.
Chaplin J. 2011. *Herman Dooyeweerd: Christian Philosopher of the State and Civil Society*. University of Notre Dame Press, Notre Dame, IN, USA.
Clouser R. 2005. *The Myth of Religious Neutrality; An Essay on the Hidden Role of Religious Belief in Theories*. University of Notre Dame Press, Notre Dame, Indiana, USA.
Davis FD. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.
Dooyeweerd H. 1955. *A New Critique of Theoretical Thought*, Vol. I-IV, Paideia Press (1975 edition), Jordan Station, Ontario.
Dooyeweerd H, 1979. *Roots of Western culture; Pagan, Secular and Christian options*. Wedge Publishing Company, Toronto, Canada.
Geertsema HG. 2002. Which causality? Whose explanation? *Philosophia Reformata*, 67(2), 173-185.
Gibson JJ. 1979. *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.
Gunton RM, van Asperen E, Basden A, Bookless D, Araya Y, Hanson DR, Goddard MA, Otieno G, Jones GO. 2017. Beyond ecosystem services: valuing the invaluable. *Trends in Ecology and Evolution* April 2017, 32 (4), 249-257.
Hartmann N. 1952. *The New Ways of Ontology* Chicago University Press.
Jackson, T. 2009. *Prosperity Without Growth: Economics for a Finite Planet*. London: Earthscan.
Klee V. 1960. *Unsolved problems in intuitive geometry*. University of Washington, Seattle, WA, USA.
Kuhn TS. 1962/1996. *The Structure of Scientific Revolutions*, Univ. Chicago Press.
Lee AS. 2004. Thinking about social theory and philosophy in information systems. pp. 1-26 in John Mingers, Leslie Willcocks. (Eds.). *Social theory and philosophy for information systems*. John Wiley & Sons, Chichester, UK.
Maslow A. 1943. A theory of human motivation. *Psychological Review*, 50, 370-396.
Masterman M. 1970. The nature of a paradigm. pp. 59-89 in I. Lakatos, A. Musgrave (eds.), *Criticism and the Growth of Knowledge*, Cambridge University Press.
Maturana H, Varela F. 1980. *Autopoiesis and Cognition: The Realization of the Living*. Reidel.
NC. See Dooyeweerd H. 1955.
Nefti S, Gray JO (eds.). 2010. *Advances in Cognitive Systems*. London, U.K.: The Institution of Engineering and Technology.
Polanyi M, Prosch H. 1975. *Meaning*. University of Chicago Press,Chicago, USA.
Seerveld C. 2001. Christian aesthetic bread for the world. *Philosophia Reformata*, 66(2), 155-76.
Strauss DFM. 2009. *Philosophy, Discipline of the Disciplines*. Paideia Press, Grand Rapids, Michigan, USA.
Strijbos S, Basden A, eds. 2006. *In Search of an Integrative Vision of Technology: Interdisciplinary Studies in Information Systems*. Springer, New York, USA.
Urbanska K, Huet S, Gumond S. 2018. Does increased interdisciplinary contact among hard and social scientists help or hinder interdisciplinary research? *PLOS ONE*, 14(9), e0221907.
van der Heijden H. 2004. User acceptance of hedonic information systems. MIS Quarterly 28(4), 694-704.
Winch P. 1958. *The Idea of a Social Science and its Relation to Philosophy*, London: Routledge and Kegan Paul.
Yousafzai SY, Foxall GR, Pallister JG. 2007. Technology acceptance: a meta-analysis of the TAM: Part 1. *Journal of Modelling in Management*, 2(3), 251-280.

Sampling Theoretically for Comparison

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Abstract: Sampling has historically been one of the major challenges of the comparative research approach. These sampling challenges primarily result from the way researchers select the cases/samples for the study. In this regard, researchers have to a large extent tended to employ non-probability convenience and purposive sampling techniques. Even though it may be argued that these sampling approaches need not be theory driven as samples tend to evolve in the process of research, more often than not, these sampling methods, especially in comparative research designs, while skewing research attention towards over-researched countries and cases, wealthy nations and incomparable cases, also introduce an element of bias into sampling and therefore into research findings. Thus, this paper argues for a move away from the simplicity of purposive and convenience sampling, to one of the more robust forms of theoretical sampling, in order to improve the research rigour associated with the comparative methodological approach. This paper accordingly postulates this may be achieved by engaging in some form of theoretical sampling. In this regard, this paper describes a two-phase method for generating comparative samples from theories, involving six distinct steps.

Keywords: Comparative analysis; organisational analysis; public sector accounting; qualitative comparative analysis (QCA); theoretical arguments; theoretical sampling; theory verification and generation

1. Introduction

Traditionally, in carrying out comparative studies in fields such as sociology, accounting, political science, public management and public administration, researchers have generated comparative samples or cases, using some form of convenience or purposive sampling, especially when selecting stage one samples, which is usually not possible in probability sampling. Stage one sampling entails macro sample selection of country or society, while stage two sampling entails micro selection of samples within the stage one sample, country or society. Yin (2014) discussed this stage two sampling in the frame of embedded unit, which entails conducting case studies within countries. One of the constraints in convenience sampling is that when making selection decisions as well as in selecting cases, researchers themselves knowingly or unknowingly conclude that their perspective is correct and therefore superior to others (Allardt, 1990), or that cases are comparable when they may not be (Aldrich, 2009). As such, researchers often may have some vested interest in such sampling, which could affect data emerging from such processes, especially in qualitative comparative studies (Martinus and Hedgcock, 2015). Although the researchers' assumptions may be correct in some situations, these assumptions tend to introduce bias into sampling.

Despite most researchers endeavouring to ensure that their research processes are rigorous, concerns about reliability and validity (both internal and external) remains. This is because all empirical observation must in some way be related to theoretical constructions, as theoretical construction does not have any value when it is not in some way related to empirical observations (Oyen, 1990; Johns, 2001). Thus, irrespective of whether researchers strive to demonstrate that the research process is rigorous, or not, results will be questioned when observers note the absence of a connection between the sample and data, and equally among sample, data and theory. In this respect, generating samples from theories is an important activity in research, especially in comparative social science research. In addition to improving the confidence of observers in the research process and the research findings, this reduces researcher bias and ensures that both descriptive (inductive) and prescriptive (deductive) comparative analyses are possible (Burnham *et al.,* 2008; Thomas, 2008). Although some researchers may argue that theories do not have to be prespecified in sampling, since theory may evolve during the fieldwork, as argued by Miles and Huberman (1994), this may not be problematic in purely qualitative research designs, but could nevertheless introduce concerns in comparative research designs.

Validity is concerned with how a quantitative researcher persuades his/her audience that the findings of an enquiry are worth paying attention to, and taking account of (Lincoln and Guba, 1985). Reliability on the other hand entails demonstrating that a study's operations, including but not limited to data collection procedures, can be repeated, with the same results (Yin, 2014). Since this study discusses the comparative approach, which is applicable in both quantitative and qualitative approaches, the terms validity and reliability have been used for both the quantitative and qualitative research components (Morse, et al, 2002).

Along these lines, this paper describes how comparative samples may be generated from theories. Although several features of this process have been discussed in prior literature, tensions nevertheless abound about how to generate samples in terms of the starting point, whether comparative samples should be selected for theory generation, or verification and how to proceed with building samples for theory verification, as well as for generation and verification as distinct from the process of building samples for theory generation. In addition, there appears to be a lack of clarity relating to the procedures for generating comparative samples, within the context of the role played by the type of comparative study to be conducted and the literature. Collectively, these reasons imply that despite the importance of generating samples from theories, it has not yet been clearly articulated by researchers.

This article therefore attempts to make three contributions to the comparative literature. The first and the main contribution is to describe the process for generating comparative cases from theoretical arguments. The second shows that even though the comparative approach may be used in generating theories, as is the case with most versions of comparative sampling (Whetten, 2009; Huarng and Roig-Tierno, 2016), it remains more of a theory verification/underpinning process. The third situates this sampling approach within other sampling techniques, as well as within the larger social science research context.

Having provided the rationale for this study, this paper proceeds by presenting the background to the study. Thereafter, an overview of the comparative approach is presented, before the problems associated with the comparative approach are discussed, which leads to the development a six-stage process for building comparative samples from theories. Following this, this paper discusses how to evaluate usable theories, before comparing the sampling procedure discussed in this paper with other case selection and comparative approaches. The paper concludes thereafter and provides avenues for future research.

2. Background

Many authors have knowingly and unknowingly attempted to demonstrate that research sampling is possible without using the traditional probability and non-probability sampling techniques (Glaser and Strauss, 1967; Kohn, 1989a; Kohn, 1989b; Peters, 1994; Druckman, 2005; Berg-Schloser and De Meur, 2009; Berg-Schlosser *et al*., 2009). The earliest work in this context is that of Glaser and Straus (1967), who showed that cases could be selected and data gathered based on theories (Glaser and Strauss, 1967; Eisenhardt, 1989). In a more recent article, Druckman (2005), writing on case studies, notes that it is possible for theories or concepts to guide case selection and description in a focused case comparison, which is one of the four categories of the case studies he developed (see also Peters, (1994) for theoretical case study; Eisenhardt, (1989) for a discussion on Glaser and Strauss (1967) theoretical sampling; and Berg-Schloser and De Meur (2009) on case and variable selection). In addition, Yin (2014) provided helpful advice on how to select cases for replication, either literally or theoretically (the latter being aimed at predicting contrasting results, but for anticipatable reasons. However, it appears that authors have not clearly elaborated the process of sampling theoretically for comparative studies. These arguments have subsequently been misinterpreted and incorrectly applied by several authors, especially the arguments of Glaser and Strauss (1967), resulting in evidence of disjointed theoretical sampling processes emerging in the literature. Regardless of this, significant tension remains concerning how to proceed by combining these disjointed elements to form a whole when contemplating undertaking any form of comparative study and generating cases for analysis generally.

3. The Comparative Approach

The comparative research approach refers to an interdisciplinary research approach (Harrison and Callan, 2013) that focuses on comparing elements that are both similar on the one hand, but different on the other. It accordingly follows that the comparative approach is used in the natural sciences, sociology, accounting, political science, economics, medicine, law and so on (Tuene, 1990; Whetten, 2009), albeit in different forms and on different issues. The comparative approach may be used to analyse organisations, organisational actors, organisational activities, organisational practices, countries, behaviour, events, objects and chemical reactions under experimental condition etc. These are known as cases or samples in comparative studies. Thus, comparative analysis represents a form of case study as indicated above. However, while the case study approach usually focuses on a single case, the comparative study focuses on a number of cases. As such, the comparative approach is a pragmatic response to the limitations of the single-case (case study) approach (Schutt, 2012). In this regard, it is important to note that most organisational analyses are sociological with an aspect of organisational economics component (see Williamson (1981) on the Economics of Organisation),

tending towards political analyses of nations and organisations in nations. In this regard, comparative analyses in political science and public administration/management are usually on individuals, organisations and, more recently, largely on nations (Wilson, 2011), as a way of responding to the new global reality (Jreisat, 2012). Along these lines, King, Felin and Whetten (2009) note two variants of sociological comparative analyses: organisational forms and cross-cultural analyses. While organisational forms entail comparing organisation forms such as markets, hierarchies and hybrids, the cross-cultural analysis entails comparing countries.

This comparative approach can be used in accomplishing different ends: generating theory, underpinning theory, extending theory and testing theory (Kohn, 1989a; 1989b). More recently, this comparative approach has assumed the important role of comparison between symmetric (e.g. MRA and SEM) versus asymmetric qualitative comparative analysis (QCA) (e.g. analysis by quintiles and by fuzzy set QCA) (Huarng and Roig-Tierno, 2016; Fainshmidt *et al*., 2020; Gligor *et al*., 2020). Authors do not however, agree on the research issue for which the comparative approach should be applied. While some authors have argued that the comparative approach should be used strictly for theory verification (Warwick and Osherson, 1973; Oyen, 1990; Tuene, 1990; Aldrich, 2009), some believe that it is both a theory verification and generation approach (Glaser and Strauss, 1967; Peters, 1994; Burnham *et al*., 2008; Thomas, 2008) with others believing that it is strictly a theory generating approach (Berg-Schlosser *et al*., 2009; Toshkov, 2016). In this regard, Peters (1994) contends that the idea that comparative research is the principal tool for generating theory in the social sciences is merely a matter of emphasis, whereas Glaser and Strauss (1967) argue that the comparative approach works better with theory generation. Within this context, Glaser and Strauss (1967) have provided an excellent clarification and assessment on comparison for verification, comparison for assumed verification and limited generation and comparison for generation. It is self-evident that despite the comparative approach being more applicable as a theory verification tool, it may equally be used for generating theories, as well as for both generating and verifying theories together.

3.1 Issues with the comparative approach

Since the comparative approach is mostly used in cross-country analysis, many documented challenges relating to comparative analysis have in some way been connected with cross-country analysis. In this way, issues of conceptual equivalence, measurement equivalence and linguistic equivalence appear to be some of the major challenges of the comparative approach (Warwick and Osherson, 1973; Allardt, 1990). Arguably, the most salient problem of the comparative approach relates to sampling, primarily because cases derived from the sampling constitute the main focus of the comparative analysis (Berg-Schlosser *et al*., 2009; Yamasaki and Rihoux, 2009; Harrison and Callan, 2013). As a result of space limitations, as well as the fact that that most comparative researchers appear to be aware of these issues, they are often well taken care of in comparative studies. However, issues of conceptual equivalence, measurement equivalence and linguistic equivalence are not discussed here. For an overview of conceptual equivalence, see Warwick and Osherson (1973), Allardt (1990) and Harrison and Callan (2013). For an overview of measurement equivalence, see Mahoney (2004). For an overview of linguistic equivalence, see Allardt (1990), Damrosch (2003) and Martinus and Hedgcock (2015).

3.1.1 Sampling Issue

Sampling entails choosing a fraction of a group and/or cases to represent the total population, to allow for making some form of generalisation about such a group. Following this description of sampling, it makes sense to conclude that sampling is important for researchers, companies, society and/or organisations. Thus, for the reasons provided below, it is important to study sampling. Within this context, sampling to a large extent determines the validity of studies (Thomann and Maggetti, 2020). Moreover, sampling, when properly conducted has the potential of delivering good research and good research results, and vice versa (Woodside, 2016). In addition, sampling is useful in limiting research bias, which is a vital factor, especially in business and organisation research. Furthermore, sampling ensures that theoretically relevant groups and/or cases are selected (Greckhamer *et al*., 2018: 7).

In other social science methodologies, such as experimental and survey approaches, the process of sampling usually denotes selecting individuals and organisations as samples. Notwithstanding, as with individuals and organisations, the comparative approach has introduced other forms of sampling, such as selecting countries, departments and organisational units. In this context, Warwick and Osherson (1973) submit that sampling occurs in different ways, which include selecting research sites, the population elements, the choice of indicators used in measuring concepts and in combining indicators into indices. To reiterate the importance of sampling in the comparative approach, Scheuch (1990) contends that the major issue with comparative studies is theoretical,

one of theory and design, and not technical. It follows that failure to clarify the reasons why a researcher employs a comparative approach, and selects particular settings or cases over others, results in the loss of research artefacts. In the same spirit, Jreisat (2012), submits that purpose and methods are major issues in comparative studies and resolving them always pose a major challenge.

Furthermore, based on Aldrich's (2009) explanations, the three critical problems of the comparative approach noted by Aldrich (2009), i.e. classifiability, generalisability, and predictability, are largely problems related to sampling. In this connection, Burnham *et al*. (2008), while arguing that the quality of a comparative analysis rests on the cases studied, contends that comparative analysis in which cases are not carefully selected and analysed are not, in a strict sense, adopting the comparative approach. In the comparative approach, selecting countries and societies, which is the first stage of sampling and the sampling of population components within these societies and/or countries, which is the second stage of sampling, are crucial. These steps, to a large extent, not only determine the outcome of comparative analysis, but also ensure the reliability and validity of comparative analysis. When selecting countries or societies, more often than not, researchers do not select samples/cases using probability sampling techniques. Judging by some of the empirical comparative studies that have been conducted to date (see for example, Barzelay and Gallego, 2010; Wada, Kajüter and Moeschler, 2012; Guta, 2013; Ying and Patel, 2016), sample selection appears to follow some form of convenience sampling for stage one sampling, and purposive/convenience for stage two sampling. In some cases, the sampling technique used is not even mentioned. Access to research sites, condition of research sites, transportation and accommodation costs, availability and accessibility of research sites, are amongst some of the widely cited reasons. These issues are largely and generally related to convenience. Samples that are not based on these parameters, may be selected using other parameters such as size of country, population of country, location of country, the level of development of country (Pollit and Bouckaert, 2011), and so on, depending on what will be analysed. Some of these selection parameters, such as access to research sites and accessibility, contribute to the reasons why some countries, particularly developed countries, are well researched, especially when compared with developing or under-developed countries.

When compared with stage one sampling issues, such as selecting countries or societies and organisations, the process of stage two sampling, i.e. sampling within countries or societies, organisations, organisational actors and individuals, is much more complex. When countries or societies are selected based on convenience, for example proximity to the researcher, tourism reasons and other factors such as the parameters identified above, the question that arises is based on what conditions and parameters researchers conduct stage two sampling, i.e. sampling within these countries or societies. In this context, stage two sampling may be some form of probability sampling, when there are many cases to choose from and the complete population set is known. However, when there are only a few cases, which is often the case in comparative studies, there must be some form of rules or methods for coordinating non-probability sampling at this stage, to find a way of improving the reliability and validity of the research process and research findings. However, it is unfortunately usually difficult to coordinate this stage two sampling using some form of rules or methods, making it important for stage one sampling to be theoretical. Nevertheless, it may be possible to generate this stage two sample using theories, especially when theories are very robust.

It is important to note that sampling through theories is more appropriate for stage one sampling (country or society selection), rather than for stage two (within country or society sampling). Notwithstanding, theoretically generating sampling at the initial stage of selecting country or society increases the rigour of comparative studies, even when within country sampling follows some form of purposive sampling. This effectively means that sampling at the stage of selecting countries or societies may represent both purposive and convenience sampling. On the other hand, stage two (within country or society) sampling can only be purposive and cannot include convenience sampling. Therefore, if sampling at the initial stage of country/society/organisation selection can be theoretical, means that convenience sampling will be eliminated at both the country or society selection level (stage one) as well as within country or society level (stage two). Thus, comparative researchers can improve both their own confidence as well as that of observers who rely on their research outcomes.

3.2 Generating comparative samples from theories

There are six stages in building comparative samples from theories. The first stage entails the decision about the type of comparative analysis to conduct. After deciding on the type of comparative analysis to conduct, the second stage involves determining the type of comparative design to use. The third stage comprises a rigorous review of literature. The fourth stage consists of generating theoretical arguments from literature. The fifth stage

requires matching cases, countries or societies with the theoretical arguments derived from the literature to be used in conducting the study, and selecting countries based on the matched countries to theories and other parameters such as closeness, or how well the countries are performing in terms of the theories (provided several countries match a particular theoretical argument). The final stage encompasses stage two sampling, selecting within country or society samples, based on the selected countries or societies, or based on theoretical arguments where applicable. From the above, the stages taken together highlight the embedded transparency inherent in theoretical sampling. An explanation of this kind of sampling method in studies will show the transparency level of how sampling is conducted, as well as when cases emerge rather than just selecting convenient cases. Thus, readers, observers and those who may want to focus on research process are able to note the high level of transparency in the research process.

3.2.1 Deciding the type of comparative analysis

There are several types of comparative analyses. In this regard, Glaser and Strauss (1967) asserts that the comparative approach should be seen as an umbrella term as it has fundamental distinctions within it.

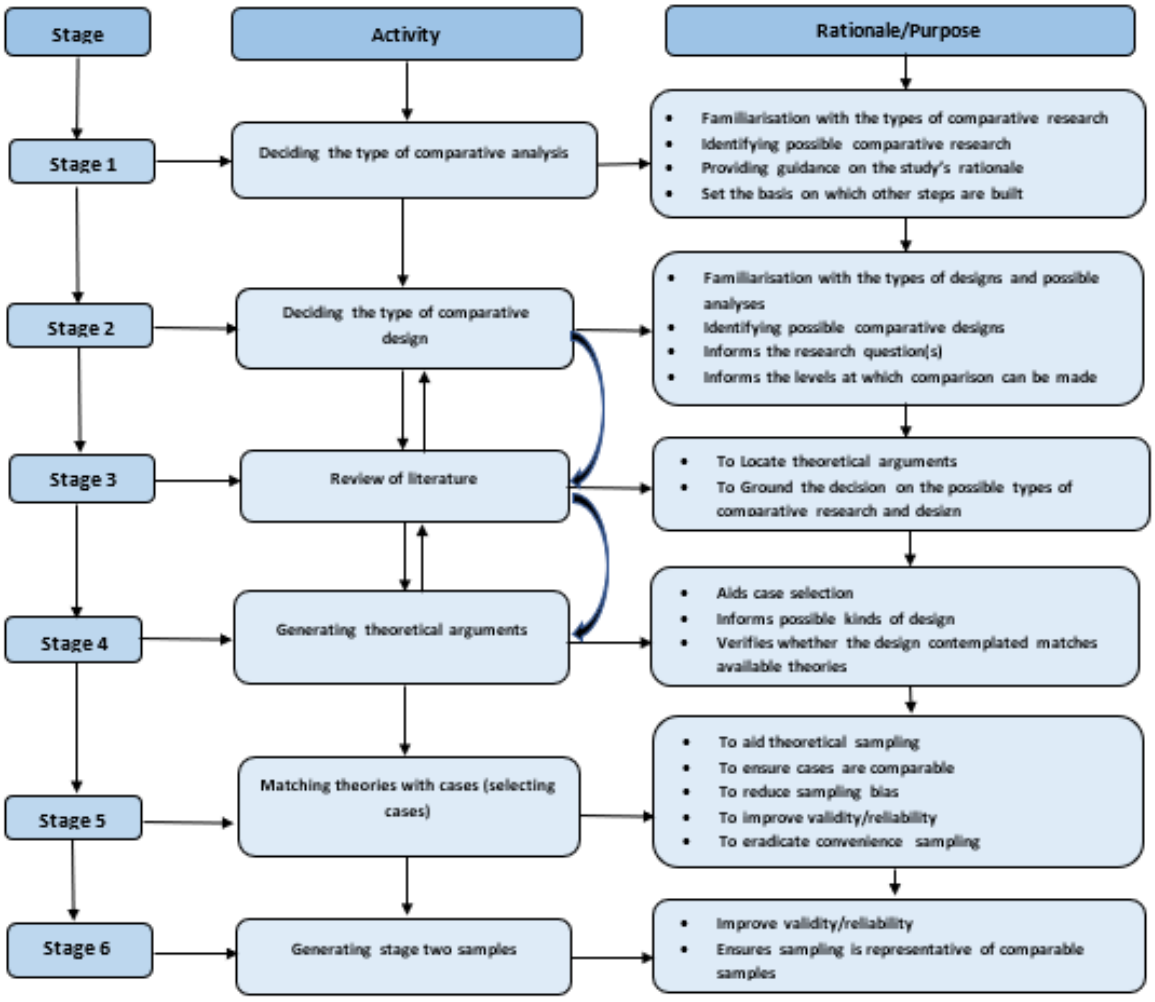

Figure 1: Process of theoretical sampling

The major challenge in grouping comparative studies is caused by the frame of reference used being both synonymous with general comparative research, while also denoting particular forms of comparison (Oyen, 1990). Traditionally, the comparative approach has been grouped into cross-sectional or cross-case, cross-country, cross-society or cross-national comparative approaches, with other categories or groupings of the comparative approach being arranged under these groups. These other categories include qualitative and quantitative comparative approaches, single-*N*, small-*N* and large-*N, as well as* inductive and deductive comparative studies (Burnham *et al*., 2008). Since single *N* represent a single case, it thus makes sense to theorise that Small-*N* cases are cases between 2 - 50; while in line with Greckhamer, Misangyi and Fiss (2013),

large-*N* are cases above 50. A cross-sectional comparative approach involves a comparative analysis carried out within a single case study (for example within a single country or organisation).

On the other hand, the cross-national, cross-society or cross-country approach comprises comparative analyses carried out between or among different countries, nations or societies. This category of comparative approach appears to be the main area where comparative analysis is usually employed. Kohn (1989a; 1989b) identifies four types of comparative research: cross-national, transnational, case study comparative and cultural context studies (Harrison and Callan, 2013). These categories may be further classified under four sub-types: nation as the object of study, nation as the context of study, nation as the unit of analysis and transnational comparative study (Kohn, 1989a; 1989b). Countries, nations or societies may therefore be the object of comparative study, in which the researcher is primarily interested in the countries of study and not in testing some hypotheses. Here, the sample selection is usually based on convenience (Harrison and Callan, 2013). The context of the study represents another area where cross-national comparative analysis may be applied. In such instances, the researcher is interested in verifying or generalising research results of the phenomena under study, between or among nations. Thus, countries, nations, or societies are mere cases in which this may be achieved. The unit of analysis is the third type of cross-national research noted by Kohn (1989a; 1989b). The interest of the researcher would be to examine the relationship between the phenomena under study and the features of the countries being studied, with countries simply being reduced to examples along the lines of theoretical arguments. Theoretical arguments therefore regard a nation or an organisation as a context, or a unit of analysis which may be compared and not simply focusing on nations or organisations as mere objects of study. The final type is trans-national, in terms of which nations are treated as elements of a larger international system with a focus on systems, such as developing nations or capitalism.

3.2.2 Deciding the type of comparative design

There are basically two types of comparative approach design, categorised as most similar and most different. In addition there is the qualitative comparative approach (QCA) and its variants (Crisp-Set (csQCA) qualitative approach; Multi-value (mvQCA) qualitative approach and Fuzzy Sets (fs QCA) qualitative approach (See Rihoux and De Meur, 2009; Berg-Schlosser *et al*., 2009; Cronqvist, 2009; Ragin, 2009; Emmenegger, Kvist and Skaaning, 2013; Hug, 2013; Huarng and Roig-Tierno, 2016; Toshkov, 2016). The discussion of these variants of qualitative comparative approach is beyond the scope of this study. It is nevertheless important to note that the choice of approach is based on the most similar and most different designs (Berg-Schlosser *et al*., 2009). In the context of comparative design, Ragin (2000) notes that the purpose of diversity-oriented research is to bridge two opposing principles of generality and complexity. Further, Smelser (1973) submits positive and negative comparative designs. The positive design is synonymous with the most similar design and the negative is synonymous with the most different design. The essence of using either of these designs is to ensure that research question(s) is closely aligned to the comparative design. In this context, Warwick and Osherson (1973) submit that comparison broadly entails the process of detecting similarities and differences between or among cases. In this way, the most different and the most similar research designs provide the initial basic direction for selecting cases. The design decision informs the questions to be asked and vice versa. At this stage, the comparative researcher accordingly decides on the type of question(s) to pose for the study, which in turn assists in formulating the question(s).

The most similar and most different design is based on the work of Mill (1967), dealing with the method of agreement and method of difference. Mill's (1967) early work has been discussed by a number of authors, including but not limited to Scheuch (1990); Ragin (2000) in discussing practical considerations in studying diversity; George and Bennett (2005); Druckman (2005); Burnham *et al*. (2008); Berg-Schlosser *et al*. (2009) and Toshkov (2016). This approach enables the ability to make comparisons in terms of similarities and/or differences, based on possible causal variables and the phenomena being studied (Schutt, 2012). The most similar or method of agreement design entails establishing that cases exhibiting the phenomenon under study, also exhibits a set of causal effects, even though they may vary in other ways that may appear to be causally relevant (Schutt, 2012). On the other hand, the most different or the method of difference relates to a situation where cases do not exhibit common phenomena or causal effects, but may however, agree to some extent on relevant cases (Schutt, 2012). For an overview of method of agreement and method of difference, see Lieberson (1991; 1994) and Anckar (2008).

Although, as noted above, the discussion of the variants of qualitative comparative approach is beyond the scope of this study, it is important to note that most comparative research designs utilise Mill's methods of difference

or agreement (Anckar, 2008). QCA is a case-oriented method (Anckar, 2008) that draws on Mill's methods of difference and agreement. In this way, cases are usually selected based on whether a study seeks to make comparisons based on similarities and/or differences.

In addition, a decision should to be made on whether the study will focus on a single-*N* case, small-*N* cases or large-*N* cases. Even though it appears to have been argued that comparative large-*N* analysis can only be conducted mathematically, experimentally and statistically (Lieberson, 1994; Anckar, 2008), large-*N* qualitative and mixed methods comparative analysis is possible where large databases are available (O'Toole and Meier, 2017; Greckhamer *et al*., 2018). It appears the reason why large-*N* cases analyses are usually not attempted using the comparative approach may be because comparative questions especially in sociology, organisational economics and public management are usually questions of boundary and relation (Peters, 1994) posed to confirm or determine differences and/or similarities in different national, organisational and individual boundaries. In such cases, large-*N* cases comparative analyses are usually not possible. The reason why the comparative approach is more suitable for small-*N* is because it usually starts with cases in order to learn from the cases (Toshkov, 2016). However, following Toshkov's (2016) observation that the comparative approach rests on two scenarios, large-*N* analysis is also possible. The first starts with a research question and questions the impact of variable x (for example the type of government) on outcome y (for example, the kind of intervention, say free medication)? The second scenario starts with a set of cases and questions what can be learnt from the cases. While the second scenario will no doubt only support small-*N* analysis (Thomann and Maggetti, 2020), the first scenario shows that large-*N* comparative analysis is possible, although this is contingent on the availability of large databases, and should questions permit, and whether it is possible to design an experiment when there are no large databases as well as theoretically relevant cases. This in effect means that it is possible to conduct large-*N* comparative organisational, national and international analyses where there are databases that can be used for qualitative analysis. Thus, when there are large databases, as with quantitative experimental research that can be conducted at micro, meso and macro levels with administrators, qualitative archival analysis is possible using database records.

The decision at this stage is based on ensuring that the researcher is aware of the possible designs and analyses, before embarking on the review of literature. Even though the design is carried out at this stage, nothing is guaranteed until after completing the next two stages, the literature review and the generation of theoretical arguments, since the researcher will have to revisit this stage after the subsequent two stages. This in effect sustains that even though feedback and feedforward loops apply to the sampling process discussed in this paper, feedback and feedforward loops are more applicable at the stage of deciding the type of comparative design, review of literature and generating theoretical arguments, as illustrated in Figure 1.

3.2.3 Rigorous literature review

Having decided on the type of comparative analysis and the design of the comparative analysis, the next stage is to review literature on the subject matter. This stage appears to be the most challenging stage, because, as with the main objective of reviewing literature to locate the research gap, the researcher is also looking for patterns, arguments and rival arguments that could be used for the purposes of sampling. The main challenge here is that it immediately becomes apparent that not all theoretical arguments can be used in generating samples. It therefore follows that the researcher will have to employ some form of method to arrive at the theoretical arguments that may inform case selection. The idea is to document all seemingly important arguments as well as counter arguments, because it is likely that in a situation where there are no sound theoretical arguments, documented theoretical arguments will have to be combined in order to arrive at theories that will enable case selection. In addition, even though there may be sound theoretical arguments, the researcher may have to refine these arguments further to permit stage one and stage two sample selection. One of the ways of conducting this type of literature review is by researching seminal works on a subject area, before moving to more recent research. This will ensure that seminal arguments are documented, as seminal arguments are mostly useful in theoretical sampling.

3.2.4 Generating theoretical arguments from literature

Theoretical arguments are derived from the literature review stage described above. Since to a large extent, the type of theoretical arguments derived informs the type of design that may be used, the first step is to establish whether the type of research design is applicable for the derived theoretical arguments. However, when following theory generation from literature, it may only be possible to carry out a most similar analysis and not a most different analysis, and vice versa. In some cases, theoretical arguments may permit both most similar

and most different analyses, providing the researcher with some form of decisional autonomy regarding the type of analysis to conduct. In essence, after completing this step, the researcher will have to go back to the second step, deciding the type of comparative design, in order to check whether there is a need to use some form of design, other than the one decided at that stage. However, while it may be argued that the research design step should come after the generation of theoretical arguments, it is important for the researcher to think about the design at that early stage, to look out for patterns of design, while engaging in the review of literature.

3.2.5 Matching theories with cases (selecting cases)

Good theoretical arguments allow researchers some form of autonomy in the choice of selecting the cases to work with. This is because patterns and features of the theoretical arguments will be present in so many cases, be it nations, organisations and organisational actors. Where this is possible, the researcher is able to select cases taking into account the three selection criteria formulated by Burnham *et al*. (2008), and select cases that maximise comparative/experimental variance, minimise error variance and control extraneous variance. Moreover, being satisfied that theoretical arguments are applicable to a number of cases, the researcher is able to select stage two samples/cases based on some form of purpose/convenience (be it for the purposes of confirming, disconfirming, or generalising) in terms of closeness to research sites and research participants, the level of development of countries, the features of theoretical arguments displayed by countries in terms of how well a country/organisation is thriving on a theory; as well as based on the all-important issue of where new knowledge can be generated amongst the identified cases. However, in executing this, the researcher should be careful to avoid powering personal interest into the process. Taken together, the three selection criteria and carefully matching theoretical arguments to cases reduce theoretical sampling bias.

3.2.6 Generating stage two samples from theories

This stage entails selecting samples within country or society, and within organisations based on the selected countries or societies, from stage one samples based on theoretical arguments. While it may not be possible to sample theoretically in stage two sampling, it can nevertheless be attempted. The feasibility is highly contingent on whether or not theories obtained from literature are robust enough and may be applied to both stage one and stage two sampling. However, even though it may not be possible, purposive sampling can be applied in stage two, provided that stage one sampling has been based on some form of theoretical sampling. Theoretical sampling is important in the first stage because the population contains the set of countries, organisations and units (Eisenhardt, 1989), from which stage two sampling is to be derived. Some authors (Eisenhardt, 1989; Caronna, Pollack and Scott, 2009; Wiesel and Modell, 2014; Dai *et al.,* 2016) have treated purposive sampling as theoretical sampling (see Eisenhardt, 1989 in discussing Glaser and Strauss (1967) and Harris and Sutton's (1986) study on dying organisations), in which cases were selected based on the purpose of the research. For example, a study focusing on the Open source community, and in which any four projects (cases) at different stages were selected in order to examine organisational practices (see Chen and Mahony, 2009), appears to be purposive and not theoretical. Even though it may appear that stage two sampling can only be conducted purposively, it is worthwhile for researchers to match cases cognisant of the dimensions to which cases can be argued to be comparable, most similar and most different. For example, in terms of sectoral, departmental and ownership, in order to reduce the limitations of comparative analysis.

3.3 Evaluating the usable theories

It appears not all theoretical arguments can be used for generating comparative analysis samples, or lead to matching samples. This gives rise to the question: how do researchers then evaluate whether theories are useful or not, and therefore evaluate those usable theories? The best way of doing this may be to ensure that the theoretical lenses to be used, are based on some form of known theoretical arguments in a particular field of research. This does not however, mean that theoretical arguments that are less known cannot be applied. It simply means that observers, especially those within a particular field, who are grounded in the literature on a particular subject, are more likely to place reliance on the research process, thereby also trusting the research outcomes.

Irrespective of whether a theory is a well-established theory or not, another important factor is to ensure that cases are carefully selected based on the emerging theory or theories, especially when there are a number of applicable cases, of which researchers need only a few. Convenience/purposive selection of both stage one and stage two samples, where there are many matching cases, should only be applied to a limited extent with selection instead being based on other carefully thought out parameters; otherwise, the theoretical sampling

rationale will be lost, and sampling will be based on convenience sampling rather than some form of theoretical sampling.

Table 1 illustrates bad and good practices in comparative sampling as well as goals that can be achieved through shifting to and embracing theoretical sampling. The table also, although studies may not fit perfectly, attempted to identify some studies that may be argued to have features of good practices in line with the reasonings in each of the six stages of the theoretical sampling process.

Table 1: Good practices in comparative sampling in business and organisational research

Theoretical sampling stage	**Bad practice**	**Good practice**	**Shifting to good practice/goal achieved through good practice**	**Studies featuring good practice**
(1 – Deciding the type of comparative analysis)	Not specifying the type of comparative research/analysis.	Specifying the type of comparative research/analysis.	Aids familiarisation with the types of comparative research, identification of possible comparative research and provision of guidance on study's rationale.	• Skelcher *et al*. (2011) on explaining democratic anchorage • Greckhamer *et al*. (2013) on small *N* and large *N* sampling; • Arikan and Ben-Nun Bloom, (2014) on social values and cross-national differences and; • Kohn (1987) on cross-national research as an analytical strategy.
(2 – Deciding the type of comparative design)	Not specifying the type of comparative design.	Specifying the type of comparative design.	Aids familiarisation with the types of design and possible analyses, identification of possible comparative designs, developing the research questions, deciding the levels at which comparison can be made.	• Anckar (2008) on the application of the most similar and the most different systems design in comparative analysis. • Lacey and Fiss (2009) on QCA; • Mahalingam, Devkar and Kalidindi (2011) on QCA and; • Gligor *et al*. (2020) on QCA.
(3 – Review of literature)	Staring studies with research questions and case selection rather than prior review of literature.	Reviewing literature so as to document theoretical arguments following the identification of the type of comparative research.	Aids locating theoretical arguments as well as grounding the decision on the possible types of comparative research and design.	• Bromley, Hwang and Powell, (2012) on decoupling; • Aversa, Furnari and Haefliger (2015) on QCA and; • Russo and Cofente (2019) on QCA.
(4 – Generating theoretical arguments)	Generating theoretical arguments from cases and/outcomes.	Generating theoretical arguments from literature.	Aids selection of cases, possible kinds of design, verifying whether the design contemplated matches available theories.	• Filatotchev, Toms and Wright (2006) on theoretical arguments supported by empirical data and; • Bohórquez Arévalo and Espinosa (2015) on theoretical approaches.
(5 – Matching theories with cases (selecting cases))	Selecting weak theoretical arguments that are not robust enough to enable proper case matching.	Selecting robust theoretical arguments that have patterns and features in many cases and allow for the selection of good cases.	Aids theoretical sampling, ensuring cases are comparable, reducing sampling bias, improving reliability and validity and eradicating convenience sampling.	• Filatotchev, Toms and Wright (2006) on theoretical arguments supported by empirical data; • Greckhamer *et al*. (2013) on small *N* and large *N* sampling and;

Theoretical sampling stage	Bad practice	Good practice	Shifting to good practice/goal achieved through good practice	Studies featuring good practice
				• Bohórquez Arévalo and Espinosa (2015) on theoretical approaches.
(6 – Generating stage two samples)	Selecting stage one and stage two sampling based on convenience sampling.	Selecting stage two samples from theoretically sampled stage one samples.	Aids improving reliability and validity, ensuring sampling is representative of comparable samples.	• Bohórquez Arévalo and Espinosa (2015) on theoretical approaches; • Filatotchev, Toms and Wright (2006) on theoretical arguments supported by empirical data; • Misangyi *et al*. (2016) on causal complexity and; • Ordanini, Parasuraman and Rubera (2013) on QCA of service innovation configurations.

3.3.1 Comparison with other sampling techniques

The sampling procedure discussed here is similar to that proposed by other commentators, albeit with notable differences. For example, in discussing this sampling method, this paper has drawn on Glaser and Strauss's (1967) comparative analysis assessment and theoretical sampling; Ragin's (1987) qualitative comparative approach; Eisenhardt's (1989) discussion of Glaser and Strauss' (1967) theoretical sampling; Peters' (1994) theoretical and comparative case study; Ragin's (2000) arguments of diversity-oriented research, which is informed by case-oriented research; Druckman's (2005) focused case comparison, George and Bennett's (2005) method of structured, focused comparison and Yin's (2014) analytic generalisation, as well as literal and analytical replication. Nevertheless, the approach discussed here exhibits notable differences in a number of dimensions compared with previous works. In this connection, firstly, even though this paper touches on other aspects, the approach discussed here is concerned with generating stage one and stage two samples from theories for any form of comparative analysis. Of previous works, the closest to the approach described here is that of Glaser and Strauss (1967), Ragin's (2000) arguments of diversity-oriented research, which is informed by case-oriented research and George and Bennett's (2005) method of structured, focused comparison. Glaser and Strauss' (1967) theoretical sampling entails a process of data collection in which the researcher collects, codes and analyses data for the purpose of deciding the kind of data to collect following analysis of data collected at the initial stage with the aim of developing theory. Thus, the theoretical sampling described by Glaser and Strauss (1967) is basically concerned with deciding on the groups or subgroups from which case study data can be re-collected for the purposes of generating theory. The two characteristics of George and Bennett's (2005) method of structured, focused comparison are structured and focused. It is "structured" since it starts with researchers posing general questions that are in line with the research objective. These questions are then used in making sense of each case under study as a guide as well as to standardise data collection, thereby making systematic comparison and cumulation of the findings of the cases possible. Further, it is "focused" because in that it deals specifically with certain research objective aspects of the historical cases examined, as well as an appropriate theoretical focus for such objective. While the starting point in George and Bennett's (2005) method of structured, focused comparison is the research question, it is under stage two – deciding the type of comparative design – in the theoretical sampling discussed in this paper. Yin's (2014) analytic generalisation is based on either corroborating, modifying, rejecting, or otherwise advancing theoretical concepts noted in designing case study or new concepts that arose upon the completion of case study. It appears analytic generalisation, compared to theoretical sampling discussed here, is not employed for the purposes of sample selection, but only for theoretical corroboration, modification and rejection. Yin's (2014) literal replication entails selecting two (or more) cases that are predicted to produce similar findings within a multiple-case study, while theoretical replication entails selecting two (or more) cases that are predicted to have contrasting findings in a multiple-case study. While these, especially theoretical replication, are close to the theoretical sampling discussed here, as noted by Yin (2014), research questions inform the selection of cases for literal replication, while in theoretical replication, cases are selected based on examples of outcomes which inform the number and types of theoretical replications to be covered in a study. Similarly, Ragin's (2000) discussion of comparative study informed by diversity-oriented research indicates that the starting point in the comparative study

described is case selection. Case selection is a later stage step (stage four) in the theoretical sampling discussed here. In this regard, Ragin (2000) posed an important question (under discussion of the features of diversity-oriented research borrows from case-oriented research), when cases are selected – "what are they cases of?" Under the theoretical sampling discussed here, cases used are cases of theoretical arguments rather than cases of outcomes and questions. As with these authors, the theoretical case study described by Peters (1994) is close to what is intended, but a theoretical case study is not driven by theoretical formulations, but rather it applies the same methodology and the same research questions on different cases with the aim of inducing generalities from the findings. Druckman's (2005) focused case comparison entails matching cases for comparison purposes. Ragin's (1987) qualitative comparative approach attempts to combine qualitative (case-oriented) and quantitative (variable-oriented) techniques so as to ensure that systematic conceptualised case comparison is possible. In contrast to these authors, in this paper, sampling theoretically entails generating stage one and stage two samples from theoretical arguments. As such, it differs from, but complements Glaser and Strauss' (1967) theoretical sampling, Ragin's (1987) qualitative comparative approach, Eisenhardt's (1989: 536-537) discussion of Glaser and Strauss (1967) theoretical sampling, Peters' (1994) theoretical case study, Ragin's (2000) discussion of comparative study informed by diversity-oriented research, George and Bennett's (2005) method of structured, focused comparison, Druckman's (2005) focused case comparison. However, the approach is similar to and complements Yin's (2014) analytic generalisation as well as literal and analytical replication.

Secondly, the approach discussed here contributes new ideas. Authors such as Glaser and Strauss (1967), Druckman (2005) and Schutt (2012), have argued differently on the starting point of a comparative study. Whereas Druckman (2005) submits that the starting point is the specification of variables, Schutt (2012) argues that the starting point should be the specification of the theoretical framework while identifying useful concepts and events, and Glaser and Strauss (1967) emphasise data collection as the starting point. The idea here is that the starting point should be informed by the decision on what type of comparative study to embark on. In this connection, Druckman (2005) usefully notes that comparative analysis inquiry is usually a later stage analysis. Accordingly, the issue of specification of variables and theoretical frameworks, and data collection are typically decisions taken at later stages of the research, rather than as a starting point. In this regard, this study has provided a six-stage process towards generating samples from theoretical arguments.

Thirdly, the approach discussed here has highlighted that purposive sampling has often been mistaken as theoretical sampling. The difference being that some approaches leading to purposive sample selection are based on the purpose of study, rather than on theoretical arguments. An example of this is the Warwick study (Pettigrew, 1973) discussed by Eisenhardt (1989), in which a case was selected based on a successful firm performance and the other case based on an unsuccessful firm performance. In this situation, theoretical sampling would have been sampling based on some form of theoretical arguments. Say, for the purpose of illustration, that state-owned enterprises should be organised in such a way that commercial objectives are separated from social objectives, thus, these state-owned enterprises should not be organised under state ministries (see Keynes (1926) for this argument). A rival argument is that state-owned enterprises should be organised under the state, so as to provide a form of competition necessary to curtail the evils of private ownership (see Marx (1967) for this argument); in such an instance selecting samples of countries and organisations within the countries would be based on these theoretical arguments. Another example is that successful firms pay more attention to organisational culture and less successful firms do not (see Morgan (2006) and Naranjo-Valencia, Jimenez-Jimenez and Sanz-Valle (2017) for such argument). A rival theory argues that successful firms pay attention to human and capital knowledge (see Jalal, Toulson and Tweed, (2011) and Kozielski (2016) for such argument); thereby, selecting samples based on these arguments.

Finally, the approach has shown that even though stage two case selection is based on purposive sampling, reliability and validity issues are less problematic when stage one sampling follows some form of theoretical sampling. The idea being that stage one sampling is arguably more important compared with stage two sampling in that stage two samples are derived from stage one samples.

4. Conclusion

While it has been relatively easy to argue that sampling and improving research rigour has historically been one of the major challenges of the comparative research approach (Thomann and Maggetti, 2020), it has been far more difficult to proffer solutions to these problems. Within this context, this paper aims to bridge this gap by offering a six-stage process for theoretical sampling. Thus, the main purpose of this article is to describe how to

generate comparative sampling from theoretical arguments. In this regard, this paper has adopted a two-phase process involving six steps to demonstrate how this may be achieved. It is submitted that the strengths of the approach may be applied by researchers conducting comparative analysis. While this approach may proffer some new insights, it builds on the work of other authors on data collection and sampling. As a result, the prior research, which sets the basis for the approach discussed here, may also be useful where the application of this approach is not possible. Moreover, as Druckman (2005) rightly observes, since the comparative analysis occurs at later stages of the research process, the starting point in early work becomes useful at later stages of comparative analysis, especially when the focus of the analysis is on generating, and not verifying theories (Huarng and Roig-Tierno, 2016). In this way, this approach taken singularly or together with earlier works, is expected to assist researchers generally, especially accounting and business researchers interested in public sector accounting, which is usually some form of sociological, organisational economics and public management comparative analyses, in conducting comparative research that can withstand research observers' as well as reliability and validity tests. While qualitative researchers may utilise other sampling techniques, it is believed that the theoretical sampling approach discussed here ensures validity and reliability.

5. Future research

Even though this paper has tried as much as possible to comprehensively describe theoretical sampling for comparison thereby offering insights as to how theoretical sampling improves validity, transparency and can be conducted, this paper may not have covered all the relevant issues and aspects of theoretical sampling. In addition, although this paper has described a theoretical sampling process, it was utilised to select samples for a PhD thesis from which it was obvious that the sampling approach provided significant advantages over the more traditional sampling approaches employed by comparative researchers. In this context, future research is required to further exemplify this theoretical sampling process. Future research could also build on this sampling process to argue that the sampling approach described here supports experimental design since it has been argued that experimental research is a comparative activity and that usually, the purpose of doing the experiments is to compare two or more ways of doing something (Easterling, 2015). This kind of research will have to document how this theoretical sampling may improve experimental research as well as the process that will be involved.

Although the discussion here may be applied to quantitative analysis, it's discussion in this paper has been more in line with application to qualitative comparative analysis. Future research could develop aspects of this paper that are relevant to quantitative research. In this instance, interested researchers will have to review additional sampling literature applicable to quantitative research.

Future research may also consider the sampling approach described here on small and large *N* cases to document whether the approach works better with small cases or with large cases. In this instance, researchers should, in the process of their study, document whether any form of difficulty is encountered in matching cases (small or large *N*) to theoretical samples. Findings from such study, especially those in which small cases and large cases are used in testing the same theoretical argument, will be worthwhile as it will indicate whether or not results change when sample size increases and if so, to what extent. Furthermore, such a study will be useful in establishing whether or not large *N* increases generalisability, since Thomann and Maggetti (2020) have argued that large *N* cases alone do not equate to generalisability.

Future research could further explore comparing outcomes in respect of different sampling method; for example, Ordanini, Parasuraman and Rubera (2014) and Russo et al., (2019) show the differences between symmetric (MRA) and asymmetric method (QCA).

A future line of research could also explore documenting matching between case studies and QCA with interviews (Forkmann, Henneberg, Witell and Kindström, 2017).

References

Aldrich, H.E., 2009. Lost in space, out of time: why and how we should study organizations comparatively. *Research in the Sociology of Organizations*, *26*, pp.21-44.

Allardt, E., 1990. Challenges for comparative social research. *Acta Sociologica*, *33*(3), pp.183-193.

Anckar, C., 2008. On the applicability of the most similar systems design and the most different systems design in comparative research. *International Journal of Social Research Methodology*, *11*(5), pp.389-401.

Arikan, G. and Ben-Nun Bloom, P., 2014. Social values and cross-national differences in attitudes towards welfare. *Political Studies*, *63*(2004), pp.431-448.

Aversa, P., Furnari, S. and Haefliger, S., 2015. Business model configurations and performance: a qualitative comparative analysis in Formula One racing, 2005–2013. *Industrial and Corporate Change, 24*: pp.655-676.

Barzelay, M. and Gallego, R., 2010. The comparative historical analysis of public management policy cycles in France, Italy, and Spain: symposium introduction. *Governance*, *23*(2), pp.209-223.

Berg-Schloser, D. and De Meur, G., 2009. Comparative research design: case and variable selection. In: B. Rihoux and C.C. Ragin, eds. *Configurational comparative methods: qualitative comparative analysis (QCA) and related techniques.* pp.20-32. California: Sage Publications, Inc.

Berg-Schlosser, D., De Meur, G., Rihoux, B. and Ragin, C.C., 2009. Qualitative comparative analysis (QCA) as an approach. In: B. Rihoux and C.C. Ragin, eds. *Configurational comparative methods: qualitative comparative analysis (QCA) and related techniques* pp.1-18. California: Sage Publications, Inc.

Bohórquez Arévalo, L.E. and Espinosa, A., 2015. Theoretical approaches to managing complexity in organizations: a comparative analysis. *Estudios Gerenciales*, *31*(134), pp.20-29.

Bromley, P., Hwang, H. and Powell, W.W., 2012. Decoupling revisited: common pressures, divergent strategies in the U.S. nonprofit sector. *M@n@gement, 15*, pp.468-501.

Burnham, P., Lutz, K.G., Grant, W. and Zig, L.H., 2008. *Research methods in politics*. 2nd ed. New York: Palgrave Macmilian.

Caronna, C.A., Pollack, S.S. and Scott, W.R., 2009. Organizations, populations, and fields: investigating organizational heterogeneity through a multilevel case study design. *Research in the Sociology of Organizations*, *26*, pp.249-270.

Chen, K.K. and O'Mahony, S., 2009. Differentiating organizational boundaries. studying differences between organizations. *Comparative Approaches to Organizational Research*, *26*, pp.183-220.

Cronqvist, L., 2009. Multi-Value QCA (mvQCA). In: B. Rihoux and C. C. Ragin eds. *Configurational comparative methods: qualitative comparative analysis (QCA) and related techniques*. pp.69-86. California: Sage Publications, Inc.

Dai, N.T., Tan, Z.S., Tang, G. and Xiao, J.Z., 2016. IPOs, institutional complexity, and management accounting in hybrid organisations: a field study in a state-owned enterprise in China. *Management Accounting Research*, *36,* pp.1-22.

Damrosch, D., 2013. Comparative literature? *Modern Language Association of America, 18*(2), pp.326-330.

Druckman, D., 2005. *Doing research : methods of inquiry for conflict analysis*. California: Sage Publications, Inc.

Easterling, R.G., 2015. *Fundamentals of statistical experimental design and analysis*. Chichester: John Wiley & Sons Ltd.

Eisenhardt, K.M., 1989. Building theories from case study research. *Academy of Management Review*, *14*(4), pp.532-550.

Emmenegger, P., Kvist, J. and Skaaning, S.-E., 2013. Making the most of configurational comparative analysis: an assessment of QCA applications in comparative welfare-state research. *Political Research Quarterly*, *66*(1), pp.185-190.

Fainshmidt, S., Witt, M.A., Aguilera, R.V. and Verbeke, A., 2020. The contributions of qualitative comparative analysis (QCA) to international business research. *Journal of International Business Studies*, *51*(4), pp.455-466.

Filatotchev, I., Toms, S. and Wright, M., 2006. The firm's strategic dynamics and corporate governance life-cycle. *International Journal of Managerial Finance*, *2*(4), pp.256-279.

Forkmann, S., Henneberg, S.C., Witell, L. and Kindström, D., 2017. Driver configurations for successful service infusion. *Journal of Service Research*, 20(3), pp. 275-291.

George, A.L. and Bennett, A., 2005. *Case studies and theory development in the social sciences*. Cambridge, MA: Harvard University Press.

Glaser, B. and Strauss, A., 1967. *The discovery of Grounded Theory: strategies for qualitative research*. New York: Aldine.

Gligor, D., Feizabadi, J., Russo, I., Maloni, M.J. and Goldsby, T.J., 2020. The triple-a supply chain and strategic resources: developing competitive advantage. *International Journal of Physical Distribution and Logistics Management*, *50*(2), pp.159-190.

Greckhamer, T., Furnari, S., Fiss, P.C. and Aguilera, R.V., 2018. Studying configurations with qualitative comparative analysis: best practices in strategy and organization research. *Strategic Organization*, *16*(4), pp.482-495.

Greckhamer, T., Misangyi, V.F. and Fiss, P.C., 2013. The two QCAs: from a small-N to a large-N set theoretic approach. In: P.C. Fiss, B. Cambré and A. Marx eds. *Configurational theory and methods in organizational research* (*Research in the Sociology of Organizations, Vol. 38*), Bingley: Emerald Group Publishing Limited. pp.49-75.

Guta, A.J., 2013. Comparative analysis of public management in Romania and EU countries. *Annals of the University of Petroşani, Economics, 13*(2), pp.85-92.

Harris, S.G. and Sutton, R.I., 1986. Functions of parting ceremonies in dying organizations, *The Academy of Management Journal*, *29*(1), pp.5-30.

Harrison, L. and Callan, T., 2013. *Key research concepts in politics and international relations*. London: Sage Publications, Inc.

Huarng, K.-H. and Roig-Tierno, N., 2016. Qualitative comparative analysis, crisp and fuzzy sets in knowledge and innovation. *Journal of Business Research*, *69*(11), pp.5181-5186.

Hug, S., 2013. Qualitative comparative analysis: how inductive use and measurement error lead to problematic inference. *Political Analysis*, *21*(2), pp.252-265.

Jalal, H.A., Toulson, P. and Tweed, D., 2011. Exploring employee perceptions of the relationships among knowledge sharing capability, organisational culture and knowledge sharing success: their implications for HRM practice. *Proceedings of the 8th International Conference on Intellectual Capital, Knowledge Management and Organisational Learning, Vol. 1 and 2*, pp.639-646.

Johns, G., 2001. In praise of context. *Journal of organizational behavior*, *42*, pp.31-42.
Jreisat, J., 2012. *Globalism and comparative public administration*. New York: Routledge.
Keynes, J.M., 1926. *The end of laissez-faire*. London: Leonard & Virginia Woolf.
King, B.G., Felin, T. and Whetten, D.A., 2009. *Comparative organizational analysis: An introduction*. *Research in the sociology of organizations*, *26*, pp.3-19.
Kohn, M.L., 1987. Cross-national research as an analytic strategy: American Sociological Association, 1987 Presidential Address, *American Sociological Association*, *52*(6), pp.713-731.
Kohn, M.L., 1989a. Cross-national research as an analytic strategy. In: M.L. Kohn ed. *Cross-national research in sociology.* California: Sage Publications, Inc. pp.77-102.
Kohn, M.L., 1989b. Introduction. In: M. L. Kohn ed. *Cross-national research in sociology*. California: Sage Publications, Inc. pp.17-31
Kozielski, R., 2016. Determinants of business success – theoretical model and empirical verification. *Folia Oeconomica Stetinensia*, *16*(1), pp.274-285.
Lacey, B. and Fiss, P.C., 2011. Comparative organizational analysis across multiple levels: a set-theoretic approach. In: studying differences between organizations: comparative approaches to organizational research. *Research in the Sociology of Organizations*, 26 pp. 91-116.
Lieberson, S., 1991. Small N 's and big conclusions: an examination of the reasoning in comparative studies based on a small number of cases. *Social Forces*, *70*(2), pp.307-320.
Lieberson, S., 1994. More on the uneasy case for using Mill-type methods in small-N comparative studies. *Social Forces*, *72*(4), pp.1225-1237.
Lincoln, Y.S. and Guba, E., 1985. *Naturalistic inquiry*. California: Sage Publications Ltd.
Mahalingam, A., Devkar, G.A. and Kalidindi, S.N., 2011. A comparative analysis of public- private partnership (PPP) coordination agencies in India: what works and what doesn't. *Public Works Management & Policy*, *16*, pp.341-372.
Mahoney, J., 2004. Comparative-historical methodology. *Annual Review of Sociology*, *30*(1), pp.81-101.
Martinus, K. and Hedgcock, D., 2015. The methodological challenge of cross-national qualitative research: comparative case study interviews in Australia and Japan. *Qualitative Research Journal*, *15*(3), pp.373-386.
Marx, K. (1967). *Capital: A critique of political economy.* New York: International Publishers.
Miles, M. B., & Huberman, A. M. (1994). Qualitative data analysis: an expanded sourcebook. California: Sage.
Mill, J.S., 1967. *A system of logic: rationcinative and inductive*. Toronto: University of Toronto Press.
Misangyi, V.F., Greckhamer, T., Furnari, S., Fiss, P.C., Crilly, D. and Aguilera, R., 2016. Embracing causal complexity: the emergence of a neo-configurational perspective. *Journal of Management*, *43*(1), pp.255-282.
Morgan, G., 2006. *Images of Organisation*. California: Sage Publications, Inc.
Morse, J. M., Barrett, M., Mayan, M., Olson, K., and Spiers, J., 2002. Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods*, 1(2), pp. 13-22.
Naranjo-Valencia, J.C., Jimenez-Jimenez, D. and Sanz-Valle, R., 2017. Impact of organisational culture on new product success: an empirical study of Spanish firms. *European Management Review*, *14*, pp.377-390.
O'Toole, J. and Meier, K.J., 2017. Comparative public management: a framework for analysis. In: *comparative public management*. Washington DC: Georgetown University Press.
Ordanini, A., Parasuraman, A. and Rubera, G., 2014. When the recipe is more important than the ingredients: a Qualitative Comparative Analysis (QCA) of service innovation configurations. *Journal of Service Research*, *17*(2), pp.134-149.
Oyen, E., 1990. The imperfection of comparisons. In: E. Oyen. ed. *Comparative methodology: theory and practice in international social research*. London: Sage Publications, Inc. pp.1-18.
Peters, G.B., 1994. Theory and methodology in the study of comparative public administration. In: R. Baker, ed., *Comparative public management: putting U.S. public policy and implementation in context*. Westport: Praeger Publishers. pp.67-91.
Pettigrew, A. (1973) The politics of organizational decision making. London: Tavistock.
Pollit, C. and Bouckaert, G., 2011. *Public management reform: a comparative analysis* (3rd ed.). New York: Oxford University Press.
Ragin, C.C., 1987. *The comparative method: moving beyond qualitative and quantitative strategies*. Berkeley: California University Press.
Ragin, C.C., 2000. *Fuzzy-set social science*. Chicago: The University of Chicago Press.
Ragin, C.C., 2009. Qualitative comparative analysis using fuzzy sets (fsQCA). In: B. Rihoux and C.C. Ragin, eds. *Configurational comparative methods: qualitative comparative analysis (QCA) and related techniques*. California: Sage Publications, Inc. , pp.87-122.
Rihoux, B. and De Meur, G., 2009. Crisp-set qualitative comparative analysis. In B. Rihoux and C.C. Ragin, eds. *Configurational comparative methods: qualitative comparative analysis (QCA) and related techniques*. California: Sage Publications, Inc. pp.33-68.
Russo, I. and Confente, I., 2019. From dataset to qualitative comparative analysis (QCA)—challenges and tricky points: A research note on contrarian case analysis and data calibration. *Australasian Marketing Journal*, *27*(2), pp.129-135.
Russo, I., Confente, I., Gligor, D. and Cobelli, N., 2019. A roadmap for applying qualitative comparative analysis in supply chain research: The reverse supply chain case. *International Journal of Physical Distribution & Logistics Management*, 49(1), pp. 99-120

Scheuch, E.K., 1990. The development of comparative research: towards causal explanation. In: E. Oyen, ed. *Comparative methodology: theory and practice in international social research*. London: Sage Publications, Inc. *,* pp.19-37.

Schutt, R.K., 2012. *Investigating the Social World :The Process and Practice of Research*. 7th ed. California: Sage Publications, Inc.

Skelcher, C., Klijn, E.H., Kubler, D., Sorensen, E. and Sullivan, H., 2011. Explaining the democratic anchorage of governance networks: evidence from four European countries. *Administrative Theory & Praxis, 33*(1), pp.7-38.

Smelser, N.J., 1973. The methodology of comparative analysis. In: D.P. Warwick and S. Osherson, eds. *Comparative research methods*. New Jersey: Prentice Hall. *,* pp.43-86.

Thomann, E. and Maggetti, M., 2020. Designing research with qualitative comparative analysis (QCA): approaches, challenges, and tools. *Sociological Methods and Research*, *49*(2), pp.356-386.

Thomas, D.C., 2008. *Cross-Cultural Management*. 2nd ed. California: Sage Publications, Inc.

Toshkov, D., 2016. *Research Design in Political Science*. New York: Palgrave.

Tuene, H., 1990. Comparing countries: lessons learned. In: E. Oyen, ed. *Comparative methodology: theory and practice in international social research*. London: Sage Publications, Inc. *,* pp.38-62.

Wada, S., Kajüter, P. and Moeschler, M., 2012. Comparative studies of cost accounting practices in Japan and Germany. *Asia-Pacific Management Accounting Journal*, *7*(1), pp.95-114.

Warwick, D.P. and Osherson, S., 1973. Comparative research methods: an overview. In: D.P. Warwick and S. Osherson, eds. *Comparative research methods*. New Jersey: Prentice Hall. , pp.3-41.

Whetten, D.A., 2009. Organizational comparative analysis: investigating similarities and differences among organizations. *Research in Sociology of Organisations*, *26*, pp.63-87.

Wiesel, F. and Modell, S., 2014. From new public management to new public governance? hybridization and implications for public sector consumerism. *Financial Accountability & Management*, *30*(2), pp.175-205.

Williamson, O.E., 1981. The economics of organization: the transaction cost approach. *American Journal of Sociology*, *87*(3), pp.548-577.

Wilson, D., 2011. Comparative analysis in public management: reflections on the experience of a major research programme. *Public Management Review*, *13*(2), pp.293-308.

Woodside, A.G., 2016. The good practices manifesto: overcoming bad practices pervasive in current research in business. *Journal of Business Research*, *69*(2), pp.365-381.

Yamasaki, S. and Rihoux, B., 2009. A commented review of applications. In: B. Rihoux and C.C. Ragin, eds. *Configurational comparative methods: qualitative comparative analysis (QCA) and related techniques*. California: Sage Publications, Inc. *,* pp.123-146.

Yin, R.K., 2014. *Case study research: design and methods*. California: Sage Publications Inc.

Ying, S.X. and Patel, C., 2016. Skeptical Judgments and self-construal: a comparative study between Chinese accounting students in Australia and China. *Journal of International Accounting Research*, *15*(3), pp.97-111.

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Editorial by the Editor; Ann Brown

Invitation to our readers to send in their opinions and views by letter to the editor
We want to hear from you. We are always interested in well-argued points of view. All your letters will be read by the Associate Editors and selected ones will be published in a later issue.

The research papers in this issue address the following subjects:

- A discussion of the implications of the philosophy of H.Dooyeweerd for research methods used in the various disciplines (Andrew Basdon)
- Sampling methods for Qualitative Comparative Analysis (QCA) (Adeyemi Adebayo and Barry Ackers)
- Two papers on teaching research methods - one on the importance of the skills of reflexivity (Anna Kimberley) and the other assessing the quality of research in Master's dissertations using case methods (Miguel Varela, Paula Lopes and Rosa Rodrigues)

The papers
Dooyeweerd's Philosophy
Andrew Basdon is concerned about the lack of mutual understanding and respect that researchers can display for researchers in different disciplines. The conditions and research questions of importance in one discipline often seem to have little connection with other disciplines. This can lead to inappropriate criticism of the research methods applied. Basdon presents Dooyeweerd's philosophy of aspects as a way to understand the apparent contradictions between disciplines' research methods.

Qualitative Comparative Analysis (QCA)
Qualitative Comparative Analysis, developed by social science researchers, has been growing in popularity for business researchers. The quality of the results obtained are critically dependent on the data sampling methods used. Adeyemi Adebayo and Barry Ackers argue for a move away from the simplicity of purposive and convenience sampling, to one of the more robust forms of theoretical sampling.

Teaching Research Methods
Anna Kimberley makes the case that undergraduate business students need to acquire critical reflexivity skills, both for research and business life. She describes an innovative pedagogical approach to developing these skills using narrative analysis of the data generated by reflective narratives created by the students. The results achieved are described in depth.

Miguel Varela, Paula Lopes and Rosa Rodrigues are concerned with assessing the methodological rigour of the research work using the case method at postgraduate level. They discuss the requirements of the case method. They use these criteria to focus on the analysis of masters dissertations defended in a Portuguese higher education institution. Their conclusions are cautiously optimistic!

The papers

- Understanding the relationships between fields of research (Andrew Basdon)
- Sampling theoretically for comparison (Adeyemi Adebayo and Barry Ackers)
- Reflexivity as a vital skill for future researchers and professionals (Anna Kimberley)
- Rigour in the management case study method: a study on master's dissertations (Miguel Varela, Paula Lopes and Rosa Rodrigues)