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Numbers conceal the intricacies in categorising qualitative research in organisational studies: What lies beneath the surface?

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Orientation: The characterisation of research as qualitative because it does not use statistics is expedient but tends to conceal the intricacies implicit in such a categorisation. Many novice researchers believe that qualitative research is limited to non-numerical data.

Research purpose: The study contributes to the ongoing methodological debates by illustrating that the theoretical underpinnings, and not the non-numerical data, are central to determine what constitutes qualitative research.

Motivation for the study: The main purpose of this article is not to debate the question of which research approach is more scientific, rather to distil the theoretical underpinnings of qualitative research to empower those less experienced in qualitative research to make sense of them.

Research design: This article is a theoretical study based on a critical literature review and engages critically with methodological issues pertinent to qualitative research.

Main findings: While the article is rooted in the notion of methodological pluralism, it focuses on the intricacies implicit in categorising research as qualitative and uses a Q methodological empirical study on trust in business alliances to buttress the view that research can use statistics and remain true to the tenets of qualitative research.

Practical implications: An understanding of the role of the theoretical tenets of qualitative research may be essential to empower those who desire to do qualitative research in management and organisational studies.

Contribution or value-add: The study builds on existing knowledge and contributes to the ongoing cutting-edge methodological debate by explicating the tenets of qualitative research with the objective of optimising its understanding and application.

Keywords: qualitative research; ontology; epistemology; methodology; role of numbers; Q methodology.

Introduction

Qualitative research is associated with a broad spectrum of research methodologies and is not a homogeneous and monolithic approach to research (Demuth, 2015; Gough & Lyons, 2016; O'Neil & Koekemoer, 2016).

However, it is generally accepted that qualitative researchers use text rather than numerical data and analyse those data in their textual form rather than in statistics to convert them to numbers (Carter & Little, 2007; Morgan, 2018). Therefore, the view that qualitative research is concerned with non-numerical data is not necessarily incorrect (Anyan, 2013; Aspers & Corte, 2019; Chesebro & Borisoff, 2007). However, qualitative research should not be categorised primarily based on whether the study uses non-numerical data per se, but by the theoretical underpinnings of research, which exemplify the researcher's worldview or set of beliefs about the world (Evered & Louis, 1981). Brown (1980) maintains that to qualify a study as qualitative or quantitative only because quantitative data have been used is a misconception. This view resonates with Maxwell's (2010) contention that numerical and non-numerical data cannot be useful ways to distinguish between qualitative and quantitative research. Therefore, the characterisation of research as qualitative because it does not rely on numerical data or statistics is expedient, but tends to conceal the intricacies implicit in such a categorisation.

My experience with qualitative novice researchers – mainly postgraduate students – who have to write a dissertation or thesis, years of studying the philosophical foundations of research, my own research trajectory that includes struggles to publish, and being a reviewer and subeditor myself have induced me to write this article. My aim in this article is to help others who wish to do qualitative research to grasp the subordinate role of non-qualitative data and the fundamental importance of its theoretical tenets. I would like to offer insights into one of the intriguing areas of research which has proven to be hard to grasp for many of my students and other novice researchers, and which presents them with enormous challenges when they have to make methodological choices that impact their research design.

I am optimistic that this article will help students and those less experienced in qualitative research to learn much faster than I did and empower them to execute their research projects competently. Therefore, although this study contributes to the ongoing, cutting-edge methodological debate (Johnson, 2017; Popa & Guillermin, 2017), it also strives to save those less experienced in qualitative research the confusion and distress that accompany making informed methodological considerations and choices. The article discusses the theoretical underpinnings of qualitative research within 21st-century research landscape, where methodological pluralism reigns supreme (Breen & Darlaston-Jones, 2010; Gough & Lyons, 2016).

Therefore, it deliberately focuses on distilling the tenets of qualitative research within this pluralistic landscape.

Regarding the argument that non-numerical data typify qualitative research, this article uses a Q methodological empirical study on trust in business alliances to amplify the view that research can use statistics and remain true to the tenets of qualitative research study. The article will illustrate that despite using quantitative methods to study subjectivity, the tenets of qualitative research are embedded in Q methodology. As it will become clearer, the proponents of both mixed-method and qualitative researches claim Q methodology (Ramlo, 2016; Shemmings, 2006). The different tendencies regarding the classification of Q methodology by experts and practitioners reveal its heterogeneous nature.

I believe that qualitative research has a pivotal role to play in advancing the theory, knowledge and practice of management and organisational studies. The broadening of the paradigmatic base by accepting diversity of research approaches, such as qualitative research, can only advance management and organisational studies.

Aim of the study

This study contributes to the ongoing cutting-edge methodological debates by illustrating that the theoretical underpinnings of research, and not the non-numerical data, are central to determine what constitutes qualitative research. The main purpose of the article is not to debate the question of which approach is more scientific, rather to distil the theoretical underpinnings of qualitative research to empower those less experienced in qualitative research to make sense of them. Furthermore, the article uses a Q methodological empirical study to amplify the view that research can use statistics and remain true to the tenets of qualitative research.

Research design

This theoretical article explores the intricacies implicit in categorising research as qualitative by focusing on four aspects: (1) the theoretical paper succinctly describes methodological pluralism that characterises the current social science research landscape to clarify the context of the discussion. (2) The article explores the question of what typifies qualitative research by ruminating on the common assumption that qualitative research is limited to non-numerical data and non-quantitative methods of analysis. The article concurs that the view that qualitative research is concerned with non-numerical data is not necessarily incorrect. However, the answer to the question of what makes research qualitative lies deeper beneath the surface. (3) The article probes on the issues that lie deeper beneath the surface, namely, the researcher's beliefs about the world, which are fundamental in shaping the entire research process. (4) The article uses a Q methodological empirical study on trust to illustrate the view that research can use numerical methods and remain true to the tenets of qualitative research. The purpose of the presentation is to illustrate how Q methodology adheres to the tenets of qualitative research.

Methodological pluralism: Heterogeneity and difference

Methodological debates are essential for the advances in the theory of research in management and organisational studies (Morgan, 2007). These debates are indicative of the fact that homogeneity, coherence, agreement, unity and intolerance that characterised research in management and organisational studies until the 1960s have acquiesced, albeit grudgingly, to a more pluralistic and heterogeneous research landscape that celebrates difference (Alvesson & Deetz, 1996; Burrell & Morgan, 1979). The diverse journal titles on qualitative, quantitative and mixed-method approaches, such as the *International Journal of Qualitative Research*, *Qualitative Research*, numerous journal titles that focus on quantitative research approach and the *Journal of Mixed Methods Research*, exemplify plurality of the research landscape. However, pluralism in research also encompasses a range of methodologies associated with the various domains or approaches of research. For example, within the qualitative approach, one may identify multiple methodologies that make qualitative research diverse (Morgan, 2018).

Generally, research approaches have been designated quantitative, qualitative or mixed methods on the basis of whether they use numeric data, non-numeric data or both (Morgan, 2018). Quantitative research is associated with

numerical data and the use of statistics to analyse data. The thought of qualitative research brings to mind non-numerical or textual data, content or narrative analysis, coding, themes and so on (Perrott, 2019). However, the categorisation of research has become more intricate with the rise of the mixed-method research and the pragmatic paradigm (Maxwell, 2010, 2016; Sandelowski, 2012; Shannon-Baker, 2016). Both the mixed-method approach and the pragmatic paradigm are systematic scholarly schemes to bridge the gap between qualitative and quantitative research approaches (Cragun et al., 2016; Sandelowski, 2012). Over the years, researchers and practitioners have taken the initiative to bridge the gap between qualitative and quantitative research (Maxwell, 2010, 2016; Sandelowski, 2012; Shannon-Baker, 2016). These methods include the qualitative comparative analysis (QCA) (Cragun et al., 2016). Numerous mixed-method research techniques have been developed over the years (Maxwell, 2016).

While initially conceptualised as the mixing of quantitative and qualitative methods, mixed-method research and the pragmatic paradigm have evolved into a more sophisticated research approach that, while acknowledging the differences between qualitative and quantitative approaches, tends to regard the qualitative and quantitative binary as overstated, and a serious impediment to meaningful inquiry (Maxwell, 2016).

Recognising the intricacies in the categorisation of research, some scholars have even suggested that research should be classified in terms of data collection techniques, such as interview studies, because it 'makes more sense than if research methods are labelled qualitative or quantitative' (Chu & Ke, 2017, p. 284). However, research using varying modes of inquiry produces different but legitimate kinds of knowledge (Gough & Lyons, 2016). Each research approach has its unique purpose and contributes to the building of the corpus of scientific knowledge (Maxwell, 2010). This article operates from the premise that it is unnecessary to set in opposition the research approaches against each other in a competing manner. Methodological pluralism empowers researchers to explore their research interests by using varying research approaches (Chenail, 2011; Gough & Lyons, 2016; Jonsen, Fendt, & Point, 2018; Midgley, Nicholson, & Brennan, 2017; Ramlo, 2016, 2019). The debate about which research approach is more or fully scientific is beyond the scope of this article. Specific research questions may be suited to being answered using certain approaches. One can infer from the preceding discussion that, although the focus of the study is on qualitative research, the article assumes a non-hegemonic and non-hierarchic classification of the diverse modes of inquiry.

The discussion has up to this point revealed the different ways of creating knowledge and simultaneously intimated the different ways through which scholars perform research. However, to acknowledge methodological plurality is not to be aspect-blind to the hegemonic or privileged position that quantitative research has over other research approaches in management and organisational studies (Breen & Darlaston-Jones, 2010; Gough & Lyons, 2016).

The common notion: Qualitative research uses non-numerical data

Qualitative research can be complicated for novice researchers (Turner, 2010). Qualitative researchers are often required to make explicit the philosophical assumptions underlying their research (O'Neil & Koekemoer, 2016). For some novice researchers, the philosophical assumptions underlying qualitative research remain obscured and to recognise what truly defines qualitative research is not an easy feat (Demuth, 2015; Ponterotto, 2005; Roulston & Shelton, 2015). According to Ponterotto (2005), some quantitative researchers adopt qualitative research, but do so without a firm grasp of the fundamental philosophical underpinnings that undergird qualitative inquiry. This underscores the need to distil the theoretical underpinnings of qualitative research.

After the conception of a research topic and the formulation of their research problem, researchers anticipate how they would collect and analyse data to resolve the central research question that initiated the study. At this preliminary stage of the research process, the researcher has to grapple with seemingly straightforward questions that require practical and often operational decisions. For example, the researcher may be required to decide on the most appropriate mode to collect data and to choose between surveys, interviews, questionnaires, psychometric measurements such as personality tests and scales or focus groups or even a combination of these. For the time being, it can be asserted that, because of the seemingly straightforward questions relating to data collection methods, the answers are often clear-cut. Generally, qualitative researchers use text rather than numerical data and analyse those data in their textual form rather than in statistics to convert them to numbers (Carter & Little, 2007; Morgan, 2018). A researcher's decision to use individual interviews as a data collection method seems uncomplicated if one wishes to follow a qualitative research approach (Chenail, 2011; Demuth, 2015). The literature abounds with research that provides guidance on how to conduct effective interviews (Bowden & Galindo-Gonzalez, 2015; Kallio, Pietilä, Johnson, & Kangasniemi, 2016; McIntosh & Morse, 2015; Turner, 2010).

At this stage, the question about the researcher's preference for certain data collection tools and their appropriateness is dealt with only superficially. The decision seems uncomplicated for the novice researcher because whatever the tool, it should fit in with the view that qualitative research is about textual and non-quantitative data (Aspers & Corte, 2019). The researcher may decide not to use standardised questionnaires or existing scales to measure trust because they may result in numerical data, which may become a nightmare and be too difficult. The decision to use interviews seems to be inextricably linked to a preference for non-numerical data and, *ipso facto*, qualitative research. The novice researcher cannot probe beneath the surface why interviews are used, that is, the researcher is limited in ferreting out the facts about the preference for interviews. The novice researcher's notion of qualitative research typified primarily

by non-numerical data makes it extremely difficult to make a connection between one's notion of the core constructs and the choice of qualitative research approach.

However, once the researcher begins to ask questions that transcend his or her preference for non-numerical data and seeks to explicate the fundamental reasons that make data derived from interviews, qualitative and the grounds for choosing interviews as a data collection method, he or she moves into the realm of the not easily discernible aspects of the research process – the theoretical assumptions that underpin the study. However, the reason why interviews are apposite to the research problem or question is not always easy to fathom for the inexperienced qualitative researcher because of the deeply ingrained notion that qualitative research is characterised by non-numerical data. It is not surprising that some novice researchers equate qualitative research with non-numerical data and methods of analysis because the existing literature often describes qualitative research in terms of non-numerical or textual data.

The characterisation of research as qualitative because it does not use statistics is expedient, but tends to conceal the intricacies implicit in such a categorisation. The primacy of numbers in categorising research has become obsolete (Maxwell, 2010; Sandelowski, 2014). The use of numbers or quantitative techniques has become a common and prominent feature of mixed-method research, the pragmatic paradigm and qualitative research (Morgan, 2018; Maxwell, 2016). However, the use of numbers per se does not make research mixed method, pragmatic or qualitative (Brown, 1993; Maxwell, 2010). The researcher's beliefs regarding the phenomena under investigation distinguish qualitative research and are the subject of investigation in the next section.

What lies beneath the surface?

This article probes on the issues that lie deeper beneath the surface, namely, the researcher's beliefs about the world or organisational phenomena, which are fundamental in shaping the entire qualitative research process. The answer to the question 'what makes research qualitative?' or to be more specific 'what makes data derived from unstructured interviews qualitative?' lies deeper beneath the surface (Aspers & Corte, 2019; Chesebro & Borisoff, 2007; McIntosh & Morse, 2015). Having decided on the research topic, the researcher has to formulate the research problem using concepts that capture mental images of what he or she sees as the problem (Onen, 2016). This implies that the researcher should have a clear understanding of the terms he or she uses in the statement of the problem so that there are no conflicts or ambiguities regarding the meaning of the words used (Sequeira, 2015). This suggests that the researcher has thought about the nature of the phenomenon that he or she wants to investigate. For example, if the researcher wants to explore trust in business alliances between traditional companies (TCs) and previously disadvantaged institutions (PDIs), the starting point should be how he or she conceptualises trust. In other words, how does the researcher understand trust? This should help the researcher to translate the abstract idea, namely, organisational trust, into specific and concrete or practical words and terms. However, making the researcher's conceptualisation of the core construct explicit also enables others who read the work to understand its meaning so that they are able to judge the quality of the research (Sequeira, 2015).

Inappropriate conceptualisation of the research problem or inappropriate use of concepts may result in the researcher investigating something other than the identified problem (Onen, 2016). Often the images that the researcher develops reveal the researcher's beliefs about the social phenomenon under observation (Burrell & Morgan, 1979; Morgan, 1980). The researcher's conceptualisation of trust or any social phenomenon under investigation is underpinned by his or her assumptions about the social world and the way it should be investigated (Guba & Lincoln, 1982; Ponterotto, 2005). The extant literature supports the view that the researcher's set of beliefs about the world is fundamental in shaping the entire research process (Houghton, Hunter, & Meskell, 2012). According to Burrell and Morgan (1979, p. 1), researchers 'approach their subject via explicit or implicit assumptions about the nature of the social world and how it may be investigated'. These assumptions are fundamental in shaping researchers' thinking and approach to research in organisations (Shannon-Baker, 2016). Researchers' beliefs about the world are predicated on their ontological, epistemological and methodological assumptions (Alvesson & Deetz, 1996; Houghton et al., 2012; Ponterotto, 2005). The researcher's conceptualisation of organisational trust is predicated on, at least, these three theoretical underpinnings of research that reveal his or her paradigmatic location. To formulate the research question on trust and to make decisions on the type of data, where to find them and how to process them to resolve the research problem, would require the researcher to explicitly or implicitly engage with the theoretical assumptions underlying research on trust or the paradigmatic questions.

What were the researcher's theoretical assumptions that underpinned the study on trust in business alliances between TCs and PDIs? In other words, what were the ontological, epistemological and methodological assumptions that underpinned the study? The answers to these questions are crucial because researchers need to understand the philosophical underpinnings anchoring their work (Ponterotto, 2005).

The ontological question: What is trust?

To ask an ontological question is to seek to understand the researcher's paradigmatic location because ontology is one of the elements of a paradigm (Lincoln & Guba, 1985). Therefore, the question of ontology inevitably reveals the researcher's paradigm. Briefly, paradigms refer to the researcher's worldview or beliefs about the world, guide the researcher's interpretation of the world and provide a philosophical and conceptual framework for observing and interpreting social phenomena (Burrell & Morgan, 1979; Kivunja & Kuyini, 2017; Lincoln & Guba, 2005). According to Guba and Lincoln (1982, p. 233), they are 'axiomatic systems

characterised essentially by their differing sets of assumptions about the phenomena into which they are designed to inquire'. Scholars have over the years proposed paradigm classification schemes, for example, the seminal work of Burrell and Morgan (1979) and Lincoln and Guba (1985). However, for expediency and to help explain the theoretical underpinnings of qualitative research, reference is made to only two of the commonly discussed approaches, namely, positivism and constructivism–interpretivism (Burrell & Morgan, 1979; Hirani, Richter, & Salami, 2018).

Beginning with the question of ontology, 'what is meant by the researcher's ontological assumptions or that the researcher's beliefs about reality are predicated on his or her ontological assumptions?' Ontology refers to the researcher's beliefs about the nature of reality and being (Burrell & Morgan, 1979; Johnson, 2017). In examining ontology, one asks questions regarding the essence of the organisational phenomenon under investigation. In this case, we ask 'does trust exist?' and 'is it real?' The fundamental ontological question researchers have to answer is whether the reality (e.g. the organisational phenomenon) to be investigated is of an objective nature and exists out there in the world or whether it is subjective and a creation of an individual's mind (Houghton et al., 2012). An affirmative answer to the former implies that the researcher assumes a realist ontology, which implies that he or she believes that reality, such as organisational trust, is real and that it can be objectively investigated (Hirani et al., 2018). Assuming such a realist ontological position also implies that the researcher believes in the existence of objective reality that exists independent of human cognition (Burrell & Morgan, 1979; Ponterotto, 2005). Such an ontological position is associated with positivism and the quantitative research (Burrell & Morgan, 1979; Hirani et al., 2018). Believing that the existence of the social world is subjective and made up of soft and intangible structures denotes a researcher's relativist ontology (Aliyu, Bello, Kasim, & Martin, 2014; Burrell & Morgan, 1979). Relativism is grounded on subjectivism and the existence of multiple realities. Reality is subjective and susceptible to influence by contextual factors, such as perceptions, social environment and interaction between the researcher and the participants (Ponterotto, 2005).

It can be discerned from the discussion so far that the questions and answers regarding the categorisation of research are not about numerical or non-numerical data. The choice between a qualitative and a quantitative research approach emerges only after the ontological question has been posed, hinting at the subordinate role of numbers or numerical data per se in the characterisation of research.

Epistemology: Theory of knowledge

The ontological assumptions of a study determine its epistemological underpinnings. In other words, the researcher's beliefs about the nature of organisational phenomena or reality influence his or her assumptions about the grounds of knowledge (Alvesson & Deetz, 1996; Burrell & Morgan, 1979). The pertinent question is no longer about whether the social world or reality exists, but rather about understanding the world or reality and communicating this as knowledge to others (Burrell & Morgan, 1979). Explicating one's epistemological position requires answers to questions such as 'what forms of knowledge exist?', 'what constitutes scientific knowledge?', 'does science generate objective or subjective knowledge?' and 'how does one distinguish between true and false knowledge?' (Breen & Darlaston-Jones, 2010; Burrell & Morgan, 1979; Kivunja & Kuyini, 2017; Ponterotto, 2005).

Researchers have different philosophical assumptions about what constitutes knowledge, and these persuade them to engage with the subject matter in specific ways (Morgan, 1980).

Epistemology is embodied in the criteria which are either implicitly or explicitly used to appraise what constitutes warranted or scientific knowledge (Dale & Burrell, 2014; Johnson & Cassell, 2001; Maier & Meyer, 2011). Epistemological questions relate to the nature of knowledge, whether it is something tangible, hard, real and objective or whether it is softer, intangible and subjective (Guba & Lincoln, 1994; Kivunja & Kuyini, 2017). The positivist epistemology asserts that knowledge is hard, real and objective and represents universal and absolute truth (Aliyu et al., 2014; Houghton et al., 2012; Shannon-Baker, 2016). If universal objective truth or reality exists, the researcher has to maintain neutrality and a distance from the participants of research so as to avoid influencing the research outcomes. On the contrary, the constructivist–intepretivist epistemologies postulate that knowledge is softer and subjective, presupposing that it is based on personal and unique experience (Burrell, 1999; Wright, 2013). Accordingly, it is not possible for the researcher to detach himself or herself from the research process and assume the standpoint of an observer (Burrell, 1999; Wright, 2013).

The constructivist–intepretivist epistemologies assert that it is essential that researchers occupy the research participants' frame of reference to understand their subjectivity because understanding their experiences happens from the inside rather than from the outside, epistemologically speaking (Evered & Louis, 1981). The study of managers' trust in business alliances between TCs and PDIs assumed a constructivist–interpretivist stance and, therefore, was premised on the view that the requisite data were contained in the experiences of the individual managers involved in these business alliances. For this reason, the researcher interacted with the participants to gather the requisite data because the data were to be found within the experiences of the managers – epistemologically speaking. The focus was on the individual managers' experiences of trust and how they experienced and made meaning of the world they lived in as managers in these business alliances.

In their seminal work, Burrell and Morgan (1979) argued that both external processes such as works of art, which are relatively tangible, and internal processes connected to the

human mind are best understood in relation to the minds which created them and the inner experiences which they reflected. Thus, meaning is embedded in the participants' experiences (Tuli, 2010). Indeed, the managers' trust experiences in the business alliances between TCs and PDIs could be understood only from their subjective point of view and not from the purported objective, value-free and neutral vantage point of the researcher (Welch, Plakoyiannaki, Piekkari, & Paavilainen-Mäntymäki, 2013).

The role of values in research is a contentious subject. To ask if values have any influence in research is to ask an axiological question. What role do the researcher's values play in research or even in the research design? Can the research process be viewed as a neutral process? The preceding discussion on epistemological grounding of constructivist and qualitative studies reveals the role of values in research and negates the notion of a value-free and neutral research process (Burrell, 1999; Wright, 2013).

The constructivist–interpretivist stance implies that studying managers' trust experiences is a subjective enterprise that can never generate objective knowledge. Clearly, the epistemological debates have not been about numerical or non-numerical data up to this point. Therefore, the discussion thus far warrants reiteration and some reflection on the significant thesis of this article, namely, that numbers conceal the intricacies in characterising qualitative research and that we need to probe deeper, beneath the surface, to understand what makes research qualitative or what makes qualitative research qualitative (Chesebro & Borisoff, 2007). Therefore, epistemological debates do not centre around numerical or non-numerical data.

Methodological issues

The researcher's ontological and epistemological beliefs are likely to persuade researchers to follow different methodologies (Kivunja & Kuyini, 2017; Ponterotto, 2005). Researchers who assume a relativist ontology and a subjectivist epistemology (constructivist–interpretivist) orientation are likely to favour research methodologies that are geared towards understanding how the individual creates, modifies and makes meaning of the world he or she lives in (Burrell & Morgan, 1979; Kivunja & Kuyini, 2017; Ponterotto, 2005). Such researchers adopt qualitative approaches that involve studying organisational or individual phenomena in detail, paying attention to what is unique and particular to the organisation or the individual rather than generalities (Burrell & Morgan, 1979). The interest is not on relationships between variables or concepts and their measurement or predictions to establish universal laws (Walker & Evers, 1999).

Briefly, the preceding discussion demonstrates the inescapable linkage between the ontological, epistemological and methodological underpinnings in research. The author has not deliberated the issue of data being numerical or non-numerical as this question is peripheral to the discussion of what typifies qualitative research. Clearly, the methodologies are not distinguished in terms of the role of numbers or whether data are numerical or non-numerical (Brown, 1980; Wong, Musa, & Wong, 2011). This article probed on the issues that lie deeper beneath the surface, namely, the researcher's beliefs about the world, which are fundamental in shaping the entire qualitative research process.

The example: A Q methodological study on trust

In this last part, the article uses a Q methodological empirical study on trust in business alliances to illustrate the view that research can use statistics and remain true to the tenets of qualitative research. As previously stated, the purpose of the presentation is not to outline the substantive aspects or to provide an exhaustive guide on how to apply Q methodology, but to illustrate how Q methodology fits in with qualitative research.

There are several perspectives regarding the categorisation of Q methodology (Ramlo, 2016, 2019; Shinebourne, 2009). Q methodology has been claimed by qualitative and mixed-method researchers alike (Ramlo, 2016; Shemmings, 2006). Therefore, this study is cognisant of the ongoing debates regarding Q as a qualitative or mixed-method research methodology. However, Q as a qualitative methodology supersedes the nomenclature mixed-method research with its more than 80 years of existence (Brown, 1993; Ramlo, 2016; Stephenson, 1993). This perspective is sound and finds support in the existing literature on Q methodology (Shemmings, 2006; Burke, 2015). As Ramlo (2015) states, Q methodology comprises a set of procedures, philosophy and theory which has more in common with qualitative research. Q methodology is the study of subjectivity, firmly rooted in qualitative research and only uses quantitative methods (Baker, Thompson, & Mannion, 2006; Shemmings, 2006). This study aligns with the view that Q methodology is more qualitative (Baker et al., 2006; Ramlo, 2015; Shemmings, 2006; Shinebourne, 2009). Stenner (2009) refers to Q methodology as a qualitative constructivist methodology. The discussion that follows would largely indicate affinity of Q methodology with qualitative research approach and the principles of qualitative research.

Q sample and Q sorting

The study drew its 50-item Q sample from the hybrid concourse comprising items derived from both the existing literature on organisational trust and the phenomenological interviews which had been conducted with four of the managers. The purpose of the interviews was to hear the voices of individuals involved in alliances so that the general discourse on or the experiences of those in the field of alliances were not disregarded. A concourse may be described as what was being said about the phenomenon of trust in alliances between TCs and PDIs. A concourse is similar to what is referred to in quantitative research methodology as a 'population of

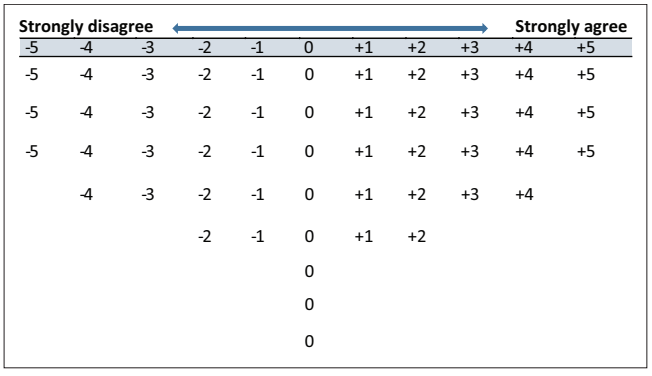
stimulus' or a 'universe of tasks or items' (Armatas, Venn, & Watson, 2014; Watts & Stenner, 2014). A concourse refers to all the possible statements from which a sample of tasks is drawn to develop a Q sample, which is then administered to the research participants. Twenty-five managers sorted the 50-item Q sample from 'most agree' (+5) to 'most disagree' (-5) in a forced-free, quasi-normal grid pattern or a Q sort distribution, as shown in Figure 1. The managers sort the statements by comparing the items with every item in a rank-ordering procedure (Brown, 1980; Paige & Morin, 2014).

The items that form the Q sample do not assume meaning *a priori* (Paige & Morin, 2014). By sorting the 50 items, the managers modelled their perspectives on trust in alliances between TCs and PDIs or indicated their perceptions of the value and significance of the statements as based on their experiences. The completed Q sorts were recorded by writing the item numbers on a score sheet that reproduced the Q sort distribution or template (Figure 1).

From the above discussion, one can infer that Q methodology examines the world from the internal standpoint of the participants. Whatever responses emerge from the sorting of the Q sample, it will be the subjective experiences of the participating managers because it is their individual viewpoints (Brown, 1980). As it will become clearer later when the factors are unveiled, Q methodology interrogates what is on people's mind because through the Q sorting process the managers are able to speak for themselves (Brown, 1980).

After sorting the 50 items, the 25 managers were interviewed individually. The purpose of these individual interviews was to provide them with an opportunity to expound on the rationale for their sorting of the cards and explain why they had arranged the items in a certain manner. The most salient statements from the Q sort form the basis of the interview (Brown, 1993). The interview data are crucial for data analysis and interpretation.

Several principles of qualitative research are inferred from the operations of the empirical Q methodological study. Like other Q methodological studies, this study collected data from a relatively small sample of 25 purposively selected managers, ensuring the participation of information-rich individuals. The phenomenon of small samples is in harmony with qualitative and constructivist–interpretivist studies (Baker et al., 2006; Brown, 1980). The purpose of using small samples is to develop an in-depth understanding and a rich diversity of accounts on the organisational phenomenon investigated. As explained later, the small sample has implications for the interpretation of the data.



Source: Brown, S.R. (1980). *Political subjectivity*. New Haven, CT: Yale University Press.

FIGURE 1: Sample of a distribution marker.

The 50 statements (Q sample) carried an indeterminate meaning, implying that they were not constrained by prior meaning. When the managers ranked the statements in terms of how strongly they agreed or strongly disagreed with each one of them, they imposed meaning and significance, thus introduced an element of operant subjectivity. In other words, they revealed their subjective experiences. They were subjective because they represented the participants' points of view and operant because they existed naturally within a particular context (Brown, 1993). One may infer that the managers' experiences of trust are viewed as relative and, therefore, there would be as many experiences as those who express them. One deduces a relativist ontological position of the research on trust because the reality investigated is subjective (Brown, 1980; Ponterotto, 2005).

Data analysis process

The data analysis process comprised two broad segments: (1) a quantitative analysis of the completed Q sort data and (2) a qualitative analysis of the post-Q sort interview data. The statements that had been rank-ordered by the managers were transformed into an array of numerical data. These data were correlated using the Pearson's product–moment correlation, which reduced the data to an $n \times n$ matrix, as illustrated in Table 1. The scores for the individual managers were inter-correlated with the scores of other managers. For example, Manager 1 correlated significantly and positively with Manager 7 ($r_{1,7}$ = 0.91; large effect size; $p \leq 0.001$), reflecting marked similarities in their experiences of trust with their TC alliance partners. Conversely, the Q sorts of managers 5 and 19 showed a negative correlation of -0.46, revealing a dissimilarity between their experiences of trust in alliances between TCs and PDIs ($r_{5,9}$ = -0.46). It is necessary to express the view that although statistics seem to play a pivotal role, we should not overlook the reality that each Q sort represents a vantage point or subjective experience of individual managers and, *ipso facto*, the correlation coefficients that are suffused with subjectivity (Brown, 1993).

The objective of a factor analysis was to identify the natural groupings of Q sorts (participating managers) by virtue of their being similar or dissimilar to one another (Paige & Morin, 2014). The extraction of factors was guided by certain statistical and theoretical criteria (Brown, 1980). As depicted in Table 2, the eigenvalue criterion for factor extraction was used in the principal component solution. The principal component method was preferred because it tends to maximise the variance of each factor (Brown, 1980).

TABLE 1: Correlation matrix.

Correlation	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	0.18*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	0.42**	0.34**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-0.22*	0.17*	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	0.13*	0.41**	0.13*	0.31**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	0.16*	0.060	0.013	0.28*	0.41**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	0.91***	0.19*	0.48**	-0.22*	0.20*	0.19*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	0.17*	-0.10*	0.063	-0.18*	-0.38**	-0.13*	0.045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	0.33**	0.16*	0.10*	0.27*	0.43**	0.62***	0.38**	-0.12*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-0.13*	-0.14*	-0.19*	-0.010	-0.23*	-0.27*	-0.048	0.35**	0.020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	0.30**	0.073	0.50***	-0.17*	-0.098	-0.15*	0.30**	0.21*	-0.15*	-0.045	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	0.27*	0.29*	0.34**	0.060	0.10*	0.23*	0.29*	-0.22*	0.39**	-0.11*	0.26*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	0.078	0.55***	0.24*	0.37**	0.67***	0.29*	0.11*	-0.34**	0.27*	-0.023*	-0.015	0.17*	-	-	-	-	-	-	-	-	-	-	-	-	-
14	0.44**	0.25*	0.65***	0.095	-0.11*	-0.028	0.44**	0.16*	0.095	-0.023	0.63***	0.41**	-0.003	-	-	-	-	-	-	-	-	-	-	-	-
15	0.39**	0.26*	0.33**	-0.050	-0.10*	-0.12*	0.42**	-0.018	0.090	0.005	0.45**	0.47**	0.073	0.61***	-	-	-	-	-	-	-	-	-	-	-
16	0.11*	0.37**	0.16*	0.26*	0.56***	0.35**	0.17*	-0.20*	0.33**	-0.28*	-0.19*	0.046	0.47**	0.044	0.013	-	-	-	-	-	-	-	-	-	-
17	0.47**	0.23*	0.14*	0.19*	0.46**	0.37**	0.42**	-0.090	0.58***	-0.078	0.11*	0.46**	0.37**	0.23*	0.44**	0.31**	-	-	-	-	-	-	-	-	-
18	0.36**	0.36**	0.42**	-0.11*	0.025	0.018	0.37**	-0.088	0.10*	-0.17*	0.44**	0.47**	0.14*	0.55***	0.55***	0.018	0.37**	-	-	-	-	-	-	-	-
19	0.13*	-0.20*	-0.073	-0.35**	-0.46**	-0.15*	0.17*	0.48**	-0.058	0.39**	0.25*	-0.070	-0.29*	0.083	0.16*	-0.30**	-0.18*	0.008	-	-	-	-	-	-	-
20	-0.095	0.31**	-0.11*	0.39**	0.72***	0.35**	-0.060	-0.28*	0.29*	-0.14*	-0.30**	0.058	0.43**	-0.15*	-0.16*	0.50***	0.27*	-0.015	-0.36**	-	-	-	-	-	-
21	0.38**	0.29*	0.31**	-0.060	-0.085	-0.13*	0.40**	-0.018	0.063	0.050	0.47**	0.48**	0.080	0.60***	0.98***	0.00	0.44**	0.52***	0.17*	-0.15*	-	-	-	-	-
22	0.11*	-0.13*	0.16*	-0.16*	-0.32**	-0.12*	0.19*	0.44**	0.088	0.55***	0.17*	-0.023	-0.23*	0.24*	0.053	-0.27*	-0.17*	-0.003	0.46**	-0.38**	0.078	-	-	-	-
23	0.28*	0.19*	0.54***	-0.12*	-0.13*	-0.27*	0.31**	0.11*	-0.19*	0.11*	0.67***	0.36**	-0.083	0.59***	0.54***	-0.18*	0.16*	0.56***	0.085	-0.16*	0.58***	0.18*	-	-	-
24	0.43**	0.44**	0.52***	0.075	-0.015	-0.063	0.36**	0.12*	-0.003	-0.008	0.48**	0.36**	0.16*	0.68***	0.42**	0.039	0.25*	0.45**	0.013	-0.13*	0.46**	0.018	0.67***	-	-
25	0.32**	0.27*	0.28*	-0.14*	-0.11*	-0.23*	0.32**	-0.038	-0.050	-0.025	0.44**	0.38**	0.040	0.52***	0.91***	-0.018	0.32**	0.46**	0.15*	-0.16*	0.93***	0.048	0.57***	0.40**	-

Note: Extracted using SPSS (2015, version 23) Pearson product-moment correlation before n = 25 Q sorts.

n = 25 Q sorts.

*, $p \leq 0.05$; **, $p \leq 0.01$; ***, $p \leq 0.001$.

TABLE 2: Total variance explained.

Component (factor)	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1 (A)	6.789	27.155	27.155	6.789	27.155	27.155	4.236	16.945	16.945
2 (B)	4.935	19.738	46.894	4.935	19.738	46.894	3.598	14.392	31.337
3 (C)	2.197	8.787	55.680	2.197	8.787	55.680	3.392	13.567	44.905
4 (D)	1.611	6.443	62.123	1.611	6.443	62.123	2.590	10.360	55.264
5 (E)	1.484	5.935	68.058	1.484	5.935	68.058	2.415	9.661	64.925
6 (F)	1.166	4.663	72.721	1.166	4.663	72.721	1.949	7.796	72.721
7	0.848	3.392	76.113	-	-	-	-	-	-
8	0.782	3.126	79.240	-	-	-	-	-	-
9	0.749	2.996	82.236	-	-	-	-	-	-
10	0.706	2.826	85.062	-	-	-	-	-	-
11	0.610	2.441	87.503	-	-	-	-	-	-
12	0.489	1.958	89.460	-	-	-	-	-	-
13	0.465	1.860	91.320	-	-	-	-	-	-
14	0.402	1.610	92.930	-	-	-	-	-	-
15	0.367	1.466	94.396	-	-	-	-	-	-
16	0.304	1.217	95.613	-	-	-	-	-	-
17	0.261	1.043	96.656	-	-	-	-	-	-
18	0.227	0.908	97.564	-	-	-	-	-	-
19	0.219	0.876	98.440	-	-	-	-	-	-
20	0.130	0.520	98.960	-	-	-	-	-	-
21	0.105	0.419	99.380	-	-	-	-	-	-
22	0.068	0.274	99.653	-	-	-	-	-	-
23	0.042	0.170	99.823	-	-	-	-	-	-
24	0.035	0.139	99.962	-	-	-	-	-	-
25	0.010	0.038	100.000	-	-	-	-	-	-

Note: Extracted using SPSS (2015, version 23), extraction method: principal component analysis.

It is important to note that although the eigenvalues are generally the sum of the squared factor loadings for each factor and that the percentage of total variance accounted for by each factor is equal to the eigenvalue divided by the number of variates in the matrix, in Q methodology, the variates are the *n* persons whose responses have been factored (Brown, 1980).

Eigenvalues represent the amount of variation accounted for by the corresponding factor. The size of the eigenvalues is used to arrange the factors according to their significance with those factors with eigenvalues greater than 1.00 being regarded as significant and those with a lesser value regarded as too weak to merit attention (Brown, 1980; Watts & Stenner, 2014).

In Table 2, the eigenvalue for factor A was 6.78, with a total variance of 27%. This means that 27% of the total variability in the correlation matrix was accounted for by factor A. An eigenvalue of 6.78 is considered significant and, therefore, factor A seemed to represent a common experience shared by a number of Q sorts or managers.

Factor B was also significant because it had an eigenvalue of 4.93 and accounted for 19% of the total variability in the correlation matrix. Thus, this factor seemed to represent the experiences shared by a number of managers. The eigenvalue criterion also qualified factors C, D, E and F as significant because they had eigenvalues greater than 1.00 (Table 3).

The size of each Q sort's association with its factor is provided in Table 4. It is clear that although a factor is defined by a group of Q sorts, factors undoubtedly vary in their contribution or association with the factor.

TABLE 3: Factors with eigenvalues greater than 1.00.

Factor	Eigenvalue	% of variance	Cumulative %
A	6.789	27.155	27.155
B	4.935	19.738	46.894
C	2.197	8.787	55.680
D	1.611	6.443	62.123
E	1.484	5.935	68.058
F	1.166	6.443	72.721

Source: Brown, S.R. (1980). *Political subjectivity*. New Haven, CT: Yale University Press.

Note: Size of eigenvalues arrange factors according to their significance. Factors with eigenvalues greater than 1 are regarded as significant.

In other words, the variates for the same factor may differ in terms of either their size or the significance to the factor. To clarify the importance of each Q sort in relation to the associated factor, factor scores were calculated. These factor scores enabled a closer examination of the trust experiences as exemplified by the six factors identified. In other words, factor scores were utilised to provide an in-depth understanding of the managers' trust experiences in alliances between TCs and PDIs.

What would be the connection between Q methodology factor analysis and interpretation and the tenets of qualitative research? Q methodology uses by-person factor analysis, which focuses on the patterns between the respondents, as shown by their Q sorts (Baker et al., 2006; Brown, 1993). Factor interpretation in Q methodology is primarily done through factor scores and not by factor loadings (Brown, 1993).

It is clear from Table 4 that a six-factor solution was found. Only the factor loadings above 0.50 were considered significant. The six factors were essentially the six groups of managers whose Q sorts exemplified factor A to factor F. It may be stated that the individual managers represented by these Q sorts had shared similar experiences regarding trust in alliances between TCs and PDIs and, therefore, there was a family resemblance. The different families, clusters or factors were labelled according to the sorting of the statements, thus reflecting the participants' subjective viewpoints which acquired meaning *a posteriori*. The factors that emerged were subjective but grounded on the participants' concrete behaviour embodied in the Q sorting of items. Through Q sorting, the participants were able to speak for themselves in their natural state.

In Q methodology, the interpretation of factors is rooted in the factor scores that represent the voices of the participants associated with each of the factors. A factor score is an average of the scores accorded to that statement by all of the Q sorts that define a factor. The post-Q sort interview data personified the voices of the participants when they were expounding on their reasoning for their ranking of the items. It is clear from the preceding example that in Q methodology, the aim of interpretation is (Baker et al., 2006):

> [*T*]o tease out the separate accounts underpinning the patterns of Q sorts, according to their similarities and differences. In the same way that qualitative analysis usually overlaps with continuous data collection, the interpretation of factors in Q methodology is iterative, requiring reflection on the structure of the concourse, and reference to the theoretical frameworks, as well as the specific features delineating and binding the factors. (p. 16)

The initial question that the empirical study on trust sought to answer concerned the black and white managers' experiences of trust in business alliances between TCs (formerly white companies) and PDIs (formerly black companies). This is a qualitative research question. However, and as can be seen from this empirical example, Q methodology enables one to effectively address qualitative questions, but with statistical and quantitative methods (Baker et al., 2006; Brown, 1980; Brown, Durning & Seldon, 1999).

The relatively small sample of 25 managers is a phenomenon typical of qualitative research studies (Brown, 1980; Stenner, 2009). Q methodology is biased towards small samples of participants because of its intensive orientation (Brown, 1993). The goal is to develop a more insightful understanding of social phenomena. Thus, generalisation is not about the number of people who hold a particular point of view but on how and why people believe as they do (Stergiou, Airey, & Riley 2010; Wright, 2013). Generalisations in Q methodology are best thought of (Brown, 1980):

> [I]n terms of specimen and type – i.e., we are prepared to say what it is that is of concern to specimen persons of the A type, the factor being a generalised abstraction (based on communalities) of a particular outlook or value orientation. (p. 67)

Conclusion

The purpose of this article was to contribute to the ongoing debate by engaging critically with methodological issues pertinent to qualitative research in management and organisational studies. More specifically, a Q methodological

TABLE 4: Factor loading matrix.

Q sort	Factors					
	A	B	C	D	E	F
3	0.818	-0.016	0.170	0.062	-0.021	0.200
14	0.806	0.313	-0.022	0.144	0.127	0.047
24	0.782	0.215	0.149	-0.017	0.063	0.032
23	0.737	0.402	-0.092	-0.153	0.079	-0.005
11	0.704	0.241	-0.176	-0.101	0.066	0.141
18	0.549	0.438	0.020	0.136	-0.177	0.136
21	0.338	0.908	0.020	0.042	0.068	0.097
15	0.330	0.892	-0.002	0.069	0.035	0.126
25	0.285	0.887	0.006	-0.111	0.004	0.123
5	-0.053	-0.080	0.794	0.287	-0.247	0.049
13	0.098	0.048	0.775	0.130	-0.163	-0.064
16	-0.043	-0.041	0.714	0.168	-0.168	0.134
2	0.333	0.210	0.696	-0.083	-0.032	-0.004
20	-0.204	-0.050	0.692	0.206	-0.192	-0.186
9	-0.063	0.041	0.267	0.861	0.116	0.096
6	-0.057	-0.211	0.198	0.766	-0.160	0.057
17	0.072	0.443	0.329	0.604	-0.076	0.156
12	0.380	0.438	-0.034	0.518	-0.184	-0.096
10	-0.133	0.113	-0.085	-0.033	0.815	-0.237
22	0.181	-0.050	-0.239	0.082	0.771	0.049
8	0.155	-0.160	-0.179	-0.127	0.671	0.189
19	-0.053	0.158	-0.327	-0.090	0.621	0.285
1	0.363	0.177	0.100	0.317	0.079	0.759
7	0.350	0.201	0.145	0.339	0.120	0.741
4	0.089	-0.096	0.378	0.330	-0.014	-0.650

Note: Extracted using SPSS (2015, version 23), extraction method - Principal component analysis. Rotation method: varimax with Kaiser normalisation.

empirical study was conducted to illustrate that research can use statistics but remain true to the tenets of qualitative research. The use of numbers in this article accorded with the qualitative and interpretive constructivist meta-theoretical assumptions. Despite the use of statistics in data analysis, the focus remained the managers' subjective points of view on trust in alliances between TCs and PDIs. What makes research qualitative lies deeper, beneath the surface, in the realm of meta-theory.

At a practical level, this article provides novice researchers with an opportunity to appreciate the intricacies of categorising research as qualitative and illuminated the theoretical underpinnings that lie beneath the surface. This should facilitate the learning of those less experienced in qualitative research about the pivotal role, relevance and application of meta-theoretical assumptions and empower them to execute their research projects competently. While contributing to the ongoing, cutting-edge methodological debate, the article should save those less experienced in qualitative research – the confusion and the distress – that accompany making informed methodological considerations and choices.

This study is not without limitations. The issues that were grappled with in this article are intricate and require more in-depth treatment. For example, more convenient labels such as positivists and constructivists–interpretivists were used to describe more elaborate issues. However, the convenient labels are in harmony with the general categorisation and were meant to cater for the length of the article which has to conform to the guidelines of the journal.

Explicating the theoretical assumptions underlying research is often more imperative in qualitative than in quantitative research. It is suggested that articles that contribute to the ongoing, cutting-edge methodological debate and empower novice researchers who desire to do qualitative research in organisational studies should continue to receive attention.

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Competing interests

The author declares that no competing interests exist.

Author's contributions

The author conceptualised the study, analysed the data and wrote the article.

Ethical consideration

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Data availability statement

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Disclaimer

The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of any affiliated agency of the author.

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