

Grounded theory methodology and practical application in environmental sustainability research: A methodological review

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ABSTRACT

Grounded Theory (GT) remains one of the most influential qualitative research methodologies for generating theory from empirical data. Since its introduction by Glaser and Strauss in 1967, Grounded Theory has undergone significant philosophical and methodological developments resulting in multiple variants of schools of thoughts including Classical Grounded Theory, Straussian Grounded Theory, and Constructivist Grounded Theory. Despite its widespread application across various disciplines such as health, education and business, Grounded Theory is often misunderstood and inconsistently applied, especially in the areas of theoretical sampling, data collection, constant comparative analysis, coding procedures, and memo writing. This paper reviews the historical evolution, fundamental principles, data collection procedures, analytical processes, and contributions of Grounded Theory to qualitative research. Using a methodological literature review of scholarly publications discussing Grounded Theory from 1967 to 2025 were examined. The review demonstrates that while Grounded Theory has evolved from a largely positivist orientation to more interpretive and constructivist perspectives, its core objective of generating theory grounded in empirical data remains unchanged. The paper further highlights the relevance of Grounded Theory in contemporary research and provides guidance for researchers seeking to apply the methodology rigorously. The results of this study revealed that Grounded Theory has been applied inconsistently in research and there is evident lack of adherence to the fundamental principles of the process. This study recommends that researchers employing Grounded Theory in their studies must align their philosophical stance, methodological procedures, and analytical stance to fit the chosen Grounded Theory approach and adhere to the tenets for rigor, transparency and trustworthiness of the research findings.

Keywords: Constant Comparative Analysis, Constructivist Grounded Theory, Grounded Theory, Qualitative Research, Theory Development, Theoretical Sampling

I. INTRODUCTION

Grounded Theory occupies a distinctive position in academic research and has been widely applied over the years. GT is a significant methodology that scholars at doctoral level apply in seeking solutions to complex social challenges and processes through the generation of frameworks or models that address these complex issues. The main aim of grounded theory is the generation of a general explanation (a theory) (Glaser & Strauss, 1967) of a process, an action, or an interaction shaped by the views of a small number of participants (Corbin & Strauss, 2015). Grounded Theory has gained increasing prominence across health sciences, business and management, education, and environmental studies due to its ability to explore complex social phenomena and provide rich contextual understanding of human experiences and processes (Draper, 2004). Unlike quantitative approaches that often seek to test existing theories, Grounded Theory's main aim remains that of generating new insights and theoretical explanations emerging directly from participants' experiences. This approach to inquiry is concerned with the subjective assessment of attitudes, opinions and behaviour of participants under study (Kothari, 2004).

This paper presents a literature methodological review of grounded theory among other qualitative study approaches such as Narrative, Ethnography, Phenomenological and Case Study approaches. It aims to give a historical evolution, fundamental principles and philosophical assumptions that underpin the application of Grounded Theory as a research methodology. The key constructs to be examined in this paper is the historical evolution, methodological procedures, the fundamental principles, and philosophical assumptions guiding its application. Historical evolution is the analysis of the origins of GT and how it has evolved over the years from the seminal work of Glaser and Strauss (1967) through to the Straussian approach (1990) and eventually the Constructivist Grounded Theory approach

propounded by Charmaz (2008). The study will also highlight the key features of the variants of GT and the scholars who have contributed to the growth of the discipline. Fundamental principles in this study will refer to the systematic phases that guide the logical generation of theory from empirical data, from theoretical sampling, constant comparative analysis, coding, memo writing and theoretical saturation. Philosophical assumptions are the guiding worldviews of the nature of reality pertaining to, how the key informants are selected, how data is collected, how research sites are identified, what inquiry instruments will be used, how researcher values will be managed and the how emerging themes will be coded to generate theory from participants view points and experiences.

1.1 Statement of the Problem

The growing popularity and frequent application, researchers adopting Grounded Theory are expected to correctly apply the fundamental principles of GT in their studies. Despite its dominance across various academic spheres GT has been misapplied in academic works especially by the new users where meaningful solutions to complex social challenges and processes are sought; methodological reviews indicate that many researchers adopt Grounded Theory terminology without fully implementing its underpinning principles (Charmaz, 2008; Ali et. al, 2019; Hutchinson et. al, 2011). The emergence of multiple GT traditions has further complicated this methodological understanding. Researchers often struggle to distinguish between Classical Grounded Theory, Straussian Grounded Theory, and Constructivist Grounded Theory, leading to inconsistencies in research design and reporting. Together, the highlighted challenges brings out the importance of clearly articulating the GT principals and philosophical foundations. These challenges if not addressed may compromise methodological rigor and reduce the credibility of findings generated through Grounded Theory approaches.

1.2 Research Objectives

- i. To explore the historical evolution of Grounded Theory from Classical to Constructivist approaches
- ii. To explore the methodological principals that guide the application of Grounded Theory
- iii. To review the application of the various approaches of Grounded Theory in research

II. LITERATURE REVIEW

2.1 Theoretical Review

Grounded theory is underpinned by several interrelated theoretical and philosophical assumptions that have shaped its evolution and application in qualitative research realm where GT is situated. Unlike other methodologies grounded in a single theoretical perspective, GT has evolved through different stages that have influenced its philosophical assumptions that guide methodological procedures and approaches to theory generation. The principal theoretical foundation of Grounded Theory is Symbolic Interactionism, while Pragmatism and Constructivism have significantly influenced the evolution of Straussian and Constructivist Grounded Theory, respectively (Kenny & Fourie, 2015) (Aldiabat & Le Navenec, 2018). Together, these theoretical perspectives expound how researchers interpret human experiences, construct meaning from social interactions, and develop theory grounded in empirical data.

The primary theoretical foundation encompassing classical Grounded Theory is symbolic interactionism propounded by Herbert Mead and later extended by Blumer (1969). Symbolic interactionism argues that individuals act towards people, objects and events based on the meanings they assign to them through continuous social interaction. These meanings are modified as the individuals engage with their social environment (Blumer, 1969). Glaser and Strauss (1967) adopted symbolic interactionism as they moved from testing existing theories to developing theories that are grounded in the views, opinions and experiences of participants on a phenomenon obtained through social interactions (Clarke, 2005). They proposed the application of inductive inquiry (Glaser & Strauss, 1967) which allow the emergence of codes and themes through interaction with raw data, without forcing it to fit into existing theories (Braun & Clarke, 2019). Theoretical sampling, constant comparative analysis, coding and theory generation are consistent with symbolic interactionism emphasising that reality is not singly objective but embedded in people's views and experiences. This reality is co-constructed between the researcher and the participants through social interaction within their natural setting (Brayant & Charmaz, 2007).

2.1.1 Application of Grounded Theory

Several scholars have reported that the fundamental principles of Grounded Theory such as theoretical sampling, constant comparative analysis, memo writing, and theoretical saturation are inconsistently applied in research projects as noted by (Birks & Mills, 2023) and (Brayant & Charmaz, 2007). Several studies conducted by Hutchison et. al (2011) analysing the demographic characteristics, Ali et al. (2019) examining the methodological rigor, Cutliffe (2000) all revealed that there was failure to adhere to the central foundations that govern application of Grounded Theory approach.

It is against this background that this study undertakes a methodological literature review of Grounded Theory focusing on the historical evolution, fundamental principles and application of Grounded Theory tenets from its Classical origins by Glaser and Strauss to Contemporary Constructivist approach by Charmaz. (Glaser & Strauss, 1967) (Glaser, 1978) (Charmaz & Brayant, 2007). The comprehensive synthesis of the methodological foundations review and its correct application seeks to reduce this knowledge gap in order to support researchers in the appropriate selection and application of GT approach to adopt thereby contributing to improved rigor and trustworthiness of research findings. If this is not addressed, there is a risk of having research findings and theories that are not credible for addressing complex social processes.

Pragmatism: Pragmatism views knowledge as dynamic, practical and continually evolving through human interactions and problem solving of social challenges (Morgan, 2020). Grounded Theory on the other hand emphasises that research should remain flexible and responsive to emerging data rather than following rigid procedures. This is applicable during theoretical sampling where the researcher continues to sample and collect data until saturation is reached, no fixed sample is determined (Charmaz, 2008). The researcher will shift iteratively between raw data and analysis to allow emerging codes guide development of theory. (McLeod, 2024). Grounded Theory seeks not only to understand the social phenomena but to produce theories that can guide the systematic solution resolution of the social problems across the various academic disciplines.

Constructivism: Constructivism is a branch of Grounded Theory developed by Kathy Charmaz. Contrary to Classical GT that assumes that theory emerges objectively from raw data, constructivist approach argues that knowledge is multiple and co-constructed through interactions between researcher and participants. Further Charmaz states that there is no absolute objectivity as the researcher cannot completely bracket themselves from the study they are conducting. They bring their own experience, interpretations and values into the research process. However, this branch of GT goes further by proposing that the researcher needs to acknowledge their personal opinions and bracket them off using reflexivity (Yip, 2023). This is a process where the researcher allows only emerging data formulate theories not mixed with their opinions, beliefs and experiences.

2.1.2 Integration of the Theoretical Framework

These three theoretical perspectives discussed collectively provide the intellectual foundation that can be applied in understanding the evolution and application of Grounded Theory. Symbolic Interactionism explains the relationship with GT by emphasising the social construction of meaning through social interaction between the researcher and participant (Mediani, 2017). Pragmatism on the other hand recommends the iterative and flexible nature of the research process which allows for theoretical sampling and constant comparative until no new themes emerge. Constructivism recognises that reality is multiple and is determined through the eyes of the participants and is co-constructed between the researcher and participants (Kenny & Fourie, 2015). Collectively, these theoretical frameworks demonstrate that although GT has evolved in its philosophy stances and methodological processes the central objective has remained unchanged; the generation of theory grounded in participants views and experiences (Glaser, 1978). These are key theoretical foundations on GT research is anchored and are essential for the generation of a rigorous and transparent research results.

2.1.3 Historical Evolution of Grounded Theory

Grounded theory emerged in the 1960s through the work of Barney Glaser and Anselm Strauss, who sought to develop a systematic methodology for generating theory directly from empirical data rather than testing pre-existing theories. In their book *The Discovery of Grounded Theory* (1967), they argued that scholars in the mid-twentieth century were concerned with validating the dominant “grand theories” advanced by the ‘*great men*’ such as Marx, Weber and Durkheim. After World War II, there was significant growth in the development and distribution of quantitative methods (e.g., survey research) that could be used to test and verify these theories (Glaser & Strauss, 1967).

In *The Discovery of Grounded Theory*, Glaser and Strauss (1967) offer a controversial view against Robert Merton and the positivist approach: they believed that his reasoning led to the position that “*data should fit the theory*”, in contrast to their position that a theory discovered during data collection will “*fit the situation being researched and will work when put into use*” (Glaser & Strauss, 1967) (p.3), than a theory identified before a study begins. While grounded theory acknowledges that verification of theory is important, it strongly argues that the task should be subordinate to the generation of theory. In Grounded Theory, theory is co-generated with the research as theories will emerge from the area under study, the documents reviewed, the research questions and the subjective opinions of the participants as key informants to the study (Mediani, 2017). This is the basis of the inductive reasoning that adopts the ‘bottom up’ approach of theory generation.

Allen. L in a journal article “*The critique of the four texts of grounded theory texts*” advances that despite the initial collaboration of Glaser and Strauss that produced *Classical grounded theory* in their subsequent works such as *Awareness of Dying* (Glaser & Strauss, 1965) and *Time for Dying* (Glaser & Strauss, 1967) (Hoflund, 2013); Strauss

later criticized Glaser's approach to grounded theory as too structured and not very elaborate on the steps to be used in data analysis bringing forth the birth of the *Straussian grounded theory* (Kothari, 2004)) and more recently, Charmaz (2008) who advocated for a *constructivist grounded theory*, thus introducing yet another perspective into Grounded Theory approach. (Allen, 2010) as further expounded in the preceding text. The different approaches to GT have varying tenets and some converging tenets guiding the applications of GT in research. They have differing underpinning principles as it concerns the use of literature, coding process and philosophical assumptions while they converge on theoretical sampling, theoretical saturation and theory generation. (Hoflund, 2013) (Kenny & Fourie, 2015)

Classical Grounded Theory: Grounded Theory was first introduced by Glaser and Strauss as co-researchers on their original seminal work *The Discovery of Grounded Theory* (1967). Their objective was to close the gap between realistic (objective) research which was mainly concerned with testing existing theories to theory development through a systematic methodology which develops theories emerging directly from data obtained from social interactions (Khan, 2014). Classical Grounded Theory is rooted in symbolic interactionism which is concerned with how people ascribe meaning to objects, actions and social interactions with an emphasizes on the discovery of patterns, processes, and relationships embedded within social interactions at the same time champions objectivism in ensuring theory generation is solely from raw data (Creswell, 2013). This approach is some times referred to as soft-positivism (Kenny & Fourie, 2015). According to Glaser, researchers should enter the field with minimal preconceived assumptions and allow themes to emerge naturally through interaction with data from participants.

Consequently, their philosophical stance of avoiding use of literature at the beginning of a research until the end of the study. They believed a researcher conducting GT must not immerse themselves in literature as it was believed to "contaminate" the analysis of data and subsequent of raw data. They believed that data should speak for itself. Similarly, the researcher is expected to be objective by engaging in constant comparative analysis to refine the emerging themes (Kenny & Fourie, 2015). The other methodological foundations of Classical Grounded Theory include: Theoretical sampling which recommends that a researcher must not have a fixed sample size for their study, instead, they should have a kick-off sample that is purposively selected, this sample is flexible as the researcher will only stop sampling and collecting data when they reach data saturation, a state where no new data is generated from the social interactions and to further strengthen the results, data should be collected from different sources for comparison (McLeod, 2024; Scotland, 2012).

Constant comparative analysis is another foundation guiding the application of Classical GT which advances that data collection and analysis should happen concurrently, the researcher should analyse data as soon as it is collected so that data saturation referred to theoretical saturation is acknowledged once its achieved and at this point the researcher stops collecting new data (Glaser, 1978) (Charmaz, 2008). The other key pillar of Classical GT is coding inductively and it encourages researchers to remain objective in their coding process so that they allow themes emerging from participants views and experiences to form theory rather than allowing their own values, beliefs and experiences affect the formulation of theory. (Glaser & Strauss, 1967). **Straussian Grounded Theory:** After their ground breaking work together Glaser and Strauss (1967), Strauss later criticised the Glaserian classical theory in his work with Corbin and Strauss (1990) where they perused to improve on the original methodology which had no clear steps towards data analysis. They introduced a more structured analytical coding framework (Corbin & Strauss, 1990).

This approach is embedded in pragmatism which is a branch of symbolic interactionism as an underlying philosophy. They placed greater emphasis on methodological rigour, transparency and analytical clarity, particularly through the identification of a central theme that integrates the developing theory. They advanced the post-positivism stance which argues that reality does not exist in a vacuum but is co-created between the researcher and the participant. Therefore, Straussian GT argues that a researcher can maintain an "open mind" and be open to emerging themes by maintaining theoretical sensitivity. They should not force the data into rigid hypothesis. However, they rejected the "empty head" tabula rasa stance that requires an inquirer to empty their head off any ideas, beliefs and experiences that pertain to phenomenon under study but they should bracket their opinion and allow emerging themes to objectively generate theory (Corbin & Strauss, 1990).

Consequently, Straussian stance on Literature review ties closely to their philosophical stance as they propose that researchers should immerse themselves in literature review from the inception of the study in order to fully understand the phenomena under investigation. Literature should be used a tool that enhances theoretical sensitivity and brings out new nuances on the study (Kenny & Fourie, 2015). This knowledge and experiences obtained from interaction with literature is managed through constant comparison analysis and the structured coding process that improves the trustworthiness of the generated theory from data (Kenny & Fourie, 2015).

The other guiding pillar of this GT approach is the emphasis placed on rigorous and systematic coding process. They aimed to "create" theory emerging from data rather than to "discover" the theory. Their coding process provided researchers with clear step by step process for coding and theory creation by introducing 4 analytical stages: *open coding*, *axial coding*, *selective coding* and *conditional matrix* which leads the creation of a rigorous theory. Open coding

involves breaking data into conceptual units, axial coding focuses on identifying relationships among categories, and selective coding collates these categories around a dominant concept. (Corbin & Strauss, 1990) (Kenny & Fourie, 2015).

While this structured approach enhanced methodological transparency, critics such as the works of (Allen, 2010) in the article which he critiqued these approaches argued that this step risked forcing data into predetermined analytical categories, thereby reducing the emergent nature of theory creation. Constructivist Grounded Theory: Constructivist Grounded Theory was discovered by Kathy Charmaz as a response to debates concerning objectivity and researcher neutrality. The philosophical assumptions are embedded in Constructivism and symbolic interactionism. Constructivist Grounded Theory recognizes that reality is multiple and is co-constructed through social interactions between researchers and participants in their natural setting (Brayant & Charmaz, 2007) (Creswell, 2013). This approach acknowledged that research is value-laden and the researcher has an influence as they have an influence on the outcome of the study as they bring their experiences and interactions to the study. Therefore, she goes further in recommending that the researcher must acknowledge their views and manage them through reflexivity (Yip, 2023), which involves the inquirer identifying their biases and manage them through detailed memo writing of the choices made concerning the study.

Memo writing is considered as a “storehouse” of ideas, documents reviewed and choices made during the social interactions (Corbin & Strauss, 1990). It is the reflective, interpretive piece of writing that builds an audit trail documenting the stages of research and helps the researcher to stay focused on the study aim. Charmaz (2008) views it an intermediate tool between data collection and the final drafting of final research findings (Charmaz, 2008), Birks and Mills (2023) argued that is a quality tool that is an essential analytic tool.

This assumption ties closely with their stance on literature, they propose that researchers are advised to use literature as a reflexive tool and not allow it to influence the research outcome. She further recommends that a comprehensive literature should be compiled and dispersed throughout the study (Kenny & Fourie, 2015). Charmaz advocated for a flexible coding and tolerance to ambiguity resisting a fixed prescriptive approach to coding, her proposed process hinged on creativity, and instead insisted on conducting rigorous in-depth interviews to gain as much data as possible, the main focus in data collection is the focus on research questions such as what is the main issue facing the participants, and how this can be resolved. Coding under the constructivism is conducted in two stages namely Initial and re-focused stages. Constructivist Grounded Theory has become increasingly influential because of its flexibility (Glaser & Strauss, 1967) and compatibility with contemporary interpretive qualitative research paradigms.

2.2 Situational Analysis

Another emerging grounded theory perspective is that argued by Clarke (2005) who turns to postmodern discourse, along with Charmaz, sought to reclaim grounded theory from its “positivist underpinnings”. Clarke, however, goes further than Charmaz, suggesting that social “situations” should form the unit of analysis in grounded theory and that three sociological modes can be useful in analysing these situations being situational, social world/arenas, and positional cartographic maps for collecting and analysing qualitative data (Clarke, 2005). Therefore, in this paper will only focus on the evolution of GT from Classic GT through to Constructivist GT approach. Fundamental Principles of Grounded Theory: The canons guiding Grounded Theory remain largely influenced by those precepts of qualitative research methodology.

III. METHODOLOGY

3.1 Grounded in Qualitative Research

Qualitative research as an approach to inquiry in which the researcher collects, interprets, and makes meaning from participants’ views and experiences within their natural settings (Creswell, 2012). In this process, the researcher becomes an integral part of the research, interacting continuously with participants and interpreting the raw data they provide to construct reality and formulate solutions to complex social issues (Glaser & Strauss, 1967).

3.2 Interpretative in Nature

Grounded Theory is interpretative in nature, meaning that the researcher interprets, what they see, hear, observe and understand from the participants. Yin (2016) elaborates that the researcher needs to “*hear the meaning of what is being said*” by the participants (Yin, 2016: p 142), this entails that a researcher needs to systematically inquire, listen and record the responses so that they can effectively analyse their findings through coding to derive meaning from human social interactions.

3.3 Inductive in Nature

Grounded Theory is inductive in nature, meaning that theory is built from bottom up. The researcher enters the field with limited and bracketed ideas, values and experiences and develops theories emerging from data from the field.

It does not test existing theory but rather collects data, analyses it and allow it to formulate a theory or framework enabling researchers to move systematically from specific observations to broader conceptual explanations that addresses complex issues and processes (Corbin & Strauss, 1990).

3.4 Theoretical Sampling

One of the key characteristic distinguishing GT from other research approaches is theoretical sampling, this is the concurrent collection and analysis of data allowing emerging concepts to continually inform subsequent sampling decisions through a theoretical sampling (Brayant & Charmaz, 2007). It does not follow the strict rule of a fixed sample size from the start of the study from which data will be collected from instead allows the researcher to continue sampling until data saturation is achieved and no new data is coming out from the social interactions (McLeod, 2024). Anchored on the main aim of theory generation in GT studies, this tenet allows the researcher to purposively sample a small size that is flexible to allow the researcher to generate a theory grounded in participants views. This iterative aspect enables researchers to gather in-depth rich data, to allow for the generation of trustworthy research findings (Draper, 2004).

3.5 Data analysis

Data analysis in Grounded Theory is a systematic and iterative process that starts as soon as data is collected from the initial sample. The researcher does not wait until data collection is complete, data is analysed concurrently with collection, Charmaz called the process Zigzag concurrent as the process is not straight but adjusted according to emerging themes (Charmaz, 2008) allowing emerging insights to guide subsequent generation of theory. The analytical process involves identifying concepts and categories within the data which are coded through strict examination of the relationships among them to facilitate theory development (Glaser & Strauss, 1967).

A central feature of data analysis process is constant comparison, whereby each coded incident is continuously compared with other incidents assigned to the same category. This comparative approach enables researchers to refine conceptual categories, identify similarities and differences, gaps and ensure that emerging interpretations remain firmly grounded in the empirical data. Data collection and analysis continues in GT until theoretical saturation is achieved that is when no new information is generated from the human interactions between the researcher and the participants, yields no new concepts, properties, or relationships but merely confirms existing categories (Corbin & Strauss, 1990). At this point, the categories are considered sufficiently developed and conceptually rich to support the construction of a grounded theory. This systematic and rigorous analytical process strengthens the credibility of the findings and ensures that the resulting theory is firmly derived from the data (Urquhart, 2023). Each approach of Grounded Theory is governed by coding procedures particular to that approach.

3.6 Researcher Positionality

Anchored on symbolic interactionism, the researcher is actively involved in the process of data collection, they make decisions on what questions to ask, what instruments to use to collect data and ultimately codes the data for emerging themes. (Kenny & Fourie, 2015). GT takes on the stance of a researcher being *emic* meaning that the researchers takes the position of an insider while investigating a phenomenon (Markee, 2023). This positionality requires the researcher to acknowledge that they have an influence on the outcome of the results and this they are required to manage their experiences and values through reflexivity so that they allow themes to objectively generate theory (Braun & Clarke, 2019).

3.7 Ethical Considerations

Ethical considerations in GT are critical because the main research instruments and tools are humans. Data is collected through interviews, observations and document analysis (Creswell, 2013). Further data is collected within the natural setting of the participants. This calls for studies applying GT to adhere to strict ethical issues. As the study commences approval should be obtained from the representing institution or university. Further after sampling the participants must give their consent to participate in the study and should be given an allowance to withdraw if they feel that they can't be part of the study. Their participation must be voluntary the researcher should ensure that the participants and the research site are safe and protected from danger (Allen, 2010).

Data management is an integral part of ethics management in GT studies, the researcher must categorically state how they data will be used and stored and declare access rights to the participants. As some of the data will be collected through literature reviews, the researcher must accurately and consistently acknowledge the authors by correctly citing the work in their study (Draper, 2004) (Brayant & Charmaz, 2007).

IV. FINDINGS & DISCUSSION

4.1 Philosophical Assumptions

Ontology is the philosophical assumptions that relates to the nature of reality are concerned with what constitutes reality, or in other words “*what is*”. The ontological stances in GT slightly differ depending on which approach is being applied. Classical GT they maintain post-positivism, they assume a relatively objective stance that advocates that reality is external and that can be discovered if the researcher remains neutral. The researcher must take the stance of an independent observer who co-constructs reality. The researcher must not be biased but inductively allows data to generate theory without bias and manipulation of raw data (Glaser, 1978). Straussian approach is positioned in pragmatism with a focus on symbolic interaction. They proposed that reality is rooted in human actions, contexts and practical consequences. They maintain that reality is co-constructed through human interactions. (Corbin & Strauss, 2015)

Constructivist approach embraces subjectivism, they advance that a researcher is a co-constructer of reality and cannot fully free themselves from their values. They further proposes reflexivity as way of managing these personal biases so that data emerging from participants views indecently create theories. (Charmaz & Brayant, 2007). Epistemological assumptions are concerned with how knowledge is acquired and communicated in other words it concerns itself with “*what it means to know*” (Lincoln & Guba, 1985). Grounded Theory generates reality from social interactions and solutions are obtained from interactions between the researcher and participants. Its interpretative in nature as the inquirer interprets meanings, opinions and experiences of the participants (Birks & Mills, 2023).

Axiologically, Classical GT approach advocates that a researcher must maintain neutrality and allow data to objectively generate themes develop theory without introducing biases, similarly the Straussian approach further advocates for the introduction of literature and acknowledgement that the researcher is a co-creator of reality and thus they should bracket their opinions through constant comparative analysis and structured coding processes (Braun & Clarke, 2019). Constructivist further agrees with the Classical and Straussian stance on co-construction and bracketing values for objectivity. They further recommend that a researcher cannot fully separate themselves from the research. Charmaz further guides on how to manage the values through reflexivity (Charmaz, 2008).

4.1.1 Grounded Theory and Environmental Sustainability

Grounded Theory is particularly appropriate for investigating environmental sustainability within business and management this is because sustainability is fundamentally both a social and organizational process that is shaped by human behaviour, decision-making, leadership practices, and stakeholder interactions. While organizations increasingly adopt environmental sustainability initiatives, there remains limited understanding of the processes through which the food and beverage manufacturing companies are guided on environmental management. The application of GT will ensure the sector specific models or frameworks are developed to address the various challenges faced by the manufactures as well the communities experiencing the effects of environmental degradation.

Unlike other methodologies that seek to test existing theoretical theories, Grounded Theory allows theory to emerge inductively from empirical data, making it particularly valuable in areas where existing theories may not adequately explain organizational realities. In business management, environmental sustainability reality is largely experienced by societies differently, there is no single fixed but can be understood through the eyes of the participants. Reality is influenced by multiple interacting factors, such as leadership, regulatory requirements, organizational culture, customer expectations, resource availability, and strategic priorities.

Furthermore, environmental sustainability represents a dynamic and evolving organizational phenomenon rather than a static outcome. They are continuously negotiating competing priorities such as investor return on investment, operational efficiency, regulatory compliance, and environmentally sustainability. Grounded Theory is therefore well suited to capture the dynamics of the processes, experiences explaining how organizations can integrate sustainability into their business models, operational practices, and strategic decision-making over time. By generating contextually grounded explanations, the methodology contributes not only to academic theory development but also to practical knowledge that can guide managers, policymakers, and other stakeholders in strengthening sustainable environmental management.

4.2 Discussion

4.2.1 Evolution of Grounded Theory

The literature reviewed found that Grounded Theory has significantly evolved from its original formulation by Glaser and Strauss (1967) into three distinct methodological approaches: Classical of (Glaser & Strauss, 1967), Straussian (Corbin & Strauss, 1990), and Constructivist Grounded Theory of Kathy Charmaz (Brayant & Charmaz, 2007). Despite each approach maintaining its own specific philosophical underpinning and analytical procedures they all share one key objective of generating theory grounded in data obtained through social interaction with participants

(Mediani, 2017). Despite having a converging factor of theory generation, the approach evolved and further share principles such as theoretical sampling, constant comparison analysis, memo writing and theoretical sampling. These principles are central to the approaches of GT in the aim of developing a theory grounded in participants views, opinions and experiences. (Hutchinson et. al, 2011).

4.2.2 Common Methodological Principles

The review identified some methodological principles namely ; theoretical sampling, constant comparative analysis, theoretical saturation and memo writing that consistently define rigorous Grounded Theory studies across all the three approaches and is widely recognised as the foundations that guide the generation of data: Among them is: Theoretical sampling, this is the purposeful selection of a kick-off sample that guides the data collection of data until no new information emerges from the participants. (Scotland, 2012).

The other uniting principle is constant comparative analysis, Grounded theory studies aim to generate theory through allowing emerging themes to independently generate themes that can be further categorised through coding. Data collection and analysis happens in circular manner on grounded theory because data analysis is simultaneous with data collection in GT studies (Glaser, 1978). This is a tool that ensures rigour and trustworthiness of the research findings. It is a tool that supports the researcher to bracket their personal experiences from influencing the research outcomes (Lincoln & Guba, 1985) (Allen, 2010).

One way of managing the bracking of researcher values affecting the outcome of research is reflexivity which is manage through memo writing. The study discovered that the Classical and Straussian approaches mentioned the co-construction of reality whilst ensuring neutrality but what they did not give the actual way of how to effectively manage these biases. Charmaz went further and extended and recommended the use of memos to record all interactions, events and decisions made during the research process. (McGhee G et, al., 2007). However, the diverging principles are based on their philosophical assumption's stances, literature review usage and their coding processes (Kenny & Fourie, 2015).

4.2.3 Misapplication of Grounded Theory

The review further found that Grounded Theory goes beyond sociology and currently widely applied in health sciences, nursing, education, business, environmental sustainability, and information systems research. This demonstrates its adaptability and continued relevance for investigating complex social processes. Despite its wide application of GT methodology, the literature review discovered methodological inconsistencies in the application of Grounded Theory approach. Several methodological reviews conducted reported that researchers frequently claimed to use GT but failed to adhere to the main methodological foundational principles. Studies examined key tenets of theoretical sampling, constant comparative analysis that were misapplied or not properly accounted for in the research process.

Hutchinson et.al (2011) for example substantiated these claims of inconsistencies in application of GT underpinning principles in his study when he conducted a critical analysis of 21 papers in health sciences that adopted GT as a methodological approach which were published between 1998 and 2008. His findings revealed these inconsistent in the application of GT tenets as it pertains to demographic characteristics and discovered that researchers failed to account for the methodological process followed in arriving at their results. They failed to report consistently on tenets such as theoretical sampling, constant comparative analysis and theory generation (Hutchinson et. al, 2011).

Ali et al. (2019) conducted yet another examination of 68 research papers published between 1998 and 2017 with the aim of appraising the methodological rigour and assess the application of GT tenets across major health research. The results reported that 36 studies representing 53% of showed a good understanding of the GT tenets while 32 studies representing 47% reported inconsistencies in the application of the tenets such as iterative process, qualitative theorising and were considered poor in methodological application of the tenets of GT. (Ali et. al, 2019). McCrae and Pursell examined three leading nursing journal publications between 2010-2014 with a view of examining the application of theoretical sampling and constant comparative analysis. They reviewed 134 articles and discovered that half of these did not demonstrate theoretical sampling and instead reported the use of purposeful sampling in their studies and consequently did not conduct constant comparative analysis (McCrae & Pursell, 2016).

Furthermore, Cutcliffe conducted a study to review the four key issues in GT being; Sampling, Creativity and Reflexivity, Use of literature and precision. The findings of the study concluded that researchers were applying these principles inconsistently, and recommended that they should consider the research questions in order to ascertain data saturation, adequate for theory generation from the collected data, purposeful sampling must only be engaged in at the beginning of data collection and then follow through with theoretical sampling .There is need to free themselves from rigid tenets of objectivism and be creative until they achieve saturation. Precision should be achieved by applying only one version of GT during a study (Cutliff, 2000).

McGhee et.al (2007) conducted an analysis in the application of literature in GT studies was conducted. The conclusion was that the different schools of GT are guided differently on how to engage literature in their studies and

that if this is not fully understood and applied correctly by researchers it can lead leading to misapplication (McGhee G et, al., 2007) thereby compromising the quality of research findings. Grounded Theory remains an appropriate methodology for studies that seek to address complex social, organizational, or behavioural processes where existing theories are limited or insufficient (Creswell, 2013). Researchers are encouraged to adopt this methodology when their primary objective is to generate theory, framework or model that is grounded in participants' experiences. Future researchers aiming to apply this approach are encouraged to understand the evolution of GT approaches and their accompanying methodological procedures and philosophical assumptions. Further to strengthen the outcome of results, there must be alignment with all the tenets guiding each approach to improve creditability and trustworthiness.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

Grounded theory is widely used by scholars in different schools and disciplines. Despite its wide application it is also misapplied. The study aimed to explore the historical evolution of Grounded Theory from its Classical, Straussian to Constructivist assumptions. The study revealed that each school of thought is guided by a unique methodological procedure and philosophical assumptions.

The misapplication is as a result of scholars possessing limited knowledge on the evolution, the methodological procedures and philosophical assumptions of the different schools of Grounded Theory. The study has provided the stages of evolution of the different schools of thought and the accompanying tenets. This will provide support and guidance to scholars undertaking Grounded Theory studies when applied appropriately. The correct application of these fundamental principles may strengthen the findings of the research findings.

5.2 Recommendations

Researchers to study and understand the evolution of Grounded Theory so that they can understand the different approaches and the foundational tenets governing their application. Clearly state the approach of GT being adopted in a particular study. Apply correctly the principles of the chosen variant. Capacity building for scholars in the understanding and application of Grounded Theory.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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