

Optimal Sample Size in Qualitative Research: Balancing Data Richness, Credibility, and Transferability

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ABSTRACT

Determining an optimal sample size remains one of the most contentious methodological issues in qualitative research. While numerical recommendations are frequently cited, they often overlook the epistemological, methodological, and analytical considerations that underpin qualitative inquiry. This paper critically reviews contemporary perspectives on qualitative sample size determination with the aim of developing an integrated framework that balances data richness, credibility, and transferability. Drawing on an extensive narrative review of methodological literature retrieved from major academic databases, the study synthesises evidence on data saturation, theoretical saturation, information power, conceptual depth, meaning saturation, and pragmatic sampling considerations across major qualitative traditions, including phenomenology, grounded theory, ethnography, case study, narrative inquiry, interpretative phenomenological analysis, and qualitative interviews. The review demonstrates that no universally optimal numerical sample size exists; instead, sample adequacy depends on research objectives, epistemological assumptions, methodological design, sample specificity, analytical strategy, and the quality and richness of the data. The findings further indicate that transparent methodological justification is more important than compliance with arbitrary numerical thresholds. Building on these insights, the paper proposes principles for defensible sample size justification that encourage researchers to align sampling decisions with research purpose, methodological logic, and ongoing analytical development. By integrating previously fragmented theoretical perspectives into a coherent conceptual framework, this study advances methodological clarity and contributes practical guidance for researchers, supervisors, journal reviewers, and research ethics committees seeking to enhance the rigour, transparency, and credibility of qualitative research.

Keywords: Sample size; Data saturation; Information power; Theoretical saturation; Conceptual depth; Credibility; Transferability

INTRODUCTION

Qualitative research holds a unique status in the methodological framework of social sciences, emphasising the understanding of human experiences, social phenomena, and contextual significances. In contrast to quantitative research, which seeks to isolate variables and generalise conclusions across broader populations using numerical data, qualitative research explores the intricacies of human behaviour, prioritising narrative, context, and subjective interpretation. This methodological approach frequently depends on intricate data obtained from interviews, focus groups, ethnographies, and content analyses. The importance of sample size in qualitative research is a critical element that influences data richness, findings' credibility, and the possibility for transferability across different contexts. Transferability is one of the concerns in the conversations on sample size in qualitative research. Although qualitative research do not seek statistical generalisation, the notion of transferability is essential. Transferability denotes the degree to which findings can be generalised to alternative situations or populations. An expanded and more varied sample may allow researchers to make comparisons and emphasise overarching themes that are relevant across many contexts, hence increasing the potential for the transferability of results. This is directly linked to the quality of the obtained data — insights

derived from a well-represented sample enable researchers to provide conclusions applicable beyond the immediate study setting.

In qualitative research, the notions of data richness and depth are essential. *Data richness* denotes the extensive and complex characteristics of the gathered information, crucial for encapsulating the nuances of participants' viewpoints. A limited sample size may restrict the diversity of experiences and perspectives represented, ultimately diminishing the depth of the data. A qualitative study utilising in-depth interviews with a limited number of individuals may provide significant individual insights; yet, it risks presenting a distorted or incomplete representation of the community or phenomenon being examined. A sufficiently large sample can improve the depth and variability of data, allowing researchers to discern patterns, differing viewpoints, and contextual elements that contribute to a comprehensive appreciation of the research interest.

Validity of qualitative findings is significantly influenced by the sample size. Credibility, a critical element of qualitative research, is measured by the validity and reliability of the data and its interpretations. By providing a broader array of perspectives, increased sample sizes promote credibility by enabling the triangulation of findings and verifying that the results are not solely the result of individual experiences. In a grounded theory study that is designed to develop a theory based on empirical data, a larger sample can disclose a variety of categories and subcategories, thereby improving the theoretical understanding. It is essential to acknowledge that the correlation between believability and sample size is not linear; it is contingent upon the rigour of the analytical process and the quality of data. However, a purposive, stratified, or theoretical selection method that aligns with the research objectives can still yield reliable results from a reduced yet judicious sample.

Determining the sample size has been a huge challenge for scholars, especially in doing qualitative research. Over the years, researchers have been preoccupied with determining the adequate sample size in qualitative research (Barkhuizen, 2014; Blaikie, 2018; Morse, 2000). Positivist scholars have specifically criticised qualitative studies for their lack of generalisability due to the use of small sample sizes. The purpose of qualitative research in social sciences is to conduct a thorough examination of the phenomena, rather than to represent the study population (Hong & Cross Francis, 2020; Moser & Korstjens, 2018; Nakkeeran, 2016; Boddy, 2016). The appropriate sample size in qualitative research is contentious, leading to confusion for researchers, especially novices (Barkhuizen, 2014; Mason, 2010). Consequently, discussions on 'assessing the adequate sample size in qualitative research' remain pertinent and call for a systematic investigation (Young & Casey, 2019). In other words, sampling procedures and the size of participants are crucial for upholding the research rigour of any scholarship. This paper provides guidance on determining sample sizes for qualitative research, aiming to be useful to both established and novice researchers, particularly master's and doctorate students in social sciences, management sciences and education.

It is against this backdrop, this study is carried out to delineate the concept of sample size in qualitative research, while balancing data richness, credibility and generalizability. The data for this paper were acquired through reviewing existing literature on sample size in qualitative research; this is achieved via surfing search engines and databases such as Google Scholar, ERIC, EBSCO, and PROQUEST.

Concept of Sample Size in Qualitative Research

The sample size in qualitative research profoundly influences the depth of data gathered, the validity of results, and the likelihood of transferability across diverse qualitative approaches. Appreciating these interconnections is essential for scholars aiming to provide significant, contextually relevant findings that enhance the wider academic dialogue. Key terms such as data richness, credibility, and transferability establish a framework for analysing the implications of sample size in qualitative research. The notion of data richness is fundamental in qualitative research and is significantly affected by the chosen sample size. Data richness denotes the depth, detail, and diversity of responses generated from qualitative investigations, serving a pivotal function in comprehending intricate processes. Hennink and Kaiser (2022) contend that a sample of insufficient size can yield superficial insights, so undermining the overall integrity of the research. They assert that although qualitative research prioritises depth over breadth, the relationship between sample size and data richness necessitates meticulous evaluation, particularly with theme saturation.

In qualitative research, researchers must equilibrate the necessity for a sample size adequacy to encompass a broad spectrum of opinions with the imperative that each participant meaningfully contributes to the central topics under investigation. According to Bekele and Ago (2022), a meticulously determined sample size not only promotes varied answers but also increases the likelihood of thematic evolution. This is especially pertinent in exploratory qualitative research, as researchers seek to reveal fresh insights and subtleties within participants' experiences.

The correlation between *sample size* and *data richness* is sometimes articulated in terms of thematic saturation, which is the juncture at which further data collection ceases to produce novel insights. Hennink and Kaiser (2022) contend that an inadequate sample size may cause researchers to attain saturation prematurely, jeopardising the omission of essential viewpoints that could enhance the understanding of the topic being studied. Conversely, an excessively large sample may induce repetition, wherein analogous responses constrain the investigation of diverse, profound meanings. Consequently, it is essential for researchers to ascertain an optimal sample size that facilitates the generation of comprehensive data and the attainment of thematic saturation.

The iterative nature of qualitative research requires continuous contemplation of sample size during the study process. Initial sampling may utilise criteria that emphasise variety or demographic representation; however, as themes become more defined, researchers might re-evaluate sample requirements to investigate growing subtleties. Bekele and Ago (2022) emphasise the necessity for adaptability in sample selection as research progresses, proposing that dynamic sampling procedures can substantially enhance data richness.

Chosen qualitative approach basically influences the determination of the suitable sample size. Methodologies like phenomenological research, aimed at appreciating lived experiences, may be enhanced by utilising smaller, more concentrated samples that facilitate thorough examination of individual narratives. Conversely, alternative methodologies, like grounded theory, may require a broader spectrum of participants to accurately discern categories and linkages within the data. Every methodological framework mandates distinct requirements about the necessary detail and diversity, which must be fulfilled to provide data richness.

The Epistemological Underpinnings of Sample Size in Qualitative Research

Qualitative research is premised on interpretivist, constructivist, and critical frameworks, which contend that social reality is multiply constructed, and contextually situated (Denzin & Lincoln, 2018). Knowledge is generated through the engagement of researchers with participants, and findings (results) are influenced by reflexivity, positionality and analytical interpretations. In these frameworks, sampling is intentional rather than random. The objective is not to achieve statistical generalisation but to gain analytical or theoretical understanding (Yin, 2018). Decisions regarding sample size are inherently linked to epistemological beliefs concerning the nature of knowledge, evidence, and methodological rigour. Efforts to enforce rigid numerical criteria may jeopardise the flexibility (adaptability) and context sensitivity in qualitative research.

Dominant Frameworks for Determining Sample Size

Sample size is an important methodological consideration in qualitative research. Qualitative inquiry, unlike quantitative research that depends heavily on statistical power and probability based assumptions, emphasises data that are rich, contextually grounded and conceptually relevant. Accordingly, sample size in qualitative research is primarily guided by the study's objectives, richness of data and the adequacy of evidence required, rather than by predetermined numerical thresholds. Consequently, several dominant frameworks (data saturation, theoretical saturation, information power, conceptual depth, and pragmatic considerations) have emerged for determining and justifying sample size in qualitative research.

Data Saturation

Data saturation is the most commonly acknowledged method for establishing sample size in qualitative studies. Saturation, derived from grounded theory, denotes the stage at which further data gathering ceases to yield novel themes, categories, or insights pertinent to the research aims (Glaser & Strauss, 1967). The notion

has been embraced over time by various qualitative approaches, such as phenomenology, case study, qualitative description, and thematic analysis.

Guest, Namey, and Chen (2020) expand the discussion on saturation by distinguishing among *data saturation*, *thematic saturation*, and *coding saturation*, each reflecting distinct aspects of qualitative research. *Data saturation* occurs when the data pool yields no additional information; *thematic saturation* is achieved when no new themes are discerned; and *code saturation* is attained when all identified codes are validated within the data set. This varied classification adds complexity, compelling researchers to meticulously examine their sample size approaches. In a phenomenological study examining lived experiences, a limited sample may be acceptable for reaching thematic saturation, whereas a grounded theory method may require a larger participant pool to effectively capture emerging theoretical conceptions. In addition, Hennink, Kaiser, and Marconi (2017) differentiated between *code saturation*, which occurs when no further issues or codes arise, and *meaning saturation*, which is reached when researchers have an in-depth comprehension of the recognised themes. Their research indicates that although code saturation can happen rather early, meaning saturation often necessitates significantly more interviews. This differentiation emphasises that the adequacy of qualitative samples relies on both interpretive profundity and thematic recurrence.

One of the earliest empirical studies on saturation was conducted by Guest, Bunce and Johnson (2006) who analysed interview data from a fairly homogeneous participant group. The results showed that most of the thematic categories emerged during the first 12 interviews, and many themes recurring after about 6 interviews. While the study revealed that relatively small samples may sometimes attain saturation, the authors warned against generalising these results because saturation is influenced by the research issue, diversity of participants and analytical depth.

Notwithstanding its widespread acceptance, saturation has faced criticism for its conceptual vagueness and lack of consistent implementation. Saunders et al. (2018) noted that scholars often reference saturation without clarifying the method of assessment or supplying proof of its attainment. Thus, saturation ought to be regarded as a malleable guiding tenet instead of a strict methodological conclusion.

Theoretical Saturation

Theoretical saturation is a specific type of saturation predominantly linked to grounded theory. In contrast to data saturation, which emphasises the recurrence of themes, theoretical saturation pertains to the thoroughness and enhancement of theoretical categories (Glaser & Strauss, 1967; Charmaz, 2014). Sampling persists until every conceptual category is adequately refined, its dimensions and characteristics are comprehensively appreciated, and the interrelations across categories are thoroughly delineated.

This relies on theoretical sampling. Participants are chosen iteratively according to evolving analytical needs, not sampling criteria. Researchers intentionally seek participants who can elaborate, challenge, or refine concepts during data collection. When further participants fail to provide meaningful theoretical insights, sampling ends.

Theory saturation is essential to grounded theory, but its use outside this tradition is questioned. Phenomenology, ethnography, narrative inquiry, and reflexive thematic analysis researchers focus on rich descriptions and interpretation rather than theory development. Thus, theoretical saturation is not a general benchmark for all qualitative techniques.

Information Power

The Information Power model introduced by Malterud, Siersma, and Guassora (2016) is regarded as one of the most significant modern approaches to determining sample size. Instead of finding out if saturation has been attained, this model suggests that the required sample size is contingent upon the quantity of pertinent information present in the chosen participants. This model posits that five interconnected factors determine information power:

1. *Study Objective*: Specifically focused research issues require fewer participants than exploratory investigations (broad studies).

2. *Sample Specificity*: Directly experienced homogeneous samples have more information power than heterogeneous samples.
3. *Deployment of Established Theory*: Strong theoretical frameworks can minimise required sample size by providing analytical guidance.
4. *Quality of Conversion*: In-depth interviews add value.
5. *Analysis Strategy*: Comparative analyses with many groups require more participants than in-depth case-oriented analyses.

The information power framework prioritises data quality and relevance over numerical targets. It also enjoins researchers to justify sample size decisions prospectively during research design rather than retrospectively claiming saturation.

The quality of data obtained from each participant is a critical factor influencing sample adequacy that is often overlooked in sample size discussions. Skilled interviewers with strong rapport-building abilities, active listening skills, and the capacity to probe effectively can obtain richer, more detailed data from fewer participants than less experienced researchers. Similarly, researchers with strong analytical skills and deep theoretical knowledge may achieve conceptual depth and saturation with smaller samples than those with less developed analytical capabilities. This has important implications for sample size determination: researchers should consider their own experience and expertise when planning sample sizes and should be transparent about how their skills might have influenced the depth and quality of data collected. Novice researchers, such as doctoral students, may need to plan for larger samples to compensate for less developed interview and analytical skills, or should engage in extensive piloting and skill development before commencing data collection. Similarly, studies conducted by multiple interviewers should consider whether interviewer skill variability might affect data quality and, consequently, the sample size required to achieve saturation.

Conceptual Depth and Meaning Saturation

Recently, qualitative research has prioritised conceptual richness over numerical completeness. Hennink et al. (2017) contended researchers ought to distinguish between themes identification and appreciation (deep understanding of themes). This contrast has led to terms like conceptual depth, meaning saturation, and conceptual density, which prioritise analytical expertise above code repetition.

Conceptual depth is how well researchers explain concept relationships, contextual complexity, and nuanced interpretations. Complex social phenomena based studies require more participants not because new themes emerge, but because deeper explanations and interpretations are conceivable. Thus, conceptual maturity, not theme redundancy, determines sample adequacy. In addition, Braun and Clarke (2021) contended that reflexive thematic analysis should emphasise interpretive richness over saturation. The study argued that interpretivist epistemologies cannot exhaust all topics since meaning is constantly produced through 'researcher – data' interaction. Instead, researchers should interpret with analytical depth, reflexivity, and coherence.

Pragmatic and Contextual Approaches

Sample size determination is influenced by practical consideration. Morse (2000) stressed that experienced qualitative researchers assess data quality during fieldwork and modify sample size as necessary. Thus, sampling adapts to new discoveries as opposed to fixed criteria. Patton (2015) suggested prioritising information-rich cases and selecting participants with extensive insights into the phenomenon of interest. The purpose is not numerical representativeness but the collection of meaningful evidence capable of answering the research question. Consequently, pragmatic considerations incorporate participant accessibility, ethical limitations, resources, time, funding, and researcher experience. These criteria should not dictate sample size, but can affect methodological considerations. Transparent communication of such variables helps readers evaluate qualitative findings' credibility and transferability.

Sample size decisions have important ethical implications that deserve explicit consideration. Under-sampling (collecting data from fewer participants than needed to answer the research question) can result in findings that are inadequately supported by the data, potentially misleading policy or practice and wasting the contributions of participants. Over-sampling (collecting data from more participants than needed) may unnecessarily burden participants and consume resources that could have been directed towards other research priorities. The principle of proportionate justification is relevant here: researchers should aim to collect the minimum amount of data needed to answer the research questions adequately, ensuring that participant burden and research resources are proportionate to the expected contribution of the study. This requires ongoing ethical reflexivity throughout the research process, with researchers continually evaluating whether sufficient data have been collected to support credible findings and whether any additional participants would meaningfully contribute to the research. Research ethics committees play an important role in scrutinising sample size justifications and should ensure that the proposed sample is proportionate to the research objectives, that vulnerable participants are protected, and that the research is not conducted with more participants than necessary.

Comparative Analysis among Qualitative Traditions

Although the frameworks discussed (data saturation, theoretical saturation, information power, conceptual depth, and pragmatic considerations) are often presented as complementary, they reflect different epistemological assumptions and have different practical implications. *Data saturation*, rooted in grounded theory, emphasises the recurrence of themes as the primary criterion for sample adequacy, whereas *the information power* model prioritises the quality and relevance of evidence over numerical indicators of theme repetition. These approaches are not always compatible: a study might have *high information power* by virtue of a focused research question and homogeneous sample, yet still fail to achieve *data saturation* if the phenomenon is complex or if the analysis seeks depth beyond theme identification. Conversely, a study might achieve *data saturation* but still lack *information power* if the sample is too homogeneous or the research question too broad. Researchers should therefore be explicit about which framework(s) guide their sampling decisions and why. When frameworks suggest different sample sizes, researchers should prioritise the framework that best aligns with their epistemological assumptions and methodological approach. For example, grounded theory researchers should prioritise *theoretical saturation*, while phenomenological researchers might prioritise *conceptual depth and meaning saturation*.

Ultimately, different qualitative traditions deploy these frameworks differently. Grounded theory is primarily anchored on theoretical sampling and theoretical saturation to underpin the development of theory. Phenomenological studies often emphasise gathering in-depth experiential data from limited numbers of meticulously chosen participants. Ethnographic research focuses on prolonged engagement and observational depth rather than participant numbers. Narrative inquiry centres on the intricacies of individual life experiences, while case study research highlights the contextual depth of individuals or multiple cases (Creswell & Poth, 2018; Yin, 2018). Thus, there is no one-fits-all framework to adequately establish sample size for all qualitative techniques.

Methodological Approaches and Sample Size Requirements

Qualitative methods vary in sample size considerations. Commonly cited qualitative sample size recommendations for key qualitative methods are listed below. Qualitative sampling is driven by study objective, information richness, and data saturation, hence these statistics should be used as guidelines not rigid rules.

Table 1: Qualitative Approaches and Recommended Sample Size

	Methodological Approach	Recommended Sample Size	Basis for Recommendation	Key Reference
1.	Phenomenology	5-25 participants	Focuses on appreciating the lived experiences of individuals who have experienced a particular	Creswell (2013); Morse (1994).

			phenomenon. Smaller samples facilitate deep exploration of experiences.	
2.	Interpretative Phenomenological Analysis (IPA)	3-15 participants (often 6-10)	Emphasizes detailed, idiographic analysis of participants' lived experiences.	Smith, Flowers & Larkin (2009)
3.	Grounded Theory	20–60 participants	Sampling continues until theoretical saturation is reached and no new concepts emerge.	Charmaz (2014); Corbin & Strauss (2015)
4.	Ethnography	30–50 participants (or key informants), though highly variable.	Relies on prolonged field engagement and participant observation rather than a fixed sample size.	Creswell (2013); Hammersley & Atkinson (2019)
5.	Case Study	5–50 participants depending on the case and units of analysis	Sample size depends on the complexity of the case and the number of embedded units.	Yin (2018); Stake (1995)
6.	Narrative Inquiry	1–10 participants	Focuses on collecting detailed life stories and personal narratives.	Clandinin & Connelly (2000)
7.	Generic Qualitative Interviews / In-depth Interviews (IDIs)	5–30 participants	Suitable for data richness, narrative depth, and contextual understanding rather than statistical representativeness. Participants' experiences can be explored more deeply in smaller samples.	Sarfo et al. (2021); Dworkin (2012); Guest, Bunce & Johnson (2006)

Source: Survey, 2026

Consequently, the most widely mentioned empirical evidence for saturation comes from Guest, Bunce, and Johnson (2006) and Hennink, Kaiser, and Marconi (2017). Their findings have greatly influenced qualitative sample size decisions. Guest et al. (2006) found that most key themes emerged during the first 12 interviews. Hennink et al. (2017) found that code saturation was reached after nine (9) interviews, while meaning saturation, which requires a deeper understanding of themes and their nuances, took 16–24 interviews.

In-depth interviews are exploratory qualitative methods that allow researchers to fully understand participants' perspectives. Sarfo et al. (2021) assert that the optimal sample size for in-depth interviews generally varies from **5 to 30 participants**, depending on the study's aims and the complexity of the phenomenon. This method emphasises data richness rather than measurable breadth, highlighting that the depth of individual narratives can provide insights that are complex and contextually relevant. Thus, researchers must reconcile the necessity for comprehensive, intricate data with the pragmatic limitations of time and resources. Achieving this equilibrium frequently results in reduced sample sizes that enable a more comprehensive examination of each participant's life experiences.

Conversely, focus groups are intended to leverage group interaction dynamics to generate insights. According to Subedi (2021), focus groups generally consist of **6 to 10 participants**, enabling discussions that reveal collective perspectives and social dynamics. The sample size in focus groups is essential for promoting interaction; an insufficient number of participants may restrict the diversity of perspectives, while an excessive number could obstruct substantive discourse. The sample must be sufficiently homogeneous to facilitate open conversation while yet being diverse enough to encompass differing opinions within the group. This intricacy

highlights the methodological requirements that influence sample size choices in focus group contexts, where data quality depends on an adequate sample size to facilitate meaningful discourse.

Ethnography introduces additional difficulty regarding sample size as it aims to comprehend cultural practices and social phenomena through immersion in a society. Sarfo et al. (2021) contend that ethnographic studies may encompass sample sizes that vary significantly, often ranging from a *few participants to several hundred*, contingent upon the depth of observational inquiry and the study's parameters. Ethnographers emphasise profound engagement over sheer participant numbers; hence, a small cohort of informants firmly embedded in the culture of interest can produce a substantial volume of observational data rich in contextual richness. The sample size in ethnography is typically a deliberate decision based on the principle of saturation, wherein data collection continues until no new insights are obtained, highlighting the iterative aspect of qualitative research.

Moreover, methodological heterogeneity can impact decisions on sample size. Researchers often integrate approaches to enhance data gathering and analysis, hence complicating sample size determinations. A researcher may employ both in-depth interviews and focus groups in a single study, requiring meticulous consideration of the distinct sample procedures required by the combined methodological approaches to achieve the study's qualitative objectives.

In Mixed-Methods Research: Mixed-methods research, which combines qualitative and quantitative components, presents additional considerations for qualitative sample size determination. In sequential designs, the qualitative sample size should be determined by qualitative methodological principles rather than by the quantitative sample size, as the research questions and epistemological assumptions differ between components. However, the qualitative sample should be justified in relation to the overall research objectives and the contribution it makes to the integrated findings. In convergent designs, where qualitative and quantitative data are collected in parallel, the qualitative sample should be sufficiently large to answer the qualitative research question, regardless of the quantitative sample size. Researchers should avoid the common error of applying quantitative power calculations to qualitative samples or assuming that the qualitative sample must be 'representative' of the population sampled quantitatively. Instead, the qualitative sample should be purposively selected to provide depth and diversity of perspectives relevant to the qualitative research question. The justification for the qualitative sample size should be clearly articulated in relation to the qualitative component's methodological framework, independent of the quantitative component.

Implications of Sample Size for Data Richness, Credibility, and Transferability

The importance of sample size in qualitative research is paramount. It influences the depth and diversity of responses, hence altering the richness of the obtained data. The work of Hennink and Kaiser (2022) and Bekele and Ago (2022) highlight the imperative for researchers to develop a sample size strategy that incorporates diverse participant experiences while carefully maintaining the delicate equilibrium between depth and breadth. Effectively managing this relationship is essential for obtaining rich, credible, and meaningful qualitative data. The credibility of qualitative research is directly linked to the rigour with which researchers engage their participants and the data they gather. It is fundamental to establishing the credibility of findings, especially when diverse qualitative approaches such as ethnography, grounded theory, and case studies require a sophisticated understanding of intricate social processes. An adequate sample size is essential for bolstering the credibility of qualitative findings, particularly by affecting the data's representativeness and the depth of insights obtained.

Mthuli et al. (2022) asserted that credibility in qualitative research emerges from the thorough analysis of participant viewpoints, highlighting the necessity of incorporating a variety of perspectives. Employing an appropriate sample size enables researchers to effectively capture the variances in experiences and perspectives, thus facilitating a more thorough understanding of the research context. Restricting the sample size may unintentionally result in a limited viewpoint, potentially yielding conclusions that mirror the prejudices of a uniform group instead of the complex diversity of the broader population.

Moreover, an expanded and more heterogeneous sample size can augment data saturation, a notion commonly referenced in qualitative technique. When researchers attain saturation (where no new information or themes

arise), confidence in the veracity of the findings markedly increases. This phenomenon correlates with the findings of Sharma et al. (2024), who say that a rich dataset produced from a properly sized sample helps researchers to make more meaningful and nuanced interpretations, as opposed to those derived from under-resourced data sets. Insufficient sampling may result in selective recruitment of biases, causing researchers to unintentionally favour individuals who align with preconceived conceptions or hypotheses, therefore compromising the validity of their findings.

Furthermore, the validity of qualitative findings depends on their capacity to represent the diversity of social reality. A larger sample size, particularly one that is deliberately stratified to incorporate various demographics and perspectives, offers a more realistic portrayal of the population under investigation. Mthuli et al. (2022) underscore the use of inter-sectionality in qualitative research design to alleviate biases linked to constrained sample numbers. By aggregating representation from diverse cultural, social, and economic backgrounds, researchers can enhance the credibility of their findings, appropriately acknowledging varying experiences and perceptions.

In qualitative techniques, where subjective narratives are essential, the relationship between sample size and believability becomes a critical factor for researchers. Inadequate sample sizes compromise the reliability of qualitative data and adversely affect the overall validity and applicability of the findings in many contexts. Therefore, it is essential for qualitative researchers to reconcile the practicalities of sample size with the foundational principles of credibility, ensuring that the subject matter's voice is adequately emphasised to inform future transferability and theoretical contributions. The current discussion regarding sample size and its implications is essential for enhancing the qualitative research framework, emphasising authenticity and the representation of diverse human experiences. The selection of sample size in qualitative research is intricately linked to the methodologies utilised, as each approach requires unique considerations concerning data richness, validity, and the applicability of results. In-depth interviews, focus groups, and ethnography possess distinct attributes that affect the rationale for sample size, highlighting the complex interplay between methodologies and sampling strategy.

DISCUSSION

Each qualitative methodology necessitates distinct sample size criteria that are crucial for assuring data richness, reliability, and the validity of results. The findings from Sarfo et al. (2021) and Subedi (2021) demonstrate that the complexities of various qualitative techniques require a customised approach to sample size, emphasising the necessity of matching methodological design with research goals. This complex understanding of sample size in qualitative research signifies greater implications for the rigour and application of findings across diverse contexts. In qualitative research, the notion of *saturation* is crucial in informing sample size determination. Saturation denotes the stage in data gathering at which no more themes, concepts, or insights arise from further interviews or focus groups, indicating that adequate data has been gathered to comprehend the topic under investigation (Mason, 2010). Establishing saturation allows researchers to strike a balance between collecting sufficient data for depth (richness) and avoiding excess that may lead to analytical redundancy. The significance of saturation is distinctly recognised in contemporary qualitative methodologies, serving as a qualitative benchmark for assessing the adequacy of sample size.

Braun and Clarke (2021) advance a sophisticated understanding of saturation, conceiving it as contextually contingent which is shaped by diverse analytical frameworks. The study asserts that saturation is not absolutely linked to a fixed sample size but is dependent on the intricacy of the research topic, the uniformity or diversity of the participant group, and the depth of data needed. This viewpoint indicates that qualitative researchers should be wary of the traditional use of saturation; strict compliance with a predetermined sample size may distort findings related to phenomena across many contexts. Saturation transforms into a dynamic process that encourages researchers to engage repeatedly with their data, contemplating the depth and significance of insights obtained from participant interactions.

Furthermore, the acknowledgement of saturation aids in addressing issues of credibility and transferability in qualitative research. Credibility is augmented when the richness of the data is apparent and provides a thorough grasp of participants' viewpoints, highlighting the necessity of achieving saturation within the

engaged sample. Conversely, generalisability is a contentious subject in qualitative research since it emphasises context-specific interpretations above widespread application. Achieving saturation enables researchers to validate assertions regarding the depth and breadth of their findings, so promoting a generalised understanding within the specific contexts of the study.

The complex relationship between saturation and sample size highlights the methodological difficulties present in qualitative research. By contextualising sample size within the concept of saturation, researchers can make judicious choices that emphasise data richness and relevance while maintaining the integrity and rigour of their studies, as discussed in comprehensive scholarly works by Braun and Clarke (2021) and Guest et al. (2020). In qualitative research, *transferability* pertains to the degree to which findings from a particular study can be extrapolated to wider contexts or populations. This notion, frequently viewed with skepticism in qualitative frameworks that emphasise depth rather than breadth, is considerably affected by sample size. Limited sample sizes may constrain researchers' ability to draw general conclusions about a population, a significant point emphasised by Crick (2021). In her examination of qualitative research, Crick contends that although smaller sample sizes can provide a more nuanced understanding of participants' experiences and surroundings, they concurrently undermine the transferability of the findings. The intrinsic subjectivity and range of human experiences confound this link; small sample sizes, though rich in data, frequently lack the diversity required to validate assertions about larger populations.

The concept of generalisability in qualitative research is especially contentious when findings originate from limited samples that do not accurately represent the target population. Mweshi and Sakyi (2020) highlight that qualitative researchers frequently contend with the conflict between acquiring comprehensive, nuanced data and attaining a sufficiently large sample size to formulate broader findings. They contend that the qualitative paradigm frequently employs intentional sampling, emphasising specific features or experiences instead of statistical representation, thereby prioritising depth over breadth. Consequently, although substantial insights may arise from a limited sample, critics contend that such results may lack applicability to different contexts or people, thereby sustaining the difficulties of transferability.

The inherent flexibility in qualitative methods further constrains transferability of results ensuing from smaller samples. In phenomenological studies of individual lived experiences, the richness of the data may obscure its broader application. According to Crick (2021), a narrow range of views may lead to findings that capture the specific characteristics rather than the general experiences of the wider population. This raises questions about the validity of generalising results outside the context of the study as the external factors and specific characteristics influencing participants' responses may not be replicable in other contexts. However, it is important to note that small sample sizes do not invalidate qualitative conclusions. Rather, they call for a more nuanced view of how transferability should be appreciated. Instead of seeking statistical generalisability, qualitative researchers acknowledge the limitations of small sample sizes, while aiming to achieve analytical or contextual generalisation, where findings are understood and applied to similar cultural, organisational or socio-political contexts (Vasileiou et al., 2018; Younas & Durante, 2023). This perspective makes it possible to think about how results might fit similar scenarios, providing interesting insight without over-extending claims of transferability.

The discussion around sample size and transferability in qualitative research highlights the necessity of methodological rigour and transparency. Researchers must meticulously defend their sample selections, elucidating how findings may contribute to broader discussions while acknowledging inherent limitations. By cultivating a balance between the profound insights provided by smaller samples and the extensive applicability of qualitative findings, researchers can enhance the overall understanding of human behaviour and social phenomena, despite the limitations of qualitative methodologies. The discussion regarding sample size in qualitative research is frequently burdened by traditional norms that emphasise numerical adequacy over the inherent quality of data. This viewpoint, however common, prompts essential reflections on the true objectives of qualitative research, which primarily pursues profound understanding rather than extensive depiction. Sebele-Mpofu (2020) contends that the focus on higher sample sizes frequently arises from a misapprehension of qualitative techniques, which are fundamentally intended to investigate intricate

phenomena through nuanced insights rather than statistical generalisability. Thus, reducing qualitative research to quantitative metrics may obscure the depth that this methodology seeks to reveal.

Lakens (2022) further clarifies this issue by challenging the traditional link between sample size and the legitimacy and validity of qualitative results. The "more is better" disposition is firmly established in research cultures that prioritise quantitative measurements, however it neglects the fundamental attributes of qualitative data. In qualitative research, the depth of data is frequently obtained through iterative sampling and analysis, where intensive interaction with a smaller number of participants can produce far more meaningful insights than cursory involvement with a larger number. Consequently, misunderstandings regarding sample size may unintentionally encourage a methodology that emphasises quantity above the intricacy and profundity that qualitative research seeks to explore.

Furthermore, the intricacies of sample size in qualitative research relate not only to the data's depth but also to its contextual validity. Qualitative research conclusions are frequently contingent upon certain cultural, social, or situational elements. Sebele-Mpofu (2020) asserts that a smaller, intentionally chosen sample can provide a more nuanced understanding of these situations, hence augmenting the trustworthiness of the findings. This approach is consistent with techniques such as phenomenology or grounded theory, which emphasise individuals' lived experiences and the meanings they create. The aim is to attain saturation (i.e. where no additional themes or insights arise) rather than to fulfil arbitrary numerical criteria that could undermine a comprehensive examination of subjects' lived experiences.

The above highlights concerns surrounding the transferability of qualitative findings, which are often misconstrued through quantitative standards. Qualitative research does not aim for statistical generalisability; rather, it aims to provide transferable insights applicable in analogous circumstances. Lakens (2022) contends that prioritising knowledge transmission above generalisation highlights the necessity of careful, contextual analysis, which may be undermined by an excessive concentration on sample size. Qualitative research fundamentally seeks to illuminate the diversity of human experience, which may be accidentally diluted by a larger sample that homogenises voices and perspectives.

In determining sample size, researchers must evaluate not just the amount but also the qualitative differences associated with changing numbers. Sampling techniques such as purposive, theoretical, or snowball sampling are based on the premise that insights obtained from a limited number of carefully selected participants can more effectively respond to specific research enquiries. The challenge of traditional sample size rules in qualitative research calls for a redefinition of standards that prioritises quality and depth, ensuring that findings authentically and subtly represent complex human experiences. The intricate equilibrium among data richness, credibility, and methodological integrity is central to this discussion, prompting scholars to challenge established norms in pursuit of a more contextually pertinent approach to qualitative inquiry. Analysing the complexities of sample size in qualitative research reveals that achieving a balance between sufficient representation and methodological rigour is essential. This paper's findings clarify the complex function of sample size in affecting data richness, trustworthiness, and the transferability of qualitative results, especially within various methodological frameworks like ethnography, phenomenology, and story analysis.

Qualitative research prioritises context and depth of insight over simply measurement. Ahmad and Wilkins (2025) assert that a reduced sample size can enhance engagement and facilitate more profound data collection, crucial for comprehending the intricacies of human experience. This stance corresponds with qualitative inquiry traditions, wherein understanding emerges from the profundity of individual narratives rather than the extent of population representation. A meticulously selected sample size can augment the depth of qualitative data, providing a venue for the investigation of subtled perspectives.

The trustworthiness of qualitative findings is closely linked to the sample size utilised in a study. Staller (2021) asserts that rigorous qualitative approaches require a sample size adequate to achieve thematic saturation and the identification of patterns. Saturation, a pivotal threshold in qualitative research, denotes the juncture at which further data gathering produces diminishing returns of novel knowledge. Comprehending the attainment of saturation frequently via iterative cycles of data collection and analysis offers a more precise framework for

identifying optimal sample sizes. In this environment, researchers must be cognisant of both the participant count and the diversity and richness of experiences encapsulated within that sample.

Furthermore, the notion of transferability in qualitative research necessitates careful contemplation of sample size. Although qualitative studies do not generally pursue generalisability in the same way as quantitative methods, they strive to investigate themes that may be pertinent across analogous contexts. Ahmad and Wilkins (2025) contend that a deliberately selected sample allows researchers to derive linkages and insights that extend beyond the local study population. Consequently, although qualitative findings may lack statistical generalisability, the recognition of thematic trends or variances within a clearly defined sample can enhance larger theoretical insights.

Optimal methodologies for establishing suitable sample sizes in qualitative research should be grounded on a synthesis of theoretical frameworks, research aims, and the specific characteristics of the investigation. Researchers are urged to practise critical reflexivity, consistently evaluating the correspondence between their methodological decisions and desired results. Staller (2021) recommends setting explicit criteria for participant selection, utilising iterative data collection methods, and fostering continuous conversation with colleagues in the field to enhance the approach to sample size.

Toward Transparent and Rigorous Sample Size Justifications

Drawing from the reviewed literature, this study suggests the ensuing principles for qualitative researchers:

1. Sample size should match study's objectives, research questions, and methodology.
2. Rationales should be conceptual and analytical, based on saturation, information power or theoretical adequacy and not numerical rules.
3. Researchers should report how sample adequacy is determined throughout data collection and analysis.
4. Sampling procedures should be adaptable as analysis progresses.
5. Claims about sample adequacy should be made in relation to the epistemological assumptions of the investigation.

In a nutshell, different qualitative traditions use qualitative approaches differently. Grounded theory relies on theoretical sampling and saturation for theory development. Phenomenological study seeks rich experiential narratives from small groups of carefully selected participants. Ethnographic studies value observational depth and persistent involvement over participant numbers. Narrative inquiry promotes life story complexity, while case study research emphasises contextual richness (Creswell, 2018; Yin, 2018). Thus, no single method can account for sample size for all qualitative approaches.

Contemporary methodological literature recommends using different techniques to determine qualitative sample size. Researchers may estimate sample size using the information power framework, monitor emerging evidence through data saturation or theoretical development, and justify sample adequacy by demonstrating conceptual depth, methodological transparency, and epistemological alignment. Consider data saturation, theoretical saturation, information power, conceptual depth, and pragmatic factors as complementary frameworks rather than competing ones. The varied techniques collectively reinforce the idea that qualitative sample size is based on the richness, relevance, and adequacy of evidence needed to answer research questions. Qualitative research is more credible, reliable, and trustworthy when these conclusions are justified.

CONCLUSION

In conclusion, establishing an appropriate sample size in qualitative research is not a matter of adhering to fixed numerical prescriptions but of ensuring methodological coherence, analytical depth, and information richness. This review demonstrates that sample adequacy should be guided by the study's purpose,

epistemological orientation, methodological approach, and the quality of evidence produced rather than by arbitrary participant counts. Contemporary frameworks, including data saturation, theoretical saturation, information power, conceptual depth, and pragmatic considerations offer complementary perspectives that enable researchers to justify sample size decisions in a transparent and context-sensitive manner. Ultimately, rigorous qualitative research depends less on how many participants are included than on why they are selected, how they contribute to answering research questions, and whether the collected data provide sufficient depth to support credible, meaningful, and transferable interpretations. By encouraging explicit, theoretically informed, and methodologically defensible sample size justifications, this review contributes to strengthening the rigour, transparency, and credibility of qualitative inquiry while providing practical guidance for researchers, supervisors, reviewers, research ethics committees and the entire intellectual community.

RECOMMENDATIONS

For novice researchers, including doctoral students, the following practical guidance is offered: (1) Begin with a smaller sample (e.g., 5-10 participants) and conduct preliminary analysis before making final decisions about sample size; (2) Consult methodological literature specific to your approach and discipline to understand typical sample sizes in your field; (3) Seek supervision and peer feedback on your sampling decisions and justifications; (4) Be transparent about the iterative nature of sampling decisions and how analysis informed ongoing data collection; (5) Plan for flexibility in sample size to accommodate emerging insights; (6) Document all sampling decisions and their justifications throughout the research process. For experienced researchers: (1) Consider mentoring less experienced colleagues in sample size justification; (2) Contribute to methodological discussions by publishing empirical studies on saturation and sample adequacy; (3) Model transparent, defensible sample size justifications in your own publications; (4) Advocate for more nuanced evaluation criteria in peer review and ethics review processes. Regardless of experience level, researchers should prioritise methodological transparency, epistemological coherence, and analytical depth over compliance with arbitrary numerical thresholds.

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