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Editorial

Less is More? Review and Recommendations for Qualitative Sampling Strategy using the S.C.A.D.E Approach

Hiram Ting[1,2]*, Daniel Turner[3], Kim-Lim Tan[4], Sook Rei Tan[4], Munwai Wong[5], and Jiankun Gong[2]

[1]*Faculty of Tourism and Hospitality, i-CATS University College, Malaysia*
[2]*International College, Krirk University, Thailand*
[3]*Quirkos, United Kingdom*
[4]*JCUS Business School, James Cook University, Singapore*
[5]*Learning Transformation Unit, Swinburne University of Technology, Australia*

*Corresponding author: hiramparousia@gmail.com

Abstract

The determination of sample size in qualitative research introduces a unique and multifaceted challenge, setting it apart from the more structured methodology of quantitative research. Contrary to sampling methods in quantitative research, which primarily aim to secure random and statistically representative samples that facilitate the generalisation of findings to broader populations, sampling in qualitative research requires a distinct set of considerations in its pursuit of a deeper understanding of specific phenomena. The objective of this editorial is to provide qualitative researchers with clear and foundational guidance for effectively communicating the methodological aspects of their research papers, particularly pertaining to sample size justification. Building on this, we present S.C.A.D.E, an acronym comprising five key actionable elements—Selecting, Clarifying, Aligning, Deploying and Evaluating—to guide researchers in determining the appropriate sample size and ensuring that data saturation is achieved as they plan their qualitative exploration.

Keywords: Methodology, Qualitative Research, Sample Size, Sampling Strategy, Data Saturation, SCADE Approach

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Introduction

The determination of sample size in qualitative research introduces a unique and multifaceted challenge, setting it apart from the more structured methodology of quantitative research. Contrary to sampling methods in quantitative research, which are mostly and primarily employed to secure statistically representative samples that facilitate the generalisation of findings to broader populations, qualitative researchers have to manage a distinct set of considerations in determining their sampling approach (Emmel, 2013).

In particular, qualitative research pursues a deep understanding of specific phenomena rather than empirical generalisation (Patton, 2002). Scholars such as Staller (2021) and Holland and Shaw (2014) argue that this distinction limits the rationale for establishing specific numerical requirements for sample size in qualitative research; in stark contrast, quantitative research demands both a sampling frame and a minimum sample size to achieve required precision levels in statistical analysis. Sample size in qualitative inquiry is often not the primary or obligatory consideration due to its distinct underlying logic, context, and purpose. Instead, qualitative researchers have remained widely devoted to the premise of determining an appropriate sample size based on individual judgement, which is significantly influenced by the specific context and scientific framework of a study (Boddy, 2016; Mocănașu, 2020). Consequently, there are no rigid, universally applicable guidelines for deciding sample size in the context of qualitative studies. As Boddy (2016) asserted, even a sample size as small as one can be justified.

Past literature across different disciplines has brought to light a considerable number of debates revolving around whether qualitative research sample size should be determined a priori, such as Sim et al.'s (2018) argument that "defining sample size a priori is inherently problematic in the case of inductive, exploratory research, which, by definition, looks to explore phenomena in relation to which we cannot identify the key themes in advance." Parallel to this relentless debate, Kohler et al. (2023) recently highlighted the critical need to steer away from applying readily accessible linear and oversimplified prescriptive templates when determining sample sizes. They proposed several practical strategies as alternatives, including the reconsideration of epistemological and ontological assumptions in a study and the creative innovation of existing research methods to thoroughly embody qualitative research rigour.

Nonetheless, while qualitative research acknowledges that determining an adequate sample size is undeniably a matter of subjective judgment and experience, it is a misconception to assert that numbers are inconsequential in ensuring an effective qualitative sampling strategy. Unfortunately, existing qualitative studies exhibit a pervasive lack of justification and sound rationale for their chosen sampling methods and sample size. This evident inadequacy in reporting across various disciplinary fields (Carlsen and Glenton, 2011; Vasileiou et al., 2018), jeopardises the reliability and legitimacy of qualitative research. Thus, addressing this issue is paramount to ensuring the rigour, credibility, and validity of qualitative research across diverse domains.

The primary objective of this Editorial is to provide qualitative researchers (and quantitative researchers who are less familiar with qualitative research and methodology) with clear and fundamental guidance for effectively communicating the

methodological aspects of their research, specifically pertaining to sample size justification. In doing so, we aim to introduce the S.C.A.D.E approach as a set of recommendations for researchers to apply when determining sample size in their research projects, theses, or dissertations. Additionally, we suggest recommendations with pertinent examples to enhance the methodological clarity and robustness of their research.

The Concept of Data Saturation

Sample size, as defined by Sekaran and Bougie (2010), is a subset of a population necessary to ensure sufficient representation for drawing meaningful conclusions. On this note, estimating an appropriate sample size involves considering diverse factors, including a study's methodology, analytical approach, model complexity, and available time and resources. Alongside these considerations, our literature review points to two primary schools of thought regarding sample size determination. The first predetermines the sample size based on statistical means, while the second relies on the concept of saturation. As many authors, such as Staller (2021) have argued, the concept of a predetermined sample size is not ideal in qualitative research, as qualitative study design essentially promotes flexibility as the research progresses. Thus, scholars have advocated a more common approach—data saturation.

Saturation is a longstanding and widely accepted practice in qualitative research (Fusch and Ness, 2015), regarded as the "gold standard" by scholars such as Morse (2015) and Sykes et al. (2018). In practice, saturation occurs when no new themes or explanations emerge from the data set (Marshall, 1996). It is the point at which the same information is repeatedly reported, and learning anything new becomes improbable, indicating that sufficient data has been collected. Apart from saturation, Seidman (2006) added adequacy as another criteria for sufficiency. Adequacy involves having enough participants and sites that represent the population, enabling those not sampled to relate to the experiences of those in the sample.

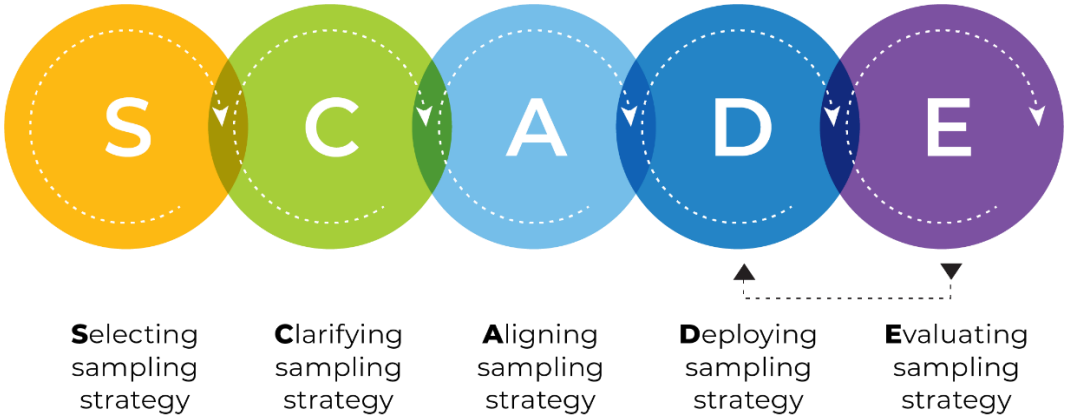
Although saturation serves as a guiding principle for determining the most appropriate sample size (Hennink et al., 2016), Francis et al. (2010) argue that there is no universally agreed-upon procedure for establishing data saturation. Variations across different studies, with some achieving saturation at as few as six interviews (Isman, Ekéus et al., 2013; Isman, Mahmoud Warsame et al., 2013; Mthuli, 2018) and one phenomenological study achieving it at 12 interviews (Guest et al., 2006), underscore the necessity for a framework to guide researchers in establishing the appropriate sample size for their specific research contexts. Such a framework can assure methodological rigour and validity, enhancing the overall quality and credibility of qualitative research across diverse subject domains.

The S.C.A.D.E Approach

While qualitative researchers should remain mindful of data saturation throughout their study, predetermining sample size should be a comprehensive process that considers specific methodological elements. Unlike other foundational underpinnings, such as ontology, epistemology, and axiology, we argue that sampling decisions should align

with the entire scope of the study, including its specific context and practical considerations. Building on this proposition, we present S.C.A.D.E—an acronym comprising five key actionable elements to guide researchers in determining the appropriate sample size when planning their study exploration (Figure 1). This approach and its elements work in a non-linear fashion, deliberately putting researchers in a conscious flow of reflection in each stage of sampling strategy and decision-making.

Figure 1: The S.C.A.D.E Approach for Sample Size Determination and Justification



SELECTing the Sampling Strategy

Selecting the appropriate sampling strategy in qualitative research by considering the characteristics of participants and contexts can significantly impact sample size. For instance, when researchers choose a purposive sampling strategy, they deliberately select participants with specific characteristics or experiences relevant to the research focus. In such instances, the sample size may be relatively small, aiming to thoroughly explore the perspectives and insights of a select group. On the other hand, if a snowball sampling strategy is employed, where participants refer other prospective participants, the sample size may grow progressively during the study. This approach is often used when researchers seek to access hard-to-reach populations or when the study demands a broader network of participants.

Consider, for instance, a qualitative study examining laid off workers' lived experiences. A researcher using a purposive sampling strategy may intentionally choose a small, diverse group of workers, encompassing various age groups, employment types, and layoff experiences. This deliberate selection ensures a manageable sample size while capturing a rich spectrum of workers' perspectives. In contrast, employing a snowball sampling in the same study could result in initial participants referring others within their networks, potentially leading to an organically expanding sample size. This approach provides a more extensive array of workers' stories and experiences. Therefore, the choice of sampling strategy not only impacts the sample size but also plays a crucial role in shaping the depth and breadth of qualitative data collected.

CLARIFYing the Sampling Strategy

In this stage, researchers should provide insightful explanations on the applicability and advantages of the selected sampling technique along with the limitations or inappropriateness of other techniques. These arguments grant researchers a clearer understanding of how they should optimise the sample size over the course of their study. Hence, the sample size should be mentioned, preplanned or preset at this stage. For instance, in a qualitative study focusing on urban school teachers' experiences using a purposive sampling strategy, the "Clarify" step involves elaborating the specifics of how the purposive technique operates and subsequently, why the preplanned sample size is adequate. This entails examining the technique's advantages, such as the selection of participants who possess the desired characteristics and experiences relevant to the research, as well as disadvantages, such as potential limitations in terms of diversity. Justification is also provided for sample size at this stage to facilitate further deliberation in later stages.

For example, in an event where the sample size is small, such as in a study exploring, documenting, or narrating the life of the richest businessman in a country (the sample size would be just one), researchers can clarify their reasons for using multiple data sources (e.g., interviews with not only the businessman but also his employees, as well as reviews of documents about him and his work) or multiple methods (e.g., participatory observation followed by in-depth interview). This procedural clarification aids in ascertaining the appropriate sample size by striking a balance between data richness and feasibility, ensuring that the study captures essential nuances without imposing excessive demands on resource or time constraints.

ALIGNing the Sampling Strategy

The "Align" stage in qualitative research sample size determination notably impacts the final sample size by providing a sound rationale for the chosen approach. In this stage, researchers strengthen the validity of their sampling decisions by aligning them with the core components of their research. By explaining how these decisions contribute to their research objectives and questions, researchers ensure that the sample size is purposefully consistent and methodically justified.

Take, for instance, a qualitative study examining the experiences of individuals living with a rare medical condition. If researchers select a snowball sampling strategy, the "Align" stage entails explaining how this choice is consistent with the research problems and objectives as well as the study's highly contextual factors (e.g., participants' willingness to share, mobility/accessibility to engage in the research, or as simple as confidentiality of shared information). They may clarify that snowball sampling facilitates access to hard-to-reach or small populations, which is essential for capturing the unique experiences of individuals with rare conditions. This alignment between the sampling strategy and the research objectives ensures that, even as the sample size grows organically, it is procedurally sound and directly serves the study's purpose. Thus, the "Align" stage plays a critical role in establishing the credibility of the sample size and its relevance to the context of a qualitative study without compromising research rigour.

DEPLOYing the Sampling Strategy

The "Deploy" stage involves translating the decisions formulated in the preceding stages of the process into practical and implementable actions. By executing the chosen sampling plan, researchers apply their selected sampling strategy and techniques in lived context and practice. For example, if a researcher has deliberated upon and followed the previous steps, and has finally decided on a snowball sampling strategy to study the experiences of marginalised urban communities, the "Deploy" stage would involve reaching out to initial participants and relying on their referrals to approach other participants and expand the sample size. Through active engagement with the community using the snowball technique, researchers can adjust and adapt the sample size in real-time as new participants are referred, thereby securing the richness (or thickness) of data.

This process also accommodates unexpected situations and deals with ambiguities whenever necessary, such as the need to sample families instead of individuals as the unit of measurement to elicit more insights and better understand the phenomenon concerned. This dynamic approach results in a sample size that reflects the evolving research focus and the complexity of the urban community's experiences. Hence, this stage ensures that the sample size remains flexible, adaptable, and responsive to the shifting needs of the study.

EVALUATing the Sampling Strategy

The "Evaluate" stage in determining sample size for qualitative studies holds significant importance, impacting not only current studies but also future research endeavours. This stage occurs post data collection, wherein researchers critically assess the effectiveness of their sampling strategy and technique(s) to gauge whether their chosen approach has delivered data of requisite quality and depth (i.e., has achieved data saturation) to adequately address their key research questions. It also prompts reflections on potential adjustments or refinements for future studies.

For instance, if researchers conducted a qualitative study on employees' experiences in a specific industry using a snowball sampling strategy, the "Evaluate" stage would involve assessing whether this strategy yielded a sufficiently diverse and comprehensive dataset. By analysing the collected data, they can determine if the chosen strategy achieved the desired richness and thickness of insights. If the evaluation reveals shortcomings in data quality or under-representation of certain perspectives, they may make adjustments to the "Deploy" stage, such as by increasing the number of respondents or adopting multiple sources of data for triangulation. If the identified shortfalls do not have a substantial impact on the findings, researchers could consider them as limitations of the study and thus recommend alternative strategies or perspectives in future studies. Thus, the "Evaluate" stage not only appraises and reflects on the quality of sampling and data but also informs the refinement of sampling strategies and sample size, both in the current study and in future research.

To present an overview of the S.C.A.D.E approach in a tabulated manner, we provide the descriptions of each element as shown in Table 1. Examples related to business research are also included to facilitate the considerations of researchers and students in determining the sample size in their respective research endeavours.

Table 1: The S.C.A.D.E approach and examples in business research

Approach	Description of actionable element	Examples in business research
SELECT*ing*	Selecting the appropriate sampling strategy in qualitative research by considering participant characteristics and contexts can impact the sample size. Selection also plays a crucial role in shaping the depth and breadth of qualitative data collected.	Sampling the general public requires different considerations and decisions than sampling special interest groups. Key informants in an organisation and online customers in the same industry have dissimilar contextual factors.
CLARIFY*ing*	Explaining and justifying how a selected sampling strategy works clarifies its suitability within the research context and thus, rationalises the sample size. This entails examining advantages (e.g., selected participants' characteristics are relevant to the research) and subsequently, predetermining the sample size.	Developing clear inclusion or exclusion criteria in an organisational study to determine the eligibility of employees as respondents. Predetermining sample size by taking into consideration the characteristics of elderly travellers.
ALIGN*ing*	Strengthening the rationale of researchers' sampling decisions to align with the core research problem and objectives ensures that the sample size is purposefully consistent and methodically justified. This is critical in establishing credibility of the sample size and its relevance to the research context without compromising research rigour.	Ensuring that a sample of middle managers is useful to address the research problem about leadership and management in the hotel industry. The sample size of Gen Z workers in five sectors is adequate for making meaningful comparisons across the sectors to achieve the research objectives.
DEPLOY*ing*	By executing the chosen sampling plan, researchers apply their selected sampling strategy and techniques in lived context and practice. This stage ensures that the sample size remains flexible, adaptable, and responsive to the shifting needs of the study, as qualitative researchers often have to adjust and adapt to evolving circumstances. It is also useful to secure the richness or thickness of data.	Investigating the decline of a tourism destination after social media hype through multiple stakeholders, such as government agencies, private firms, local communities, and visitors. Ascertaining the factors that contribute to an increase in complaints by online and in-store customers, as well as the reasons behind their dissatisfaction.
EVALUAT*ing*	Evaluating the overall sampling strategy holds paramount importance and impact for the current study as well as future studies. This stage involves assessing and reflecting upon the effectiveness of the chosen sampling strategy to determine whether data saturation is achieved, thus informing the refinement of	Determining if any emerging theme exists in the last five interviews to describe or explain the rise of young women entrepreneurs in Southeast Asian countries. Proposing future investigations to look into the latent effect of the

	sampling strategies and sample size determination in the current or future research.	current geopolitical landscape on international business activities and performance.

References include Obermayer, Kővári, Leinonen, Bak, G, & Valeri (2022); Welch, Marschan-Piekkari, Penttinen, & Tahvanainen (2002); Mbonyane, & Ladzani (2011); Loh, & Dahesihsari (2013).

Conclusion

The unique challenges associated with determining sample size in qualitative research require careful consideration of the distinct nature of this methodology. This Editorial introduces the S.C.A.D.E. approach as a thoughtful, flexible, guided and justified procedure for sample size determination in a qualitative study. By applying the five key actionable elements under this approach, researchers and students can demonstrate the transparency and rigour of their qualitative research in determining sample size and data saturation while ensuring that the sample size determination is in line with their core research problem, objectives, or questions. Although there are critiques of data saturation concept as being too positivistic, and there are different types of saturation (Sebele-Mpofu, 2020), these elements remain pivotal to applying data saturation concept in the appropriate form. Such an approach not only enhances methodological clarity of their work, but also the credibility of qualitative findings and the implications of the study.

References

Boddy, C. R., (2016), Sample size for qualitative research, *Qualitative Market Research: An International Journal*, vol. 19, no. 4, pp. 426-432.

Carlsen, B., & Glenton, C., (2011), What about N? A methodological study of sample-size reporting in focus group studies, *BMC medical research methodology*, vol. 11, no. 1, pp. 1-10.

Emmel, N., (2013), Sampling and choosing cases in qualitative research: A realist approach, *Sampling and Choosing Cases in Qualitative Research*, pp. 1-192.

Holland, S., & Shaw, I., (2014), Doing qualitative research in social work, Doing qualitative research in social work, pp. 1-368.

Köhler, T., Smith, A. D., & Pieper, T. M., (2023), Stop... Just stop! The use and misuse of methodological template prescriptions in qualitative family business research and ways forward, *Journal of Family Business Strategy*, pp. 100595.

Loh, J. M., & Dahesihsari, R. (2013). Resilience and economic empowerment: A qualitative investigation of entrepreneurial Indonesian women. *Journal of Enterprising Culture, 21*(01), 107-121.

Mbonyane, B., & Ladzani, W. (2011). Factors that hinder the growth of small businesses in South African townships. *European Business Review, 23*(6), 550-560.

Mocănașu, D. R., (2020), Determining the sample size in qualitative research. In *International multidisciplinary scientific conference on the dialogue between sciences & arts, religion & education*, vol. 4, no. 1, pp. 181-187, Ideas Forum International Academic and Scientific Association.

Mthuli, S. A., Ruffin, F., & Singh, N., (2022), 'Define, Explain, Justify, Apply'(DEJA): An analytic tool for guiding qualitative research sample size. *International Journal of Social Research Methodology*, vol. 25, no. 6, pp. 809-821.

Obermayer, N., Kővári, E., Leinonen, J., Bak, G., & Valeri, M. (2022). How social media practices shape family business performance: the wine industry case study. *European Management Journal*, *40*(3), 360-371.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K., (2015), Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research, *Administration and policy in mental health*, vol. 42, no. 5, pp. 533–544, https://doi.org/10.1007/s10488-013-0528-y.

Patton, M. Q., (2002), Two decades of developments in qualitative inquiry: A personal, experiential perspective, *Qualitative social work*, vol. 1, no. 3, pp. 261-283.

Sebele-Mpofu, F. Y., (2020), Saturation controversy in qualitative research: Complexities and underlying assumptions. A literature review, *Cogent Social Sciences*, 6:1, 1838706, DOI: 10.1080/23311886.2020.1838706

Sim, J., Saunders, B., Waterfield, J., & Kingstone, T., (2018), Can sample size in qualitative research be determined a priori?, *International Journal of Social Research Methodology*, vol. 21, no. 5, pp. 619-634.

Staller, K. M., (2021), Big enough? Sampling in qualitative inquiry, *Qualitative Social Work*, vol. 20, no. 4, pp. 897-904.

Vasileiou, K., Barnett, J., Thorpe, S., & Young, T., (2018), Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period, *BMC medical research methodology*, vol. 18, pp. 1-18.

Welch, C., Marschan-Piekkari, R., Penttinen, H., & Tahvanainen, M. (2002). Corporate elites as informants in qualitative international business research. *International business review*, *11*(5), 611-628.