Editorial: A roadmap for data analysis in qualitative research

Qualitative research is often associated with new developments in theory building and elaboration. At the core of this type of research, data analysis represents a significant challenge. Some scholars consider inductive data analysis a black box because of its creative and unpredictable nature (common features of radical innovations). In response to this challenge, standard protocols (called templates) gained relevance (Harley & Cornelissen, 2022). This editorial sheds light on how to perform inductive data analysis. We link this crucial process with the three main templates in qualitative research: the Eisenhardt method, the Langley approach and the Gioia methodology. Moreover, we provide a framework (roadmap) for data analysis, which might facilitate research to build new theories.

Designing a roadmap

Excellent recent studies and editorials increase the understanding of qualitative research scope, goals, approaches and relevance (Bansal, Smith, & Vaara, 2018; Eisenhardt, 2021; Gioia, 2021). For example, there is a growing consensus that qualitative research occupies a unique position in management and strategy literature in radically generating new theories (Bartunek, Rynes, & Ireland, 2006; Gehman et al., 2018). Scholars also appear to converge in three modes or templates of conducting qualitative research: the comparison of multiple case approaches (or the Eisenhardt method), the interpretive case approach (or the Gioia methodology) and the process research (or the Langley approach). Although templates might represent simplifications, they also offer helpful guidance to the whole community: master students, PhD students, researchers, editors and, of course, readers. Moreover, these templates organise what qualitative research is, how to conduct it and the type of theory or contributions expected. As qualitative researchers, we admire these recent evolutions. However, a core aspect needs clarification: data analysis.

This is not due to the lack of studies and literature on data analysis (Miles & Huberman, 1994; Graebner, Martin, & Roundy, 2012; Patton, 2015; Glaser & Strauss, 1999). There are outstanding playbooks, articles and videos on data analysis. However, a fundamental aspect is missing in the landscape of contributions: an organising roadmap for inductive data analysis. Scholars tend to make incorrect assumptions regarding data analysis (Figure 1). For example, although the existing software represents impressive tools, data analysis is not confined to using them. Although the templates may present, substantial differences and scholars might have their preferences and biases, when and how to choose the template might depend on data collection and data analysis procedures.

Erratum: It has come to the attention of the publisher that the article "Editorial: A roadmap for data analysis in qualitative research" by Leonardo Augusto Vasconcelos Gomes, Liliana Vasconcellos and Kavita Miadaira Hamza, published in *RAUSP Management Journal*, Vol. 58 No. 3, https://doi.org/10.1108/RAUSP-07-2023-274, contained the wrong copyright line. This error was introduced during the production process and has now been corrected online. The publisher sincerely apologises for this error and for any confusion caused.

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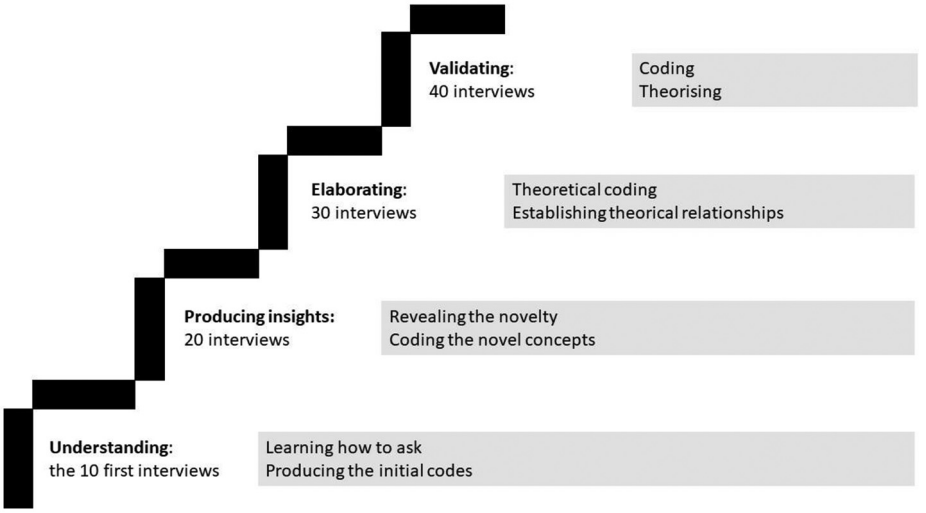

Figure 1.
Roadmap for data analysis in qualitative research

Paradigms in qualitative research

Understanding our worldview (or research paradigm) helps design coherent qualitative research since qualitative data has a wide range of possibilities. Burrell and Morgan (1979) defined two dichotomic dimensions to understand research paradigms: the objective and the subjective approaches to social science. In the positivism paradigm, a "real" world can be apprehended. The researcher is considered independent from the investigated object and uses strategies to reduce or eliminate biases. On the other hand, constructivism considers a socially constructed reality dependent on individuals or groups. It also believes that researchers and informants create the findings during the investigation (Guba & Lincoln, 1994). We can analyse it as a continuum with the objective paradigms at one side (*positivism* and *postpositivism*) and the subjective ones at the other (*interpretivism*, *postmodernism*, *critical theory*, *constructivism* and *participative inquiry*), also called *non-positivists*.

Since paradigms are also a result of conflicts and disputes, for many decades, different paradigm wars have been in place (Denzin, 2010). Although paradigms boundaries have been changing over time (Lincoln, Lynham, & Guba, 2018), positivism and constructivism (also *interpretivism*) cannot be combined since the worldviews are mutually exclusive. Still, methodologies can be mixed (Lincoln et al., 2018). That is, the qualitative approach can be used in different paradigms but with implications for interpreting the data and theorising (Langley & Abdallah, 2011). As acknowledged by Gehman et al. (2018), unfortunately, a diversity of methodological authors can be found in the same reviewed paper, disregarding their differing assumptions. Thus, the knowledge and use of templates might help researchers maintain the internal coherence of their qualitative research design.

Comparing three different templates

A methodological template is an approach to conducting and analysing qualitative research that has become standardised and legitimised among researchers (Langley & Abdallah, 2011; Köhler, Smith, & Bhakoo, 2022; Harley & Cornelissen, 2022). Templates can be instructive (Langley & Abdallah, 2011) and provide procedures and steps for a qualitative research project (Köhler et al., 2022).

We present in Table 1 the main characteristics of three different templates: the Eisenhardt Method, the Gioia Methodology and the Langley Approach. Although all three templates aim to build theory through an inductive approach, the assumptions and guidelines are specific.

An essential distinction between Eisenhardt and Gioia templates is the research tradition, resulting in the impossibility of combining the two templates in the same research. So, to analyse data from research based on Eisenhardt's comparative case study, a researcher must use strategies that can be aligned with postpositivism, such as Miles and Huberman (1994) or Glaser and Strauss (1999).

Although the approaches are different, there are interactions and dialogues among them (Gehman et al., 2018). For example, Langley includes the possibility of a comparative case approach (from Eisenhardt) through process-based data (how things evolve) instead of using a variance approach (relationships between variables). The Gioia methodology can also be used in process research, as the discovery of relevant concepts can be embedded in a flow of activities or events.

Also, all three templates mention an iterative process during data analysis. Eisenhardt (2021) emphasises iteration between literature, data and emergent theory, while the Gioia methodology iterates data collecting, data analysis and new informants' search (Corley & Gioia, 2004). Finally, Langley (1999) describes the grounded theory strategy for analysing process data (Glaser & Strauss, 1999). Therefore, the researcher needs to identify the best theory fit for the focus of her/his study.

Roadmap for qualitative data analysis

Data analysis is the core of qualitative research. However, it is always a challenging task. Some scholars (notably inexperienced ones) believe collecting all data is necessary before analysing data. In our experience, this was never the case. Data analysis is a more interactive, iterative and accumulative process. By interactive process, we refer to that process as engaging with other scholars and stakeholders to produce codes and develop a theory. Supervisors, advisors, other master's and PhD students and research assistants might help scholars, notably in the early stage of their careers, to see what nobody sees in a dataset. Seeing what nobody can is a crucial aspect of qualitative research and, consequently, of data analysis. However, this is never an easy job. Interacting with other scholars might contribute to triggering and catalysing the discovery process.

Data analysis is also an iterative process. Scholars should also engage with prior literature and establish proper comparisons. Although scholars often say they are pursuing the pure manifestation of ground theory (Glaser & Strauss, 1999; Kuckertz et al., 2020; Bocken & Geradts, 2020) or the Gioia methodology, this does not imply that we should ignore the prior literature. Not all codes and findings that emerge from the data will contribute to generating an insightful theory. Ignoring the prior literature might lead to unnecessary learning and waste. However, it is necessary to find the right moment. Engaging too early might create substantial obstacles to true discovery, while engaging too late might lead to unnecessary efforts in developing well-described and documented concepts and theoretical relationships.

Moreover, the process is cumulative and consists of a progressive engagement in a particular direction based on what the data revealed. For example, while we often start with an inductive process, we redesign the script to focus on emergent categories after finding the initial categories. We collect more data after finding some new, promising aspects of a phenomenon, which can render a new theory. In this vein, data analysis and data collection have a significant overlap.

Additionally, sometimes we change the template according to what our data reveal or the need for more data. For example, we have already started research based on a single case through a process lens. Nevertheless, after initial rounds of data analysis, we perceived that case comparisons would be more revealing in terms of discovery. Consequently, we decided to change our template. In another situation, we started the research based on process research and then changed it to the Gioia methodology. Assuming a more flexible approach concerning the templates and understanding how to pivot might lead scholars to focus on the core aspect

Table 1. Template comparison

	Eisenhardt method	Gioia methodology	Langley approach
Goal	• Builds theory that is testable, generalisable, logically coherent and empirically valid	• Discover relevant concepts for theory building	• Theorising that incorporates a temporal progression of activities
Research paradigm	• Postpositivism	• Interpretivism	• Different ontological views
Focus	• There is no theory or the available theory is problematic • Complex processes • "Hard to measure" constructs	• Meaning attributed by people living the experience	• How and why things emerge, develop, grow or terminate over time
Method	• Study of multiple cases • Multiple data sources • Research design and theoretical sampling (e.g. polar types) • Replication logic	• Single case or cases with revelatory potential • Informants are "knowledgeable agents" • Suspension of belief concerning previous theorising • Efforts to give voice to the informants • Multiple data sources • Revision of interview protocol during data collection	• Requires rich longitudinal data • Several approaches to data collection
Data analysis	• May guess the constructs but is also open-minded • Breaks up data into measures and constructs • Analysis of each case and cross-case pattern recognition • Data reduction • Tables connecting constructs and cases • Iterate among literature, data and emergent theory	• 1st order (informant- centric) concepts, 2nd order (theory-centric) themes and aggregate dimensions • Researcher adopts an outsider's perspective • Builds a data structure • Consensual interpretation (rules) • Literature consultation to refine emergent • Iterative process	• Based on flows of activities and events • Qualitative and quantitative methods of analysis • Methods can be mixed (e.g. temporal bracketing, visual mapping) • Cross-case replication and/or longitudinal replication
Methodological references	Eisenhardt (1989), Eisenhardt (2021)	Gioia *et al.* (2013), Gioia (2021)	Langley (1999), Langley, Smallman, Tsoukas, and Van De Ven (2013)

Source: Based on Gehman et al. (2018), Langley and Abdallah (2011), Eisenhardt (2021), Gioia et al. (2013) and Langley et al. (2013)

of qualitative data analysis: *the discovery* (and not a specific template). These features led us to develop a four-stage framework to guide scholars through data analysis (Figure 1).

The first stage, "Understanding", involves collecting initial data and performing open coding. The label "Understanding" has several reasons. Qualitative research often deals with abstract concepts and phenomena. To operationalise these concepts into meaningful questions and to gather relevant data from informants, researchers face the challenge of embracing experimentations and adjustments. The first significant discovery is how to ask for and obtain information regarding a particular issue. In this stage, researchers should demonstrate that they can identify the main aspects concerning the phenomenon of interest. For example, in research regarding how managers assess uncertainty propagation regarding causes and effects, a fundamental challenge was to ask about "uncertainty propagation". We then struggled to code examples of uncertainty propagation from our dataset. We perceived that a significant contribution of our work would be showing how academics can research uncertainty propagation. In this stage, we conducted the first ten interviews and workshops with key partners to elaborate on the initial codes. Therefore, understanding how to ask and code is crucial to succeed in qualitative research.

The second stage is "Producing insights". This stage often involves collecting more than ten interviews. Here, we start to ask what is new in this dataset. Developing cases (one or more) as individual stories helps find insight. We still code to characterise different aspects of our data set according to the phenomenon of interest. Nothing is taken for granted. We tend to question everything and do not consider anything as usual or expected. We dive into the data set by searching why and how something is happening. We also tend to compare it with prior literature. We question whether the prior literature can explain the phenomenon or if our codes (although unfinished) bring novelties. In this stage, we define which template would be adopted. Part of the insight involves this definition. We also define the type of contribution or theory we will generate. For example, in line with Sandberg and Alvesson (2021), we might focus on developing a typology (ordering) or unpacking phenomenon in terms of stages, events, decisions and actions (*enacting*). Such a definition plays a significant role in the following steps concerning data analysis and data collection. Moreover, we also define whether we will adopt theory elaboration, theory generation or a combination of both (Fisher & Aguinis, 2017).

"Producing insights" does not imply that the whole job is done. In fact, this stage triggers the following stage: "Elaborating". Here, we engage in coding with a new lens. Now, the insights guide us to theoretical coding. We might assemble the first-order codes into categories (as suggested by Gioia, Corley, & Hamilton, 2013) or engage in case comparisons based on our codes accordingly. The critical aspect is to enhance the novelty. Elaborating requires more data to collect specific and illustrative examples of our categories. We tend to return to the same prior informants and ask them new questions based on a more deductive script. We also definitely engage in comparison with the appraisal of theories. We demonstrate how a particular concept assumes unique features according to the research context or how a new concept provides unique insights into the phenomena. Elaborating is also crucial to explore the theoretical relationships among emergent concepts.

The final stage consists of "Validating". At this stage, we show results and theoretical frameworks to informants and experts. We can also engage in collecting more data and data analysis, but the focus is refining the emergent theory.

Final remarks

The power of qualitative research is more related to generating and elaborating new theories. Although some scholars indicate that qualitative research can be conducted with an inductive, deductive or mixed approach, Locke (2007) argues that an inductive approach should be applied to theory building and elaborating. However, Bansal et al. (2018)

understand the research primarily based on qualitative data and inductive theorising as qualitative. The three templates we briefly discussed in this editorial can be used by researchers willing to engage in theory-building through inductive qualitative research. However, they are non-exhaustive. Besides, qualitative research has many approaches available and used by management scholars (Gehman et al., 2018). Also, researchers must be careful when using methodological templates.

Templates are a simplification and might give the wrong impression of a linear process and the required level of expertise (Köhler et al., 2022). They can also constrain innovative possibilities (Gioia et al., 2013) since excessive conformity to the template can result in dull and uninspiring results (Reay, Zafar, Monteiro, & Glaser, 2019). Moreover, using a template does not guarantee rigorous research (as a quick fix); rigour relates to the researcher's reasoning about her/his methodological choices (Harley & Cornelissen, 2022).

Despite their limitations, templates can be used for performing qualitative inductive research, helping researchers with their research's general direction and internal coherence.

We intended to present and compare three different templates (Eisenhardt, Gioia and Langley's) but also to go beyond them. In this sense, we provided some guidance on structuring and performing data analysis. We emphasised the importance of focusing on the discovery. Also, we offered a roadmap, which we designed as a four-stage framework – understanding, producing insights, elaborating and validating – to navigate through the data analysis in qualitative research.

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