Interpreting Meaning in Words: Exploring Thematic Analysis as a Qualitative Data Analysis Method

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Abstract

Data analysis in qualitative research is to arrange the qualitative data, interpret the data and communicate findings. It needs an in-depth understanding of the context, knowledge in the field, expertise, skills and considerable amount of time to interpret qualitative data and get sense out of the data. There are a number of procedures to analyze qualitative data i.e., thematic analysis, content analysis, narrative analysis, discourse analysis, framework analysis and ground theory analysis. The current study employed a systematic literature review to explore the procedures and principles involved in thematic analysis. Thematic analysis generally involves identifying, analyzing, and interpreting patterns of meaning (themes) within qualitative data. Data was obtained from authentic peer-reviewed journals and the inclusion criteria were based on thematic analysis, peer-reviewed pulications, and updated publication. The paper elaborates a seven-step thematic analysis procedures and concludes the process of thematic analysis in seven steps i.e. transcribing the data, organizing the data, finding concepts in the data, making themes in the data, keeping reliability and validity in the process, explanation of the findings and concluding the findings. The paper argues that while thematic analysis is flexible, rigourous application is essential for methodological credibility.

Keywords: Qualitative Data Analysis, Thematic Analysis, Interview Data, Methodological Rigor

INTRODUCTION

Data analysis is an important step in all research studies and it is consider the key step in the whole research process. The data being collected through different instruments like questionnaire, interviews, observation and so on needs to be analyzed to get the sense out of the data. It means that the researcher usually collect a huge amount of data and it will be impossible or illogical to present all the collected data in the research process. Instead the researcher analyzes the data and tries to get the gist or sense out of the data or interpret the data and then presents it to procced the research process to the next stage.

Qualitative data refers to data which is in the form of words, pictures, observations and symbols. Unlikely to quantitative data which is in the form of numbers and numerical; the qualitative data is in the form of words. Qualitative data is usually collected through data collection instruments like interviews and observations. In order to get some level of knowledge, understanding, explanation and interpretation of the qualitative data, the researcher use a procedure or process called qualitative data analysis.

Qualitative data analysis involves the analysis of data to arrange the data, interpret the data and communicate findings. As compared to the quantitative data analysis, the analysis of qualitative data is a challenging job though. The quantitative data involves numerical which is easy to manipulate. Moreover, in quantitative data analysis the researcher has the facilities of advanced data analysis software like SPSS and can easily analyze and get sense out of data by using various readymade formulas just in a matter of seconds. But on the other hand qualitative data which is more concerned with the meaning and involves words, ideas, thoughts, opinions and so on; it is not an easy job for the researcher to manipulate wordy ideas, thoughts and opinions in a shortcut way. Instead the analysis of qualitative data needs in-depth understanding of the context, knowledge in the field, expertise, skills and considerable amount of time to interpret qualitative data and get sense out of the data.

The qualitative research design has various research approaches like grounded theory approach, phenomenology approach, ethnography approach, narrative approach and so on. So, the type of data and the data analysis strategies also somehow varies in all these various approaches of qualitative research designs. Grounded theory approach which focus on the human actions and interaction; the data is usually in the forms of interviews, observations and field notes; so, the analysis strategies in grounded theory approach is usually coding the data in the form of categorization and constant comparison. Phenomenology approach which focus on the experience and meaning of phenomena; the data is usually in the forms of texts i.e. interviews transcripts; so, the analysis strategies in phenomenology approach is usually coding the data in the form of categorization, thematizing and interpreting. Ethnography approach which focus on the social organisation of experience; the data is usually in the forms of interviews, observations and field notes; so, the analysis strategies in ethnography approach is usually coding the data in the form of categorization and interpretation. Narrative approach which focus on how individual construct understanding of an event; the data is usually in the forms of individual stories; so, the analysis strategies in narrative approach is usually coding the data in the form of thematizing and restorying.

Similarly, qualitative data analysis involves thematic analysis, content analysis, narrative analysis, discourse analysis, framework analysis and ground theory analysis. Thematic analysis is finding relevant themes of interest in the data (Braun and Clarke, 2006). Content analysis involves classification and summarization of verbal data. Narrative analysis refers to the reformulation of the respondents stories keeping in mind the context of each case and respondent. Discourse analysis is when the researcher analyze the data which come from the naturally occurred talk. In framework analysis the researcher use a number of steps i.e. knowing the data, using a thematic framework, making codes, charts, maps and presenting the interpretation. In grounded theory analysis the researcher analyze the data to create a theory from a single case and then the researcher explore additional case to see if they contribute to the theory.

To cut it short and be specific, thematic analysis generally involves some important steps i.e. reading the data thoroughly, arranging the data, making categories and themes in the data, finding patterns and connections and interpretation of data which the researcher must follow in order to properly analyze qualitative data. These and some other important steps of qualitative data analysis with a special focus to analysis data being collected through interviews will be covered in the study.

LITERATURE REVIEW

Qualitative data analysis is a crucial phase in interpretivist research paradigms, offering deep insights into social phenomena through the examination of narratives, experiences, and perceptions. Among the numerous analytic frameworks available, thematic analysis has emerged as a flexible yet robust method for identifying, analyzing, and interpreting patterns of meaning within qualitative data (Braun & Clarke, 2006). This method is particularly suited for research where the goal is to explore people's lived experiences and perspectives in a nuanced manner. Thematic analysis has its origins in grounded theory (Glaser & Strauss, 1967), although it has evolved into a distinct method. Braun and Clarke (2006) argue that thematic analysis is foundational for qualitative analysis and can be conducted both inductively (data-driven) and deductively (theory-driven). It allows researchers to identify latent and manifest content, which makes it applicable across a wide range of qualitative studies. Guest et al., (2012) further assert that thematic analysis facilitates transparency and replicability, especially when the coding process is clearly defined and systematically applied. Boyatzis (1998) also emphasizes the importance of transforming raw qualitative information into coherent themes through careful coding, which enhances the rigor and reliability of the study.

However, the flexibility of thematic analysis has drawn criticism for its perceived lack of coherence and standardization. Nowell et al. (2017) caution that if thematic analysis is poorly executed without clear criteria for theme development it can result in superficial findings. To mitigate this, scholars like Fereday and Muir-Cochrane (2006) advocate for the integration of thematic analysis with Computer-Assisted Qualitative Data Analysis Software (CAQDAS) to enhance analytical depth and consistency. The literature also underscores the importance of maintaining rigor through reflexivity, triangulation, and member checking during the analysis process (Lincoln & Guba, 1985). These practices ensure that the resulting themes authentically represent participants' narratives and minimize researcher bias.

In sum, the thematic analysis approach, while inherently flexible, demands methodological rigor. This study situates itself within these scholarly debates, offering a library-based synthesis of thematic analysis as applied to interview data, while highlighting key methodological considerations relevant for novice and experienced qualitative researchers alike.

METHODOLOGY

This study employs a systematic literature review methodology to examine the procedures and principles of qualitative data analysis, specifically, thematic analysis. Sources were selected based on relevance, authenticity, and scholarly recognition from peer-reviewed journals and academic texts. Key databases used included Google Scholar, JSTOR, and Scopus. Inclusion criteria

were: (a) focus on thematic analysis in interview-based research; (b) peer-reviewed publications; and (c) publications in the last three decades. The extracted content was analyzed thematically to understand methodological consistencies, theoretical underpinnings, and practical applications of thematic analysis. This approach allowed for a structured synthesis of perspectives from seminal and contemporary researchers in the field.

FINDINGS

Qualıtatıve Data Analysıs

Qualitative data analysis helps the researcher to summarize the massive and wordy data to get meaning out of their collected data. According to Rubin and Rubin, (1995), this process of analysis usually involve some skills on the part of the researcher i.e. how to code the data, how to make categories (grouping similar information together), how to relate the various ideas and themes to each other and so on. In qualitative research design the data is usually collected through interviews, observations, individual stories and field notes. The analysis process of data collected through all these various instrument i.e. interview, observation and filed notes requires specific techniques. As this description is trying to explore the process of qualitative data analysis with a special focus on the analysis of qualitative data being collected through interviews; so, the coming paragraphs will involve discussion about qualitative data analysis collected through interviews.

The qualitative data analysis can be done inductively or deductively. In inductive approach the researcher either use thematic content analysis or narrative analysis. Thematic analysis is when the researcher search for common themes and patterns in the data set whereas in the narrative analysis the researcher tries to make sense of the individual stories of the respondents in the data set. Deductive analysis is when the researcher create a theme map in advance and then search for the related categories in the data set and make connection. Some scholar argues that there are three basic methods to analyze qualitative data i.e. thematic content analysis, narrative analysis and analysis through deductive approach. In thematic analysis the researcher search for common pattern in the data by familiarizing with the data, coding the data, thematizing the data, nominating the themes and reporting the conclusions. In narrative analysis the researcher getting sense out of the stories by collecting the stories, analyzing each individual story for insights, comparing and contrasting the stories and creating a novel story. In a deductive approach, the researcher use a predetermined framework and tries to analyze the data based on the chosen framework.

All in all, there are various approaches to analyze qualitative data. Every approach that is used for qualitative data analysis has its own usage and importance. As mentioned earlier, there are various instruments used for qualitative data collection i.e. interview, observation and so on. Data collected through each instrument require some specific techniques and strategies for its data analyzation procedure. The next section will focus on how to analyze data being collected through interviews.

Thematıc Analysıs

Thematic analysis is an important and widely used qualitative data analysis method in social sciences. It is one of the most used and fundamental method for qualitative data analysis. A researcher should learn this method and to have knowledge and practice of this method of data analysis as this method of data analysis provides essential skills for conducting many other forms of qualitative analysis. Thematic analysis is very flexible and it is the benefit of thematic analysis. It is a method of identifying, analyzing and reporting patterns or themes within data (Alhojailan, 2012). It involves the organization, description and interpretation of data in great detail (Boyatzis, 1998). To be more specific, thematic analysis interprets various aspects of the research topic and provide the researcher with the ability to understand an issue thoroughly (Marks and Yardley, 2004). There is a comprehensive elucidation of thematic analysis by Namey et al. (2008), who think of thematic analysis as:

> "Thematic Moves beyond counting explicit words or phrases and focuses on identifying and describing both implicit and explicit ideas. Codes developed for ideas or themes are then applied or linked to raw data as summary markers for later analysis, which may include comparing the relative frequencies of themes or topics within a data set, looking for code cooccurrence, or graphically displaying code relationships." (p.138)

Thematic analysis is a widely used method of qualitative data analysis; however there is no specific argument that could tell what thematic analysis is and how it could be done in a specific manner. This is why it is been termed as a poorly branded method and does not appear to be a named analysis in the same way that other methods are i.e., narrative analysis, grounded theory. In this sense, it is often not explicitly claimed as the method of analysis, when in actuality, we argue that a lot of analysis is essentially thematic i.e., data is subjected to qualitative analysis for commonly recurring themes.

Thematıc Analysıs of Intervıew Data

To be specific, the thematic analysis procedure of the data being collected through interviews involve some key steps i.e. transcribing the data, organizing the data, finding and organizing ideas and concepts, creating themes in the data, keeping the reliability and validity throughout the process, explanation for the findings and finally concluding the information in a final report. A brief discussion on each of these steps is provided next.

1-Transcribing the Data

As the interview is usually recorded with a recorder in the form of audio data, so the first step is to transcribe the audio data into words. In this stage the researcher should make it sure to not miss any bit of information. Sometimes the respondents have issues to provide information and their responses in English language, so the researcher take the interview from the respondents in their

native/mother language. In such case the researcher should make it sure to professionally translate the responses. The researcher should make it sure to translate the words of the respondents into English without missing any bit of information or should not change the original idea of the respondents. Words and expressions mean different in different languages and cultures so while the researcher is translating and transcribing the data, he/she should think of it. The researcher should find the exact meaning of each and every word. Our translation and transcription should be as true as the original speech is. It should reflect each and every bit of information the respondent has tried to provide to the researcher.

2-Organizing the Data

Organizing the data is most essential step in process of data analysis. In this step the researcher has to organize all the data to make it prepared and suitable for the next step of data analysis. Data should be organized in such a way that the researcher feels comfortable while looking at it. It should be organized to provide ease and feasibility for the researcher to go through each and every point and help him/her to draw concepts and themes from it. Miles and Huberman (1994, p.432), suggest that "valid analysis is immensely aided by data displays that are focused enough to permit viewing of a full data set in one location and are systematically arranged to answer the research question at hand". The best way to organize the data is to make a chart or table and present data in it. This will help the researcher to see the responses clearly and specifically about each topic and each specific question. This will ultimately help the researcher to easily pick the concepts and themes out of the data. After that the researcher has organized the data, the next step is to find ideas and concept and to make categories.

3-Finding Concepts in the Data

Once the researcher has organized the data, next he/she needs to find various ideas and concepts in the data. This is the difficult but yet the most important part of data analysis as it involve the researcher to figure out the ideas, concepts, pattern of thoughts and more importantly answers to issues from the perspective of various respondents. According to Marshal and Rossman (1995), one of the most difficult step in data analysis is to figure out the repeated ideas and pattern of thoughts of various respondents in the collected data. It is important to look for words and phrases that are used quite often in the transcription for a particular question. It will be more helpful if the researcher take notes and make a list as he/she go through the responses of various respondents. The researcher should note down the expressions which he/she does not understand. Sometime the respondent is providing essential information but the researcher ignores it simply because he/she does not understand the expression. So, as a researcher one should pick all those strange and unclear words which the respondents is frequently using, especially when the researcher is doing a cross-cultural interviews. The researcher should first note all those strange words/ideas/expressions and should later on find the meaning and underlying implications of those terms and expressions.

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Page No. 67-76

72

Similarly, the researcher must look for the unexpected and strange ideas in the responses. Sometime the researcher has not asked for certain information in his/her interviews but suddenly comes across with strange and new ideas from the respondents. These new and strange ideas are actually very essential for the study and opens a new direction for the study. These new ideas and thoughts are known as the rich points which are of great importance (Creswell, 1998).

Finally, the researcher has to categorize the words, phrases, ideas and concepts. The categorization of ideas and concept is essential and very helpful for the next stage of data analysis. The researcher must be very careful to categorize related data and should not miss any important details. Once the researcher has categorized the relevant data, next the researcher has to make themes in the data.

4-Making Themes in the Data

Once the researcher has created various categories in the data, next he/she has to make theme of the various categories. A theme is usually a collection of various categories that somehow develops a single aspect of the problem of the research. The researcher must constantly review the themes to check whether there is any issue within the theme i.e. to check whether any idea contradict with the other. The ideas should be arranged within a theme that must support an argument.

Similarly, the themes should be given proper names and they should be clear and informative to discuss only a single aspect. Once the themes are named, next they should be coherently organized. Moreover, the themes should be named in such a way that they look attractive and engaging. For example if a researcher has found a theme about "assessment", so instead of naming it assessment, the better way is to name it "innovations in measuring students success".

5-Keeping Reliability and Validity in the Process

Reliability and validity is another very important concept in the process of data analysis. Validity in data analysis is to analyze the data accurately and objectively. The reliability in qualitative data simply means that the researcher should present what he sees and his/her own wishes should not interfere with actual findings. Validity is the accuracy of a method to measure what it is supposed to measure (Schopper et al., 1993). Similarly, Goodwin et al. (1987), say that reliability means when the method provide the reality. The validity in case of qualitative research is an ongoing standard throughout the research process. Reliability on the other hand is the name of consistency in the data. Kvale (1996), think of reliability as the consistency of the research findings. A researcher must take stern steps to ensure consistency throughout the process of data analysis i.e. interviewing, transcribing and analyzing the data.

The concept of validity and reliability is not only limited to the research process but is quite handy and essential in the data analysis process too. The best way to bring about validity and reliably in the data analysis process is to share your process of data analysis (categorization and theme) with your colleague to see how they would have done it. To do this, the researcher can give his/her

colleague a few randomly selected passages from the data which the researcher has already analyzed. Once the colleague has analyzed the data, next the researcher can match it with his/her own process of data analysis and can use this strategy as measure of validity and reliability of the data analysis process.

As discussed in the previous paragraphs, validity and reliability in the case of qualitative data analysis is a through standard to keep the process accurate and consistent. The researcher must go through the process of data analysis again and again to make sure there is no issue whatsoever. The researcher must check the themes carefully to see whether there is any irrelevant patterns in the data which are termed as 'outlier' by Miles and Huberman (1994). Similarly, the researcher must check for the ideas and thoughts which has been purely aroused by the researcher subjective stance or bias and should eliminate those. Moreover, the best way to check the validity of the process is to go back to the participants and share your interpretation of their opinions and responses.

6-Explanation of the Findings

In this stage the researcher can present a summary of what he/she has found in the form of themes. The researcher must explain the finding based on the literature and should mentions the major surprises of the findings. The researcher must discuss how his/her findings differ with the literature from the similar studies. Here the researcher must relate his/her findings with the context of the research study and should explain each single finding from the data analysis with the real context.

7-Concluding the Findings

The final stage of thematic analysis is to conclude the findings. At this stage, the researcher has to be very attentive and careful to present the main themes and subject matter of all collected data. This is the stage that decide the results of the whole study. So, the researcher has to be very careful not to miss any important details and has to be very careful not to add anything that is not actually present in the data. Similarly, the research has to be very objective in concluding the findings. Whatever is the conclusion, the researcher must accept it and should not add anything that shows the researcher desire and inclination.

RESULTS AND DISCUSSION

Qualitative data analysis is not as easy and practical as it is in the case of quantitative data. Data in the case of qualitative research studies is in the form of words, ideas, thoughts and opinions and is therefore a challenging task to analyze the data. In qualitative research the researcher does not have the facility of advance software and formulas which could easily manipulate the data in the spare of just a few seconds or minutes. Instead, the research has to be an expert to analyse data

1*Corresponding Author: Dr. Hazrat Usman Mashwani   **Volume 01 Issue 01 (May) 2025**
Available at: ijss-sjau.com
Page No. 67-76

74

through his/her own mind, skills, knowledge and expertise. Analyzing qualitative data involves certain things on the researcher part. The researcher must have knowledge and great skills of qualitative data analysis. The researcher should be an expert in the field where he/she is going to carry qualitative study design. Moreover, to have a great accuracy or to have valid and reliable results, the researcher has to choose a proper qualitative data collection instrument i.e. interviews or observation.

The researchers widely use interviews as an instrument to collect data in qualitative research studies. To have great results, the researcher must first make sure that the interview items are properly developed keeping in mind the purpose of the research and then should make sure that the interviews are properly conducted. The researcher should use proper interview items which could collect data in line with the research purpose. Based on the purpose and need of the research; the researcher can create his own interview items or he/she can adopt/adept interview items form other studies. Once the researcher has created proper interview items, next the researcher has to properly conduct interviews with the most suitable participants. Once the researcher conducted the interviews, the researcher has to follow certain essential steps to analyze the data.

Thematic analysis of qualitative data being collected through interviews involves certain essential steps. First, the researcher has to transcribe, translate, arrange the collected data and should familiarize himself/herself with the data. The researcher must read the data again and again to have an in-depth understanding of the data. Once the researcher has transcribed, translated and organized the data; next the researcher has to search for key points, phrases and ideas. Next, the researcher has to make categorization and make themes of the related points, phrases and ideas found in the data. Finally, the researcher has to interpret and conclude the data and data analysis procedure by keeping in mind the validity and reliability concepts. The literature demonstrates that while thematic analysis is adaptable across research contexts, its effectiveness relies on the researcher's methodological competence and epistemological clarity. In interview-based research, where data is rich in personal narratives and contextual detail, the transparency and systematic nature of thematic analysis allow for in-depth exploration without compromising analytical rigor.

Thematic analysis stands as a foundational method in qualitative research, particularly effective in analyzing interview-based data. Its flexibility allows it to be adapted to diverse research goals, yet this very flexibility necessitates methodological rigor to ensure trustworthiness. This paper reviewed key literature and synthesized a structured, seven-step model for conducting thematic analysis. Emphasis was placed on the importance of validity, reliability, and reflexivity throughout the analytical process. Future researchers are encouraged to approach thematic analysis not merely as a technical procedure but as an interpretive act grounded in theoretical sensitivity and contextual awareness. When applied with rigor, thematic analysis offers a robust means for unpacking complex social realities embedded in qualitative data.

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