

Qualitative Research Method Summary

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Abstract—This paper serves the purpose of reviewing and summarizing Qualitative research Method and investigating its structure, and different types of Data Collection and Data Analysis methods. A review centric research has been conducted, reviewing existing literature in order to accomplish a basic understanding of the topic and all factors associated within this paper. The research only focuses on the concept of Qualitative research method, and the procedures behind it. Furthermore, we discussed in short four different data collecting methods, and three data analysis techniques. Due to the nature of this paper as a summary paper, it is not possible to cover all data collection and data analysis methods. All data and opinions are collected from 30 different articles, and previous research papers. The results and findings of this paper serve as a brief discussion of existing literature, and this paper maybe applied as a summary reference for students and other learners. This paper represents a new referring article for seekers who are willing to enhance their understanding regarding qualitative research method, and Data collection and Data analysis techniques.

Keywords—Qualitative Research; methods; Data Collection; Data Analysis;

I. INTRODUCTION

In order to be able to put together a research paper, you need to fully understand what is a research method, how is it structured and the purpose of research methods, both generally, and specialized in any scientific field. Linguistically, and according to Cambridge Dictionary Online, research method is a particular way of studying something in order to discover new information about it or understand it better.

Research is a one type of knowing, Epistemology which is the philosophical theory of knowledge, the philosophy of investigating information in order to categorized it correctly, either under opinions, or beliefs. Epistemology identifies different sources of knowledge which are:

- Intuitive knowledge: Based on belief, faith, and doesn't rely on hard facts
- Authoritative knowledge: Based on information gathered from people in forms of word of mouth or books

- Logical Knowledge: Based on reasoning and advancing from the initial point to the new knowledge point

- Empirical knowledge: Based on demonstrable objective facts, relying on observations and experimentation

Our modern day research use all the four ways of accomplishing knowledge, and lay the basics steps of research, initial idea of research, reviewing previous literature, processing information through certain procedure, and finally finding and conclusions,

Research is well-arranged and systematic way of finding answers and explanations to various topics and questions that one might ask. Research is organized in a sense that there is a certain plan and specific structure that headlines scope of the research. Also, it is systematic because there are a well defined steps and procedures which you have to follow during the research process in order to be able to collect the most precise results, and find the answers the scholar is seeking at the end of the research. Keeping in mind, that research results can be simply a clear statement, hypothesis, or sometimes even a question that believe to be the goal of an extended research paper. With the help of research, we achieve progress in science; we pick up from what other scholars left and move toward advancement. If we have no question to answer, there is no focus in the research, thus there is no use.

Research is basically divided into three basic categorize, which are:

Basic research

Applied research

Practical Research

Basic research is only focusing on the theory, doesn't necessarily yield any practical usefulness. Calvert [1] defines basic research "Basic research is often used in science policy. It is commonly thought to refer to research that is directed solely toward acquiring new knowledge rather than any more practical objective [1] p. 199". In the other hand, applied research is focusing on how we can turn the findings of the research to an applied method of teaching. Lastly, practical research focuses on actually applying the findings to a certain practical teaching situation.

There is cumulative theories and researches about Supply Chain and important factors e.g.[2-11] as the

research methods are of the essence of all sciences, and it is branching out to carry extensive details that leads to more accurate researches

Research methods are different but they all serve the same purpose, either it was proving or disproving a thesis, answering questions, or expanding on a topic. Among the types of research methods, in this paper we will discuss briefly the three major types that can be infused in one paper, and use them to design and plan your research to achieve the desired outcome. These types are:

- Qualitative
- Descriptive
- Experimental

II. RESEARCH METHOD

The research summary we offer in this paper concentrate on The Qualitative research method, and focusing on the two major parts of research method which are the Data Collection procedure and Data Analysis. We explore different approaches of data collection methods and their points of strength and weaknesses, and also exploring multiple data analysis tools. We are trying to provide a summary of most effective and common Data collection and Data analysis approaches to the qualitative research method.

To achieve the goal of this research and to accomplish "rich theoretical insights [12] p. 613." LePine and Wilcox-King [13] states that "developing new theoretical insights that advances our understanding [13] p. 506" is the evaluation of "review centric research approach" where researchers study and evaluate "existing theory and research [13] p. 506" and the take benefit from existing literature "Review and summarize the theoretical and empirical knowledge existing in a given literature [13] p. 506".

This article focuses on "previously established studies and concepts" from the academic literature that "advances our understanding [13] p. 507". The Paper provides successful overview about the Qualitative Research Method.

III. QUALITATIVE RESEARCH METHOD MODEL AND DISCUSSION

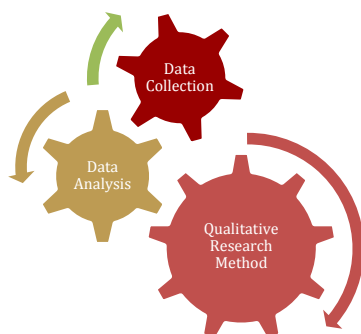


Figure1: Qualitative Research Method Model

IV. QUALITATIVE RESEARCH METHOD

Qualitative research method is widely used in different academic fields, and in market research. Denzin and Lincoln [14] states "Qualitative research is a method of inquiry employed in many different academic disciplines, traditionally in the social sciences, but also in market research and further contexts [14]. Qualitative researcher's goal is to collect in great details the understanding of the human behavior, and the result that led to such particular behavior. In other words, the qualitative research method examine and answers questions of how, where, what, when and why a person would act in a certain way toward a specific matter. Smith [15] defines Qualitative research as empirical, and he states "The researcher collects sense data about the phenomenon under study and works on them in some way organizes them, and hold them up against ideas, hypotheses, and categorical definitions as a way of testing them. As a result of how focused this method is, a small number of participants is legitimate as source of information [15] P. 174".

Qualitative research on several procedures, the most important are the Data Collection and Data analysis processes, and they can be thought of as the gears that moves the Qualitative research forward.

Data Collection and Data Analysis happen together in the same time, Schreiber and MacDonald [16] describe the timing of these process as simultaneously and adding "As data are analyzed using the constant comparative method and conceptual formulations begin to emerge, the researcher continues to sample theoretically in order to fully develop and enrich the categories [16] P. 153"

A. Data Collection

The qualitative research method relies highly on the data collection process. The data collected during this process defines the volubility of the research presented Sells, Smith [17] supports this argument and confirms that the quality of the research study is mostly based on how to utilize the data collection method that is used during this phase, the relativity of the data to the research, the ability of the scholar to have an outstanding observation and interpretation skills, and valid record of the phenomena [17]

In the Data collection process for the qualitative research method, scholars have a variety of choices to accomplish this task, starting from grounded theory practice, shadowing, storytelling, ethnography, or narratology. All data collection methods fall under two separate sections; the first one is the direct interaction with participants in a one to one confrontation basis. And the second is direct interaction with a group of participants. The uttermost known methods are individual interviews, group discussions, observation and action research (Baden & Major, 2013)

Data collection methods for qualitative research method are mostly time consuming, individual

interviews for instance, is a process that takes a lot of interaction with the participant, for this reason researchers who are using qualitative method tend to be satisfied with a small sample comparing to using any other research method such as quantitative method.

1) *Individual Interviews*

The popularity of this method as a data collection method is basically caused by the nature of it is performance. An interview can be performed in friendly settings that seem to be as natural as friendly conversation in a coffee shop for instance. Griffiee [18] states that "Interviewing is a popular way of gathering qualitative research data because it is perceived as "talking," and talking is natural [18] P.36"

Individual interview for the qualitative method can be designed in three different ways, depending on the researcher. The first type is the In-depth interview, or can be referred to as unstructured type. The researcher prepare himself to discuss a number of topics with an interviewee rather than asking a question and wait for a short answer, with this the researcher grant a discussion in great details for the areas you wish to cover, and this gives the ability to be as much involved and collect as much data needed as possible from this meeting. However, the interviewer should prepare the interview discussion based on the answer of the previous information and response for the interviewee.

The second type of interviews is the focused interviews, or can be referred to as Semi-structured. There is very little structure in this interview, all questions are more of open ended questions depending on the topic of the research, and areas need to be covered. These questions are broad and the interviewer can push and encourage the interviewee toward the point needed once the researcher's interest is high. This semi structure provides the opportunity to have a discussion in details but within the boundaries of the topic, and allow the researcher to be free to direct the interview based on the quality of the answers from the interviewee.

The third type is structured type, where the interviewer asks all participants the same set of questions on the same way. The interview is set on a certain schedule, and all questions are prepared as a limited answer would be fit, for instance yes or no questions, or rating questions. The down side of this type is that the interviewee might not have the ability to give an in-depth answer, and that limit the information that can be gathered.

It is very important to plan the interview and provide an environment that comforts the interviewee, and make the participants feels and value their contribution to the study, and that is what an open ended discussion might be able to provide, unlike the structured type. For instance, the Global entrepreneurship Monitor research program that

works on creating assessments on the role of entrepreneurship on the national economic growth conducts interviews on a yearly basis to monitor the performance. These interviews are open ended discussions which put less tension and give the corporation personnel interviewed a sense of belonging. Reynolds, Bosma [19] states "The primary focus of the face to face interviews was on an open discussion of their views of national contributions (strengths) and limitations (weaknesses) as a context for entrepreneurship and what policy or program changes would enhance the level of entrepreneurship in their country [19] P.222"

2) *Focus Groups*

The history of using focus group starts back in the world war II era, were it was first initiated in the Bureau of Applied Social Research in the USA by the associate director sociologist Robert K.Merton (Kaufman, M. T ,2003). The term, Focus groups, the term itself was invented by the psychologist and marketing expert Earnest Dichter. The concept of focus group has been used during World War II to investigate and examine the propaganda effect on the war (Collis, J., & Hussey, R, 2009)

Focus groups are favored over individual interviews in some cases where it is agreed upon that quality of information gathered from a group is better than individual. Also, sometimes some form of restrictions forces you to conduct a group interview, for instance the lack of resource, and also it is preferable when we are exploring a matter that requires a collective discussion, or to observe the dynamic of group.

There are some characteristics that define the focus groups, to ensure best output. Starting by the size of the group, where it is highly recommended to have 4 to 12 members in a focus group [20]. Logically speaking, the smaller the group, the less information we gather, thus we don't want to conduct a small focus group where we might suffer from insufficient amount of data collected. In the other hand, having more than 10 people in the group make it crowded and difficult for all members to participate and interact, and also to collect a coherent information that serves the purpose of the study.

Since we are advised to stay restricted to certain number of members in a group, multiple focus groups should be conducted in order to gather sufficient amount of data, opinion, and views on the study. It is important to keep in mind that gathering one group can lead us to the possibility of gathering information from a ideological group with strict views, while multiple focus group bring variety and mixture. The main purpose of the focus group is to observe the participants emotions and opinions.

3) *Observations*

Using Observation in the qualitative research method is very common. The observation process can

be set in variable kind of settings, either it was a closed place, like class rooms, or It can be placed in natural settings for instance, and in all ways the scholar will be taking detailed notes of what's been observed during the experiment.

A valid argument may arise from the use of Observation to collect information. The presence of an observer and the participants being aware of his presence may set some sort of limitation to the process due to the possibility of participants changing behavior when they feel they are being observed. This one limitation can strongly affect the validity of this method. Another limitation to this method is the dependability of the process on the observer understanding, judgment, and what to make value of. Nevertheless, the observer may miss a critical moment while notes have been taking, or being distracted by another factor in the setting. As Pohland [21] said "From this reality the observer captures a selective portion in his field notes. From the field notes a descriptive, lay language narrative is composed [21] P. 10"

In the other hand, Observations have strength too, where it can make the researcher see the bigger picture of set, and help you identifies sub groups and common behavior. Observations help you pinpoint important targets to be identified in the research. Furthermore, Using observation can help researchers prove or disprove a theory considering that the observation setting is an actual experiment. And it can be done to human, animals, and even the environment and nature.

There are different techniques to collect data during the observation process. These techniques can improve the operation and overcome it is limitation. The initial technique is the description writings, where the researcher writes the great details of the setting, people, and environment. The second technique is video recording, during the video shooting the observer have the ability to take notes as well, and researchers can go back to the record and reassure proper observation. However, the cons of this technique are that people may act unnaturally when noticed about the presence of the video camera, and also some participants may object and try to avoid being under surveillance.

Researchers can use any or maybe all techniques of observation to help document the event, and gather reliable information. For example, Conway [22] have used multiple data collection method for the same group in a school, when he observed teachers giving a lecture in a class room, then conducted an individual interview that lasted around an hour right after observation. [22]

4) Self Study

Final data collection method that's been chosen in this research summary paper is the self study method. Conducting a study regarding an area of interest that benefit your overall research is a proper way to collect

data and to get an answer to your quest, and build greater understanding of the matter. Starting from thinking about the goal and purpose you are aiming to, and what do you want to gain. Also, identifying your role in the operation and the way you record the data collected, and how these findings will serve the main research.

B. Data Collection

There are different techniques to perform Data analysis procedures, and in this summary paper we are briefly discussing three main methods which are the Interpretive, Recursive abstraction, and Mechanical Techniques.

- Interpretive Techniques

Interpretive techniques are the techniques that are based on human understanding. Hayes [23] Defines interpretive analysis saying "By interpretive analysis I mean any analysis where we try to understand and explain human action by reference to the intentions it expresses [23] P. 1"

The most popular way of analyzing the qualitative data, is interpretative techniques. As Gaskins [24] states "Interpretive approaches to research in the social sciences have as their focus the meaning of human action in context. Many interpretive researchers find it useful, and often necessary, to emphasize that contexts are structured, in part, by the shared belief system of the actors that constitutes their culture [24] p. 313." This is a way of analyzing the data by creating an impression and recording it as structured data, and even sometimes on a form of quantitative data.

Coding:

Coding is one of the interpretive techniques that can do two things to the data collected, it helps organize it and also guide us to introducing the interpretations of it as one qualitative method. Almost all coding demand the researcher to read the data and Most coding requires the analyst to read the data and mark and delimit segments within it, which it can be performed at any time during the process [25]. During the creation of these portions, a labialization process starts with a code, this code can be a word or short phrase that keep the segment distinguished among all other codes, and advise the analyst of the objective of this part. After the completion of the coding process, the analyst starts preparing reports using a mixture of codes summarized, and begins to compare codes and determines the relationship between the individual codes. Sharon [26] review the steps of coding saying "Coding is paradigmatic of the "constant comparative method" of GTM and qualitative data analysis. Its four-step analytic process consists of: 1.comparing units of meaning across categories for inductive category coding; 2.Refining categories; 3."delimiting the theory" by exploring relationships and patterns across categories; and 4.integrating data to write theory [26] P.266."

Several strictly structured qualitative data, like structured interviews for instance, is usually coded without additional portioning of its content. In such cases, the material is coded using a layer on top of data.

Nowadays, and with the help of technology, qualitative data analyses can be supported by computer applications, these coding analyses is referred to as Computer Assisted Qualitative Data Analysis Software. The negative part about the computer aided analyses is that it factors out the human behavior and interpretation to coding. In the other hand, the positive aspect is that provide an efficient data storage, and easy retrieval procedure.

- Recursive Abstraction

Another way of analyzing data, and slightly different than coding, is the recursive abstraction method. It is a simple method that is mainly based on summarizing the data in steps. It starts by summarizing a set of data, then summarizing the summarized portion and so on until we end up with a focused and very compact summary that is both accurate and distinct. Hershkowitz, Schwarz [27] explain the abstraction procedure saying t. "The development of abstraction proceeds from analysis, at the initial stage of the abstraction, to synthesis. It ends with a consistent and elaborate final form [27] P. 200."

Weighting the pros and cons of the recursive abstraction method, we stumble upon a major negative aspect of the recursive abstraction method that is always has been criticized. Recursive abstraction finalize the data and give a conclusion that is several times summarized from the original data, leading to the danger of having a bad concluded data because of poor initial summarization, thus we might end up with inaccurate information. As a response to this, qualitative researchers provides a well documented summary in each and every step, with citations from the data collected shows statements included and excluded from the summary.

- Mechanical Techniques

The mechanical techniques depend only on computers to analyze, scan, summarize and reduce large qualitative data sets. On the basic level of Mechanical techniques, it depends on counting words and phrases. Usually refer to as content analysis. At their most basic level, mechanical techniques rely on counting words, phrases, or coincidences of tokens within the data. Often referred to as content analysis and the outcome of the Mechanical techniques is highly adjustable to advanced statistical analyses.

Mechanical techniques are very particular, and it is helpful especially when it comes to large sets of data that human find it very difficult to analyze properly. Furthermore, Mechanical techniques saves time and also can be considered cheaper than other techniques.

A repeated criticism regarding the mechanical techniques is the absence of a human factor; the human mind is better interpreter. Even though the developers of these applications try to implement a rational in their sophisticated written software in a way that it maybe can make humanly decisions, but still the analysis of data is nonhuman. Muller [28] compares the human factor versus the computers in analyzing data, where it is stated that the human and their knowledge, experience and understanding of factors that the computers are very likely to be unaware of make them superior over the computers when it comes to making decisions and judgments [28].

C. Trustworthiness

How can we insure the worthiness of the data that has been collected and analyzed, we here come across what is known as validating in the qualitative studies. Validating the data is a critical issue, making sure that the data is credible and we can depend on it. There are various ways of instituting trustworthiness, according to Lincoln and Guba (1985) for instance here is some of these ways

- Peer debriefing
- Interviewer corroboration
- Auditability
- prolonged engagement
- Negative case analysis
- Bracketing
- Member check.
- Conformability

Also, according to Johnson and Saville-Troike [29] In qualitative research, judging the validity of data concentrate mainly on the interpretation of the findings [29].

V. FINDINGS

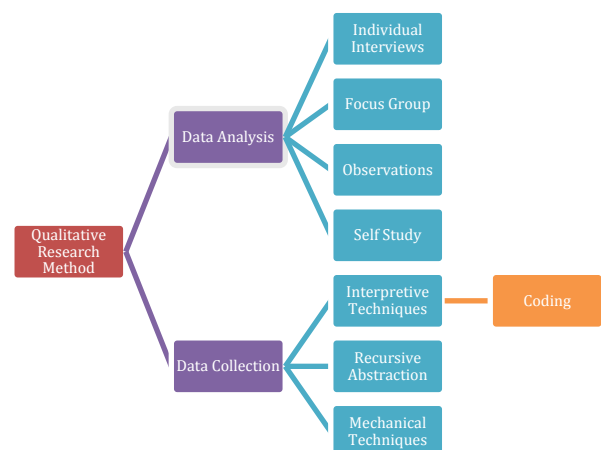


Figure 2: More Independent of independent variables moves the dependent

Throughout the research and while learning about the qualitative research method, we found out that this research method can be performed using several variables. The main gear, the qualitative research method can only move with Data collected and Data

analyzed. However, in order to have a proper output from the research conducted, you can use either one or many methods to perform data collection procedure, as well as data analysis.

VI CONCLUSION

The main purpose of scientific research is to deliver information and build a hypothesis. Thus, the research study should seek to put the findings in context. Research has to be in a high level in terms of quality in order for it to be result knowledge that we can use in practical life, and beyond all research settings such as observational environments or groups that contributed to the research with their participation.

Scientific researches hold a structure that defines all aspects of research process. We have learned that there are different ways to do a research, including quantitative, qualitative, experimental, and descriptive and so on. And In this paper we provided a summary for one of these popular research methods known as qualitative research method. And presented it its definition and structure, and we explored the important factors that determine the researches value.

We have investigated the use of Qualitative research method, and main factors that contribute to the validity of this research method. We have briefly discussed couple of main factors that impact the research process, and these factors are Data Collection, and Data Analysis.

Data collection is one of the two bases of the qualitative research method where it depends massively data collection process. The better is the data collected during this process the better quality of the research will be. There are multiple ways to collect data and we have discussed four different ways of doing so. Individual interviews, focus groups, Observations Self study. These data collection method can be freely used at once, or we can be selective and choose the method that will guarantee us success in the research paper. Also, we might have some sort of limitations that forces us to use one method over the other, as there is always a downside for each method. One of the reasons that may impose and restrict our options is the lack of resource, time, money, or even personnel.

The second base we have discussed is the Data analysis, this phase of the research can be done simultaneously with the data collection phase. We have divided the ways to analyze data to three main techniques, and they are: Interpretive Techniques, Recursive Abstraction, and Mechanical Technique. We have concluded that the major limitation that we should consider is the absence of human factors in some of these techniques. Machines can help greatly in data analysis, especially when we are dealing with a huge amount of data that is collected, and that saves time and expedite the process of analyzing. However, data can be interpreted poorly in case of

unawareness of the machine regarding matters that can change the understanding of data collected.

In any case, insuring the validity of the data collected and analyzed is crucial and we can use techniques like peer debriefing, interviewer corroboration, and auditability to clarify any doubts and hesitations in regard of the material and information gathered and analyzed.

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