

Mixed Methods Research Approaches: Warrant Consideration Phenomena in the Methodological Third Movement on the Humanities Sciences

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Abstract: Today, Dramatic changes and transformations has happened in theories sociology similar to other areas. We have seen in recent sociological theories emerging paradigms of integrated. Social research methods are not exempt from this rule. Simplification of complex social problems cannot be easily by a deterministic selection approach to both qualitative and quantitative methods. Therefore, since the condition of today's postmodern discourse of diversity technique, Selection mixed research approach is a methodological necessity in the social sciences. Today, the simultaneous use of both quantitative and qualitative methods is justified. As mentioned, the mixed research approach qualitative and quantitative methods are combined by each other. The main objective of this paper is to introduce integrated research approach and review of advantage and disadvantage mentioned method.

It is expected that using this approach contribute to overcome the shortcomings of positivistic hard and soft humanistic Blumer. Because the main idea of mixed research approach is to combine of qualitative and quantitative approaches, more appropriate and comprehensive understanding is obtained of topic.

Keywords: Mixed Research Approach, Third Movement of Methodological, Qualitative Method and Quantitative Method.

I. Introduction

In the present age, significant changes has occurred in sociological theory and paradigm as a researcher thought and action guidance (the entire process of research). So that we are observing the emergence of mixed theory in recent sociological theories of thinkers such as Bourdieu, Giddens, Habermas , Archer and ... in order to defect compensation of structural and actors (micro and macro) theories. Which seeks to integrate micro and macro views , the objectivity and subjectivity and in a sense, for elimination false opposition

Among objectivity, subjectivity and micro and macro . Social research methods are not excluded from this rule. So that the major approaches in the humanities and social research During the numerous methodological movements have progressed .The first wave of methodology began with quantitative and positivism. After a period of domination of the quantitative research, the deficiency of quantitative research in people's thoughts and intentions of activities and special complex events was revealed people's thoughts and intentions of activities and special events. The second wave of methodology known as qualitative research in the decade of 1970-80 began with an emphasis on understanding the processes that led to the results of the study will be expanded [1]. In the past decade, qualitative methodology limitations in generalizing the results, integration of research findings with researchers specific values and problems of validity and reliability of data were identified as the major challenges that qualitative research has been faced. therefore, The integrated approach as a third methodological movement, is critically important. According to the authors, the basic principle of integration is a use of different methods to converge the different perspectives.

In the mentioned method, method based on the positivist and quantitative method according to Blumer hard method combined with qualitative, interpretation and humanistic Soft methods. According to the researchers, integrated approach has emerged to solving the problems caused by the use of hard positivistic and Blumer's humanistic soft method in social science. Accordingly, an integrated research approach is an approach that researchers use for data collection and analysis of qualitative and quantitative methods in their research [2]. In the other words, a mixed theory is a research that qualitative and quantitative methods are combined together in a single study. This approach has been named as the third methodological movement by Tashakkori and Teddlie in the handbook of mixed theory [3]. mixed method consider one or several worldview. Some authors consider the way of mixed of this research model as a methodology and focus on the philosophical assumptions. And some authors emphasize the techniques and methods of data collection and analysis .

Mixed methods, including philosophical theories and methods of research that leads the collection and analysis of data and combines quantitative and qualitative approaches many stages of the research process. this research as a means of collecting, focuses on the analyzing and integrating quantitative and qualitative information in a separate study or set of studies. the most important assumption is that the use of a combination of quantitative and qualitative approaches gives better understand of the research subject. If the researcher choose the integrated approach, it is necessary to realize the research project to predict the mechanisms and tools to collect information on what research will done. the first mixed approach was called "multi-character, multi-method". It is also called mixed method approach. In general, the multiplicity of research methods, proximity and quantitative and qualitative data relevance known as an integrated method[1]. advocate of the combination theory conventionally follow compatibility thesis and the latter philosophy (pragmatic). This theory is based on the idea that quantitative and qualitative methods compatible with each other and can be combined them. In pragmatic philosophy, emphasized that researchers have to use integrated approaches that act better in the real world[4]. according to Johnson and Turner fundamental principle of mixed research is that researcher must use a combination of methods to complete each other's strengths and regulate together weaknesses[5]. Accordingly, being complex and multidimensional of human and social issues does not simplify with a deterministic selection methods, including quantitative and qualitative methods. So according to researchers that in today's postmodern stressed to diversity in method, mixed methodology selection is a methodological necessity in social science. Thereby, Today's the need for both quantitative and qualitative methods is defensible. when a method, whether qualitative or quantitative research is not enough research to investigate the matter, preferably we use mixed method. However, since the mixed methods is desirable that qualitative data could improve quantitative methods and vice versa, quantitative data could improve qualitative method [1]. The principal question of this research is, the first what are defects of quantitative and qualitative method? The second, What are the basic requirements using a mixed methods? The third, What is the most important types of mixed and what steps including mixed methods?

II. Characteristics of qualitative and quantitative research methods

Empirical methodology that claim the natural science methodology could use in humanities science are active in scientific research. Positivism that include different branches like logical positivism, naturalism and behaviorism, have long history among philosophy of science and researchers. In this approach, of natural science methods used to design humanities research based on quantitative methods. Quantitative methods characterized by follow Features:

- 1) Quantitative method emphasize on the relatively small number of concepts(variables)
- 2) It start of preconceived ideas and discuss about the concepts relations(theories)
- 3) It uses Formal methods and tools to data collection(like questionnaire)
- 4) Data collection was performed under controlled conditions(control condition).
- 5) In collecting and analyzing data emphasizes on the problem of objectivity(Moral neutrality).
- 6) By using statistical methods analyze Numerical data(statistical analyze).
- 7) The results have a generalized properties.
- 8) In this study, there is a reproducibility.
- 9) There is an Individualism in quantitative research
- 10) Deductive method is used in the research process (theory, hypothesis, data, hypothesis testing, theory).
- 11) This method consider human behavior as a regular and predictable(behavior Predictability).
- 12) The main objective is description, explanation and prediction.
- 13) general purpose of this method is a Quantitative and obtained in response to the question of How often and How many.
- 14) The final report present as a statistical and quantitative report[6,7,8,9,10,11,12].

In contrast, qualitative research a systematic approach to explore and discover the meaning of their life experiences that are based on different methods. in this regard Donalk notes that qualitative method studied everyday experiences of life to understand the phenomena that occur naturally and finally give meaning to everyday life. In this method does not manipulated variable and none of the demographic variables not controlled[13,14]. this type of research with certain definition of human and social realities are trying to study people social action in a natural context .study of action in relevant social context [15]. And access to the meaning systems to identify the specific circumstances of each action and according to the prevailing mentality is a great help. Characteristics of qualitative research are:

- 1) Natural and social context is a researcher source of information.
- 2) It is descriptive and The main purpose of it is exploration.
- 3) Qualitative research is proceeding.
- 4) Inductive methods used in the analysis.
- 5) Meaning is a essential component of qualitative research.

- 6) Qualitative research is based on subjective.
- 7) The main technic for data collection is qualitative and various technic (interview, observation, pictures, notes ...) was used.
- 8) Nature of data is speech, images and categories.
- 9) Data analysis was to determine the prevailing patterns and the analysis included all aspects of the matter.
- 10)The narrative report with a description of the context and direct quotations from participants was studied.
- 11) Regarding matter from subjects perspectives.
- 12) This method has more flexibility.
- 13) It is not emphasize on Specific concepts (variables) and recognize the phenomenon and its integrity as a whole.
- 14) In most cases it has not regular and formal instruments.
- 15) In the qualitative research, control does not important.
- 16) It is descriptive and It can be used to generate descriptive and hypothesis, theory development (grounded theory).
- 17) general purpose of this method is a Qualitative and obtained in response to the question of what, how and why[15,10,9,3,4,16,17,18,11,6,7].

III. Similarities and differences of qualitative and quantitative approaches

today's, researchers and social scientists to compare qualitative and quantitative methods and have recognized the fundamental differences of them in social studies:

1)Epistemological aspect:quantitative research methods is based on Positivist epistemology [8]. Positivists believe that the main purpose of scientific research is describe and explain of phenomena.in this perspective, science is a coherent set of statements around specific knowledge that based on empirical tests verifiable or falsifiable.positivists believe that if human and social sciences being as a scientific status, they must follow the methods of natural science[19]. The epistemological basis of qualitative research is interpretivism[4].Interpretivists believe that the main purpose of scientific research is understanding of social life and discovering how a social meaning creation by people. Interpretativists believe that the prerequisite of scientific understanding about human and social phenomena, is a common sense and common beliefs to understand the correct meaning of actors behaviors. And science to be achieved when researchers realized that accurate definition of the actions[19].

2) Methodological aspect: Quantitative research methods testing the hypothesis by deductive methodology. In the other words, the logic of theory testing in quantitative method id based on deductive logic.so, in this method, hypothesis and assumptions deducted of theories and Assess the correctness or incorrectness of the hypotheses is don based on empirical evidence and natural science. but qualitative research is based on inductive logic. In this research collected data through inductive logic and in the next stage generated theory and testing the hypothesis and question. it is believed that accepting a theory in advance not only restricted researchers but also prevents his attention to the actors view.thus, qualitative researchers are interested in develop concepts and theories than theory testing. Qualitative methodology suggests that the social world, unlike the physical world outside and independent of human consciousness does not exist, therefore the social world is not predetermined that the researchers discovered it[4].

3)Ontological aspect: Quantitative approach follow the type of ontology that social world considered actual and independent of human mind such as physical world. Patterns and disciplines that there are in the social world are objective and independent of the perception or interpretation of them. And can be detected with scientific instrumentsAnd the purpose of identifying is describing and explaining the phenomena that we experience and knowledge about mete empirical phenomena is not possible.

Qualitative approach based on naturalistic ontology (interpretation), in this approach, there is no pre-defined external reality.But the reality made through perceptions and interpretations of the participants. In terms of them there is not a single and isolated reality apart from our perception. and humans have different experiences of the same phenomena. totally, there are major differences between qualitative and quantitative research approaches.the main difference between them based on paradigm.

Table 2: the difference between quantitative and qualitative research approach

Quantitative method	Qualitative method
1. positivistic	1. phenomenological
2. Based on deductive	2. inductive
3. particularistic	3. subjective and focus on internal
4. objective and regard to outside	4. It is processing
5. Based on natural science approach	5. It has an anthropological perspective on the world.
6. trying to control variables	6. lack of control
7. The aim is to find the truth and reasons	7. The aim is to understand the evaluation of the actors.
8. The reality is static	8. reality is dynamic
9. Quantitative and numerical data	9. Qualitative and textual data
10. sampling is the random type.	10. sampling is a non-probability type

Adapted from: 20

Despite major differences between two approaches, there is a similarities between quantitative and qualitative method. The fist, analysis in each of them Accompanied with elicitation. Second, analysis included general process and researcher regularly collecting data and recorded. Third, comparing of data is a processing based. The fourth, in both method, researcher try to avoid of errors and wrong conclusion in data collection. They are also alert to the illusions and false perceptions[7].

Mixed research approach

Mixed research approach is a approach in which researcher in data collection and analysis use quantitative and qualitative method in a single or several studies in their research[2]. In the other words, a mixed theory is a research that qualitative and quantitative methods are combined together in a single study. This approach has been named as the third methodological movement byTashakkori and Teddlie in the handbook of mixed theory [3].

Green, Crossley and Graham [21] in 57 studies that had been done on the basis of anmixed research identifying five strategy:

1-Triangulation, 2 -complementarily,3-Development, 4-Initiation 5 -Expansion

1)Triangulation: the study of Integration and verification of the results of many different methods that study the single phenomenon. And according to denzin a combination of methodologies in single study.triangulation allows the researcher improve the accuracy of findings based on data from qualitative and quantitative research methods. for example, triangulation by using qualitative interviews and quantitative questionnaires assessing the subjects attitudes and perceptions in topic of study[4]. According to Green, Crossley and Graham, triangulation is the use of different methods(Methods triangulation) different approaches and theories(theoretical triangulation). So, It can be argued from a variety of triangulation in a single study[10].so we can say that the main objective of the integration and triangulation is increases the reliability and validity of research results.

2) complementarily: It should be said that words and numbers is a two major factors of human communication with each other, And usually they are used in all dealing. By combining two methods, it is likely that decrease of weakness point of a method. in other words, quantitative research in some fields facilitate the qualitative research and in contrast, the qualitative research and its data can also facilitate quantitative research. the supplementation of these two methods can be solve a lot of obstacles in the collection and analysis and data measurement [21].

3) Development: the goal of mixed research is usually to combine the results of a study that provide the development and formation of a study with other methods' or example, a quantitative survey of the needs and motivation of subjects can be purposeful sampling determination for interviews about their needs [4,21]. some believe that the various ideas suited in the evolution of the theory or evolution a range of questions. qualitative methods are usually appropriate for the exploration and development of hypotheses in beginning of study and as for the purpose of research questions evolved the need for quantitative research is an important. Finally, qualitative methods will be appropriate for displaying hypotheses and providing guidance. However, the evolution of a theory or a problem will be rarely linear and one-dimensional[6].

4) Initiation: for a more extensive analysis of the results of findings used for incompatible quantitative and qualitative research. in other words, wherever research is questionable or controversial conditions would need to be sufficient understanding the phenomenon,new study with new insightis generated[4].

5) Expansion: sometimes researchers find that qualitative and quantitative data is heterogeneous and contradictory, if this inconsistency occurs in the context of a research unit led researcher to a new approach that can be provide suitable research path. In other words, the inconsistent results can be acts as a platform for investigating the causes of conflicts and creating new routes[6].

The mixed method steps:

It can be said that there are eight steps in the process of mixed method. it is possible that the process wont be explained in the order.

- 1) Determining the consolidated mixed plan: At this step, design is selected based on the research question. Is it possible to find an answer to the research question? is it a mixed method would provide the best design to collect the kind of evidence?
- 2) the logic of mixed method application: in the second phase determined the purpose of mixed theory. That is triangulation or completing data? that is Development or Initiation? Does the goal is innovation?[21].
- 3) Mixed method or plan: is the selected method according to the chronological order, the concurrent or sequential? At this phase should be selected the priority of method and mixed model projects [12] In other words, at this stage, the researcher will decide on his design. Of which plan how it can provide the best answer to the research question?
- 4) Data collection: At this stage, the data collection is determined. Data collection methods and data analysis instrument like: questionnaires, interviews, group discussions, observation, etc. is selected.
- 5) data analysis: in analyzing the data, researchers can use qualitative and quantitative data analysis techniques, Perhaps the researcher intends to be use quantitative techniques and qualitative techniques concurrently or separately. in other words, a researcher in the process of quantification, take qualitative data into quantitative data and in the process of qualitative, take quantitative data into qualitative data [12].
- 6) Data validation: data validation studied in throughout the mixed method. if the data was invalid, the generated results will be invalid. For validation of qualitative and quantitative data used the validation strategies (Empirical validity, face validity, construct validity, research teams, consensus, integration with other data sources and integration with initial expectations.
- 7) Interpretation of data: interpretation of data begins of the first data and continues in all stages of research. Interpretation and validation of data occurs simultaneously and together. During data interpretation, can be used different strategies such as reflexivity, negative - case Sampling. In negative - case Sampling trying to find and examine cases that do not meet the expectations and demands of empirical research.
- 8) compiling the final report: In the mixed method, report writing can be done during or after the data collection. researchers should remember that combination present in various stages of research and design and interpretation is a mixed type. the most important step in this stage is that the researchers combined the results of qualitative and quantitative data [12].

Mixed method research studies and approaches

Questions are usually planned for mixed method research. In which, The mixed research when, in what order, at what level, and what proportion, with what means, with what type of analysis performed? And in total, what is the what is the benefit of mixed research?

1-mixed research usually depend on the types of research questions, data collection, data analysis, interpretation of results.

2-mixed research may be performed sequentially and simultaneously.

3- The data collection and analyzing may be placed between or within the different levels. Levels may be include individuals, group, organization and community.

4- Elements of qualitative and quantitative research in mixed method may have equal weight or importance of one over the other.

5-there is a Techniques and various tools for data collection, such as, questionnaires, structured interviews, open interviews.

6-In mixed method may be quantitative data take into qualitative data and vice versa [22].

7-one of the main benefits of the mixed methods that it is use the two method and logic process, induction and deduction. This process caused that findings have a good theoretical and practical basis and generalization, theorizing occur in favorable condition. there are two major approaches in mixed research approaches: (a) mixed model (b) mixed method.

(a) mixed model :in this model, a qualitative and quantitative approach are combined to the within of stage or during stages of research and evaluation processes. Tarynor[12], Johnson[1] have stated two models for mixed method research: 1-Within – Stage 2-Across- Stage.

Tarynor[12] believed that Within – Stage mixed method research is a approach that qualitative and quantitative approaches can be combined in one or more stages of the study. for example, researchers in this approach can be used questionnaires to collecting data. The questionnaire to be included open questions (qualitative) and closed questions (quantitative). in this case, the model can be considered as within-stage. According to the Johnson and Anghobozue[8] in the Across- Stage mixed research combined quantitative and qualitative approach in two stages. In other words, a types of triangulation may be seen in this type of research. the following diagram shows the first and the last projects that are done in one method. But the rest of the project is an mixed project. Because the qualitative and quantitative data collection and analysis of quantitative and qualitative performed on them.

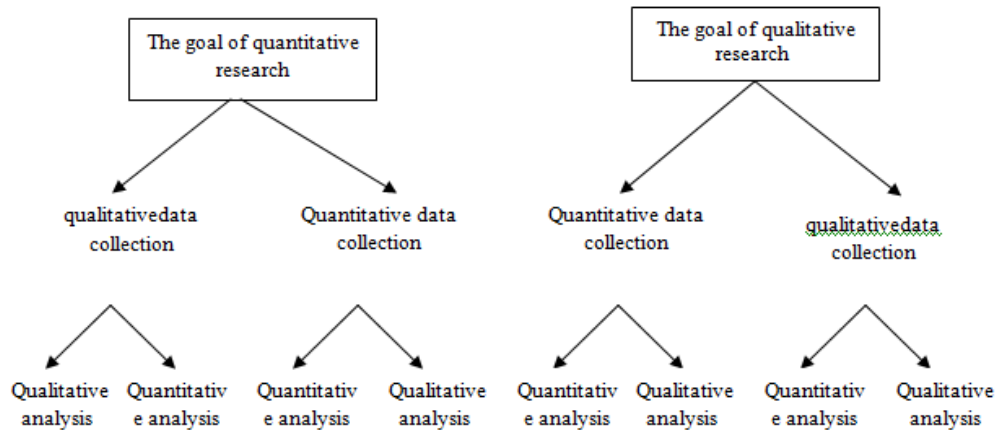


Figure 2: The Designs of mixed model
Adapted from:[23,8]

(b) **Mixed method:** in the plans with mixed method, were combined the stages of qualitative research with stages of quantitative research in a research process. Designs of mixed method approach classified based on two major factors: 1-Time order: concurrent, sequential 2-Paradigm: the equal or unequal status and dominant. in The first factor emphasized that whether the researcher intends to focus on the approach of quantitative and qualitative data collected and analyzed at the same time or one before the other? In the second criterion is whether the researchers emphasize that it intends to use the dominant paradigm or the paradigm will change over time? in this regard, Creswell[2], noted strategies to design an mixed approach for gathering, the priority and analyzing the data.

- 1) Sequential explanatory plan: the Strategic goal of this project is to understand the quantitative data collection and analysis that continues with quantitative analysis and data collection. Priority with quantitative data. there are two integrated approach during the process of interpretation. this type of strategy is significant when explaining the role of qualitative data are responsible for quantitative data.
- 2) The Sequential exploratory plan: The strategy of this project is to collect data in two stages with the first priority of all the data that have been collected.in general, the qualitative data tend to collected previous data and integration of two types of data (quantitative and qualitative) in the analysis. this strategy is used when the primary purpose of the test is emerging qualitative theories from the data.
- 3) The Sequential transformative plan: the strategy of this project is to collect data on two separate phases. It is obvious that the priority of qualitative and quantitative methods depends on theoretical framework. the project may be more acceptable strategy for researchers that their interests change of circumstances(like as critical and feminist theory).
- 4) The concurrent triangulation theory: In this strategy, data collected at a time and aims to improve the weaknesses of one method with another. Here's priority occurs in the interpretation steps by providing convergence of findings explanation.
- 5) The concurrent nested plan: In this strategy, data collected concurrently, but the priority is a study that guide researcher.this type of strategy can broadly to understanding the phenomenon by which one or more than one method can be used.
- 6) The concurrent Transformative plan: In this strategy, data collected concurrently, but the priority with a theoretical research. similar to the transformative strategy s, these processes directed strongly by the nature of the research question and theoretical research. Combination any of the methods can lead to mixed research.

Table 3: Summary of mixed method research

1	Confirmatory survey Qualitative data Qualitative analysis	4	Confirmatory survey Qualitative data Statistical analysis
2	Explanatory survey Qualitative data Statistical analysis	5	Explanatory survey Quantitative data Statistical analysis
3	Explanatory survey Quantitative data Qualitative analysis	6	Confirmatory survey Quantitative data Qualitative analysis

Morgan[24] also referred to the types of mixed method mixed research. an excellent summary of his pragmatic strategies for combining quantitative and qualitative approach in which quantitative and qualitative approaches to cover each other's weaknesses are presented in table (4).

Table 4: Models of combining qualitative and quantitative research approaches

Models	Qualitative components	Quantitative components
Model 1 Qualitative → Quantitative	Guide OF quantitative data collection <ul style="list-style-type: none"> • Hypothesis • complete the questionnaire and survey • Provide basic tools 	Principal method
Model 2 Quantitative → Qualitative	Principal method	Guide OF qualitative data collection <ul style="list-style-type: none"> • Provide information of purposeful sampling • Provide preliminary results to depths discover
Model 3 Quantitative → Qualitative	Quantitative study prosecution: <ul style="list-style-type: none"> • Evaluation and interpretation of results • help to researchers explanation 	Principal method
Model 4 Qualitative → Quantitative	Principal method	Qualitative study prosecution: <ul style="list-style-type: none"> • Contribute to the generalization of the results to different sample • Testing of emerging elements

Adopted from: [24]

Combining of quantitative and qualitative research caused that researcher consider at the phenomenon from different aspects and more complete understanding of the problem. in general, a combination of qualitative and quantitative methods can be developed measurement instruments, clarifying concepts, understanding of causal processes, theory building, testing, and refining and increasing the credibility and reliability of the findings.

IV. Discussion and conclusion

Mixed research approach as third movement of methodology to overcome the methodological shortcomings and criticisms to quantitative method as a first methodological movement and qualitative method as a second methodological movement have been developed in social sciences by experts and experienced researchers and theorists. quantitative research is said to that it relies too much on statistics and statistical models. hence, The current processes in everyday social interaction of actors is often overlooked. But, in qualitative research this processes constitute one of the basic assumptions of research. it is also said that one of the strengths of quantitative research is the property of the generalizability of the findings. On the contrary, it is one of the weaknesses of qualitative research methods. Because in the qualitative method research could not be generalized the results to the entire community. Therefore ,with regards these cases it can be said that the research method ends all of these shortcomings and criticism. the basic principle of the mixed method is combination of different methods and techniques to establish the maximum issue. Mixed research approach is a approach that researcher used qualitative and quantitative methods in a single or in multiple research studies in data collection and analysis of them at research program. The mixed research method advocate under the influence of adaptation theory ends the quantitative and qualitative Paradigm. The mentioned approach based on the idea that qualitative and quantitative methods are compatible and can be combined them. in this regard, the Green Cross and Graham stated that the main purpose of mixed method approach is triangle, creating new boundaries, the complementary data, the potential for expansion and innovation. By comparing the two methods of qualitative and quantitative research results can be conclude that the strong point of quantitative research is a weakness point of qualitative research and weakness of quantitative research is the strong point of qualitative research. so to avoid falling into the trap of reductionism and ensure greater social studies suggest that researcher use a combination of research methods. It should be noted that in some studies it is possible that the use of mixed research approaches is a quantitative or qualitative paradigm. This depends on the nature of the

research topic. That is the issue is more compatible with one of the paradigms will be the determined paradigm. It is possible that the quantitative method research to be used in quantitative research method in a stage or stages Or it may be that quantitative research methods to be used in qualitative research methods in a stage or stages of it. in the first case the main paradigm will be a quantitative research and in the second case will be a qualitative research paradigm. the third mode is that paradigms used in mixed research equally. finally, with recognizing the difficulty of making mixed research main objective of mixed research approach in combining quantitative and qualitative paradigm is increase understanding of the phenomenon and strengthen their knowledge and expand the knowledge, provided strong evidence in order to research findings to answer to the question. So, the mixed method approach as a method, improve the generalizability of results and improve the understanding of the problem. The final point is that, in social science, the audience of researcher is a subject and the complexity and multi-dimensional of that need to consider the mixed method. it can be said that the mixed method research is a double-edged sword that positive function of it, promote understanding of the problem and study the behavior and dysfunction of it is Time consuming and costly.

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