

Mixed Research Method

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Abstract

Research is a methodological process in which a researcher's interest is investigated and investigated exhaustively, whether under the qualitative, quantitative or socio-critical approach, with aims aimed at solving said problem in the field scientific, humanistic and technological. The objective of this document was to analyze the Mixed Method of Research (MMI), from its conceptualization, procedure and importance of its applicability in the investigative work.

The methodology used to approach this essay was exhaustive documentary research, which consisted in reviewing bibliographic material on the object of study to perform an analysis of the selected contents. It is concluded that this method allows the synergy between different styles of thought for the obtaining and validation of scientific knowledge, favoring the methodological hybridization of the study problem, without letting escape the minimum detail of it, to establish objective conclusions of objective and subjective.

Keywords

Mixed research method, research approach, scientific knowledge, science.

Introduction

Scientific research has been the bulwark par excellence that man has had on his part to do science, understood as those knowledge obtained through observation and rationing in an orderly and systematized, which are principles, foundations, laws and theories, susceptible of scientific verification, by some of the methods of experimentation of the same. Being scientific knowledge the product resulting from the application of the scientific method (observation, analysis, synthesis and experimentation), to be notified to the community of researchers for verification and approval by it.

In this sense, the researchers apprehend a method consistent with the research objectives, to carry out the research and among them we find the MMI, as an emerging approach that combines the rigor of subjectivity and scientific objectivity. This document is a reflexive analysis of the MMI. For this, the definition of the same is explored, as well as the interaction between the ways of obtaining knowledge in this method, the procedures in a pure and modified form and the importance of the MMI in a research work.

Method

The methodology used to approach this essay was exhaustive documentary research, which consisted of reviewing bibliographic material on the object of study to perform an analysis of the selected contents¹. For this, discrimination was made of scientific articles indexed in various electronic repositories, postgraduate theses and institutional documents, which provided a broad view on the subject of study.

Developing

The MMI, explains the synergy what-how, where the methodological aspects of the quantitative and qualitative paradigm are harmoniously combined, either: for the approach of the problem, theoretical framework, techniques and instruments of data collection and analysis of them. This novel approach constitutes an important methodological link in any investigation, where the researcher needs to formulate

hypotheses and collect information on the basis of the different designs present in the union when. All research planning under the mixed method will depend on the objectives and scope of the study. It should be noted that at this point they combine the objective and subjective aspects, translating into a greater wealth of information, where explanatory theories of the phenomena are formulated deductively and inductively, allowing a holistic and / or integral approach to the study problem².

Among the characteristics of the MMI, we have: ³⁻⁴

- **Triangulation:** It is the multiple use of methods in the study of the same object (qualitative and quantitative), for the holistic analysis of the data of the research in question.
- **Complementation:** Refers to the complement between the paradigms (quantitative and quantitative) immersed in the mixed approach, since due to the weaknesses of each, one paradigm supplies the other and vice versa. The quantitative, leaves aside many qualities not numerically measurable object of study, which if taken into consideration in the qualitative, that is, one is a complement to the other.
- **Holistic Vision:** The holistic vision in research refers to those projects that are integral, that is, that intertwine the scientific and humanistic part, where the results of the studies are for and benefit society, integrating the quantitative methodology and qualitative (mixed research approach). Likewise, they allow the permanent training of the researcher in each of their scientific disciplines.
- **Initiation:** It is the discovery and / or investigation of paradoxes or contradictions, with respect to the study to be developed.
- **Development:** It refers to the sequence and successful overcoming of the phases that make up the research study
- **Expansion:** It is the extension of the project or research study, as the research progresses, after having passed the period of initiation and development.
- **Compensation:** It is the use of different techniques and research methods in the mixed method and that support the development of the stages or phase described in the study.

- **Diversity:** Refers to the variety and complexity of data that can be obtained from a mixed investigation, since the mimes can be numerical or qualities on the object of study, therefore, due to the nature of the same, they need a different treatment for its analysis as the case may be. This allows a better requisition of the obtained results, as well as, different perspectives of the phenomenon studied.

It should be noted that if any of the implicit elements described above is omitted during an investigation using the mixed method, it would be in a methodological bias, since the research would lack scientific validity.

This methodology allows the use of various techniques and instruments that allow the quantitative and qualitative measurement of the study variables, whose combination will allow a systematic management of the information collected. Example of this, we have it in social and health research, where descriptive statistics is used for the management of some data and simultaneously, the emotional dimension of the study sample is approached⁵.

In the mixed research approach, there are two basic methodological procedures: Pure form procedures and modified procedures. The first one preserves the foundations, epistemological, ontological and investigative of the quantitative and qualitative paradigm, on the other hand the second one; It refers to the modification of some of the methodological steps used in the binomial when, with the purpose of adapting to the objectives or purposes of the study in question, where there may be a greater inclination to either of the two paradigms, either the quantitative (quantitative-mixed) or qualitative (qualitative-mixed).

These procedures constitute an important methodological link in any investigation, where the researcher needs to formulate hypotheses and collect information on the basis of the different designs present in the union when. All research planning under the mixed method will depend on the objectives and scope of the study. It should be noted that at this point they combine the objective and subjective aspects, translating into a greater wealth of information, where explanatory theories of the phenomena are formulated deductively and inductively, allowing a holistic and / or integral approach to the study problem².

Therefore, this method refers to the holistic view between the different ways of obtaining knowledge, according to the style of thought used. However, in this model

the inductive path corresponds to direct and meticulous observation in situ, which plays a very important role, since it allows to reveal the changes or patterns visible in the object of study. Considering that observation and perception through the senses, is essential for the initiation of any investigation, regardless of the area of knowledge in which it is framed, since it is the initial start in the search for knowledge, is "the spark that moves the cognitive engine "of our human and thinking nature. These characteristics belong to a style of Inductive-Concrete thinking. According to García y Hurtado^{5,6}, it is characterized by the accusatory and systematic observation of the prevailing reality, where the researcher is immersed, from specific cases to the construction of theories that encompass a whole, whose parts are closely related to each other, but that each one of its components can be explained separately.

This style of epistemological thought, initially emanates from the characteristics or features that have the object of study, whether known or unknown (descriptive phase), which leads us to explain the "why" (explanatory phase) of the above. This leads to deepen the object of study to answer the questions resulting from the observation of the same, being the documentary review essential in this phase, ie, review scientific documentation reported and not reported on the object of study⁷.

The research method par excellence used in it, is the "experiment", where the researcher, can intentionally control the variables to be measured or quantify the object of study, through descriptive statistics, probabilistic and mathematical models (numerical language- abstract), allowing the intensification and improvement of research instruments. Therefore, the relationship between the object of study and the researcher is of an "apparent" type, since the object has its own reality and is independent of what the subject studies about it.

ikewise, in the multidimensional model we find the deductive way, which corresponds from the ontological point of view with realism. This part of novel and disturbing ideas for man, that is, of assumptions that allow the rigorous and theoretical discussion of them, for their approval and falsification (falsificationism), by means of counterexamples⁸.

The falsificationist method is the one used for the approval of theories, through conjectures (assumptions that are believed to be true, until the same is verified). The theoretical systems are the product par excellence of scientific knowledge and they

are invented or designed, they are not discovered. If the premises that form the theory are true, the theory is true, if any is false, the theory is rejected⁹.

Experimentation is not the main source of validation of scientific knowledge. It is only justified, if it contributes to the formulation of explanatory theories of the facts. But, the reason (knowledge of the truth, which seeks to establish the order and association of previously designed knowledge with new ideas, questions or research problems). Therefore, it is opposed to the inductive method, that is, to observable and measurable facts for the generation of theories. Instead, it seeks the explanation of phenomena, supported by previous and / or related theories, that help explain them, where the particular conclusions derived from the facts are verifiable, for their acceptance or rejection, supported by a rigorous argument⁵.

It should be noted that it is possible to integrate different methodologies in the same study, this being a fundamental point within the mixed method, since studies of exploratory and descriptive types can be included within the same subject, with different techniques and instruments of the quantitative paradigm and qualitative.

Conclusion

In conclusion, the MMI uses the synergy between different styles of thought for obtaining and validating scientific knowledge, which despite the existing divergence from the epistemological and ontological point of view, it is possible to adapt both approaches in the same study, favoring the methodological hybridization of the study problem, without letting go of the minimum detail of it, in order to establish objective and subjective integrative conclusions.

In addition, the pure and modified procedure of the mixed methods uses the conjugation and / or methodological hybridization of the different research paradigms and the benefits of the various designs, techniques and instruments involved, without missing the minimum detail of the same, to establish integrative conclusions of objective and subjective character, that give answers to the questions of investigation and hypothesis.

Bibliographic references

1. Corona, J. Scientific research. By way of reflection. *Medisur* 2016; 14 (3).
2. Hernández, R., Fernández, C., Baptista, P. *Research Methodology*. McGraw-Hill International. 5th Edition. Lima Peru. 2010. p. 613
3. Mejías, J. On Qualitative research. New concepts and field of development. Editorial Fund of the Faculty of Social Sciences. 8th Edition. Lima Peru. 2004. p. 208
4. Scribano, A. *Qualitative Social Research Process*. Editorial Promise. 2nd Edition. Buenos Aires, Argentina, 2007. p. 150
5. Garcia. M. "Karl's legacy. R. Popper to critical rationalism in social sciences; nineteen ninety six.
6. Hurtado León, Toro Garrido. "Paradigms, Research Methods in Times of Changes; 1991
7. Pasek, E. and Matos, Y. (2006). Five paradigms to address the real. *Telos*. 2006; 8 (1): 106-121.
8. Molini, F. Proactivity: the scientific method of Karl Popper applied to the future. Autonomous University of Madrid; 2007. p. 208
9. Thomas Khun. *The Structure of Scientific Revolutions*. FCE, Mexico; 1971