

**ANALYSIS OF MULTIPLE CLASSIFICATION IN
THE QUALITATIVE RESEARCH**

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Title: Analysis of Multiple Classification in the qualitative research

Abstract

The field of investigation has a contribution of informative wealth when it looks for qualitative data, inserted in the investigation instrument in form of open questions. The analysis of the qualitative data will join that analysis potential. One method is the Thematic Analysis as mentions Minayo (1993). We propose an alternative method, denominated of Analysis of Multiple Classification, specifically for the treatment of “speeches”, answers of argumentative type. The advantage is: that analysis expresses all ideas from the answer. We joined the quantification of the data potentially collected under the optics of the qualification, allowing evaluating the problem and the importance of that investigation as an analysis element and projection of the reality. The treatment of the open questions for the Analysis of Multiple Classification potentiates the discussion of the data configuring the simultaneous elaboration of the text.

Analysis of Multiple Classification in the qualitative research

The field of investigation has a contribution of informative wealth when it looks for qualitative data, in general, is inserted in the investigation instrument in form of open questions. Even values questions that are answered by a simple form as - no or yes -, or still in form of scale of the type as - ignored, little, more or less, a lot - when done with a “why do you find that?” they are enlarged allowing the knowledge of arguments that they contribute favorably or not. The present censorship in the lack of that inquiry impedes a quality analysis because the debate closes up in the given answer. To the author remains to describe the facts relatively to the favorable individuals' proportion and the contrary to the theory individuals' proportion, impeded of establishing an elucidating debate, just conjecturing.

With the knowledge of the arguments used by the interview in the open questions opens up a great number of statistical techniques that can be used in the treatment of the data. We will denominate that treatment of a qualified quantitative analysis by the arguments used by the investigated subjects. With those systematized arguments we potentially joined the quantification of the data collected under the optics of the qualification, allowing evaluating the problem and the importance of that investigation as an analysis element and projection of the reality.

The statistical analysis is a type of reading again, which decodes the observed relationships. It interprets the information after its treatment of data seeking for maxim and minimum, its relative importance in consonance with the descriptive measures that they look for to enlarge the reading of the data. Also, the elements are sought that can be projected starting from the statistics samples for the population, after its validation for the hypothesis tests. This reading is complementally and argumentative, it is adjusted, on one side, to the need to evidence relationships no so apparent, to prove and to validate results, projecting them thoroughly, and, on the other hand, to corroborate the statements “visualized”, sustaining them as textual arguments. (FRICKE, 1999, P.111).

The treatment of the open questions, here denominated of Analysis of Multiple Classification promotes the discussion of the data configuring the simultaneous elaboration of the discussion text.

Thematic Analysis and of Content

The analysis of the qualitative data will aggregate that analysis potential, however different points of views can be used to do that treatment with views to the presentation. Commonly on identifies this process as Contents Analysis, and the contents can be represented by the interpretation of the author's argumentative idea, for the repeatability in the use of words –subjects, verbs, adverbs, qualities–in the text allowing to do a semantic analysis of the same.

This is made through a continuous process in what on try to identify dimensions, categories, tendencies, patterns, relationships, unmasking them the meaning. This is a complex, no lineal process, which implicates a reduction of work, organization and interpretation of the data, which already begins in the exploratory phase and accompanies all the investigation (Minayo, 1993, p. 170).

The methods proposed to accomplish the qualitative analysis are based in the content Analysis and in the Thematic Analysis as mentions Minayo (1993). The Thematic Analysis allows the open questions to be treated in the quantitative optics after the qualitative evaluation, consisting in

to discover the sense nuclei that composes a communication whose presence or frequency, mean some thing for the stamped analytical objective. In other words, traditionally, the thematic analysis heads for the counting of the frequency of the units of significance that define the character of the speech. Or, to the opposite, qualitatively the presence of certain themes denotes the reference values and the present models of behavior in the speech. MINAYO (1993, P.209)

In this case through contents analysis we will evaluate the qualitative text to discover in the repeatability of the syntactic units as verb, subject, predicate that will define the character of the speech while the thematic unit reinforces the idea of the verification of the presence of thematic units in the text. For one it is the own composition of the speech while for another they are the approached themes. According to BARDIN mentioned by MINAYO (1993, p. 208) “the THEME is the unit of significance that frees naturally from a analyzed text according to relative criteria to the theory that serves from guide to the reading.” For the accomplishment of the thematic analysis, MINAYO (1993) mentions the importance of proceeding to a Previous Analysis, to the Exploration of the Material and the Treatment of the results.

In the previous analysis phase, the researcher accomplishes a general reading of the answers and that contact with the material, takes him to understand the speeches already absorbing its content form and then “to visualize” a type of rude themes, no systematically, in its contents. That first organization of the collected material needs to take in consideration some validation criteria as: exhaustion – that considers the exhausting study of the “speeches” -, representative – that intends to represent the theme like him comes in the speech without modifying its sense, homogeneous – that implicates in the identity of the group of answers classified by that theme, and relevant – that is related to the theme as analysis category according to the theoretical referential of the research. Mainly, it should be considered the quality of the themes that are mutually exclusive and disrespects to put upon the themes. In that phase, are determined the units of registration, the unit of context, the category form among others, as the initial aim, however, these initial presuppositions should be flexible to the point of to allow new objectives to emerge starting from the exploration of the material.

In the phase of exploration of the material, the researcher will make the cuttings of the text in units of registration, defining the counting rules to be used for quantitative treatment and accomplishes the classified and the aggregation of the data, reducing the theoretical or empiric categories that will define the specification of the themes. In this phase on evaluate the text that can be the “speaks” of the interviewee, the page of the book, the article transforming the report in units of understanding of the same. Therefore, it’s no more the author's of the original report, but the interpretation-synthesis that the author of the analysis does of the same. This interpretation is a reading again, an interpretative inclination accomplished under the optics of the researcher regarding to the authors that he looked for to dialogue. It is not a neutral reading, therefore, but guided by the methodology and for the underlying theories to the analysis that guarantee objectivity in the treatment of the collected data transforming them in analyzable social facts.

The convenience of that thematic reduction is the one of potentially the statistical treatment of the data being visualized the more referred Theme, allowing comparing its importance to the others ones. Necessarily the researcher will enlarge that theme accomplishing a theoretical construction inferring analyses starting from theoretical referential.

Many times, this reduction is already accomplished in the previous test and allows the creation of alternatives, transforming the open subjects into closed ones of multiple choices. For these authors it’s necessary to consider the information obtained in elapsing of the whole path of the investigation. Naturally, we have to consider that in the theoretical referential, the authors called for the debate will guide the creation of categories. Therefore, the best system of reduction of data is its accomplishment with the ready readings with the analysis paradigms already

defined, besides being fundamental that the own researcher makes that evaluation under the light of their theoretical referential. The same group of answers can be classified differently in function of different paradigms reference. The category form of the arguments is not neutral in that sense and it imposes a choice of the researcher. Accomplished the operational part of the investigation, it is necessary to organize and to systematize the collected data, transforming them in information that facilitate analysis and interpretation.

The organization of the data transforms them in information that allow to compare data, to esteem parameters, to evaluate the subgroups formation, to create indicators, to observe the multiple relationships that can happen among the study variables. Variables that can be defined as a picture of general reference and a picture of information discriminator (Fricke, 2000, p. 3).

According Fricke (2005), the statistic treatment is descriptive and needs to be preceded by a meticulous reading and conference, with the purpose of verifying inconsistencies and the presence or not of “outliers” (given out of the pattern observing the whole), guaranteeing safety and scientific reliability of the research.

The qualitative data obtained in the open and mixed questions, demand a special treatment, demanding time and a lot of attention, for making an appropriate classification of the enormous volume of information and opinions supplied by those researched, to answered the proposed questions. We should consider that each answer can have multiple ideas that are mutually exclusive that should be considered and classified group accordingly, in way to allow the analysis to be the widest possible, in order to unmask the relationships that the variables establish among themselves.

The open questions represent a very significant part in the questionnaire and, many researchers evidence difficulty in systematize them. That difficulty almost always elapses from the methods traditionally used for the reduction of the

data to the one theme that was the most significant in that context. That reduction method imposes the researcher to do choices in function of order of importance, that is, to establish priorities in the themes and to discard the one of smaller argumentative importance.

Analysis of Multiple Classification

It is in that context that we propose an alternative process, denominated of Analysis of Multiple Classification, specifically for the treatment of “speeches”, answers to open questions of argumentative type and referential. We intended to take into account all the expressed ideas of the interviewees. It is inappropriate to do a selection in the argumentative texts because the researcher appropriates of a speech that is not yours and, and so, he doesn't have domain about the argumentative priorities. We understand then that all of the used arguments should be taken into account for that multiple classification. The difference that settles down between the Thematic Analysis and the Analysis of Multiple Classification is that this last one doesn't presuppose exclusive argumentative unit in each “spoken text” while the other makes a thematic reduction. It can happens that a same argument contains two or more ideas or it can be analyzed under two or more points of views, in addition that all of the present arguments in the speech will be classified. As we cannot previously establish the answers that will be given, it is necessary to create a code system to identify the diversity of ideas after the same being registered. The answers are read in full detail and analyzed so much individually as in the group, classified starting from their arguments considering the theoretical referential of the research so that they are constituted in analysis categories. Then they can be classified into new groups again, by her content if

they constitute a very big number of arguments. On verifying more than one opinion in the same answer, all of them should be classified independently. Each argument receives a code; so that the answers are classified according to the homogeneity of the ideas and in each “speak” we will look for the presence or absence of those arguments.

Later, the composition of the answers is evaluated respect to the created categories verifying if they contemplate the several opinions appropriately, each one, incorporating the corresponding code. For each formulated subject on generate, on average, five to seven analysis categories that contemplate the several supplied opinions, being verified later, the incidence or no, of the idea in each category, being represented by the present or absent factors.

The statistic treatment of the created categories is descriptive and we verified the proportion of presence and absence of the multiples arguments. With that we can, a posteriori, to know the priority of the arguments in the optics of those researched. Naturally, the choice of the categories for the researcher implicates in a decision element supported by his theoretical reference. That refers a process no neutral in that the researcher is backed objectively in their theoretical considerations. It is yours “reading” of the answers that will build the analysis categories, for that, it is important that he considers each one of them expressing the nature of the arguments acted by each one of the categories.

The first providence is the one of doing a listing of the answers given in a spreadsheet of answers. After reading the sentences sincerely, these are subdivided in arguments. This procedure can be accomplished coloring arguments that provide the same argumentative idea identically. Then on verify arguments that are repeated, seeking for those mutually exclusive. This idea doesn't mean that a same speech doesn't contain more than an argument but that they cannot be looked as

identical argument. If so, it is possible to melt two or three arguments in only one, reducing the amount. Once the arguments are analysis categories, it is important that number is reduced and presents the characteristics that Minayo (1993) mentions for the themes: Exhaustion -, representative, homogeneous, and relevant, mainly mutually exclusive. In a same speech, multiple arguments are classified. All of the arguments used by the answerers can be taken into account, even if more than an idea is presented or that the same argument can be meant for more than an argument. Each argument receives a code and his presence is marked in the speech. This is the essential difference in relation to the analysis of themes, which tries to prioritize a theme in each speech, reducing to the main idea. In that case, the “speaks” will be meant by the understanding of the researcher to a list of priorities that doesn't necessarily represent the order of the interviewees' priority. In the Analysis of Multiple Classification, the component of the researcher's significance is also present because he interprets the meaning of the argument reducing it to keywords. What is not present is the priority, for the arguments, that will be known starting from the repeatability of the used arguments. In that case, the interviewees' indicate the priorities. It is noticed, therefore, that two optics are satisfied in this treatment: the one of the researched that establishes the priority starting from the repeatability of the arguments and that of the researcher that re-sign the speeches reducing them to arguments. The re-sign accomplished by the researcher is guided by the theoretical references of the research, like this, other researcher could arrive to arguments differentiated with the same ones “speeches.”

The stages of the Analysis of Multiple Classification are: Spreadsheet of results and arguments synthesis, write the concepts of the arguments as analysis categories, Table of presence/Absence of the arguments for repeatability order and

graph with the proportion of presence of the arguments, being followed by the debate by argument that will be confronted with authors references.

Example

To illustrate we will use as an example a student's research guided by this researcher. In agreement with Fricke (2005), the reality is subjected to the human limitation. In the searching case, researchers are the agents that make the observation, the interpretation and the analysis of the facts and data. According to Manfio (2004) the field of research accomplished with the teachers offered a significant group of data and information sending to a high complexity degree and difficulty to be considered in integrality. An analysis, answer for answer was accomplished, arriving to the definition of categories that they could act with fidelity the interviewees' thought in relation to the educational personnel's of the University politics. There were applied open and closed questions in a probabilistic sample of 61 teachers. They are presented, to exemplify, 5 speeches of one of the open questions and later the total statistical treatment, that contemplates all the speeches of that question.

Selected question: "Which the main reasons for your entrance in this University as teacher/professor?"

Step 1: Spreadsheet of data

NO	Answers	Code	Q4 1	Q4 2	Q4 3	Q4 4	Q4 5	Q4 6	Q4 7
1	Stability in the job; for the democratic form with that the teachers and employees of the Institution act	12	1	1	0	0	0	0	0
2	Invitation to work in partnership with a teacher of the graduation; work opportunity; to deepen the studies.	34	0	0	1	1	0	0	0
11	To continue specializing intellectually and to Act in the higher education. I visualized a promising future	456	0	0	0	1	1	1	0
15	Job market	3	0	0	1	0	0	0	0
17	The main reason in entering in the Institution, at that time, was the possibility to be in a center of generation of knowledge; opportunity to accomplish new works	146	1	0	0	1	0	1	0

Note: 1 - Present 0 - Absent

The example doesn't present all of the sentences but it allows visualizing the treatment given to the same ones. Each one of the sentences was evaluated as for the presence or absence of the different arguments. The representative degree of the arguments was a discussion object for the importance of those categories in the analysis, its capacity to open the scientific debate in the evaluation of the results. For that, it was important to consider each key word.

Step 2: Concepts of the key words/arguments

	ARGUMENTS	CONCEPTS
Q4_1	Work Conditions	Good conditions of professional performance–I glide of career, etc
Q4_2	Project of University	For the democracy it interns, work philosophy, political position and exercise of the citizenship
Q4_3	Work Opportunity	Opportunity appeared in the job market
Q4_4	Qualification Perspective	To deepen into studies, improvement, qualification and educational training
Q4_5	Professional Accomplishment	Professional accomplishment with future perspective
Q4_6	Academicals Performance	For the possibility to be in a center of knowledge generation
Q4_7	Geographical Localization	Next university to the home place and regional center

The table 1 presents the arguments used as analysis categories by the presence and absence of the same ones in the 61 “speeches.”

Step 3-A: Makes a table with the arguments priority

Table 1: Main reasons for the entrance in this University as teacher/professor - Ijuí-RS-BR - 2001

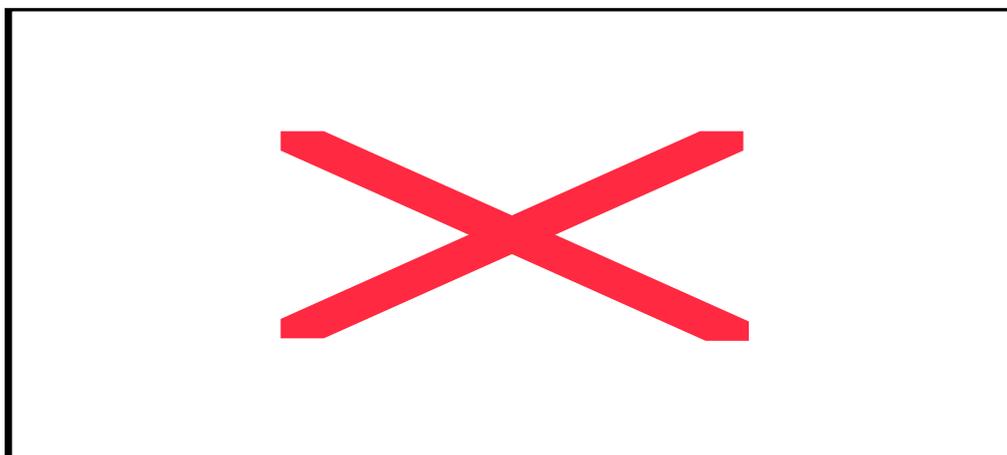
ARGUMENTS	Present		Absent	
Code 3-Work Opportunity	23	37,7%	38	62,3%
Code 1 - Work Conditions	19	31,1%	42	68,9%
Code 2-Project of Universidade/Curso	19	31,1%	42	68,9%
Code 6 - Academical Performance	16	26,2%	45	73,8%
Code 4-Qualification Perspective	9	14,8%	52	85,2%
Code 5-Professional Accomplishment	7	11,5%	54	88,5%
Code 7 - Geographical Localization	6	9,8%	55	90,2%

Source: Research of Field-MANFIO, J. P. -FRICKE, R, M..

The illustration accomplished with the proportions of presence of each argument presented in repeatability order will allow the to visualize the density among the arguments used by the interviewees. It is possible that on opts for the table or for the illustration once the information presented for both is the same, only the form of visualizing is different. A table presents larger wealth of details at the same time confronting presence and absence in that it informs the dimension of the same ones so that it can evaluate individual importance. The illustration presents a faster process of information once gives visibility to the presence of the arguments and it allows to quickly confrontation, turn minimum the effects of the details and allows a more dynamic reading.

Step 3-B: Makes a graphic with the arguments priority

Figure 1: Main reasons for the entrance in this University as teacher/professor - Ijuí-RS-BR - 2001



Source: Research of Field-MANFIO, J. P. -FRICKE, R, M..

Conclusion

The Analysis of Multiple Classification will mean the research in a double sensitive way: for the respect to the interviewees' speech once it doesn't underestimate nor ignores any argument and for the researcher's participation regarding to the authors that called for the debate. The great contribution of this method is that one could consider all arguments and, besides, to consider “speeches” under more than one point of view. The simplicity of the treatment to contribute to do minus complicated the analysis of the open questions.

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