Doing Classic Grounded Theory with Quantitative Data

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Abstract

Generally, when researchers think of one type of data associated with classic grounded theory, most probably qualitative data that comes to mind. While a researcher may, indeed, use qualitative data with classic grounded theory, there is a possible misapprehension that exists whereby that is the only type of data permitted. With classic grounded theory, qualitative and quantitative data may be used with equally successful results. In this paper, the author will offer a detailed discussion, using some fake sample data, to show how quantitative information may be used with a classic grounded theory design. Though a multivariate theory will not be presented here, such a goal is understood and quite possible with the data.

Keywords: classic grounded theory, quantitative data, constant comparison method, Glaserian grounded theory

When a researcher thinks of different types of data—regardless of the subject area—qualitative and quantitative broadly come to mind. And each type of data is thought to be analyzed in specific ways. For example, quantitative data would be analyzed according to a variety of different statistical tests depending on exactly what is being explored, tested, and desired. Quantitative data are used to answer, address, accept, or reject various hypotheses.

Qualitative data may be analyzed using thematic analysis, interpretive phenomenological analysis, and a number of other analysis models, according to Braun and Clarke (2013). While

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this information is correct, grounded theory is often put into the qualitative "pile." One could, I suppose, justify that grounded theory is used for qualitative research given that the title of the 1967 book by Glaser and Strauss is *The discovery of grounded theory: Strategies for qualitative research*. Yet, in that book, Glaser and Strauss (1967) stated that classic grounded theory is neither a qualitative nor a quantitative design. Here is where the exploration in this paper needs to start. With qualitative data, analysis using classic grounded theory is very well-documented; a researcher could read a number of books (Glaser & Strauss, 1967; Glaser, 1978, 1992, 1998) and, with time, patience, and fortitude, could potentially learn to analyze qualitative data using classic grounded theory. However, there exists minimal extent literature on quantitative grounded theory: Glaser (2008), Holton and Walsh (2017), and Rosenbaum (2008) to name a few. If a person does not have a strong quantitative background, they may very well be lost as they try to read and understand the extent literature.

With the help of ChatGPT (OpenAI, 2025), the objective of this methodological paper is to show the reader how to start a classic grounded theory study, in simple and straightforward language, using some fake quantitative data. In using classic grounded theory with quantitative data, there is value to realize that unlike traditional quantitative analysis, no variables are tested (Glaser, 2008); no test of any "statistical significance" (Glaser, 2008, p. 17) will be required as the numbers are not meant to verify anything. Rather, like qualitative information, quantitative data must first be conceptualized and then developed into a theory. In this respect, quantitative data are no different from qualitative data as both get would get coded, conceptualized, and developed in a similar way. Glaser (2007) stated, "all is data" (p. 8; Glaser, 2001, p. 145); everything is acceptable in classic grounded theory as data to be analyzed.

Additionally, a researcher needs to be cognizant of the three questions that Glaser (1978) posed: "What is this data a study of? What category does this incident indicate? What is actually happening in the data" (p. 57)? If a researcher sees that some percentage of respondents did (or did not do) something, then rather than looking at that number quantitatively, the researcher must ask what behavior is represented by that number; what is happening in the data (Glaser, 1978). In the following sections, readers will see a section dealing with open coding. Then, there will be a section on memos and constant comparison. Next, a discussion involving the core category, theoretical sampling, and theoretical codes will ensue. Finally, a conclusion will end the paper.

Open Coding

Broadly speaking because many researchers are not accustomed to analyzing quantitative data in a qualitative manner, the first step as a way to "ease into" the open coding process and write one sentence or a sentence-fragment in which you explain what the numbers may represent. This explanation is done from a 10,000-foot perspective. In looking at the data in Table 1, I have used an example from ChatGPT (OpenAI, 2025): "Daily hours worked by freelancers to understand how they manage their workload." Such a statement must be extremely clear, direct, and parsimonious; omit all extraneous words to help you have a laser-focused perspective. If desired, the sentence might be further shortened to the following fragment: "Daily work patterns of freelancers." As you ponder this statement, go back to what Glaser (1978) wrote: "What is this data a study of" (p. 57)? Ask yourself: what might daily hours worked by freelancers tell you in terms of their behaviors? With that information in your mind, you can how turn your attention to the open coding process. To aid in this discussion, here are some raw data that will be used in this discussion. In this fictitious analysis, there are six participants with the hours each works per day (HW/D) (see Table 1):

Table 1

Raw data

Participant	HW/D
A	12
B	6
C	7
D	10
E	2
F	8

Organizing the numbers to be high, medium, and low—as one may easily do (and perhaps want to do based on roughly 6–8-hour workday)—will not be valuable to explain the numbers in this manner. There is no behavior in "high," "medium," or "low" though such a determination may later be valuable to help develop dimensions for the categories in your theory. Similarly, you are advised not explain the numbers as variables (as one might do in various statistical tests). Instead, look at the numbers in regard to behaviors. Be sure to keep Glaser's (1978) questions in mind: What is going on in the data? What behavior might the number represent? To that end, some potential codes are presented in Table 2.

Table 2

Raw data with codes

Participant	HW/D	Code
A	12	overcompensating, overextending
B	5	balancing with life priorities
C	7	having a standardized routine, stabilizing, maintaining momentum
D	10	maximizing productivity, overextending
E	2	having minimal engagement/being burned out
F	8	maintaining momentum, stabilizing

While these codes and data are seemingly logical, any potential alternative(s) to the codes may be possible. For example, while Participant A seems to work 12-hour days, the why so many hours are worked can be explored in the memos to be written, and then compared with each other (Glaser, 1965). As categories are developed, there is great value to look again at the data to uncover important dimensions that may exist.

As seen in the two aforementioned tables, data have come from a table of numbers, but a researcher could also use data from a Likert scale and code in a similar manner as was just explained. In 2019, Chametzky published research from a validated study called the Online World Languages Anxiety Scale. In this study, 5-point Likert scale questions were asked of 7 participants in the pilot study. Two questions from the survey are shown in this discussion. The first question dealt with confidence speaking in class; 71.4% disagreed and 28.6% neither agreed nor disagreed. When looking at the 71.4%, one might code the percentage as feeling ashamed in front of peers or perhaps having fear of feeling foolish. The second question dealt with asking for

help from the instructor privately when questions arise. For this question, 42.9% strongly agreed and 57.1% agreed. One might code this information as wanting clarification or perhaps saving face; readers do not know the reason for high percentages but potentially, the respondents do not want to look unintelligent in front of peers. Regardless of the exact codes chosen in these two examples, it should be clear that quantitative data can be coded relatively easily, just as seen with the information about freelance workers.

Memos and Constant Comparison

Once some codes have been created, your next step would be to write memos and employ the constant comparison method (Glaser, 1965) where the codes are compared with each other and additional memos are written. The process of writing memos, as Glaser (2013a, 2013b) explained, is a requirement and a core tenet of classic grounded theory (Chametzky, 2023). Through your memo writing and constantly comparing one memo with another, you will find that more conceptualized codes will develop and then get further developed (through constant comparison) into categories and properties of those categories. Given memos are highly personal (Glaser, 2013a, 2013b), they will not be shown here. As you code and compare those codes one with another, keep in mind Glaser's (1978) questions that were presented in the initial section of this paper. Classic grounded theory is about how participants address and resolve their main concern.

Do not be concerned with how many memos will be created; having a larger number of memos is to be expected in a classic grounded theory study. As you compare each code and instance with another, a memo is created. And then as memos are compared with each other, there will be more memos. But, eventually, as categories are developed and enriched, memos

will be combined, and become more conceptual and longer. These memos will become the theory you are developing.

Core Category (or Variable), Theoretical Sampling, and Theoretical Codes

As your categories develop, you will no doubt discover a single, overriding concept. This is the core category (or variable). As you look at this developing theory, broadly speaking, you would (generally speaking) have 3 or 4 categories, each of which is rich and developed with properties. If you find categories are insufficiently detailed, you are well-advised to review the data you have to see if you missed something or if you need to collect more data, write and compare more memos, and so on. Theoretical sampling, the formal term used when you collect data to help develop certain underdeveloped elements of the theory, will be needed so that categories and properties can be saturated (Chametzky, 2022).

Once you have developed the theory and each category is multivariate and rich, the final step in the development of the theory are theoretical codes (Glaser, 1998). Glaser (1978, 2005, 2013a) explained theoretical codes as the highly conceptual relationships used to connect one category to another. Perhaps the "glue that connects the categories" is a particular strategy, process, condition, consequence, temporality, or any one of the various many coding families that Glaser (1978, 1998, 2005) discussed. With a fully saturated, multivariate theory now developed, where each category is connected to another through theoretical codes, your hard work is done; you have started with quantitative data and developed a theory. Congratulations!

Conclusion

Though classic grounded theory has evolved since its conception in the 1960s, one point has remained steadfast: the classic grounded theory research design can be used on all types of data. For Glaser, the design is so powerful, versatile, and sophisticated to allow a researcher to

analyze any kind of data. As he stated, "all is data" (Glaser, 2008, p. 19). Leave statistical

analyses to the quantitative analysts; let them validate their hypotheses and accept or reject the

null hypothesis.

As long as you are able to conceptualize the numbers, you will be able to develop a rich

and multivariate theory to explain participants' behaviors. The important clue always to keep in

mind is that you need to view the data from a theoretical not statistical perspective. Good luck!

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