

## Exam MEE115

- 1) Describe key characteristics of “grounded theory” and discuss differences and similarities between grounded theory and an abductive research strategy. Use examples.**

Grounded theory is based upon the belief that the theory shouldn't be solely based upon earlier empirical research, but that the theory should also be generated through the research process. Grounded theory is a way of generating theory through research data (Dey, 2004, p. 209).

It's sometimes described as an inductive process, which means that it starts with collecting data and then goes to derive generalizations from this. The focus is on what's going on, describing this, its characteristics, and regularities. The focus is on what not why. (Blaikie & Priest, 2019, p. 21) However, according to Glaser and Strauss, the use of inductive strategies will be able to provide both explanations and predictions (Blaikie & Priest, 2019, p. 144).

*“The process of discovering theory from qualitative data is sometimes described as induction. however, this is rather loose usage of the term. All forms of research, qualitative and quantitative, are based upon a complex admixture of processes, including induction, deduction and verification.”*(Pettersen Gould, March 2021)

However, the theory's exact placement among the basic logics is not fully agreed upon which is understandable as they have some overlaps and can be mixed and combined when doing research.

Grounded theory is systematically discovered from and verified with the data of the research. The theory is involved in the research process rather than preceding it. Theory must be worked out in relation to the data and thus creates an ever-developing process. (Blaikie & Priest, 2019, p. 144) Grounded theory, while not exclusively, relies primarily on qualitative data (Dey, 2004).

Abductive strategy in social science consists largely of observing social actors and the accounts they give to the research while the researcher accompanies them in social activities. The researcher often explores the actor's world's construction of reality, concepts, and meanings, which much of can be found embedded in language. The accounts, experiences, motives and meanings are reproduced in the researcher's data, some of this will have to be abstracted. This process can be called social scientific typification and can help provide

understanding which in turn can become more elaborate systemic explanations. (Blaikie & Priest, 2019, p. 22)

Abductive strategy can differ from grounded theory based on how it approaches recontextualization. Abductive strategy works taking the phenomena, meanings, etc out of the world they exist in and putting them into a conceptual framework. This is used to see the phenomena in a new way, or give it meaning by interpreting it in a particular framework. (Danermark et al., 2002) Grounded theory on the other hand makes the decides on or makes the concepts based on the data itself and can therefore be said to keep more of the original context rather than recontextualizing.

Some commonalities between abductive strategy and grounded theory is the involvement and closeness to the data. Abductive strategy describes the researches as an active part of the social activities of the actors they are investigating while collecting the data, while grounded theory bases itself on making the theory from the data itself. Both are eliminating some of the distance to the data that other methods like deductive logic or fully quantitative methods may create (Blaikie & Priest, 2019, p. 209).

Abduction differs from deduction and induction in that it focuses on “theorizing” rather than “theory”, which is similar to grounded theory as they both seek to explore and investigate in the hunt for new knowledge (Blaikie & Priest, 2019, p. 242).

**2) Qualitative Comparative Analysis falls into a category of research methods between qualitative and quantitative studies. By integrating research approaches from both neighbouring traditions, it allows for a structured analysis of various topics. Please explain the "comparative" in Qualitative Comparative Analysis and how it relates to both qualitative and quantitative research traditions!**

Some of the main components of Qualitative Comparative Analysis (QCA) is that it considers the whole of a case, sees it as a complex entity. One should seek to understand the part and variables in their context for coheres. The comparative aspect comes from the fact that it allows researchers to explore differences and similarities across comparable cases. Its described as an iterative (cyclic) way of developing explanatory models as it encourages repeating steps and improving the model each time. The truth table is produces can reveal important contradictions which, when resolved, can identify omitted causal conditions. (Marx et al., 2014)

While QCA is a very specific type of mixed methods it is not unique. The use of the term mixed methods can differ in meaning some want it to be distinguished as methods that combine both the quantitative and qualitative. Some of the features of mixed methods are that the strengths in one can offset the weakness in another, the findings can be more comprehensive, it can help find answer that are unavailable to one method alone, it encourages the use of multiple paradigms. (Blaikie & Priest, 2019, pp. 213-214) Many if not all of these features will also apply to QCA.

The comparative aspect in QCA can be used across types of data, but one should still not use it across very different types of cases. For the method to be valid the cases should be comparable.

The iterative process of QCA with the adjustments of the analysis, the cases, the theory, etc can bear some resemblance to grounded theory. While grounded theory is a mostly qualitative method it has much in common with the QCA process which have some more quantitative core aspects, such as the use of the truth table. (Blaikie & Priest, 2019; Marx et al., 2014)

While QCA seeing cases as whole and complex entities may be in tune with the thinking of qualitative cases studies it may weaken the study from a qualitative perspective. Ideally the sample would not only include good representation of the variety of relevant features in the population in proportionate amounts but also overall a proportionate amount of the population. (Blaikie & Priest, 2019, p. 167) While a sample such as this would be the ideal it is most often not feasible as the number of cases, variables and contradictions that would need to be resolved would lead to enormous amounts of work. Workloads of that size would not be manageable for most studies even with resources. The analytical reduction would restrict researchers unreasonably much (Marx et al., 2014, p. 123).

*“Quantitative data is usually produced by coding some other data...stripping of the context and removing content from it.”*(Blaikie & Priest, 2019, p. 209). Then the data is expanded by adding content and context so one can see back to the social world. This is very a lot of the difference between qualitative and quantitative methods lie. The idea of removing the context from the analysis to achieve objectivity comes in big part from positivist and critical rationalist views concerning the biases and assumptions the researcher might have. (Blaikie & Priest, 2019, p. 209)

While qualitative data gathering can be viewed as lacking objectivity, sometimes subjectivity is the goal. They want to “go native” and immerse themselves in the social world of the

phenomena in question by becoming "...as subjective as possible..."(Blaikie & Priest, 2019, p. 210). They want the concepts, ideas and theories to evolve without imposing their own notions on them. (Blaikie & Priest, 2019). This in itself can possibly be seen as a form of objectivity and avoidance of biases and assumptions.

For comparing and generalising quantitative data one uses statistical inference which needs probability samples and numerical data. (Blaikie & Priest, 2019, p. 212) By entering the available data into a truth table this form of comparison is doable. However, it does not negate the fact that a probability sample most likely will be hard to achieve.

Some of the analytical methods within QCA such as reduction and minimization come from quantitative traditions as they rely on Boolean algebra and logic (Marx et al., 2014). So, while QCA does not accommodate for quantitative analysis is on an ideal level it allows for the logic of quantitative comparison. This lets researchers compare more on a much bigger scale than a traditional case study comparison. And the comparison is much more comprehensive than usually possible for traditional qualitative statistical studies.

- 3) All households in Rogaland have new, digital power meters that communicate online with the power distributors. The meters include opportunities for a continuous monitoring of each households' power use and could also open for dynamic pricing of the power use. On a regular day, demand is much higher during the early morning hours and afternoon hours, and the spot price fluctuates accordingly. Households may access data on their power use and costs if they log on to the "my page" on the supplier's homepage.**

**Consumption data show that peak consumption has not been much influenced by making the data available to consumers. It has been suggested that the data is too difficult to access. A tablet size display for households has been developed that graphically illustrates spot power use and cost. The display is intended to be mounted highly visible in the household. The power distributor plans to test the effects of the display. The households in the city of Stavanger have been randomly split in two groups. One group (the experiment group) will get the new display while the other group serves as a control group. The experiment will run for 1 month. The total power consumption in each group will then be compared. Discuss the validity of this experiment.**

For any scientific experiment it is important to consider the validity of the design. It indicates how well the phenomena that one wishes to measure fits with the empirical reality.(Neuman, 2014, p. 132)

The internal validity depends on the proposed causal relationship between the display and change in power usage. If there are other omitted causal conditions any findings of a causal link would be from a spurious relationship. Some validity can be pinned on the importance of independence and numbers. *“if the sources are numerous and independent, and if they agree with one another, he will be reasonably confident that their account of the matter is correct.”*(Campbell & Fiske, 1959, p. 83) A lot of this is dependant on the method of sampling homes for the groups in the experiment. As for the matter of their congruence, that can not be assessed, only theorized and hypothesized about until the results are in.

Measurement validity can be divided into three parts, face validity, content validity and criterion validity.

Face validity can be achieved by having a knowledgeable group of people judge if the measurement really measures the concept it hopes to measure (Neuman, 2014, pp. 133-134). While this exam forbids collaboration, common sense (hopefully possessed by this candidate) says that looking at the correlation between power usage and accessibility to power usage data could very well be measured by looking at the changes in power usage in households that either have improved access to date or have not.

Content validity can be called another type of face validity, in the way that the measure captures the entirety of the concept (Neuman, 2014, p. 134) This one is less assured for the experiments as their may be omitted or external factors that have not been accounted for that could affect power usage for the household.

Criterion validity depends on an indicator or standard that is used to indicate a concept. This can be seen by comparing it with another measurement that already has strong confidence for the same concept. This is often done later in the process as one *“...tries to assess whether the scale score can differentiate the positions of "known groups" or whether the scale correctly predicts some criterion measure...”*(Churchill, 1979, p. 72)

The external validity of the experiments would relate to the extent that which the results can be generalized. Some of the possible criticism about generalizing based on a single population, and here just a smaller selection of that single population, is that the population

has too many unique aspects compared to other or a bigger population elsewhere. This would reduce the comparability and transferability of the results. If they have findings that have similarities and the understanding to recognize patterns to see the congruence between the context of this experiment and the context of another similar one, then they can have natural generalization which would strengthen the external validity. (Blaikie & Priest, 2019, pp. 185-186)

The use of a control group and an experimental group can heighten the internal validity of the experiments, given that they are equal. If the variable have several values this should be reflected in the number of experimental groups. (Neuman, 2014, pp. 197-199) The variable level can be one of four: Nominal variables are assigned based on categories with no intrinsic order. Ordinal variables are like nominal variables with the exception that the categories are ordered along a continuum. The categories do not need to be equal. Interval variables have categories that are ordered and equal but with an arbitrary zero. Lastly there are ratio variables, these are ordered, equal and have an absolute zero. (Blaikie & Priest, 2019, pp. 203-204) For the experiment the variable seems to be a nominal one set to having the power consumption display or not. This would be consistent with the number of groups in the study and strengthens the internal validity.

The validity of the experiment concerning the effect of the displays of power consumption in people's homes is mostly dependant on the specifics of the experiment design, which has not been disclosed in the assignment text. However, given the information in the assignment and assumptions about the experiment design the experiment appears to have a good validity.

### Sources

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