

Critical Analysis of Research Methodology and method

1 Introduction

In the social sciences, Grounded Theory has gained popularity as a research approach, nevertheless, its application by scholars in the field of architecture, landscape architecture, urban planning has been less common (Hussein et al., 2020). However, Grounded Theory enables researchers studying the urban environment to construct theories based on an inductive approach. Therefore, my research will apply Grounded Theory as main methodology, use semi-structured interview method to data collection. This research will invite public to assess the cultural ecology service (CES) of Minjiang River waterfront space in Fuzhou after their environmental experiences, and then explore how the environmental factors affect the public's evaluation results, finally construct a CES evaluation model for urban waterfront space.

In this paper, Grounded Theory and the interview method will be introduced, focusing on their main characteristics, evidence, their advantages and limitations, link to my research, why do I use them, and how to guide my practice.

2 Methodology--Grounded theory

2.1 Origins and Major Schools of Grounded theory

The grounded theory traces its origins back to 1967, first published by the founders Glaser and Strauss in "the discovery of grounded theory" (Glaser, 1967), which defines the grounded theory approach as "an initial, systematic discovery of the theory from the data" (Gleasure & Feller, 2018), indicating that it is a particularly inductive method of developing theories. According to Charmaz (2015), The grounded theory's greater worth is its strengths of induction, iteration, interaction, and comparison as well as the strong foundation it offers for theory development. It is not just capable of organising, synthesising, analysing, and conceptualising qualitative data. Additionally, among the five conventional research methods in sociology, grounded research is regarded as the most scientific and suitable for developing theories in the field of qualitative research (Denzin & Lincoln, 1994).

The three primary schools of grounded theory include Classical Grounded Theory (Glaser), Proceduralised Grounded Theory (Strauss & Corbin), The Constructivist's Approach to Grounded Theory (Charmaz Kathy). The fundamental distinctions among these three genres are their different epistemologies, coding systems, literature review requirements, etc. Firstly, in terms of epistemology, classical grounded theory is based on empiricism, procedural grounded on interpretivism, and

constructive grounded on constructivism; Secondly,as for the coding processes, Classical Grounded Theory's coding procedure include substantive coding (including open coding and selective coding) ,theoretical coding; Proceduralised Grounded Theory uses three levels of coding,namely,open coding,axial coding and selective coding,shown as figure 1; The coding systems of Proceduralised includes Grounded Theory initial coding,focused coding,axial coding and theory coding.

Furthermore, when it comes to reviewing to learn about the background and current state of the study field, Classical Grounded forbids the researcher from reading literature beforehand, claiming the argument that it would cause the researcher to have predetermined notions that would influence research preconceptions and theory development. However,the other two schools disagree with Glaser's viewpoint and suggest the researcher is able of reading the literature.In my view, the researcher can read the literature because, without doing so, the researcher would not be able to question is innovative and addresses a literature gap, clarify whether the research question is significant and valuable, or determine whether it applies to the Grounded Theory.

Finally,Constructivist Grounded Theory contends that theories are more like constructs created by researchers during their research, in contrast to Classical Grounded Theory's statement that theories arise organically. I agree with Constructivist Grounded Theory's viewpoint.

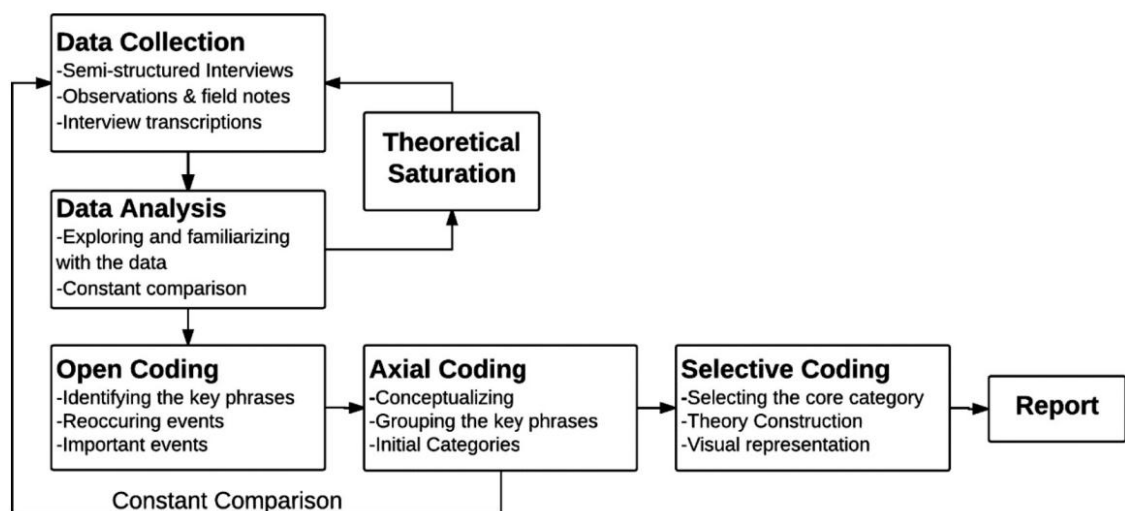


Fig.1.Data collection and analysis of proceduralised grounded theory (Acun &Yilmazer,2015)

2.2 Characteristics of Grounded Theory

First of all, the Grounded Theory is an appropriate methodology in the field existing theoretical gaps or imperfections.According to Bogdan & Biklen (2003),given its goal of gaining a deeper understanding of human behaviour and experience, grounded theory is an appropriate research approach when there are theoretical gaps or imperfections.

The grounded theory can be applied in the following research situations: Firstly, research phenomenon is novel, there is a research gap, and no scholars have studied it, which is obviously rare; Secondly, there is a contradiction in the theories established by previous research, and the researcher feels that the conclusions drawn from previous research may be applicable to their own research; and thirdly, the researcher has found that the existing constructed theory is imperfect or lacking through reviewing the existing literature. Regardless of the above scenario, this research phenomena need to be actual and significant to the field of study.

Secondly, Grounded Theory research is scientific rigour, traceable and testable. According to He(2014), The most characteristic feature of grounded theory is that theoretical hypotheses are not put forward at the beginning of study, but a method of generating theories from qualitative information by rooting in empirical data through a rigorous and standardised analytical process. This methodology avoids the researcher's subjective interference and solves the issues of general qualitative research's less persuasive conclusions and lack of standardised procedure guidance(Jia,2010).

Furthermore, Grounded Theory's rigorously regulated research procedures allow for repetitive testing of the data analysis and coding process by the researcher or others. Every school of grounded theory has its own set of coding processes as a methodology, and the researcher's study processes ought to follow these procedures as much as possible. Because of this, Grounded Theory has been called "the most scientific methodology in qualitative researches" and has a high degree of scientific validity, traceability, and testability.

Thirdly, the Grounded theory requires researches must be rooted in practice. According to the grounded spirit, research problem formulation should be rooted in actual empirical data. The identification of the research question should be rooted in the practice, through observation in the practice environment or interviews after the first-hand data and then confirmed. This is because the researcher applying the grounded theory to the research should generate and confirm the research question from the practice context, not just from the review and comparison of the literature.

In addition, primary data are indispensable. Grounded research requires the researcher to go into the field, conduct interviews, observations and other research to obtain first-hand data, and not just study second-hand data, which is indispensable, otherwise it would be contrary to the grounded spirit .

Fourthly, Grounded Theory research is like "exploratory research". Grounded research doesn't have a research plan and determine a fixed sample size prior to the study. When conducting a grounded study, the investigator starts with an exploratory topic based on the study's progress, and moves forward gradually until theoretical saturation is reached. In other words, the grounded researcher can't predetermine in advance how many sample sizes will be able to reach theoretical saturation in their study. Therefore, grounded research is like an exploratory study.

Finally, Grounded Theory analysis data while collecting. Grounded Theory study collect and analyse data simultaneously, in contrast to traditional qualitative studies,

which analyse data after the data has been acquired. According to Strauss and Corbin (1998), in order to generate an inductive theory about a specific phenomenon, Grounded Theory combines components of several qualitative research approaches to provide a methodical framework that allows data to be processed simultaneously, as opposed to sequentially, during the phases of data collection and analysis.

2.3 Link to my research

Firstly, the Grounded Theory proposes that theory comes from practice and guides practice (Glaser & Strauss, 1967). Which is consistent with my research. My research question arises in a practice situation, it aims to construct a theory based on grounded theory research, explore how urban waterfront landscape factors affect public cultural ecology service (CES) assessments, and apply this theory to landscape design practice.

Secondly, The grounded theory is an appropriate research approach when there are theoretical gaps or imperfections (Bogdan & Biklen, 2003). With the use of grounded theory, scholars that study the built environment can develop theories using an inductive methodology (Hussein et al., 2020). The public's evaluation of the landscape was conducted by most current studies using quantitative data, which was difficult to capture the public's real sentiments. However, the application of grounded theory can compensate for the shortcomings of quantitative and objective data to obtain public's perceptions of landscape (Acun & Yilmazer, 2018). It is more reflective of the public's true emotions.

Thirdly, The grounded theory is an approach to discovering theories using induction, that enables theoretical explanations of a topic's general characteristics based on empirical observations or data. (Martin & Turner 1986, P141). The theory-generative procedure is relevant to my study in exploring how urban waterfront landscape factors affect public CES assessments.

In conclusion, the inductive, contextual, and qualitative data-driven features of grounded theory, together with its distinctive methodology, fit well with the exploratory and interpretive nature of my research. This study uses the grounded theory approach to gather data from qualitative interviews, code the data, and content analysis to develop a theory in order to achieve research aim.

2.4 Evidence (Application of Grounded Theory in landscape assessment field)

Grounded Theory, as a well-developed qualitative research methodology, has not only contributed procedures for constructing grounded theory models for numerous fields in many humanities and social disciplines, also enables researchers studying the urban environment to construct theories based on an inductive approach. Nevertheless, though a review of the literature reveals that the Grounded Theory has not received as much attention in the fields of landscape architecture and urban planning

study. Examples of studies carried out by landscape design researchers using the interview method and the Grounded Theory methodology are listed below:

For instance, Acun & Yilmazer (2018) conducted semi-structured interviews with 49 employees in two different office spaces to capture individuals' subjective responses to soundscapes and evaluations of soundscape perceptions. They used Grocedural Grounded Theory to construct a theoretical framework for the impact of sound environments on work productivity.

After which, Karimimoshaver et al., (2020) applied field research, interviews and semi-structured questionnaires to study the impact of several types of urban landscapes on citizens. It depends on grounded methodology that determines the urban landscapes and factors that generate effects, including natural elements, visual harmony, spatial proportions, identity and visual barriers.

Meanwhile, Hussein et al., (2020) used Grounded Theory as a approach of exploring the impact of cultural memory in historic urban landscapes on the psychosocial, health and quality of life of users and visitors. In addition, the authors point out that Grounded Theory enables researchers studying the built environment to construct theories based on an inductive approach.

In another case, Zhou & Lin (2022) used the Grounded Theory to explore how urban park recreationists perceive inclusivity and what influences them. Through semi-structured interviews with recreationists, park managers, landscape garden researchers, and designers, the study gathered data. Using the three levels of coding of procedural rooting theory, it then built a model of factors influencing perceptions of inclusivity in urban parks. The model clarifies the path and key factors of inclusive evaluation, and provides a theoretical guidance for future construction and development targeting landscape justice.

In their research, one advantage of using the grounded theory is that the staff's subjective responses showed that objective measurements are insufficient to adequately capture their perception of the soundscape. It indicated that Grounded Theory can make up for the inability of quantitative objective data to respond to people's subjective perceptions of the landscape, it will be beneficial to my research.

2.5 Limitation of Grounded Theory

Firstly, The applicability of theories developed by Grounded Theory is limited. Although theories developed through grounded theory research are applicable to some extent and within a limited range, neither they nor their applicability are universal nor absolute. Grounded Theory, like any other qualitative research, research is affected by factors such as sample size, time, money, manpower and material resources. As a result, the theoretical saturation reached by the research is relative rather than absolute, meaning that the theory developed is only partially universal.

Secondly, Theories Constructed by ground theory need to be verified. Theories constructed through ground theory research or other qualitative research are essentially hypotheses or assumptions. Therefore, in order to make them generalisable, it need to be empirically tested by subsequent large samples or large

data. However, the majority of current ground theory research only completed theories constructing and rarely conducting empirically tests on them.

Thirdly, The study results are influenced by the researcher's capacity and subjectivity. The primer limitation of Ground Theory comes from the fact that the researcher is an inseparable part of the whole research process, including data collection and analysis. The outcomes of study will be influenced by researchers, including the data collection technique they adopted, the researcher's objective and neutral attitude, and the coding ability and theoretical sensitivity. According to Aletta(2016), Strauss and Corbin(1990), since the researcher is the only one involved in the coding process, the theory's generalizability may be limited by the researcher's personal experience, and question depth. Researchers' skill for data analysis, interpretation, generalisation, and coding all affects their research results. In order to prevent biases from influencing the outcomes, researchers are requested to keep in mind being flexible and open to the emerging data(Hussein et al.,2020).

2.6 Methodology guild my practice

On one hand, Grounded theory provides guidance for data collection in this research. According to grounded theory, research must be conducted in real-world settings. This study's research questions are grounded in reality, furthermore, taking the public into the field to experience the landscape is necessary for public landscape assessment in this study.

On the other hand, Grounded theory provides guidance for landscape design practice in my research. The main purpose of grounded research is to construct theories. Theories constructed by applying grounded theory have explanatory and predictive roles, which can not only explain existing phenomena, but also guide future design practice. My research aim is to explore how the environmental factors affect the public's evaluation results, and then construct a CES evaluation model for urban waterfront space, in order to propose improvement strategies to guide the landscape design practice of the Minjing River waterfront space.

3 Method--Interview

3.1 Introduction of interviews

Interview deserve special attention because it is frequently used in qualitative approaches(Creswell & Poth, 2016). An interview is considered to be a social interaction based on a conversation(Warren & Xavia Karner, 2015), it is a method of gathering knowledge and ideas from respondents. According to Brinkmann and Kvale (2015,p4), an interview is where “knowledge is constructed in the interaction between the interviewer and the interviewee”. Who is interviewed and what questions are asked depends on the purpose for the study and research questions guiding the study.

Semi-structured interview has a certain structure that guides the respondent, but is also flexible and open enough to allow the respondent to express their views and

experiences freely. This study will use semi-structured interviews to conduct public CES (cultural ecosystem services) evaluations of urban waterfront spaces.

3.2 Link to my research

Firstly, the interview is described as “attempts to understand the world from the subjects' point of view, to unfold the meaning of their experience, to uncover their lived world” (Brinkmann & Kvale, 2015, p.3). In my research, the interview method allows for an in-depth understanding and exploration of the public's post-experience feelings and evaluations of the landscape environment.

In addition, according to Blaxter et al. (2006) and Dörnyei (2007), interview can obtain data that can't be obtained by questionnaires and observation methods, and it enables the researcher and participants to interact and communicate, avoiding information errors. The majority of earlier landscape evaluation studies applied quantitative data collection methods like questionnaire, which have the drawbacks of making it difficult to learn the public's real thoughts. In contrast, the interview method allows the researcher to interact with the interviewees and gain their true feelings.

3.3 Evidence (Application of interview in landscape assessment)

The interview method has been favoured by many scholars for its unique advantages. For instance, Katarzyna & Barbara (2019) investigated through interviews and questionnaires whether new developments within the Wilanów West district of Warsaw, Poland, have an impact on citizens' landscape perceptions, focusing on citizens' landscape identification and perceived landscape quality. According to their study's findings, the primary factors effecting public perception on landscape are the physical environment's quality in urban planning and design (aesthetics, architectural scale). In other words, despite the prioritisation of conservation, the new urban fabric continues to affect the historic heritage landscape of the city.

In another case, Komossa et al., (2020) applied interview methods to assess the public's outdoor recreation preferences and to compare whether the data gathered through the two interview methods produced outcomes were similar. They were direct engagement methods in the form of interviews (including participatory mapping, free-listing and quantitative photo ranking) and indirect engagement methods by analysing social media content (location, tags and photo content). According to their findings, these two kind of interview methods generally identify similar landscape preferences. They did, however, discover differences in the kinds of data they are able to obtain.

Meanwhile, Karimimoshaver et al., (2020) applied field research, interviews and semi-structured questionnaires to study the impact of several types of urban landscapes on citizens. The findings indicated that the urban landscapes factors that generate effects on citizens are natural elements, visual harmony, spatial proportions, identity and visual barriers.

3.4 Advantages and limitations

Compared to other data collection approaches, interviews offer distinct advantages, including interactivity, detailed recording, flexibility, and in-depth information exploitation. Firstly, it can obtain data that cannot be obtained by questionnaires and observation methods (Blaxter et al, 2006, p172), and it enables the researcher and participants to interact and communicate, avoiding information errors (Dörnyei, 2007, p143); Additionally, the researcher can record and examine this data multiple times to aid in creating a precise interview report (Berg, 2007); Thirdly, the interview method is flexible since the interviewer need not conduct the entire conversation based on a pre-planned outline; instead, they can modify the questions as the interview goes along and the interviewees' responses become clearer, allowing for a more focused and flexible dialogue; More significantly, the interviewing process offers a wealth of information about the interviewees' thoughts and emotions, which can be used to uncover unconscious motivations and mental activities. As a result, more appropriate answers, and subsequently more accurate data will be reached (Alshenqeeti, 2014).

Obviously, these benefits have made interviewing a more alluring technique for gathering data. Interviews might have disadvantages, just like any other research methods. First of all, respondents' subjective awareness and personal bias have an impact on interview data, meaning that the research findings is only partially universal (Fontana & Frey, 2005); In addition, interviews have also been criticised as being time-consuming with regard to both data collection and analysis because they need to be transcribed, coded and possibly translated; Thirdly, Sample size and sampling may have an impact on interview results because the study will only include participants who are willing to engage in the interviews. As a result, some groups may be excluded (Gibson & Brown, 2009); Finally, the study results may be affected by memory bias. The interviewees may be subject to memory bias and recall may be forgetful or exaggerated, affecting the accuracy of the interview results (Rubin & Rubin, 2011).

Table 1. Advantages and limitation of interview (adaptation from Alshenqeeti, 2014)

Advantages	Limitation
High return rate	Time-consuming
In-depth information exploitation	Small scale study
Detailed record	Never 100% anonymous
Interactivity	Subjective bias
Relatively flexible	Potential inconsistencies

4 Conclusion

My research will apply Grounded Theory as main methodology, use semi-structured interview as main method to data collection. This research will invite public to assess the cultural ecology service (CES) of Minjiang River waterfront space in Fuzhou after their environmental experiences, and then explore how the environmental factors affect the public's evaluation results, finally construct a CES evaluation model for urban waterfront space.

In order to propose improvement strategies to guide the landscape design practice of the Minjiang River waterfront space. Furthermore, it will provide general experimental experience for the enhancement of CES and landscape optimized design in waterfront space of other cities.

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