NTNU
Norwegian University of
Science and Technology

Participatory design research for urban community building in China

Huiyang Yu

Abstract

This thesis aims to provide direct input for the deliverables required for Task 1.1 of the TRANS-URBAN-EU-CHINA project. This thesis means to create a knowledge base about how to experiment with context-specific and citizen centered studies and participatory design (PD) approaches, and how to map citizens' needs through insights from user-centered design in China. With the research questions of 1) what the current status of PD development related to fields that contribute to community building in China is; 2) What the possible challenges and issues to practice PD in the Chinese context, and the possible way to coping are; and 3) What information can be concluded and utilized in future studies, focusing on both what works well, and new insights about what could work in the context that so far are seen as potentially challenging.

Starting with reviewing previous literature relevant to this topic, I identify the challenges of conducting PD research in the Chinese context, including communication, knowledge-transfer, balanced decision-making regime with distinguishing of scale of participation. I also find that PD practices need more focus on ethnographic methods and reward system in the Chinese context. Following the findings of literature review, this thesis is developed further with interviews of six experts who have performed relevant fieldworks in China. Based on the interviews, I conclude that, when conducting research and PD, practitioners and researchers need to cultivate and maintain interpersonal relationships and trust with local participants and build up effective communication channels and mechanisms for the local Chinese context. This thesis proposed recommendations of a PD framework and tools for PD activities with explained scenarios, indicate different possibilities of improving community-based contextual PD application, and emphasizes the research of PD theories and practice need more focus for the Chinese context in future.

Sammendrag

Denne oppgaven tar sikte på å gi direkte innspill til de leveranser som kreves for oppgave 1.1 i TRANS-URBAN-EU-KINA-prosjektet. Denne oppgaven innebærer å skape en kunnskapsbase om hvordan man skal eksperimentere med konteksspesifikke og borgerbaserte studier og deltakende design (PD) tilnærminger, og hvordan kartlegge borgernes behov gjennom innsikt fra bruker-sentrert design i Kina. Med forskningsspørsmålene om 1) hva er dagens status for PD-utvikling relatert til felt som bidrar til samfunnsbygging i Kina, 2) Hvilke mulige utfordringer og problemstillinger for å praktisere PD i den kinesiske sammenhengen, og den mulige måten å håndtere, er; og 3) Hvilken informasjon kan konkluderes og benyttes i fremtidige studier, med fokus på både hva som fungerer bra og ny innsikt om hva som kan fungere i sammenheng som hittil er sett som potensielt utfordrende.

Fra og med gjennomgåelse av tidligere litteratur som er relevant for dette emnet, identifiserer jeg utfordringene med å utføre PD-forskning i kinesisk sammenheng, inkludert kommunikasjon, kunnskapsoverføring, balansert beslutningstaking med å skille mellom deltakelse. Jeg finner også at PD-praksis trenger mer fokus på etnografiske metoder og belønningssystem i kinesisk sammenheng. Etter undersøkelsen av litteraturvurderingen er denne oppgaven videreutviklet med intervjuer av seks eksperter som har utført relevant felt verk i Kina. Basert på intervjuene konkluderer jeg med at utøvere og forskere, når de utfører forskning og PD, trenger å dyrke og vedlikeholde mellommenneskelige relasjoner og tillit med lokale deltakere, og bygge opp effektive kommunikasjonskanaler og mekanismer for den lokale kinesiske konteksten. Denne oppgaven foreslår anbefalinger av PD-rammeverk og verktøy for PD-aktiviteter med forklarte scenarier, indikerer ulike muligheter for å forbedre fellesskapsbasert kontekstuell PD-applikasjon, og understreker at forskning i PD teorier og praksis trenger mer fokus for den kinesiske konteksten i fremtiden.

Acknowledgement

First, I would like to thank my thesis supervisor Ida Nilstad Pettersen, co-supervisor Casper Boks of the Department of Design at Faculty of Architecture and Design at NTNU for their valuable critiques, resources, support and instruction. Their knowledge and charms always make the supervising meeting fruitful and lively, and their serious and responsible attitudes towards all kinds of work, whether important or trivial, greatly inspired me and encouraged me all the way. They consistently steered me in the right direction whenever I needed it.

I would also like to thank all the experts who were involved in the interviews for this research master thesis. Without their passionate participation and input, the interviews could not have been successfully conducted.

Many others have inspired and supported me, and I thank all my friends, colleagues and mentors that have helped me on my way through the years.

Thanks to all readers of this master thesis. I hope this thesis can benefit you while it accompanies you on the way of reading and exploring.

Finally, I must express my very profound gratitude to my parents and to my wife for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis. This accomplishment would not have been possible without them. Thank you.

Huiyang YU

Preface

Before this master study, I had a wish to dedicate on the work that can bring others with care and meanings. Through the two years' master study, I have learned much and have built up extensive interests on theories and methods about industrial design. Besides the technical parts of design studies, the courses like Design Strategy and Design for Society inspire me to rethink the 'design' from other perspectives - to think more of design basis about people, and from where I gain the knowledge and interests on the human-centered design practice.

Meanwhile, the high-level freedom courses like design theory provided me broad choices to work on my interests, from where I've got the opportunity to work with Professor Pettersen, and thus I had the chance to know about the EU project TRANS-URBAN-EU-CHINA (TUEC). With the guidance and tutoring, I step on the intriguing exploration of design theories, and use this opportunity seeing the potentials of applying user-centered design theories into specific contexts.

By looking at the world, urbanization and social development have been stepping in a very fast pace, which is the same and even more radical in China, which improves the living standard for many people. The dynamic societal and technological developing progress bring lots of opportunities and challenges to professionals and decision-makers. I am very lucky to be a witness of this historical progress and have this opportunity to study and take part in the exploration process of the relevant topics, such as participatory design in the context of community building in China.

Master Thesis for Huiyang YU

Urban community building: User-centered design methods in a Chinese context

The thesis will study the relevance of existing user-centered-design (UCD) methods (such as surveys, interviews, and ethnographic methods such as observation and storytelling) in a Chinese context. The master project will be linked to the H2020 project TRANS-URBAN-EU-CHINA in which the department is involved. To build up a bridge for exchanging knowledge, it is necessary to find out the status of UCD application in China, and the way empirical user research in China is done, and perhaps can be improved. On a general level, the master project will provide an overview and comparison of applying conditions of such research methods in the Chinese and European context. The insights will be applied in the context of urban community building in China, under the assumption that the EU project will provide opportunities for doing so.

Among other tasks, the thesis will include:
1. A comparative literature review and case study review of UCD methods and practices in Europe vs. China, and possibly other urban research and experiments of community building.
2. Empirical data gathering on practical experiences from researchers that have experience with user research in China.
3. Propose and possibly test a participatory design framework that is suitable for application in a Chinese context.

The thesis will he carried out according to the "Guidelines for master thesis in Industrial Design'.

Department supervisor: Ida Nilstad Pettersen
Co-supervisor: Casper Boks
Starting date: 12 January 2018
Due date: 07 June 2018

Trondheim, NTNU, 12 January 2018

Ida Nilstad Pettersen
Departmental supervisor

Ole Andreas Alsos
Head of Department

Content

Table of figure

I. Introduction

The urbanization process in China has gone hand-in-hand with the economic boom and technology development. By the end of 2017, 59.4% of the total population is living in urban areas, which has increase from 26% in 1990[1]. The fast-pace urbanization is reshaping both the physical and culture environment in China. Usually, community formation is followed after the infrastructure and hardware development (Galeazzi, 2015). This makes the urban and community-based design activities much more complex than before: more stakeholders are involved, and the conflicts of interests need to be mitigated. Besides, there are emerging social issues, such as the conflict between preservation of traditional cultural identity and the rapid invasion of western lifestyles. At the same time, the traditional Chinese social community models is facing great challenge as the high-rise complex apartments displace the traditional community structures (Galeazzi, 2015).

The aim of this master thesis is to examine the relevance of existing user-centered-design methods, with specific concentration on participatory design (PD) and its research methods in a Chinese context. These research methods can be surveys, interviews, and other ethnographic methods such as observation and storytelling. This thesis also aims to find out the application status of PD in Chinese community building. Lastly, this thesis will try to conclude the characters of such contextual application, provide suggestions and propose a suitable framework for the future practice, e.g. PD, design research and other relevance.

---

[1] Sun, Wenyu (July 13, 2017). "China's permanent urbanization rate hits 57.4 per cent". *People's Daily*.

With these aims, the thesis starts with a literature review of previous publication. Then the scope and research questions (figure I-1) are drafted and defined for conducting the literature review. Literatures are systematically searched among scientific database both in English and Chinese. The searched literatures are categorized and analyzed, followed by discussions on the searching results and analyses.

Research questions

RQ1   What is the current status of PD development related to fields that contribute to urban community building in China?

RQ2   What are the possible challenges and issues to practice PD in the Chinese context, and the possible way to coping with them?

RQ3   What information can be concluded and utilized in future studies, focusing on both what works well, and new insights about what could work in the context that so far are seen as potentially challenging?

Figure I- 1, research questions in literature review

Further steps of the research are conducted with clues provided by the findings from literature review. Six interviews are conducted with experts who are seen as relevant to the present study and could provide insights for the topic. The experts have research and practice experience in regard of ethnographic methods, especially extensive filed work experience in China.

At last, based on all collected information, a general PD framework is illustrated with the recommendations for researchers and practitioners in community-based context in China. Ideas of tools for organizing PD activities are also proposed with indicated future work. A hypothetical PD application is illustrated to explain the process of PD in a local community-based Chinese context.

Therefore, this master thesis is conducted as a research study that includes six main parts: The first part is introduction of this thesis background and content; the second part is a systematic literature review including the analysis and discussion; the third part is content and discussion based on expert interviews which were conducted by using the insights of literature review; the fourth part is recommendations and illustration for community-based PD practice in the Chinese context; the last part is conclusions of this thesis. Figure I-2 illustrates the structure of this thesis.
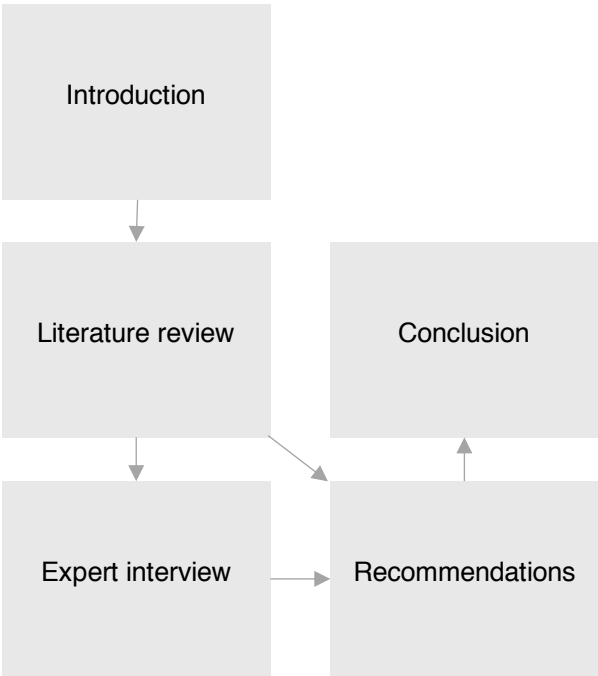
Figure I- 2 The structure of this thesis

1.1 Contribution of this study

This master thesis is aimed as a direct input for the deliverables required for Task 1.1 of the TUEC project, which is about creating a knowledge base about how to experiment with context-specific and citizen centered studies and participatory design approaches, and how to map citizens' needs through insights from theories of social practice and user-centered design. The overall goal of this work package is to analyze citizens' perspectives to identify opportunities and challenges of public engagement in efforts to achieve sustainable lifestyles that enhance the vitality and quality of urban life.

Meanwhile, this thesis will try to provide an overview about the current status of theory development and practical application in China and summarizes the characters of PD application in specific contexts. This thesis also identifies concerns and challenges of practicing PD and possibly suggests ways to cope with them. In addition, the thesis indicates ways and directions to further exploration and discussion.

1.2   A brief introduction to PD and its application in China

Participatory design is defined as a design approach that invites the end-users to participate in the process of innovative activities and to perform actively like bringing up ideas, solving problems and creating prototypes of product and service (Halskov & Hansen, 2015; Kensing & Blomberg, 1998; Schuler & Namioka, 1993; Spinuzzi, 2005). The emerging design outcomes are promoted by the desire of fulfilling the end users' need, while balancing with other stakeholders' interests, various constrains and conditions (Halskov & Hansen, 2015; Kensing & Blomberg, 1998; Schuler & Namioka, 1993; Spinuzzi, 2005).

It is an emerging trend that applying PD in community-based development projects, and this approach is introduced and advocated by several researcher and practitioners (W. Liu, 2004; Qian, 2011; Tang, 2017). Applying PD in community-based context has achieved good results. The concept of PD conforms to the current design practice trend that put users in the center of design activities and promote users as part of the design process.

From documented PD projects and case studies, researchers and practitioners may face various challenges to achieve goal or ideal result from PD process in Chinese community building context. Therefore, PD method may need to adapt to the local context application. A comparative and comprehensive study on participatory design therefore is called for and need to be further studied.

1.3 About the project of TRANS-EU-URBAN-CHINA (TUEC) [2]

The project of TUEC is a large project of collaboration between several academic organizations, which are from Europe and China. It aims to help policy makers, urban innovators, professionals and citizens in China to contribute to common efforts of creating sustainable and integrative cities, while the efforts are in environmentally friendly and financially viable way. In addition, the sustainable urban development in Europe can be reconsidered with taking the reflection upon this project. One of the focus of the project is on "community building and place-making in neighborhoods". NTNU is one of the participants in this project, and part of the work package is undertaken in the Design department in Architecture and Design institute.

1.4 PD with Living Labs in China

The rapid development of ICT technologies and urbanization promote the divergent need for stakeholders from society, which is also the trend of urban development in China. The Living Labs can provide new perspectives to apply PD into innovative practices (Dell'Era & Landoni, 2014).

Living Labs is a new research area that introducing new ways of managing innovation process, where the focus is on the people' s need, experience from products, services and applications from start of the innovation process (Bergvall-Kareborn, Hoist, & Stahlbrost, 2009). The early development of Living Labs has the focus on testing new technologies in micro scale, home-like constructed environments (Bergvall-Kareborn et al., 2009; Markopoulos & Rauterberg, 2000). Følstad (2008, p. 116) demonstrates the common core of Living Labs:

- "Living Labs are environments for innovation and development where users are exposed to new ICT solutions in (semi)realistic contexts, as part of medium- or long-

---

term studies targeting evaluation of new ICT solutions and discovery of innovation opportunities."

Moreover, Dell'Era and Landoni (2014) see Living Labs as a methodology. By applying the methodology of Living Labs, practitioners and researchers facilitate and lead the co-creation process based on contextual factors, and provoke participants' ability of interaction and interpretation (Dell'Era & Landoni, 2014).

Figure I- 3, the activities to Living labs in China [3]

At present, there has been several projects in China[4] applied Living Labs or similar, e.g. the Living China housing lab in Enoll[5] , Living lab projects in China (Figure I- 3). Moreover, the scale of the Living Labs, and the aim of projects are varied and diverged from each other. Nevertheless, similar to Living Labs in Europe, new technologies development has been the

---

[3] China national engineering research center for human settlements, 2017 report, source: http://www.house-china.net/list/7/0.html

[4] The three living labs in China (http://news.sciencenet.cn/sbhtmlnews/2011/4/243773.html)

[5] China housing lab in Enoll (http://www.openlivinglabs.eu/livinglab/china-housing-lab-china-living-lab-future-housing)

focus of the Living Labs in China. In the meantime, the focus of individual's need and experience, and the community as the actual living environment has been paid much attention within the broad coverage of Living Labs in China. The PD process concluded in this paper and the practitioner's recommendations can also be applied in the Living Labs practice.

II. Literature review

As a preliminary study of relevant research within the present topic, a further and more comprehensive literature review study is needed. An effective review creates foundation, facilitates theory development and define areas where further research is needed (Webster & Watson, 2002). This literature review is conducted with sequential procedures that start from literature search, literature analysis, summarize search result to the discussion.

1 Scope

It is assumed that PD has been recognized and practiced in China, especially in the fields and topics related to technology and innovations, community development and design research. Two assumptions were made regarding the term of PD, so that the literature search could have an adequate scope:

(1) The terms PD is associate to a wide variety of user-centered design research methods (e.g. User-centered-design, co-design), therefore allowing relevant articles can be reviewed to gain more insights.

(2) Literature study may get different searching result with literature in Chinese language and literature in English language, also results may differed between literature in two different languages.

Therefore, articles can be from two different groups of non-overlapping databases in terms of differences and complementarity, in order to achieve a full overview from both the western and Chinese perspectives, which in practice, can be two separate literature studies, and yet are synthesized as one in this study.

In addition, the term of community has its social characters, and to explore a broader understanding of the concepts of individual and massive participation, the literature review

also gives a glimpse on discussion of public participation on various related fields, such as social studies and research related to policy making, political science and anthropology.

2 Theoretical background

To have a familiarity about community in China as context and PD with its theories, and to build up the foundation of understanding towards PD methods and goals for anyone, it is necessary and useful to have a preliminary understanding of the situations of Chinese community, and look into the relevant theories and the theoretical development of PD. The following theoretical terms, definitions and development of PD are explored and summarized from a preliminary study of literature about PD theories, public participation theories that these theories and framework could be applied to assist the analyzing of actual PD practice.

2.1   An introduction of urban community in China

The term "community" is introduced into China in the 1930s and has been widely used since 1980s (B. M. Wang, Yuexia; Liang, Ying, 2018)[6]. In the early 1950s, to stabilize the post-war society and to limit massive rural migration to urban areas, the Chinese Central Government established two systems to organize people from both rural and urban area, namely DANWEI (F. Lu, 1989) and HUKOU (Y. Lu, 2002). DANWEI in Chinese letter is '单位' with directly translation of 'work unit', and is refer to general employer organizations. HUKOU (Y. Lu, 2002) refers to an urban house hold registration system (Yan & Gao, 2005). These two systems control mobility through strict administrative procedures that if people move and

---

[6] Organic Law of the Urban Residents Committee of the People's Republic of China [Effective], source: http://www.lawinfochina.com/display.aspx?lib=law&id=1207&CGid=

settle down in other places, they need to get permission from their DANWEI, while the Ministry of Civil Affairs as a lead ministry with the urban administrative system could manage and mobilize people from provincial, municipal, and district levels, to the street office, and on down to the lowest level, the residents' committee, which is structured in a similar way to the Central Government (Yan & Gao, 2005). Its general mechanism, and the structure may be simplified as Figure II- 1 (Xue, 2009).
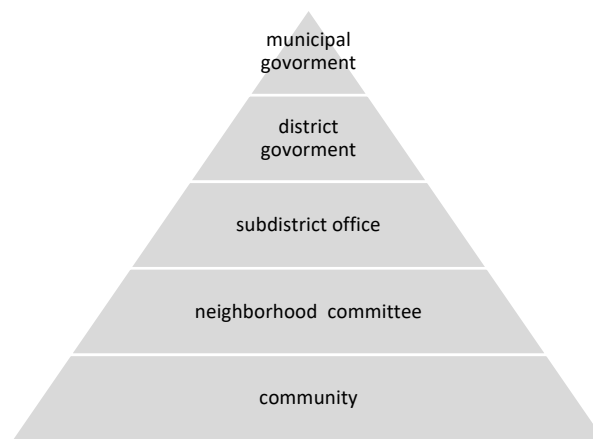
Figure II- 1, a general illustration of Chinese urban community structure

Yan and Gao (2005) argue that China's conception of community may not be understood from a Western tradition, which very often ties the notion of community closely to the idea of civil society and liberal democratic politics, and conclusions should not be draw rashly that the Western civil society is emerging in China. The nowadays communities are still constructed as part of the state administrative establishment (S. Chen, 2018; Yan & Gao, 2005). Yet, community tends to be repositioned as a social service provider, and more research needs to be drawn on how involve people in the community building process (Yan & Gao, 2005).

Moreover, the community buildings in Chinese cities are based on city's renewal and city's expansion. Both renewal and expansion lead to involvement of different stakeholders from society including local authorities, citizens, real-estate developer, architects, and researchers and so on. The stakeholder's involvement is often followed with various issues and challenges, such as preservation of historical and cultural legacy, various conflicts of interests

and so on. In addition, urban development aim to improve citizens' life quality, and mitigate the pressure of population, spatial limitation and other influencing sources during the development. Citizens' attitudes, reformation of community and satisfaction to the development are vital to other stakeholders' interests. Because citizens as the end user of the new-built project, it is necessary that they become the center of designing and planning activities, thus PD is ideal to be introduced into the process of development.

2.2 The ladder of participation

Among the theories about citizen participation, the ladder of participation brought up by Shelly Arnstein (figure 4) in 1969 is one of the most well-known theoretical model that it categorizes the participation into several levels. It demonstrates the public power through increased range of power of decision making (Arnstein, 1969). The ladder theory may help practitioners to define consciously the level of participation for their projects or events, depend on their resources and conditions (Arnstein, 1969). On the other hand, Arnstein also states that the model does not further explain the reason cause the difference between levels of participation, it only illustrates the characters to distinguish the different levels. Without clarifying the causes for participation staying in different levels, the appropriate approach to promote ideal participation may be difficult to formulize.
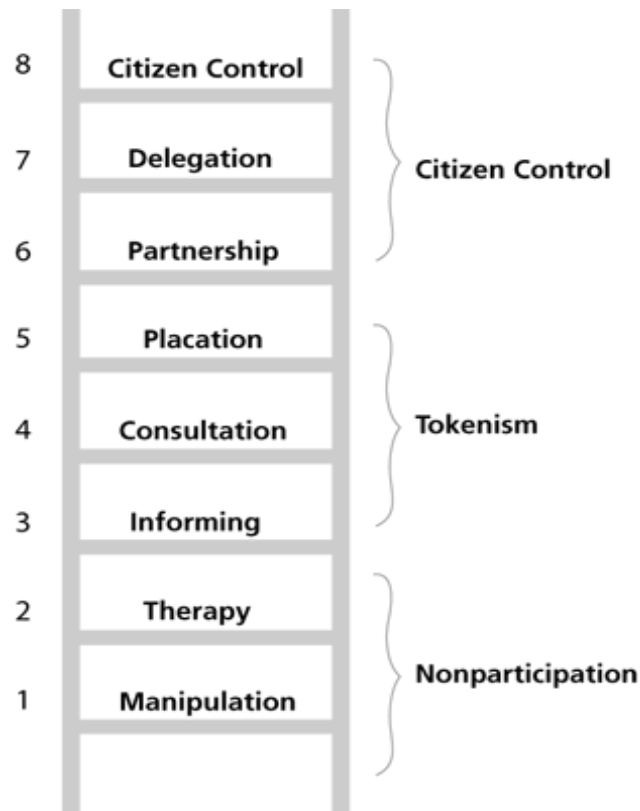
Figure II- 2, Arnstein's ladder, degrees of Citizen Participation (Arnstein, 1969)

Levels 1 and 2, Manipulation and Therapy - In the first and second level, there is no participation, the authorities lead all policy directions, and the publics are only informed and educated with top-down decisions.

Levels 3, 4 and 5, Informing, Consultation and Placation - At 3, 4 and 5 level, the public participation are identified as 'Tokenism'. Although the public has the opportunity to participate in the policy planning process, there is also a chance to express their views, but their suggestions and opinions may not be accepted by authorities. Therefore, there is no practical decision-making power for publics.

Level 6, 7 and 8, Partnership, Delegated Power and Citizen Control - At these three levels, the public participation can be identified as "full participation". The participation of all behavior is dominated by citizens, citizens have the right to decide policy planning and as a result, request the change of the organizational structure and procedure, so that new groups and organizations can cause influence the policy making process and result.

Moreover, even though people have the power in final decision-making in the "public control", but this type of decision may be counterbalanced with authority' s power, which means the public participation is controllable somehow. If the 'participation control' become a type of uncontrolled participation, it may lead to discussion about an extensive defined participation, such as parade, demonstrations (Jia, 2008). For design and innovative activities, the uncontrolled participation could lead to irrational requests and eventually become conflicting events.

2.3   The development of participatory design

In the first few decades since 1960s, PD is mainly practiced in Europe (Sanders, 2006). The term of participatory design has been often discussed in the fields like human-computer interaction, computer-supported cooperative work, and related fields as a research orientation or even a field rather than a methodology (Spinuzzi, 2005). In the urban planning and architecture design projects, which are publicly-founded, participatory design can also be applied to involve developers, academics, NGO and authorities (Palerm, 2000). Participatory design is a design approach that invites the end-users and stakeholders to participate in the process of innovative activities and to perform actively like bringing up ideas, solving problems and creating prototypes of product and service, the emerging design outcomes are promoted by the desire of fulfilling the end users' need, while balancing with other stakeholders' interests, various constrains and conditions. In the meantime, all the parties in the participation have the possibilities to share ideas, mitigate conflicts and learn from each other.

From the beginning, participatory design has first become popular in Scandinavia countries from the early 1970s and 1980s (Bødker, Ehn, Kammersgaard, Kyng, & Sundblad, 1987; Halskov & Hansen, 2015; Kensing & Blomberg, 1998; Spinuzzi, 2002). At that time, computer technology was introduced in a factory, and workers met difficulties to fit in the new working system. Supported by the strong unions, workers were able to involve in the process of integrating new technologies into their works. Workers started to involve in factory configuration and planning work that had been normally done by management. In the meantime, workers had little experience about the new technology and related knowledge and

had difficulties to describe what they wanted to achieve. Later on, researchers jointed and utilized a series of research techniques including mockups, future workshops to let workers have a more efficient way to involve in the process of creating innovations (Bødker et al., 1987; Halskov & Hansen, 2015; Kensing & Blomberg, 1998; Spinuzzi, 2002).

Pilemalm (2018) provided a research overview and analytic narrative of PD in a historical perspective that are about the PD with specific relevance for contemporary public-sector governance trends, where PD approach was presented as several generations based on the significant trends and specialties. The previous PD has three generations, which were listed as following (Pilemalm, 2018) (Figure II- 3):

The three generations of PD, (Pilemalm, 2018)	
First generation	The first generation of PD were between 1960s and 1970s. The early PD started by actively involving citizens in urban planning and the living environment. The focus was on industry, production, and realizing the good work, the end-user group was relatively small. In several PD practices, it mainly involved workers and system developers. Much focus was put on democratic principles.
Second generation	Between 1980s and 1990s, the development of ICT technologies provided support for collaborations and teamwork, and the focus of PD also partially shifted from Taylorism and production technology to collaborative office work. In this stage, several studies claim that the academic PD framework need to be adapted to the un-academic context, the approach had more focus on the earlier design phase than the later technical phase, and few concrete uses of PD were illustrated.
Third generation	In this generation which is at similar time, much focus was on the inter-organizational collaborations, broad group of end users were mixed, and thus the stakeholder's notion was highlighted. Studies had increased focus on defining stakeholders and the involvement of stakeholder groups in design process.

Figure II- 3, the three generations of PD, (Pilemalm, 2018)

From the level of practical implementation, as Spinuzzi (2005) summarized, almost all participatory design research have three basic stages, in which different research methods are grouped (Spinuzzi, 2005):

1) Stage 1: Initial exploration of work

   In this stage, design researchers examine user, spatial environment, users' behaviors and routines, in ways to get familiar with the user. The methods draw from

ethnographic methods such as observations, interviews, walkthroughs and organizational visits, and examinations of artifacts.

2) Stage 2: Discovery processes

In stage 2, design researchers employ various techniques to interact with users, so that user's behavior pattern can be further learned, and desired change and outcomes regarding the future spatial environment can be envisioned.

3) Stage 3: Prototyping

In the final stage, together with users, design researchers iteratively shape the prototype of novel artifact that fit in the future working/living environment, or just the environment. The progress and results are disseminated in forms that users can understand and share, in a way all the related stakeholders can communicate and achieve the momentum of satisfaction.

Spinuzzi (2005) argued that Participatory design's object of study is the tacit knowledge developed and used by those who work with technologies.

PD is often compared with the notions of co-design, user-centered design, collective design, cooperative design, contextual design and perhaps more. They have many commonalities regarding the methodologies and meaning. However, several studies have mentioned the difference between the notions. In the early years of PD practice, PD is commonly classed under the label of 'cooperative design'. Participatory design is recognized as one type of User-Centered-Design (UCD) approach, and it let user involve in different design stage, and become the essential part of the design research (Ivey & Sanders, 2006). It is argued that the difference between PD and UCD is that the research and design work in PD must be done with users, while the work is done on behalf of the users in UCD (Iivari, 2004). In addition, Sanders and Stappers (2008) pointed out PD is used as the name to illustrate the collective creativity in design around since 1960s, and much of the activity in PD happened in Europe. The terminology of co-creation and co-design later became trending and were used more after PD in academic circles (Sanders & Stappers, 2008).

Moreover, participatory design can be defined as a research methodology, in which design is research (Spinuzzi, 2005). The emerging outcomes in participatory design is simultaneously

and iteratively constructed by designer-researchers and participants who are stakeholders in the design process and of the design outcomes (Spinuzzi, 2005).

Concern for *what could be*; a design orientation

Concern for *what is*; a research orientation
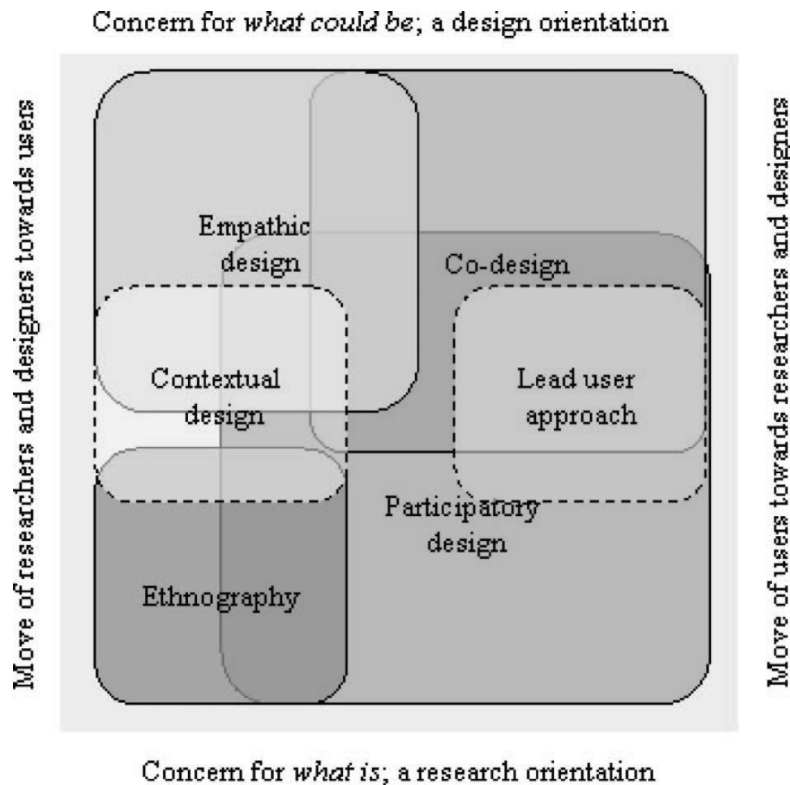
Figure II- 4, a model to illustrate various design approaches (Steen, 2011)

Steen (2011) use a model (Figure II- 4) to illustrates the various human-centered design approaches, which is adapted from the model presented by Sanders and Stappers (2008). The model visualize the tension between researchers and designers on horizontal axis, and the tension between a research orientation describing current or past situations and envisioning alternative or future situations (Steen, 2011).

In all, PD has similar core principle with other user-centered design approach that it advocates placing user in the center of all design activities, and the overall target of innovative process is to fulfill users' need. Specially, PD approach focus on motivating users and stakeholders as participants to actively interact with each other in whole process, and with the assistive

material and guidance, participants transfer knowledge, thoughts and concerns. The active engagement lead participants perceive the feeling of ownerships.

3 Research questions

With the overall purpose of this study, the research questions are defined as below:

1. What is the current status of PD development related to fields that contribute to urban community building in China?

The purpose is to achieve an overview of theory development, the application and case studies, which are related to PD approach in urban Chinese context. This overview was useful to frame and focus the second research question.

2. What are the possible challenges and issues to practice PD in the Chinese context, and the possible way to coping with them?

Based on the illustrated PD methodologies and approaches, empirical data was collected from practitioners about the challenges and issues in the practices related to PD, and how they cope with it.

3. What information can be concluded and utilized in future studies, focusing on both what works well, and new insights about what could work in the context that so far are seen as potentially challenging?

It is ideally to summarize that how practitioners coped with the challenges and issues from reviewed literature, so that it can be learned for future practice, and what can be taken into considerations for improvement of future situations.

Insights from the answers to the first two questions was structured, analyzed and summarized to inform future practices related to PD in China.

4 Literature search

The literature research was conducted with a sequential procedures including systematically searching and organizing, analyzing and summarizing reviewed articles (Boks, 2017).

The literature search of articles in English were conducted through the portal of scientific searching engine "Web of Science", with keywords segmented into 3 groups as combination components (see Figure II- 5).

The searched literatures were filtered with three iterations. In the portal of "Web of Science", the first filtering applied the system filter called 'searching refinement' with relevant 'research fields'; The second filtering was carried out with quick scanning of title, abstract and partially content of literatures, so that remained articles are relevant to this study.

Similarly, the literature search in Chinese language was performed in the following academic archives and scientific database: CNKI (www.CNKI.net), WANFANG data (www.wanfangdata.com). The search was mainly in journal articles with keyword of 参与式设计/参与性设计 (participatory design), 协同设计/共创/共创设计 (co-design), 用户参与 (user-participation), 社区 (community), 居民 (resident), 公民(citizen), 公众/大众 (public).

In addition to these searches in academic archives, the 'snowballing' approach (Jalali & Wohlin, 2012) is also applied that Google and Google Scholar were also used to broaden the search of relevant articles and reports, and some of the cited reference resources form

searched literature were also reviewed. They are for achieving a broader insight for the later discussion part.

Searching keyword clusters		
Keywords group 1	Participatory design, User-centered design, Human-centered design, Co-design, Codesign Collaborative design Participatory innovation User involvement Co-creation Collaborative approaches	参与式设计/参与性设计 (participatory design), 协同设计/共创/共创设计/协作设计 (co-design/ Collaborative design/cooperative design, etc.), 用户参与 (user-participation),
Keywords group 2	Communit* (community, ies) Citizen* Civic* Resident* Public	社区 (community), 居民 (resident), 公民 (citizen), 公众/大众 (public)
Keywords group 3	Chin* (China or Chinese)	

Figure II- 5 , the searching keyword clusters

5 Literature analysis

Three analyses were carried out with the prior research questions on the searched literature as shown in Figure II- 6 .

The first analysis attempted to identify the character of the searched literature, in terms of:

1) The type of literature: the type of literature can be categorized with *critique, method* and/or *case study,* where

  - *Critique* implies literature mainly provides some insights, discussion related PD approach

  - Method implies that literature has explained the methodology of PD approach or has discussion of how PD activities is practiced.

  - Case implies literature has detailed illustration on concrete case study or examples of PD practice

2) The domain that the literature has focus on, i.e., architecture, industrial design.

The second analysis is to identify the illustrated PD approach, its process and the discussion of the approach, and the third analysis is to identify the issues and challenges that raised in literature, and possibly how they were coped by practitioners.

- Identify literature type
- Domain

- Identify illustrated PD approach,
- Process of participation
- What is discussed

- identify the issues and challenges
- how they were coped
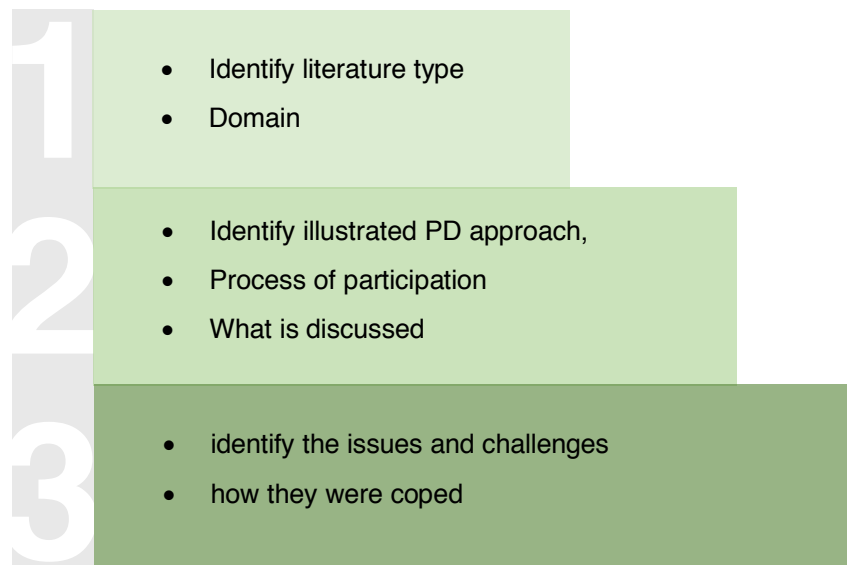
Figure II- 6, analyses on searched literatures

6 Results

6.1 Search result

In English literature, searching the database of "Web of Science Core Collection" achieves in total 95 results, and 21 articles were remained after scanning and filtering, together with the 4 more articles from snowballing, in total 25 articles are included from the English literature. For Chinese literature, the author searches the database of 'CNKI' and yields 101 results, while 17 articles were reserved after the scanning and filtering, combining with 3 more articles from the snowballing technique, there are in total 20 articles are included from the Chinese literature.

In addition, with the intention of searching literature that has Chinese context, and after preliminary scanning of the content, articles were kept that are varied from different domains such as architecture and policy studies, in which some articles have little or even no relation to design perspective (but has mentioned somewhat), but may have discussion on Chinese public participation or other similar theme, e.g. participatory action research (M. Liu, Gao, & Pusari, 2006), project about 'participatory technology development' (Wilkes, 2006), which can contribute to the understanding of community building in the Chinese context.

6.2 Categorized Literature

In the reviewed 25 literatures in English language, 8 articles are about architecture and urban study, 1 are about environmental study, 1 is about public participation in healthcare development, 3 articles are about industrial design. The rest 12 articles are categorized as related to social studies (see appendix 1).

For Chinese literature, out of the 20 articles, 8 articles have illustrated PD case study. In the 20 articles, 6 articles are in the domain of industrial design; 9 articles are in architecture design domain; 2 articles are in social science domain that discuss the character of public participation in urban design activities, and 1 article is in anthropology domain that has discussion about the theoretical understanding and application of ethnographical research methods in design research (see appendix 2). It may worth to mention that the search in English language with the keyword of 'China, Chinese' may filtered out some articles that are relevant to this study, because it gave large number amount of searching results without the keyword, which was impractical to scan. Therefore, future more comprehensive literature search need to be performed. An overview of the result in literature is summarized in the following Figure II- 7 , Figure II- 8 :

Literature search results

Analysis	Category	Reviewed literature in English language	Reviewed literature in Chinese language
Type	Critique	7	4
	method	0	2
	case study	13	8
	method and case study	5	6
Domain	Architecture	8	10
	Industrial design	3	6
	Social study (inkl. environmental, health-care)	14	2
	Anthropology	0	2
Total		25	20

Figure II- 7, literature search results
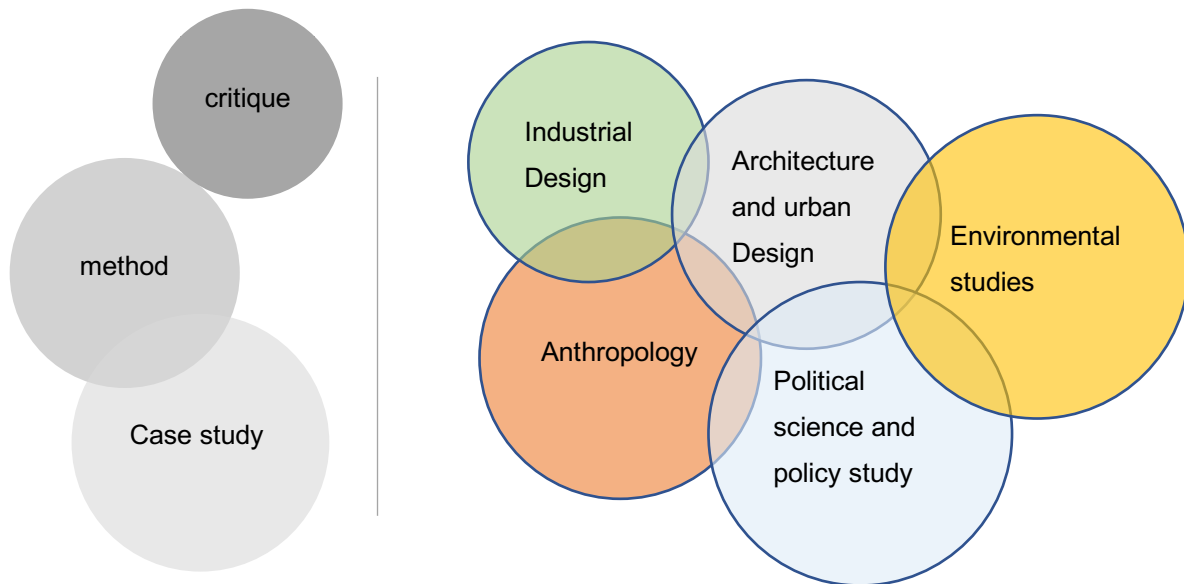
Figure II-ℰ, characterizing the 'domain' of searched literature

6.3   Illustrated projects, principles and framework related to PD

From the searched literatures, researchers elaborate various principles, methods and framework related to PD from both English literature and Chinese literature. Illustrated projects and applied PD approach are analyzed and described as following sub-chapters.

6.3.1   Results in English literature

Articles in industrial domain are about community engagement with co-creation, e.g. using community engagement to drive co-creation and help local community build sustainable economic development and self-identities (W. Wang, Bryan-Kinns, & Ji, 2016), and to explore how designers may collaborate with artisans to create opportunities for a local craft and how designers can make contributions to the artisan community (Tung, 2012) (Figure II-9).

Besides, several articles are about urban planning projects with public participation in the project process. Articles discussed the tools and media that can facilitate public participations,

e.g. the discussion about that new media have been facilitating the development of new types of collaborative urban planning (Deng, Lin, Zhao, & Wang, 2015), the discussion about public participation on urban transportation project (W. Chen & Mehndiratta, 2007), and the proposed web-based participatory mapping tool to investigate children's perceptions and the spatial distribution of outdoor play places (X. L. Zhou, Li, & Larsen, 2016).

Figure II- 9, designer learn the rush waving techniques from community craftswoman (Tung, 2012)

Forrest and Yip (2007) points out that compare to commercial areas, the older and mature community tend to have higher level of social interactions, local intimacy, trust and help each other older.

Researchers proposes design guide lines and framework for public participation in the urban planning projects, e.g. the design guidelines for the open green space redevelopment project (B. K. Lee, Sohn, & Yang, 2014) and a conceptual framework on modes of governance for the regeneration of Chinese 'villages in the city (Lin, Hao, & Geertman, 2015), there might be possible alternative ways to solve the decentralized community with high populations in city (Galeazzi, 2015).

Articles have the focus on public' s attitude and impact on public participation, e.g. the analytical research on stakeholders' impact during post-occupancy evaluation of green buildings (H. Y. Li, Ng, & Skitmore, 2018) and Attitude and willingness toward participation in decision-making of urban green space (Shan, 2012). It indicates that inhabitants become

more knowledgeable about local politics, and develop a stronger awareness of their rights, as also mentioned from the critique about the homeowners' participation in neighborhood affairs (Weijie Wang, Li, & Cooper, 2017).

Beside the architecture and urban planning domain, articles are about public participation in project about community building and development, e.g. a research on community stakeholders' perceptions of the enhancing family well-being project (Chu et al., 2017), a study examine the multi-stakeholder platform involving a mining company and neighboring villages (X. Huang, Faysse, & Ren, 2017), and by facilitating community participation with innovation and technical intervention to support sustainable livelihoods (Wilkes, 2006).

There are other themes like environmental theme and healthcare domain in articles that could be related to PD, and may provide insights about community engagement, e.g. using participatory action research to provide health promotion for disadvantaged elders (M. Liu et al., 2006) and discussion about using societal scale environmental sensing network with public participation (C. M. Li, Wei, Vause, & Liu, 2013).

6.3.2   Result in Chinese literature

In the analysis of Chinese literature, 9 articles are in Industrial domain, in which 4 articles have illustrated PD with specific case.

D. J. Zhang, Tie (2016) illustrated a co-design case that is about a project implemented in a traditional Chinese minority community, in which designers together with researchers, stakeholders and local community members created a knowledge platform for a series of social innovations (Figure II-１０). The innovations include digital design, online media design and handcrafts co-designed by local handicraftsman and industrial designers, who learned knowledge and experience from each other; more job opportunities were created through the process of developing, and the local community members become the internal power of promoting the local community culture, and avoid the tragedy of simply becoming industrialized labor (D. J. Zhang, Tie, 2016).

Figure II- 1 0, shoes crafted by local villager (left) and Industrial designer who learned the handcraft techniques from local craftswoman (right) (D. Zhang, 2016)

D. Zhang (2016) in another article stresses the concern that co-design shall avoid being 'New colonialism' design and discusses about the relationships between modern designers and craftsman in cultural heritage community. The notable issues are raised regarding craftsmanship and introducing participatory design into community culture development. Luo (2012) used "Global Service Jam" as an example to stress the digitalized product service platform can be one of the solutions to involve communities in creative process of any inventions. Du (2016) proposed the principles of developing participatory tools for engaging and organizing creative activities for urban community elderly.

Du (2016) proposed the principles of developing 'participatory carrier' for the elderly participating creative activities in community. They analyzed the characteristics of the elderly and the advantages of the elderly's creative activities in community in China, and considered the elderly have rich experience, the ability of association of ideas and broad perspectives to deal with issues, while the elderly in community also have sufficient time and stable living conditions. With community service and an active environment, elderly's creativity have the capability to create values; on the other hand, the elderly can achieve respect and recognition through the participatory and creative activities (Du, 2016). Therefore, introducing concept of

participatory design method with participatory carrier to community services are beneficial both to the elderly and the society (the meaning 'carrier' may be considered as 'type of tool', on which various activities can be performed). In addition, Du (2016, p. 133) use a case to illustrate the participatory design carrier:

> *"...The elderly women were invited to participate a workshop of designing daily life gadget. They used the materials provided by the organizer, which had clay, plastic bottles and tools. Their aim was to develop some sort of gadget that can be used to open food can..." (Du, 2016, p. 133)*
> *（translated）*

Here, the provided materials are the 'participatory carrier' , and as Du (2016) proposed, for the elderly, the participatory carrier can be incomplete piece or unfinished design artefact, so that the elderly can participate the final procedures through simple guidance. The suggested the principles of designing the participatory carrier for community elderly are in three aspects:

> *"... Fault tolerance: the fault tolerance should be considered in both participatory process and end result. The participatory carrier need to be easily operated, and even participant has made mistake, the activity process can be continued with no interruptions; the end result may be different as designer/organizer' s expectations, as the meaningful part is in the process of participation; Moderate participation: participants may have different understanding and creativity level, the complexity level of participatory carrier shall be able to be adjustable, flexible and controlled by participants, in order to keep their focus and interests; Active participation: organizers/designers should create enough effective interactions between participants and with participants, i.e. exchange and cooperation; Demand-oriented: the workshop or project need to be in specific theme, and the output shall be meaningful, useful, providing help or solving certain issues for the elderly..." (Du, 2016, p. 133) （translated）*

PD is common to appear in projects of information and communications technology (ICT) innovations. Shang (2016) illustrated how designer can identify right user, inspire user to have creative ideas, reduce the threshold for user to design, and guide users to not deviate from the design direction, while the article also stresses that optimization of the PD process and providing sufficient design elements may activate users' potential capability for design.

Among literature in Architecture domain, case studies were described about PD approach applied in the fields including urban planning, community rehabilitation and architecture design. PD approach were adopted by practitioners in several community rehabilitation project. Illustrated projects and case studies in literature are ranged from large community housing rehabilitation, i.e. a renovation project in Wangjiaqiao (B. Li, 2017), renewal of a commercial street (Y. S. Huang, Li; Liao, Kai; Xie, Siqi, 2017), revival of the downfallen and traditional villages in Guangzhou (Qian, 2011), to minor community housing rehabilitation, i.e. Beijing courtyard (Zhao, 2017), and experiment of improving community public space in Taiwan (Y. Zhan, 2013) *(*Figure II- 1 1 *)*. These activities can help people, in a rather gradual way, reach out to those around them and participate in collective self-government engagement, which in turn, could help foster state institutions that are more willing to tolerate, listen and negotiate with self-organized voters (Read, 2008).

In the large renewal project illustrated by Y. S. Huang, Li; Liao, Kai; Xie, Siqi (2017), when community members are in enormous amount, the demands and concerns are complex, and thus in architecture plan, designers simplified the diagram of solution so that it can be more easier to understand, and used typology to create relative less alternatives to avoid high complexity. For minor scaled project, designers can use workshops to establish the initial conversation with community members. Several projects also mentioned that PD projects also involved academic research and teaching activities (Qian, 2011; Zhao, 2017), in which students practice their design knowledge and negotiation techniques. Moreover, researchers can make experiment and test their assumptions, and take PD projects as pilot project (Y. Zhan, 2013; Zhao, 2017).

Figure II- 1 1, community members participate discussion of architecture design (Y. Zhan, 2013)

For PD in large community renewal projects, organizer tend to select representatives from community members as participants because of the large number of related population for projects. The literature about the project of Wangjiaqiao in Kunming attempts to illustrate how community members were engaged through PD (B. Li, 2017). With introducing PD approach, the project team was planned with design department and society department. In the initial stage, the society department was in charge of selecting specific groups and representatives, while the design department was responsible for collecting and analyzing environmental information of the project; in the medium term, the two departments combined and shared the results, and jointly proposed the plan of community space for the representatives; in the later stage, design department, society department and the representatives join together to revise the plan. A final plan was obtained through repeated modification and improvement. During the design phase, the community members were invited to participate in the process of design individual' s apartment, which they could negotiate with designers about the detailed room arrangement and design.

Community members also involved in the design tasks from the large one like design of public squares to the small one like design of greenery' s fences, which are echoed to the basic principles proposed by Qian (2011) for public space participatory design: 'participants are active users of the space' , 'empower users with rights and responsibility to participate in

the decision-making, implementation, supervision and evaluation of the project' *(*Figure II- 1

 2).
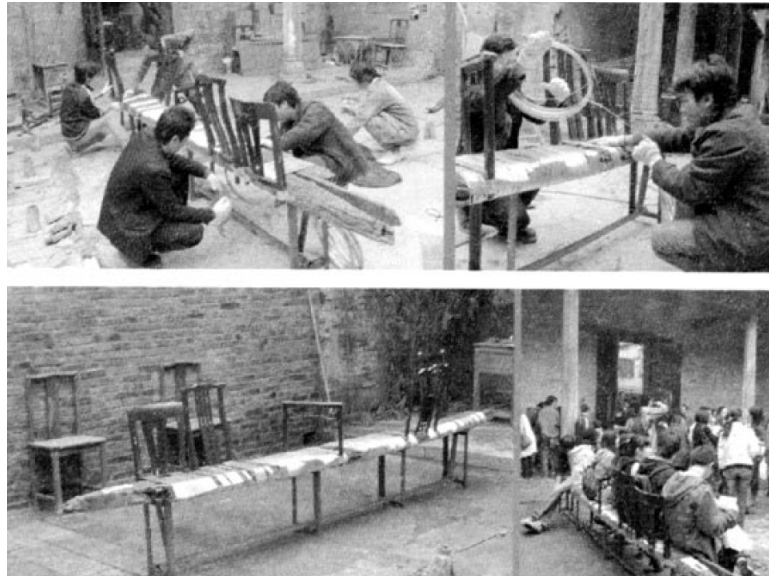
Figure II- 1 2, Co-design of furniture with community members (Qian, 2011)

In addition, PD was also applied in design of new re-estate project with planning of new community (G. Feng, 2012), and the regional urban planning work associated with large population, i.e. New Central Harbor-front in Hong Kong (Q. C. Zhou, Wei; Yang, Minxing 2013), and PD was introduced by community practitioners to solve various issues in urban planning work, i.e. transportation around communities in Macao (K. Li, 2014).

Chu (2017) gave suggestions for practitioners who are interested in engaging communities in community-based research:

> *"First, a common set of goals and objectives need to be identified among*
> *partners. These goals and objectives should translate into specific, tangible*
> *actions that bring measurable benefits to the community… Second, building*
> *trust among community partners is an ongoing process. Maintaining*
> *equitable partnerships is often difficult… Third, stakeholder involvement in*
> *a community-based research project requires substantial time and effort…*

Finally, the biggest challenge to community-based research project is often the funding required. Community organizations frequently lack the financial resources that create barriers to participation in community projects and may create tension and stress within and among organizations…." (Chu et al., 2017, pp. 7-8)

G. Feng (2012) described a design competition for guaranteed-housings projects, in which housings are distributed to families with economic difficulties. The design of guarantied housing normally is simplified, cost-efficient, which has massive duplicates and standard units. A team applied PD in architectural design to fulfill the personalized demands of different families. Designers were not to design the layout of each housing unit, but to design the strategies that users can learn and apply to design their own layouts; Designers only finish the main structure and cable with pipelines; users learn the design tools and how to design their own ideal home via the community online platform, from where they can share their design, discuss with other users, and ideally find neighborhoods who have the same design and living styles.

6.4   Illustrated challenges and issues in practice

Several articles have mentioned the challenges and issues during the illustrated projects and cases. Some researchers reflected the practice of PD and public participation in the papers. The illustrated challenges and issues of PD practice are marked and analyzed.

Contextual understanding and knowledge transfer are recorded by researchers. Researchers need to know the context and people during the field work. W. Liu (2004) illustrated an example about the field research in a project of old housing renewal that designer can get confused without a contextual thinking:

> *'...the survey was sent out to investigate which type of toilet that people would like to choose for their future housing plan, which is between the traditional toilet and the modern toilet. The result surprised research that almost all people chose traditional one. With a further investigation, it turned out that people live in that courtyard had never seen such modern toilet...' (W. Liu, 2004, p. 13)(translated)*

Similarly, in a study of stakeholders' impact in sustainable project of green building in China, researchers held several interviews with participants from various stakeholder groups, and unfamiliar with the academic knowledge was raised as one of the issues in PD process:

> *"Participants from the designer and contractor groups complained that the reason so many design innovations fail during post- occupancy could be ascribed to a lack of project owner' s motivation. The owner representatives interviewed partly accepted these criticisms but pointed out that they are unfamiliar with the theory/practice of green operations due to their unrelated backgrounds. Academia participants thinks causing factors can be the partnership patterns of owners and property management companies, and the constituent relationships of the project owners and end- users." (H. Y. Li et al., 2018, p. 93)*

Professional knowledge for participants' learning capability were challenging and problematic for the creation process, and the knowledge that participants are familiar with could bring stereotypes that limit participants to "think-out-of-box":

- *"Designers invite teachers to workshop participate design of new classrooms and reflect the tools and environment in teaching activities. However, it was very difficult for them to bring up constructive ideas in the beginning because teachers were too familiar with the classroom, and they had stereotypes of what a classroom should be. In addition, the teachers had the difficulty that they were lack of professional architectural design knowledge to propose ideas for design..." (W. Zhang, 2007, p. 77) (translated)*

Chu et al. (2017) illustrated the exploration of community stakeholders' experience involved with planning and implementing community-based family programs. The project used four focus group with social workers, and six in-depth interviews with steering committee member within half-year. The challenge of doing participatory research include the balancing scientific rigor, as it is mentioned:

> '...Some respondents felt that the project maintained strong scientific standards more than it accommodated the needs of the community. The challenge with completing questionnaires (e.g., difficult wording, long and repetitive, and difficult to follow-up with participants) was repeatedly noted by respondents...' (Chu et al., 2017, p. 106)

Deng et al. (2015)stated that new media have contributed to form new types of collaborative planning that have diversified agents, new ways of communication and new roles for planners, and illustrated the case study of The Dafo Temple controversy. The whole story was started by a planning expert who criticized and opposed the demolishing action on a building, and the message was spread through online social network, it came to broad public debate including institutions, scholars and citizens, and finally the local planning authorities had to adjust the project, however, the voices from the public were also varied in different groups regarding the design proposal. The issues of the new role of planner was raised that experts can influence public value via online discussion and comments, it usually takes time to make the conflict of interest clear between stakeholders and agents, that the experts should be careful about their comments which should be based on accurate information. And Deng mentioned that it is difficult for planners to arrange co-creation activities with other agents and stakeholders, as the traditional planning in China is usually led by governments, and they also lacked knowledge and have information bias.

PD for urban matter is often a long process. In the school rebuild project (W. Zhang, 2007), describes the concerns of time-consuming in PD process:

> "...Due to the tight time for reconstruction, participatory design was emphasized in the process, but its implementation was not as effective as expected. Many architects are hastily involved in participatory design

because of the time. It is just a matter of arrogantly choosing a program, or opening several seminars, it does not meet the spirit of participatory design…the intensive time requirement was clearly inconsistent with the goal of full interaction between designers and users... for the projects that had a better PD process, designers had focused on school design from long time ago, and they had kept in touch with the users before the disaster and rebuilding projects…"(W. Zhang, 2007, p. 80) (translated)

Wilkes (2006) also demonstrated that previously how practitioners and researchers work in the community, and raised the concern about the compatibility between a participatory approach and the standard target-driven project procedure used in government projects:

'Technicians spend little time in the villages and often have a poor understanding of community members' needs. They often only engage in extension activities when project funds become available, and mostly promote technologies that superior agencies think are needed, rather than what the communities themselves feel they need." (Wilkes, 2006, p. 210)

Lin et al. (2015) commented on the investigation on governance mode of 'village in city' in Shenzhen, in the community composed of immigrants, housing upgrading and the provision of public facilities emerge the self-governance mode, where households, informal organizations and civil organizations that have established informal partnerships between each initiated various bottom-up approach, the informality also create the difficulty for reaching agreement with local governments, and the housing upgrading may also lead to increased rents and thus increase the threshold of surviving for the low-income community members.

Although the mentioned challenges and issues are not discussed and illustrated in all searched literatures, they can be common for other projects and cases that are not listed in this thesis.

7 Discussion of literature review

In this chapter, I discuss the reflections during literature review, and discusses the character of 'participation' in PD by starting with distinguishing the scale of participation, which indicates that the scale of participation has certain association to the domain of the practice, and the time length of the participatory activities. Furthermore, I will discuss the factors that can be influential to the PD in Chinese community context, which are derived from the previously distinguished character of PD and are the ones that practitioners and researchers are encouraged to take into consideration for making better strategies of future engagement in their practice and field work.

7.1 Reflection on searching process and result

Before performing the systematic searching of literature, the preliminary search about PD in Chinese context returned very few results about PD research and practice had been performed in China, which was proved by the later search with theme about community-based PD in China that return even less result, both in English literatures and Chinese literatures. PD and these similar design approaches are often applied within the tasks of optimizing workplace and tools. Results in both English search and Chinese search indicates that PD with community context are mostly discussed and practiced in urban planning and architectural design field. On the other hand, there is no indication that any case or project exists in both English articles and Chinese articles. In these limited search results, most of the case and projects from Chinese literatures are qualitative studies, correspondingly there are more quantitative studies in English literatures, e.g. mapping attitudes and perceptions by applying survey, questionnaire and online mapping tools (X. L. Zhou et al., 2016), even though the domains are varied to large extent. Yet its application in community building in Chinese context is indicated as limited but in an emerging trend from the returned searching results.

The searching results implies that political concern of engagement with community often lead PD to be associated with public participation, which may appear in many domains, especially in the domain within social science and policy studies.

I also gave a glimpse based on a preliminary search with a broader scope within themes of public participation, which returned enormous amount of searched literature. Many of the articles have however, more focus on public administration, political science, law study, rather than design, innovation, urban planning or related social studies, and are seen beyond this study' s scope as the present study focuses on the elaborated process of engagement and participation with designing or innovative properties of PD. Yet, the exclusion might lead to the present study miss any insightful discussion and information, and thus investigations of these articles might be necessary in the future work. Nevertheless, several researchers advocate citizen involvement, application of PD in community-based projects and urban planning projects (Y. Feng, 2011; W. Liu, 2004; Qian, 2011).

Summary to discussion of search results:
- Although some researchers acknowledge application of PD can benefit community building, which is an emerging trend, the number of research and practice is still limited that PD needs more focus in the Chinese context
- Political concern exists in public participation of PD within various domains, especially policies and political studies.

7.2 PD in 'large-scale participation'

In the evolvement of PD theory, PD is often practiced in micro scaled activities and projects (Halskov & Hansen, 2015). Policies and plans may also be seen as type of 'design outcomes' where participation often is a long process and may include iterative deliberation with patience and effort, and in the meantime the outcomes can have direct influence on local communities. In addition, communities are composed by individual member, who can be participant in large public hearings, investigation surveys and other public affairs forms. The

47

activities can be relevant to individual's daily life, no matter what outcomes will be achieved in the end.

Therefore, the certain public-participation about policies and plans might be seen as PD in large scale, and the participation illustrated in the reviewed papers might be categorized into 'small size participation' and 'large size participation', which is distinguished with the approximate amount number of participants. It appears that the PD session has 'Large-size participation' usually in city-level-scale, are related to urban planning work, public healthcare and environmental research that involve public in decision-making process. It often involved many hundreds to thousands of participants (it may also be online community and members).

Illustrated projects are about policy studies and social deliberations (Kornreich, Vertinsky, & Potter, 2012), public attitudes on participation (H. Y. Li et al., 2018; Shan, 2012), and area-level urban planning (W. Chen & Mehndiratta, 2007; B. K. Lee et al., 2014), while most of the studies has quantitative research. At the same time, the activity in 'small-size participation' often has dozen of participants that the activities are in workshop or focus group level, to max-extent community-level, where the study has more focus on illustration of design activities (Tung, 2012; W. Wang et al., 2016), discussion of individual reflections on participatory activities (X. Huang et al., 2017; M. Liu et al., 2006). Therefore, a coordinating system (Figure II- 1 3) could be introduced to map the reviewed literature which has mentioning, or discussion of the activities related to PD, where the vertical coordinate is about the size of participation and horizontal coordinate is ranged from design activities and non-design activities.

Large scale participation

Public hearings on transportation

Environmental sensing system

Health-care reform

Plan for public green space

Policy and plan

Design and innovation

Participatory technology

Community health-program

Co-creation in traditional community

Cooperative craft design

Small scale participation
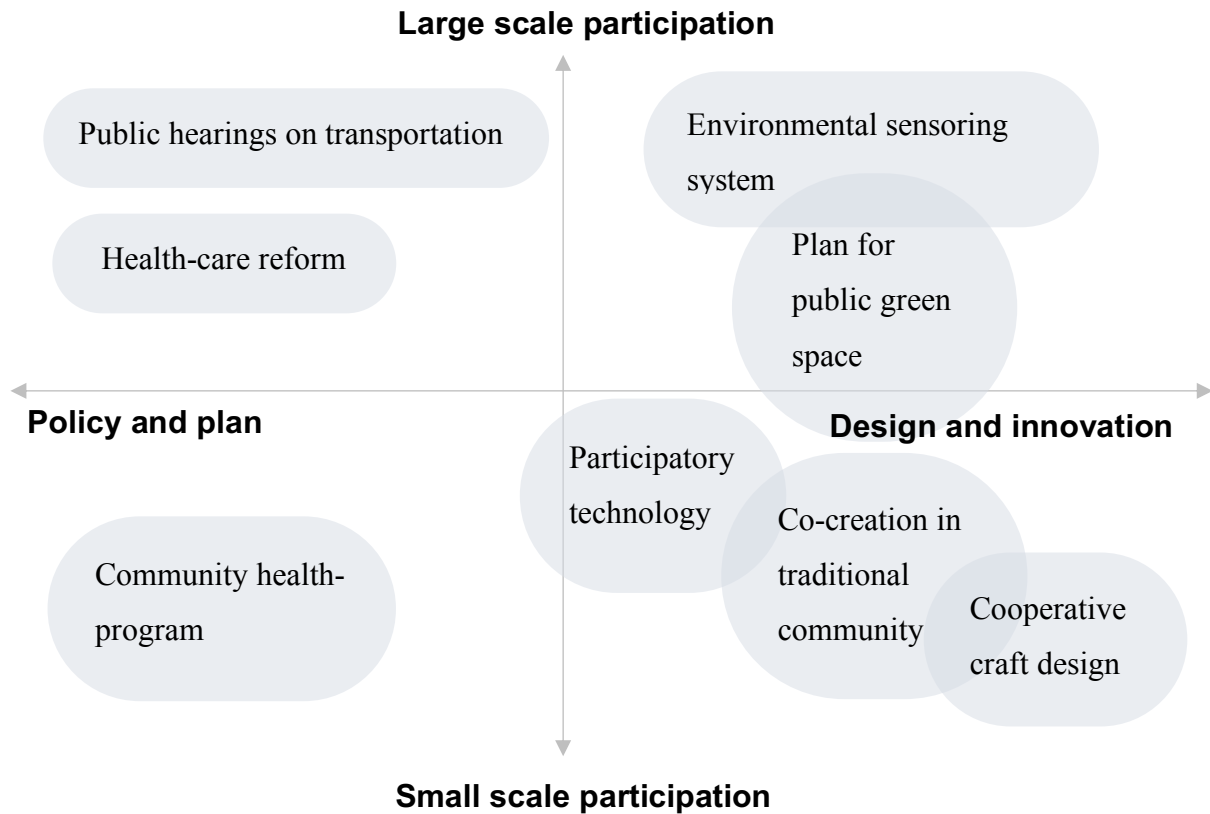
Figure II- 1 3, the relevance activities of PD can be mapped in in terms of domain and scale

The ICT development bring more possibilities for public engagement in large-scale PD. Social media network in China (e.g. Weibo, similar to Twitter) provides a platform for public participation in various local issues and trend topics, it contributes to a constitution of new type of public. In the Chinese collectivistic culture, public has great tendency in seeking information through Social Network sites, also as Men and Tsai (2012) point out, Social network sites (SNSs) constitute powerful multimedia platforms that provide such utilities as information sharing, social networking and so on, and companies see SNSs as important tool to create dialogues and maintain public relations. Researchers should pay attention to the roles that these objects and technologies as actors act and their influence bring to the public participation, and how social media tools' particular technological features, the related user cultures, and the platform's systematic self-censorship practices, in addition to the occasional government interventions, mutually articulate each other (Poell, de Kloet, & Zeng, 2014).

It could be challenging and troublesome to mediate conflicts of interests for practitioners in the process of large scale PD, where stakeholders might have to compromise their interests. The mutual trust could be challenging to achieve between stakeholders and publics. Moreover, there need to be certain roles acted as connections and mediator for organizing the participatory activities, while the large number of participants in activities of large-scale-PD may also lead to a difficult balance with conflicts of interests and create possible tension between the groups, and online platforms might be good arenas for practices.

Summary of large-scale-PD:
- It is argued that the large-scale-PD is often about policy and plan making
- large number of participants may lead to a difficult balance with conflicts of interests and create possible tension
- Online platforms can be arenas for large-scale-PD to mitigate communities and stakeholders' conflicts of interests.

7.3 Ethnography in PD process

Ethnography is commonly used in the PD early organizational analysis phase, preceding prototyping and design (Halskov & Hansen, 2015), and the ethnographic research in anthropology may help researchers and practitioners to achieve better understanding of users' need and behavior (M. Lu, 2016). Anthropology often involve in whole process of PD activities to discover and define problems, which can be related to human behavior, pattern of activities etc. The methods include fieldwork research, such as interviews and observations. D. J. Zhang, Tie (2016) illustrated that the research group conducted research including direct observation, participatory observation and interviews, and further analyzed the community culture and life style, which helped the designers get to know the issues from insiders' perspectives.

In the project of Wangjiaqiao (Li Bolin, 2017), researchers from the society science department took existing investigation of the community population as start (which was made by community service centers), and applied a series of research methods, i.e. survey, focus group, in-depth interview. The fieldwork gave researchers indication about which groups of people were vulnerable in the community, which turned out to be a big number of people in the end.

Researcher also tracked and recorded individual or group of users' daily activities, routine paths, and behaviors to study user's potential needs (Qi and Su, 2011). M. Liu et al. (2006) illustrated participatory action research (PAR) model was used over a 2-year period in a remote disadvantaged rural village in Shaanxi province where participants were 20 elders and 5 local administrators including government officers and village leaders. The paper concluded participatory action research is an optimum research method, which allows researchers to facilitate collaboration with all participants through research and supports democratic dialogue and deliberation through the participation process. The design of cook-stove for rural Chinese homes is described with applying user-centered and iterative design approach, where researchers and designers used interviews, observation and monitoring to collect data.

However, few discussions and the processes of ethnographic research are detailed illustrated in the PD projects that have more illustration on the end results and outcomes from PD activities. It implies that ethnographic research methods are rather seen as tools for preparation of PD activities, rather than topics that draw researchers' attention. Therefore, for performing community-based PD in China, how to better conduct research and organize design activities seems need researchers and practitioners to place more focus, and have reflection on ethnographic research within specific contexts, and take design anthropology into processes of research and practice

Summary of ethnography in PD:
- Researchers and practitioners need place more focus on, and have reflection on ethnographic research within specific contexts, and take design anthropology into processes of research and practice, in order to better conduct research and organize design activities

7.4   Challenges of communication, knowledge transfer and empathy in PD

The challenges of communication are common to appear in several projects. It is about how PD practitioners and researchers communicated with participants, and how the learning processes were conducted from both ends with knowledge transferring. **Researchers need to consider the learning-ability of participants**, and avoid the Dunning–Kruger effect (Dunning, 2011) that incautiously thinking that participants have the same level of understanding about the methods, process and the objectives of PD.

The example mentioned by W. Liu (2004) illustrates that the researcher naturally thought the community would have knowledge about the modern toilet, and thus had never questioned if they share the same knowledge. If the decision was made with such survey results, it would be difficult to verify what was community members actually wanted, and if the design based on such information would be good for them in the end.

This case can be associated with the 'Mapping workshop' done by architect Jason HO[7], together they prove that by deeper engaging with local life, researcher may know better of human behaviors and the causes. The architect Jason HO conducted a workshop which is so-called 'mapping': When the architect wanted to find out what are the reasons that lead to the community are so tight, and its inner social connection are so strong among the people living there. For outsider the community looked messy and disordered, he followed the people and observed their behavior for nearly a month. After following of 108 people, he summarized and gave an answer that it was the chamber pot that made the community member so connected, because people needed to step out of their home and walk to a public washing

---

[7] https://new.qq.com/omn/20180320/20180320A0FO5H.html

room to tidy it, and just in such short trips the inhabitants had chance to talk to each other, no matter it was about gossip or important information. The conclusion was given not to suggest avoiding any upgrading work nor letting the people stay in the traditional way, but to indicate that simply adding infrastructure may not be enough, as it is about the way people interact. Therefore, when practitioners and researchers perform such dedicated ethnographical research, it could be beneficial to get an in-depth understanding of the target and try to understand participants' behaviors and response from different perspectives.

To engage local people in early stage of research can be helpful for PD, which local habitants are the sources of local knowledge. In the project illustrated by Wilkes (2006), it is also pointed out that the local knowledge is important for practitioners and researchers. The project was that a group of community members and extension workers began to experiment with exotic fodder grass species, as winter fodder shortage was a major problem affecting cattle health and milk yields. However, several of the farmers rejected to use it, even though the grass grew well, because they explained that the traditional fodder crops could bring 'vital energy' to the animals from their experience. In the end, they had further discussion on how to grow more of the traditional crops. This case indicates that acquiring local knowledge is essential for practitioners.

Building relationships and cultivating positive connections between researchers and participants in Chinese community is important and can improve the process of knowledge transfer. Researchers shall not take for granted the responsibility of conducting communication throughout the entire participatory process, because the relationships between participants can develop into lasting partnerships which can lead to additional collaborations (Chu et al., 2017). Interpersonal relationship skills of researchers are of crucial importance in building the collaborative relationship with all stakeholders (M. Liu et al., 2006). In the participatory technology development (PTD) project (Wilkes, 2006), it is also illustrated that one of the technicians said 'I've learned how to chat with the villagers and build relationships with them ...', which indicates the channel for knowledge transfer is built while the inter-personal relationship is established.

It could be associated with the psychological study about the changing of general Chinese personalities along with the societal development (M. Z. Zhou, Jianxin, 2007). It is argued

that the personality characteristics of the Chinese people are changing with the development of the social modernization, showing the characteristics of diversification and individuality (M. Z. Zhou, Jianxin, 2007). Moreover, it also proposes that, in terms of the hypothesis of personalities in places with different modernized level, people in high level of modernization generally have high 'openness' , and with low level of modernization, the 'interpersonal relationship' is high, and to which the 'openness' could be interpreted as the spirit of reasoning and seeking for truth, while the 'interpersonal relationship' is more to the spirit of humanity and ethic that could be referred to 'localized' personality concepts, such as 'avoid confrontation' , 'keep harmony relationship' and the term interested by many westerners - 'face' (which may be associated to nobility and dignity).

The practice of PD in community with strong cultural traditions (especially low modernized community) may encounter the low level of 'openness' of community, which means beside the community members may have difficulties to understand the practitioner' goal, they may also have little motivation to engage with the innovative activities. On one hand, the high-possibility of the high level of 'interpersonal relationship' may also require practitioners and researchers to make strategy for their practice, and for having an in-depth and mutual understanding with the community members. On the other hand, researcher and practitioners also need to consider other effects along with the interpersonal relationship. In the community developed programs (Fabrizio et al., 2012), researcher stressed the concern about the Chinese cultural propensity might influence the research design that the hierarchal nature of Chinese society might limited the equalitarian partnership, and the tendency to avoid conflict might influence judgement of practitioners and researchers in practice.

In addition, for the large-scale participation, especially one in the online form, researchers need to cultivate the trust and the relationship with participants. Publics largely depend on extended social network for emotional exchange, and publics treat trust and relationship more valuable than explicit product information in terms of organizational online services (e.g. companies' posts have non-brand-relevant discussion and the content illustrates company as a caring friend, so that to cultivate the relationships with current and potential customers), to which the Chinese high-context culture is a core essence (Men & Tsai, 2012). A high situational culture tends to be relation-oriented, collectivistic, intuitive-oriented and more thoughtful. However, experts should be careful about their comments in the public

media channels which should be based on accurate information, because it usually takes time to make the conflict of interest clear between stakeholders and agents (Deng et al., 2015).

Being considerate and empathetic may help designer find new way to explore design possibilities. In PD process, if designers are capable to catch any tiny details from users' behavior or stories, they may help themselves open new ways of thinking. Zhang (2007) illustrates the example that the designers caught the detail embedded with sentiment:

- In the school rebuild project, school director gave architects a map of trees planted in the schoolyard. The map had every detail of the name of trees, the locations and so on. Architects realized the trees are very important to the students, and they avoided to take away the trees in their new design and used the trees to form the unique design that natural playground were surrounded and divided by the trees (Zhang W, 2007).

In the case illustrated by G. Feng (2012), the designers made various recommendations for users based on deep understanding of local culture and daily activities, for example, in the guarantied housings projects, some families stated rarely use kitchen, and propose the idea of sharing a kitchen with a neighbor family, and that shared kitchen became a pathway connected to both families and a place for occasional chatting (G. Feng, 2012). But for this specific case, follow-up investigation was not mentioned, as an assumption could be that users' knowledge may let them foresee their desire in a short time period, and there is a doubt that whether the user-designed solution would function as it should in the end. Also, Participants' lack of knowledge for the novel innovations may hamper the motivation for participation, e.g. the post stage of the green building projects (H. Y. Li et al., 2018).

That is to say, **participants may need to have certain level of knowledge about the process, background, motivations and techniques**. The learning process can be facilitated by practitioner and researcher who may need to act as developer and facilitator (Y. Lee, 2008) that transform design knowledge for participation and help participants to share their knowledge in the participation process.

However, it can be challenging for design researchers to achieve efficient communication. Researchers may have difficulties to control the scientific rigor as the control to participants may need to be compromised, and the "expert language" may need to

be imprecise which are shared with those participants who may not have the same level of knowledge (Spinuzzi, 2005). Similarly, Eriksen, Seravalli, Hillgren, and Emilson (2016) states that one of the issues of current PD practice is that how to relate to approaches and understandings of practitioners and researchers from other fields also engaging in the urban contexts and complex societal challenges. **Simplified process and tools may provide certain level of help**, and having the focus on process not the end result may create more meaningful end results, e.g. the principle of participatory carrier design (Du, 2016). Tools like online mapping platform (X. L. Zhou et al., 2016) to explore children' s play behavior and perceptions in a spatial context may also help certain participants group. The mapping activity provided geo-tagged information of the places children identified as play spaces or bad spaces as well as their perceptions of these spaces, so that it can help city planners and designers target the specific locations that need improvement.

There is a concern that designers and researchers still need to explore more ways and make understandings to have a better engagement with cultural communities, which is also stressed by D. J. Zhang, Tie (2016). The questions include when designers should fade out from community activities, how designers can keep a moderate relationship with community and in the end, give community independency and confidence to carry on and expand their cultural heritage.

Summary of communication, knowledge transfer and empathy in PD:

- Acquiring local knowledge and having early engagement are essential for researchers and practitioners
- Participants' learning-ability need to be considered. they may also need to have certain level of knowledge about the process, background, motivations and techniques
- Cultivating interpersonal relationship and trust between researchers and participants in community is important, which can be the same for large-scale PD and with online communities. Being considerate and empathetic may help to achieve them
- Simplified processes and tools may help design researchers to achieve efficient communication, and to a certain level avoid reduction of scientific rigor

7.5 Challenge of possible tokenism and top-down decision-making regime

For the large-scale-PD, communities were possible to be excluded in the initial decision-making process because of the top-down execution in this rapid urbanization achievement (Galeazzi, 2015). Activities in urban design are often organized by professionals and government (Y. Feng, 2011), while citizens' participation is supplementary that the public are used to rely on and leave the decision-making to public authorities, and inhabitants have more focus on their surrounding environment than broader, long term urban plans. It is pointed out that the mechanisms for democratic participation in rulemaking have not been well established, and the policy pronouncements have been frequently criticized as mere "symbolic gestures" for many years (X. Y. Zhan, Lo, & Tang, 2014).

In addition, public participation sometimes is involved only in the early stages than the later stages, and the public hearing can be formalistic due to the limited project time with design

professionals, the interview, survey and public hearing are the type of passive participation that the active participation mindset and organizational activities are still experiencing unmatured stage when they are related to large city scaled urban design and planning (Y. Feng, 2011).

The informality of bottom up organizations also create the difficulty for reaching agreement with local governments (Lin et al., 2015). It could be also difficult for professionals to organize co-creation activities with other agents and stakeholders, since the traditional planning in China is usually led by governments, and they may also lack of knowledge and have information bias Deng et al. (2015). Participants without strong association's back may not be willing to express their views publicly as they were afraid of some potential retaliation from their superiors (Kornreich et al., 2012). In these cases, the privacy and mechanism of expressing opinions seems to be the core issues, which can lead participants' voices be inauthentic. Therefore, PD researcher should place more focus on the issues of 'how' or the actual design practice than looking at the issues of 'why' or even 'should people participate', in order to avoid tokenism (Y. Lee, 2008).

The balanced participation was seen as very important to both users and architects, which need to avoid the over-participation. The users' over-participation could lead to a "design populism" (W. Zhang, 2007), which means that users' power and rights are overwhelming and exaggerated, and the "elite components" and principle of PD are despised, for example, the strong committee of school or teacher could ask for design to fit their likeness and "style" (W. Zhang, 2007). However, the designers' over-participation could lead to a blindness to users' need, and designer could emphasis too much on outcomes, and pursue the outcomes encoding with their personal remarks, for instance, a water pool is designed in adults' perspectives with so-called cultural features, which is, in fact, in concrete enclosure with no greeneries planted inside or around, and it is purely a "stylish design" that has no ecological value, neither possibilities for children to play (W. Zhang, 2007). In classroom project in the school rebuild project, architects designed a sunroof to bring up the stylish of design, and left mark of personal style, but the local weather environment made the teachers and students suffered with hot and sunburn (W. Zhang, 2007). From another perspective, the "balanced" participatory design is an ideal status that designer's and user's right and power are well-balanced, which in practice there need to be a collaborative sprits and effective ways of communication for all the involved participants.

Although it is possible that not all issues raised in PD process could be solved, participants are able to be empowered and acquire knowledge about how to cooperate with design professionals and express their demands, thus promote and facilitate further PD activities, e.g. project in Wangjiaqiao (B. Li, 2017). Besides improving life-standard, community members could also perceive the ownership to the community. The empowerment of PD may also make community to be self-rehabilitated by members' learning on how to solve issues in a participatory and innovative way.

Summary of possible tokenism and top-down decision-making regime in PD:
- PD need to balance the top-down and bottom-up approach in the Chinese context to avoid the possible tokenism
- PD need to avoid over-participation that participants, practitioner or researchers' power and rights are overwhelming and exaggerated

7.6   Sustainable PD projects need commitment and funding support

Participatory design research is time- and resources-consuming, and it need much institutional commitment to come through (Spinuzzi, 2005). The participants must be committed to the process, and it is very easy that participants drop out in the middle of a process, while the research structure and project time length seems to be difficulties to all (Spinuzzi, 2005). **It is vital that clear expectations of the outcomes should be discussed up front to cope with issues** (Spinuzzi, 2005).

Chu et al. (2017) pointed out that stakeholder involvement requires considerable time and effort, which stakeholders might not devote all their time and effort into participation process in reality, and sufficient funding was often the biggest challenge during the project execution. The concerns of time-consuming in PD process is also described in the school rebuild project (W. Zhang, 2007)

In the meantime, PD typically require continuous critical participation (Spinuzzi, 2005). Researchers might meet the situation of inconsistent participation that participants with the same role change all the time, though the changed participants may come from the same organization with similar background as previous one (Spinuzzi, 2005), which is also referred as Chu et al. (2017) cited the feedback from social worker and focus group:

> *"I think there could have been better communication (with university staff). It would be better if we dealt with the same person each time, so they were more familiar with what we did in the last session and knew how to deal with the problems we encountered previously…"(Chu et al., 2017, p. 5)*

The recruitment of PD can be also challenging, as participants might not be able to devote their time to the participatory activities. Chu et al. (2017) also illustrated this issue in the family development project:

> *'…Many commented that families did not have the time to participate in interventions…Community partners are faced with competing demands and it is unrealistic to expect community partners to devote all their time and effort into recruitment, particularly for participants beyond their usual service targets. Community organizations' capacity and readiness to organize themselves to undertake coordinated action are important issues to assess and consider prior to participation in research projects…' (Chu et al., 2017, p. 7)*

In the case demonstrated by Zhao (2017), when practitioners and researchers finished the PD project in renewal of courtyard, the 'old habits' and disorder seemed came back to some extent. It indicates that when the PD project has achieved certain outcomes, it is vital for

practitioners and researchers to be aware of that **PD can be a long-term engagement** with users, especially in projects about urban matters. The outcomes could be just temporary that need to be sustainable and lasting. **This makes that practitioners and researchers need to make long term plans and guide the community to be self-regulated.**

Though the process of PD can be costly and time-consuming, **the outcomes of the process yet may achieve optimized results or improvement, which in another way reduce the overall cost and time length in the long run**. For instance, in the public transportation project (W. Chen & Mehndiratta, 2007), the small and inexpensive measures suggested by the general public provides greater public satisfaction with much lower costs than the originally proposed urban expansion plan, and for the long-term urban development, it would improve project cost-effectiveness.

The reviewed literatures provide limited illustration and discussion about the detailed interactions between practitioners, researchers and users, the process of how knowledge is transferred, and details of how the outcomes were achieved through these processes, which may provide useful information for this thesis. Moreover, the feedback from user and community member were rarely illustrated or discussed. Surprisingly, almost none literature has illustrated following-up process after project was finished. It seems reasonable to expect a certain level of completion in terms of practices and their achievements, and such lack of record of following up and associated reference should cause concern, especially considering that current trend of PD across different domains.

Perhaps one of the reason to cause the concern is that too few literatures were found to provide critical discussion or investigation of PD following up process. This may be, on one hand, that the literatures were produced in a short time after projects were finished, and thus the long-term end result were not shown and discussed; on the other hand, such process might exist and be described in other documents, which might be available in another literature search; however, the existing literatures provide no indication of this.

In all, the need of commitment is seen as challenging mentioned by many researchers from practice conducted in western countries (Y. Lee, 2008; Pilemalm, 2018; Schuler & Namioka, 1993), but has relatively few discussion and reflection from the reviewed literatures in this thesis. It could be interpreted, on one hand, that the PD process was well-organized and had achieved ideal result, one the other hand, the published papers were only the ones that has successful projects and cases that can be presented and taken as examples. Nevertheless, **it can be helpful for future research to document the reflection about long-term commitment**, and **sustainable PD projects need commitment and dedication from researchers, practitioners and stakeholders as participants**, making clear expectations and plans for motivating participation are very necessary for practice.

Summary of practicing sustainable PD:
- PD can be a long-term engagement, which need practitioners and researchers to make long term plans for
- the outcomes of the process may achieve optimized results or improvement, which in another way reduce the required overall cost and time length in the long run
- it can be helpful for future research to document the reflection about long-term commitment, and sustainable PD projects need commitment and dedication from researchers, practitioners and stakeholders as participants,

7.7   What promotes the participation? The lack of reward system in PD

Participants are explained with goal in organized PD activities. Ideally, the end result of the participation process can bring meaningful result to all of the stakeholders as participants, so that participants can achieve benefits and satisfaction, even the motivation is from the responsible sense or purely volunteerism. It is indicated from the large scaled public participation such as projects of housing rebuild and housing upgrade, public space design, to the small scaled product development. In the reviewed literatures, there is rarely discussion on how public or individuals motivated to participate activity, the recruitment process were mentioned in several literature, and mostly are for the interview or focus group and relevant research studies.

The level of engagement in large scale participation can be related to the theme of activities and knowledge that participants need to acquire. **When the project requires professional knowledge that not relevant to participants, and is difficult for them to acquire, the enthusiasm could be hampered, and therefore the level of engagement might be reduced**. In certain fields, the professional knowledge can be explained and transferred from professionals and experts to participants, yet the form of communication and activities may need to be well organized, and activity could be fragmented into several session to reduce the level of complexity. Bergvall-Kareborn et al. (2009) argue that in work settings, participating in development projects often is part of the work role, but such driving force does not exist in relation to systems developed for private use, and the award from the participation cannot be achieved. The quantitative research conducted in Guangzhou, which is on attitude and willingness toward participation in decision-making of urban green spaces, provides a positive result that among the 595 respondents, 76% of the face-to-face survey interviewee have the willing to be practically involved in the decision making process, while comments in the report is also given on the collected data that the individuals are easier and more willing to state their environmental concern, but **this commitment decreases when action is required** (Shan, 2012).

The example of "Global Service Jam" illustrated by Luo, Li, & Gong (2012) is in a very ideal scenario that users are free to pose their ideas and creative thinking in the online platform, and through the open projects participants can contribute their efforts and suggestions. It is in doubt that whether this type of online community will last for a long term, what could motivate the users is also needed to be further explored. Nevertheless, foreseeable outcomes of PD might encourage the participants having passion for PD activities.

If getting benefits is one of the reason to motivate people participate the design research, **it is then shown rather vague in reviewed literature**. The newness of design and innovation activity may bring excitement to participants, but the stamina of the motivation of participants keep staying in the process also need to be preserved, which is seldom an issue in short term projects, but the long-term planning projects.

Summary of lack of reward system in PD:
- When the project requires professional knowledge that not relevant to participants, and is difficult for them to acquire, the enthusiasm could be hampered, and therefore the level of engagement might be reduced
- Reward systems need to be illustrated and discussed in the PD projects

7.8   Summary of discussion

The literature review indicates that community-based PD in China can be categorized as large-scale-PD and small-scale-PD. The large-scale-PD often involve political concerns from the domains related to policy-making and holistic planning work. Moreover, ethnographic research has important role in PD, and its methods are seen as essential as applied to learn about needs and interests of communities and stakeholders as participants. How to interact with participants and how to challenges and issues need to be noticed.

III. Experts interviews

PD in urban context often need the collaboration with researchers and practitioners from other fields, who also deal with ideas and/or ways of participation, democracy and learning (Eriksen et al., 2016). Along with the review of literature, it proposes an understanding that the participatory design research shares commonalities with the research in other fields (i.e., political science and anthropology). Moreover, regarding the "Chinese context" I don't not want to denote the spatial position (i.e., focus on specific locations), but rather describe contexts characterized by diversity. With this understanding, the "PD research in Chinese context" entails perspectives from various fields and interests.

Based on the findings of literature review (figure 8-1), I had the interests to further explore the themes such like ethnographic research that how exactly researchers and practitioners perform it in the Chinese context, and therefore continued the research with conducting a series of expert interview. Expert interview is conducted to collect information to compare with and supplement the findings, and their experience and opinions in terms of methods and field works will make this study have more affluent investigation on how participatory design can be facilitated in the individual level in the Chinese context.

1 Preparation for expert interview

The selection of expert has a scope of field within industrial design, architecture and urban design, public-administration, political science and anthropology, because the research character of PD makes it share many commonalities in regard of ethnographical research, design research and analyzing tools in social science perspectives. Semi-structured questions were drafted, revised, also it was kept in mind that being good listeners and remaining adaptive, in order to prepare for insightful interviews (Yin, 2017).

2 Results of interviews

With the available resources and the time constrains, I contacted 6 selected experts directly and by the help form institutions. Figure III- 1 give an illustration of how the interview with these experts can contribute to this study from various perspectives. 6 oral interviewees with each expert completed during March-May 2018. The 6 experts are represented as interviewee from A to F. Among them, expert A and B are researchers with academic background and research focus on policy study, expert C is associate professor who has concentration on anthropology related to culture and heritage, while another two experts D and E have academic background on architecture design and planning, and they have each concentrated on Chinese urbanization and Chinese urban community research. The last expert F is an urbanist and director of an organization that collaborates with Chinese institute in research and practice about urbanization. I also contacted another 2 experts from industrial design domain, who have practiced community-based PD in China. However, due to the time and access issues, the interviews with them were not able to conduct, though they expressed the willingness for participation. Nevertheless, all the interviewed 6 experts have long time experience on the field work in China that their work was related to design research, urbanization and ethnography.
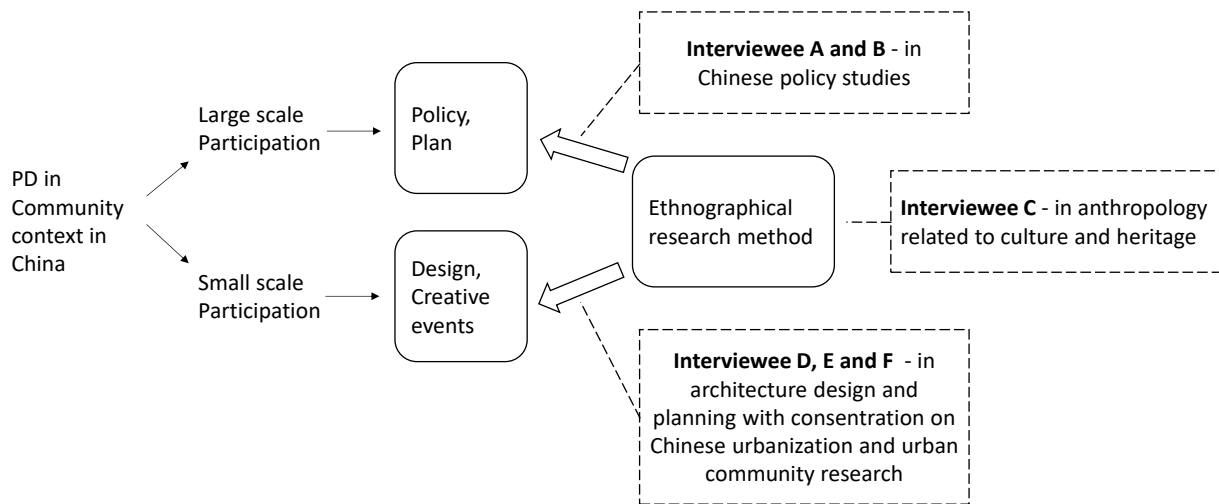
Figure III- 1, based on literature findings, interviews are conducted with experts who is linked to the PD research

Among the 6 interviews, 4 interviews were conducted in the university campus, where places are among café, meeting room and office. 2 interviews were conducted through online voice video call as they were not feasible to conduct the face-to-face interview. The Interviews were conducted as semi structured interview, and the interview questions were minor adjusted before each conversation with considerations on their research filed (see example in appendix 3), which has topics about their research experience in China, especially about the methods they used in the field research which could be relevant to PD research.

During the interview, interviewees A and B who are in policy studies stated that field work of interview was the most used method for their research, in order to learn about opinions and perspectives from key-players and decision makers in industry and authorities; interviewee C in anthropology demonstrated that both methods of interview and observation were applied in her research to learn about the living-style, cultural traditions and behavioral patterns of local residents in specific area; Interviewee D and F listed several projects that are similar to PD in the community context in China. Interviewee E with similar background in architecture and urban planning also demonstrated the field research in several local urban communities, where observations were also applied in most of the research. The interviewees' answers indicate that their experience and knowledge are relevant to this thesis.

3 Discussion: important factors on conducting PD in China

The interviewees also provided feedback that they were willing to contribute to this study and had provided answers and opinions with their best effort. Their interviewed answers are summarized and discussed in the following sub-chapters.

3.1 Accessing resources of people

Getting access to right person for interview was one of the biggest challenges to almost all the interviewees interviewed, just like Interviewee B stated:

> *'It is difficult to get the access to people for interview and find the people you want to talk with…I guess it is difficult anywhere, but it is even more difficult in China…you need to understand the social hierarchy behind, and why they would be contacted with you'. - Interviewee B*

It seems that by simply requesting with direct contact like sending email or making phone calls may hardly to get the opportunity to meet the 'important people' as the word used by interviewee A, who also thought access to 'important people' was a big challenge for the beginning stage of his research. He also had to be flexible with time that it was difficult to schedule time with the important people'. That imply the power hierarchy to some extent that Interviewee A and B and E have the similar experience. The interviewee had the thought that 'The important people wouldn't meet me as I' m just a student/employee/researcher/common person'. This could also be reflected from the 'flexible time' that 'important people' might not have the willing to participate research work, which is illustrated by interviewee A

> *"…. One thing I like about doing research in China is people are very flexible with time. Like once I was asking for scheduling time for interview,*

and they told me just come to their place anytime and give them a phone
call when I arrive. It' s completely different than here that people
scheduling specific time at once so that I could plan several interviews in
that day, which is impossible in China." – Interviewee A

Instead, industry expo was a good test-ground for A to get know the 'right and important' people and establish the first-time contacts and impressions. Similarly, Interviewee D mentioned the pilot projects like the triple-helix project that connects the industry, university and government is also a practical arena to establish the connections with different stakeholders from society. Interviewee D and E have the relevant experience, they believed such projects would share the same interests as PD practitioners and researchers have.

Besides the decision-maker as 'powerful character' in PD, the general public should be easy to access in China, which is reflected from almost all the interviewees. Interviewee C and E also thinks it is easy to talk with normal people in China from her experience that she thinks the Chinese people she met in field work were generally talkative, and the conservation with them were very informative.

3.2 Institutional backing

Institutional support to fieldwork and research was mentioned by several interviewees. Interviewee C mentioned the local institutions had provided much supports and made arrangements for her research, and through the assistance the effective connections could be established with the key participants in its research. The need of institutional support for establishing connections with the key-participants of research was also mentioned and agreed by interviewee B and interviewee D.

"…Whatsoever products and services the municipality, industry, the
research institute provide, the end user will be the citizen, who lives in the
city… How to work together is our challenge, how to balance, and create a
win-win situation that everybody will be satisfied in this process is crucial

69

but also challenging…Maybe bottom-up is a good approach, but you have
to face the fact that most of the cases, not only in China, are top-down… I
think top-down, and bottom-up methods meet somewhere, to give people
space to express their minds is important" – Interviewee D

Interviewee F believes his courtyard project Figure III- 2 benefits from the local street neighborhood committee, and with larger and complex projects, strong institutional support would be needed. The project of courtyard renovation was initiated by him when he was living in the courtyard. "The housings were in very bad condition, and people were worried, but somehow didn't' know what to do with the situation", as interviewee F said. The neighborhoods have close relationship between each other, but people didn't' want to pay much money for any renovation. Another issue was that many of the inhabitants were elders that they were not able to coordinate the renovation work. Therefore, he took the role of coordinator, find technicians, call-up workers, buy materials and deal with many paper works, most important was that he managed to convince the neighborhoods to 'put money on the table' that the neighbors are willing to participate this project not only from mind, but also from actions. There were many negotiations between the neighborhoods about various actions during the project going, such as dealing with common public spaces where people used to place many stuffs that were blockage of passageways. However, he used different ways like scaled models, sketch illustrations to demonstrate the ideas, and let the neighborhoods to discuss and make negotiations.

The final result was brilliant, as the media also reported his project from an early stage, in which the process of organizing the report was even longer than the project itself as interviewee F commented. Because this was an opportunity to present the idea behind the project to a broader public, and to convince both public and authorities that the project will improve local situations without breaking local regulations. There was much discussion with press and media as he thought it is the important channel send out promising and accurate information to let people know about the project.

Figure III- 2, the courtyard project, before (up two) and after (below two). MATJAZ TANCIC.

His project also caught authorities and several institutions' attention that this micro scale method might be able to be applied to large scale projects (e.g. later projects like Shijia Hutong, Dashilar, etc.). These large-scale pilot projects are also about renovating old courtyard and have received remarkable results. However, unlike these 'slow with patience and cost-efficient projects', there are a few other projects running at the same time that are 'fast built' and might neglect many things like preservation of historical heritage, taking care of original inhabitants' need, which as interviewee F thinks may need more research institutions' support and authorities' supervision. In interviewee F's impression, there are many institutions come across such kind of projects, and it seems to him that there should be a clear one lead institution to guide and plan all activities. As interviewee F commented, there might be one, but sometimes it is difficult to know and to reach the relevant in-charging organizations for practitioners.

Lack of funding seems to be one of the most problematic issues to many projects similar to interviewee F's courtyard renovation. He was once invited to carry on a series of similar projects, but he couldn't continue as the funding was to less to carry on. It is sometimes that project owner doesn't know whom they could contact for funding or investment. For the market, the economic resource of such project is often from real-estate developers, they need to get something out of it. "Perhaps there could be some kind of deal between real-estate developers and government, but it is probably the issue for many similar projects", as interviewee F said.

Interviewee F also stressed the importance of having support from the street-residential committee in the project, and this committee like many others was very active and caring for the local neighborhoods' daily life that there had been many activities organized for improving local life' s diversities. But interviewee F also commented that there are yet many other committees that don' t have such activities and being passive. Therefore, questions are, why these street level neighborhood committee are so different? How to provoke them to be active and supportive for making good local communities?

In all, there need to have channels and opportunities for practitioners and researchers getting institutional support to organize effective PD activities, as interviewee D addressed with his personal experience that it could be very difficult to conduct work for outsiders without local partners in a Chinese local context. Working with a partner closely and build a joint team would be very useful and helpful for the field work.

3.3 Empathy and contextual understanding

When modern minds meet the traditions, a process for mutual learning might be needed, which is also illustrated in co-design practices and renovation projects (Galeazzi, 2015; Tung, 2012; D. J. Zhang, Tie, 2016). To create positive communication, designer can lower their threshold and attitude, try to learn from the locals, respect them first, and then make suggestions later, which is also believed by interviewee D and E. The locals have their own ways for many years become a tradition, and the sudden intervention from outsiders would be

hard to let people to accept it, which practitioners can easily have the mindset that 'this is not good, and we will make it better', as interviewee D commented:

> *"If you want them to work together, you have to learn what they are doing, and respect it. Thinking of the craftsmanship and traditions, they certainly have some good reasons to be like that, otherwise the traditions might not have survived and could be vanished. Also, you need to treat locals as partners"- interviewee D*

On the other hand, the practice and research can also provide learning process and opportunities for researchers and practitioners, as interviewee A stated:

> *"...lots of things had happened in between in that one year, and some of them had changed opinions, and I have also learned much more about the industry than in the beginning, so I could ask a lot of follow-up questions, cause it' s a learning process, the more you talked to the people, the more you learned, and the more interesting the conversations became." – Interviewee A*

Interviewee D expressed that local craftsman and designers can ideally find balanced point for teamwork to deliver a good end result. People may prefer to be cooperated than to be told to do things. Particularly, when designers as outsiders performing design tasks, there might be potential conflicts that designers have the tendency to push their ideas to the participants. It' s important for designers and other experts not to speak on behalf for the people as end users, which is also the idea stressed by interviewee C and E. interviewee C mentioned a case that once the local villagers refused to take the proposal of building inside toilets, which was proposed by designers who think the locals would soon need them. The villagers explained how the traditional toilet was embedded with their daily life and expressed their concern about the indoor sanitary with the current life-style. Interviewee C stressed that for that case, designers should respect the choice that the locals made, which they did in the end.

Offering options instead of making choice for the participants may lead the participation to democratic and respectful end results, for participants, PD practitioners and researchers.

Moreover, it is important for practitioners and researchers to know about the cultural and local traditions, policy and political environment as much as possible before conducting the field research, which was also stressed by interviewee D:

> *"...even for Chinese practitioners and researchers, as China is big country with great local diversities, you have to be mentally prepared to overcome the culture and language barrier, and to get familiar with local situations..."- interviewee D*

The interviewees also reflected the challenge of communication as cultural and language barriers, and the intention of interviewee that avoid giving answers to specific questions that it was especially commented by interviewee A and B, as they concluded that the questions they asked were controversial. It is difficult to get people's opinions when the questions are controversial, which is the experience from interviewee B. The interviewee may have many concerns of what consequences their answer could cause, especially when the questions are related to sensitive topics. The answer could be seen as disadvantages and seen as represent the group or organizations they belong to.

> *"...you have to understand the culture, the hierarchy. ...I guess people take risk to say things that are controversial or unfollowing the 'line', as that might cause them trouble, and it' s natural that they were cautious..." – Interviewee B*

In fact, the phenomenon of avoiding answering controversial questions could be associated to the lack of trust between practitioners and participants, which can be linked to the caution to expressing opinions towards policy and political themes that they are involved with (e.g. policy makers). It is also stated in the paper about health-care reform in China that participants without strong association's back may not be willing to express their views

publicly as they were afraid of some potential retaliation from their superiors (Kornreich et al., 2012).

The controversial questions may also lead the inter-personal relationship be weakened, especially when such questions were raised in a straightforward way. Interviewee C illustrated that open conversation could make people feel comfortable to talk, instead of being frightened. People may feel threatened when they are stressed and are asked a lot of questions. It is important to inform participants about the purpose of the participation to eliminate the concerns of consequences and the sense of insecurity. If participants understand its purpose, the answer might be close to the truth, even the question is controversial.

In addition, to have the contextual dialogs, researchers and practitioners need to know about the characters that participants belong to, and thus the research could be more target oriented. Interviewee C stated the difference between young people and old people in terms of answering questions:

> *"... I think generally there is a big gap between young people and old people (in China), like we had in one project, young people don't have interests on old people' s experience, especially about war period, the starving period. Young people are more analytical and criticizing more. And, for old people, we often get the answer like 'it' s not for me to say', and 'the government should decide', while young people say, 'they should really do something about it, it is horrible'. So, there is big change" – Interviewee C*

Interviewee C also illustrated her experience about a field work in a village in China, where they wanted to have villager to talk about their memories and histories about what the local street looked like in the old times. The participants were elders who didn't want to talk about their childhood stories, as they expressed to interviewee C that they can' t understand why the researchers is interested in such things that they think are boring and not important to talk about. Interviewee C also has the thought that such field work didn't work in China would work in Norway. For this case, it perhaps may vary the villagers mind to some extent if researchers could have a deeper understanding of the historical events and having a more

informal and relaxed atmosphere for the filed work, though this perhaps also challenging to achieve from a practical perspective.

In addition, interviewee may have the tendency of illustrating things that are opposite to their actual behaviors, and Interviewee B thought it is perhaps quite general. He has an assumption of example that could be asking people about the recycling garbage: when the person who don' t sort garbage was asked about if they sort their garbage or not, they probably would say yes, as the main stream of the society is promoting recycling and sorting garbage.

Interviewee C also has similar experience that she thinks it is international phenomenon. She took the example that once a participant said, 'I go to pray 5 times a day', but it actually was the pray time, and the person should be at another place for praying, but the fact was not. People often express the fact that things should be or status they would like to be, but in fact they do not behave as they expressed. Such tendency might not be seen as lying, but more like a way of expressing. It could be for easy communication, as also stated by interviewee C that people may also use stereotypes in their answer to let others understand the conversation, like when some people was asked 'the unique characters as Norwegian', the answer might be much illustrations about eating salmon and go skiing, and the fact might be that the person neither eat salmon, nor go skiing.

It is somewhat in a way to create a resonance. On the other hand, it could be also a type of phenomenal related to social – desirability – bias, which indicates the statement that people expressed is with a willing to fulfil the social value standards in the main stream.

3.4   Trust and inter-personal relationships

The accessing resources of people also associate with the inter-personal relationships and mutual trust. The interviewees think having trust on each other and good inter-personal relationships are crucial and even decisive to the field work in China. Interviewee B and E thinks it would help a lot that to know the people first via informal ways like meeting or have a lunch first, and then conduct the interview or field research. Laying foundations for the relationship before actually the field work is much helpful. To achieve the trust from

important people, interviewee B sometimes had to go through activities that was thought as type of test, such as visiting the underground mine to interview a coal manager, so that it could prove the interests for getting a further knowing between each other and getting the access to the resources of people.

> *"...If you want to do a more appropriate interview there, it would help a lot that to know the people first. To meet, or have a lunch or something first, and then to do the interview or ask questions. You need to lay the foundations for the relationship before you actually do the interviews." – Interviewee B*

Interviewee C also illustrated her experience of having the support from a local partner on organizing a focus group with many participants who are previous mayor, retired professors and people who has influential abilities in daily life with broad personal connections. Those participants became key-informants for disseminating the information, and their active participation created self-provoked discussion, which provide much information for the focus group talk.

Many people in urban cities are from rural area before they moved to city and being immigrants. For interviewee D and E urban people have the same personalities as rural do. It could be the city is too big, people may hardly know each other. But village often has small neighborhoods, so people might know each other, and when they were asked questions, they may have more concern and be careful of their answers, which could be opposite to urban people. Interviewee D believed this should not be an issue, as practitioners and researchers still can find many ways to talk to people in rural area. Interviewee B and E also thinks people live in rural and condensed area may have more closed personal relationship, and he had similar feeling as in 'hutong' in Beijing that people know their neighbors better. It seems that people are very aware of the social codes and rules, like people are supposed to respect the elders and their superiors. This is also stated by interviewee F:

> *"I have never seen an urban space like Beijing in all parts of the world. Interpersonal relationship is dominated by a labyrinthine homogenous network of yards and hutongs, forming a powerful network structure that is both human and urban." - Interviewee F*

Mutual trust is also needed for practitioners, on which cooperation is established. Similar to the co-creation of interactive drama in a local community illustrated by (W. Wang et al., 2016) (Figure III- 3), interviewee D also stated an example :

> *"… some architects who work in the rural village with local municipality, they always left some work for the locals, and they would say 'the locals would do better than me', and this is the beautiful part of the architecture… Ideally, Local craftsman and designers can find balanced point for teamwork to deliver a good end result. People may prefer to be cooperated than to be told to do things" – Interviewee D*

Figure III- 3, local construction works (W. Wang et al., 2016)

4 Summary of Interviews

The expert interviews provide substantial information and supplement the findings from literature review. Answers from Interviewees reflected that acquiring communication and negotiation techniques are essential for fieldworks in the Chinese context, as it can be influenced by the local culture and the strong sense of social hierarchy, and on the other hand they are also challenging and difficult to cope with, as the social power hierarchy in Chinese cultural is rooted with abundant of respects, mutual trusts and negotiation techniques (Galeazzi, 2015).

Accessing resource of people is also listed as challenging, especially to the people who have influential power in the society. Local institutional supports are seen as important and may help to access people, and it can also help researchers and practitioners to conduct research activities and organize PD events. Moreover, having empathy and contextual understanding can help to cultivate and maintain interpersonal relationships, which can further benefit the communication and accessing people.

Therefore, it could be concluded that how to invite decision-makers into participation, stimulate them to contribute their efforts, and organize PD activities to achieve progress are challenging. Having access to certain stakeholders who have influential power in the social system is essential and inevitable. Building up effective communication channels and mechanisms for access and negotiation with decision-makers is perhaps the tasks that practitioners should focus on.

IV. Recommendations

This thesis has explored the current status of PD and its relevance including theories and practice, which is in community-based context in China. It also illustrates PD differentiated by scale of public participation, and in various research fields of applying PD approach in the community context. With the summaries of literature review and interviews, it concludes with the identification of several major themes that are most for applying a PD approach in a Chinese context. Carrying with these insights, I continue the exploration.

In this chapter, I will demonstrate his understanding of the PD that can be applied in community context in China and gives recommendations for practitioners and researchers based on the summarized insights.

1   A PD framework and recommendations

Sanders and Stappers (2014) framework provides a perspective to look into how the creative activity of PD is formulated. For projects illustrated in the literature review and interviews, there need to be an extra focus on how such creative activity is brought up, which can to be a type of institutionalized active participation, e.g. the 'large-scale PD' in urban design projects (Q. C. Zhou, Wei; Yang, Minxing 2013), and the courtyard renovation project of interviewee F.

It is therefore necessary having a solid foundation before the pre-design phase to initiate an effective PD event. Based on the literature review and interviews, a PD framework is illustrated as Figure IV- 1 .
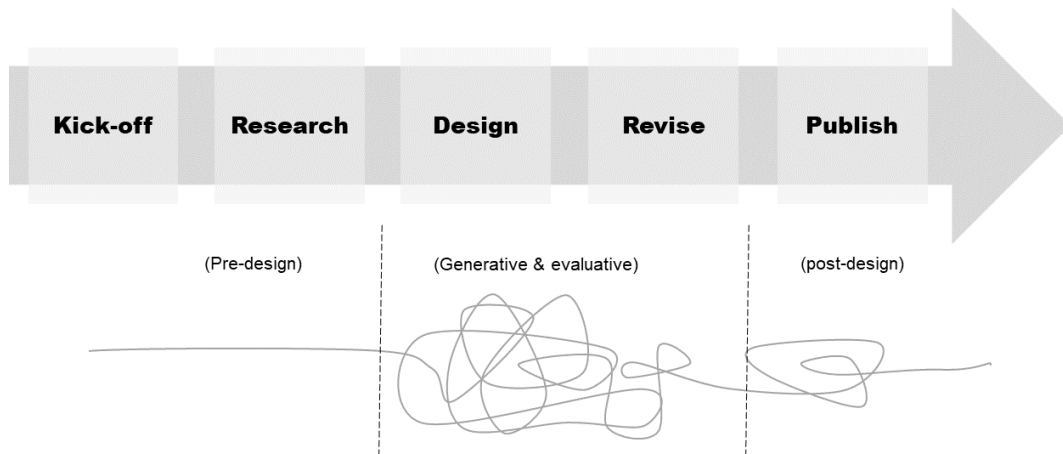
Figure IV- 1, the 'general PD process' corresponding to the fuzzy front end in Sanders' co-design framework (2016)

These five components may be seen as five stages of a PD project, and from the case studies in the reviewed papers, community members often involved in the middle three stages, which are research, design and revise stage. The proposal and motivation of initializing PD activities were often from government, academic research institutes, NGOs and business cooperation, where NGO' s power seemed pale in the reviewed case studies (except the project in Macao), and here it is used the term of 'kick-off' to represent the initiation of a PD project. However, more concerns need to be stressed towards the empowerment of community member in the kick-off stage. They could learn and use the right tools through channels to initialize a PD project, which may solve community issues and improve the community' s life-standards for all.

In these five components, the research component represents the further step after goal is formulated in the kick-off stage that practitioners and researchers start to collect information, perform field research, get in touch with contacts and build up relationship with stakeholders for participation.

The Design component indicates that, with the preparation from research stage, practitioners and researchers invite stakeholders to the creation process which could be co-design activities, making plans, draft policies and any other types of innovative activities.

In the Revise component, the PD activities shall have certain progress and preliminary outcomes that can be tested and revised, which could be prototypes, models, illustrations, policy drafts, scenarios storytelling, contextual simulations and etc. The process involve discussion, iterations of refinement and pilot programs, and thus the preliminary outcomes are refined to achieve the final end result.

The last component is Publish. In this stage, the final outcome has its shape and content after the iterations of revision. Practitioners, researchers and participants conclude the process and end-result, negotiate and clarify issues like the ownership of the end-result and the plan for the outcomes. When the outcome is certain type of products (tangible or intangible), there could be a plan for taking the outcome further (e.g. larger scale test and commercializing). If the outcome is certain type of plan, policy or agreement, there could be a broader announcement, so that the PD outcomes could be identified and be effective, possibly also be supervised. In addition, no matter what outcomes the participation events create, communication of result via appropriate media to broader public is necessary. Deng et al. (2015) suggested that the planners with the help of new media can perform as activist and imitator besides their conventional role with the simultaneous updated knowledge and information. Moreover, it is also mentioned in the interview with interviewee F that the journalist report helped his success to be broadcasted. Therefore, 'publish' is necessary as the last component of general PD.

Nevertheless, even the outcome of PD is published, the existence of flaw and deficiency in outcomes is not impossible. This is also depend on the target, content and scale of the participation and PD. Iterations of a complete PD process may be needed, thus a new kick-off stage is initiated, like the public participation of urban transportation project (W. Chen & Mehndiratta, 2007) .

By taking as reference of Sander's co-design frame work, the PD' s five stage has similarities, the 'research stage' is corresponding with the 'pre-design stage', while design stage and revise stage is corresponding to the generative and evaluative. The publish stage is the post-design stage. It could be argued with that Sander's frame work illustrates co-design process. PD also share similar methodologies, but its characters with broad application, especially in community projects and other social innovation projects, may also lead PD to be associated with concerns like democratic meaning and political matters.

The insights from the previous chapters could be synthesized into the PD framework with recommendations for these five stages. The recommendations listed the what need to be paid more attentions for the community-based PD research and practice in the Chinese context, as illustrated in Figure IV- 2 .
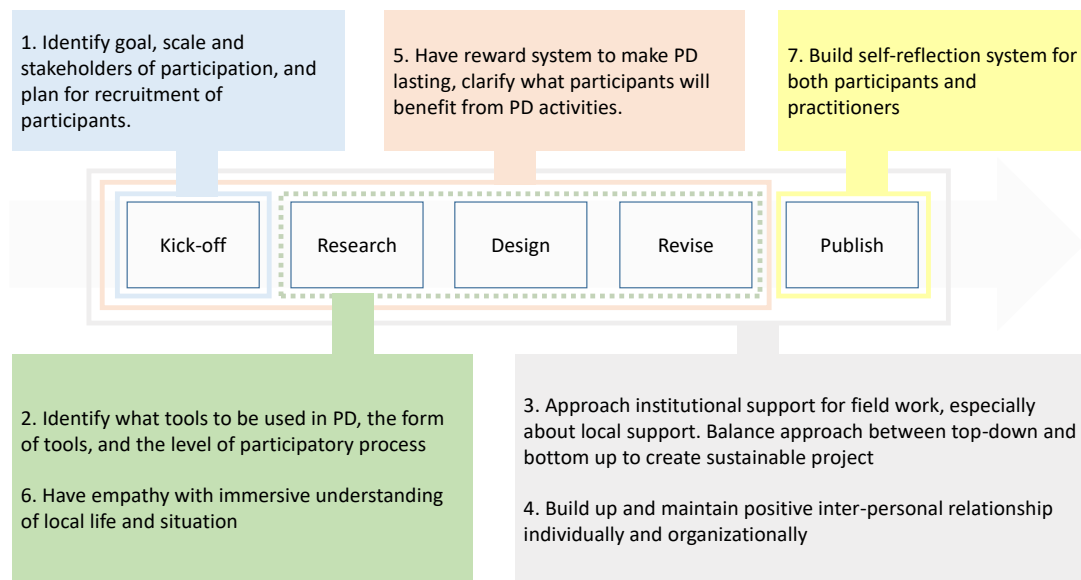
Figure IV- 2, The recommendations for PD practitioners and researchers

Where this framework can be demonstrated with the five stages, and focuses are placed on the stage that the recommendations are needed. The recommendations are listed as following:

1. Identify the goal, scale and stakeholders of participation, and plan for recruitment of participants.
2. Identify what tools to be used in PD, the form of tools, e.g. online tools and group gathering, and the level of participatory process, e.g. complexity level and difficulty level in regard of participants' background (such as to children and the elders) and level that to what extent the participation should be (such as intensive workshop and long-term participation)
3. Approach institutional support for field work, especially about local support. Balance approach between top-down and bottom up to create sustainable project

4. Build up and maintain positive inter-personal relationship individually and organizationally

5. Have reward system to make PD lasting, clarify what participants will benefit from PD activities.

6. Have empathy with immersive understanding of local life and situation

7. Build self-reflection system for both participants and practitioners for communication, improvement and log.

2 Interpersonal relationship – core of the framework

The inter-personal relationship has been often brought up in the literature review and interviews, and which is no doubt in the Chinese society, as an intangible factor influences the cooperation work and communication effectiveness. Several interviewees have stressed that maintaining a good inter-personal relationship had helped them access certain resources and build up effective trust foundations with the local partners in their field work in China. In the fuzzy front end of PD process, positive inter-personal relationship may also catalyze efficient problem-solving motivations, and this is also illustrated in several projects in the literature review.

The inter-personal relationship in Chinese society is often named and associated with the local word 'Guanxi', which might be a high frequency word that a person could hear it on many occasions in Chinese local context. It is no doubt that actively maintaining such relationship is seen as rooted in a cultural sense by locals and outsiders.

The Recognizing and discussion of inter-personal relationship is not only from the Chinese society, many researchers from both inside and outside have tried illustrated and analyze it.

'Guanxi' can have three stages from Initiating and building to Using, where using 'Guanxi' has long term equity (X.-P. Chen & Chen, 2004) (Figure IV- 3).

Guanxi stages	Guanxi objectives	Interactive activities	Operating principles
Initiating	Setting up bases	Familiarizing	Mutual self-disclosure
Building	Enhancing quality	Expressive & instrumental transactions	Dynamic reciprocity
Using	Getting benefits re-evaluating guanxi quality	Exchanging favors	Long-term equity

Figure IV- 3 , the three stage of Guanxi (X.-P. Chen & Chen, 2004).

The traditional community notion is about the group-the clan, the village, the family, which is of closed inhabitants and has been the core of the Confucian society, and as community member a person always tries to be in harmony with the group they belong, and meet the group's expectations (Nisbett, 2004).

3 The character index of participants

To create the harmony for PD activities, participants' can be categorized with a simple measurement that practitioners and researchers can know about what tasks can be offered to them. Participants characters can be analyzed before and during the PD activities, which is assumed to be based on a series of quantitative research (e.g. psychology and behavioral studies)

Inspired by Kim's[8] Social Action Matrix, which is stated inspired by Bartle's Player Types (Hamari & Tuunanen, 2014), a diagram of character index with three characters is proposed for PD facilitator to analyze participants in PD activities, which the three characters are seen as most influential for the participation that is type of 'interactions' in the Social Action Matrix. The index is aimed to be a supplementary tool to evaluate PD participants' character, so that it could provide information and reference for practitioners and researchers to make certain groups and let groups to take responsibility for certain tasks.

It is assumed that three characters can be non-overlapping, and participants with evaluation can carry one or more characters to represent their specialties:

---

[8] Beyond Player Types: Kim' s Social Action Matrix: http://amyjokim.com/blog/2014/02/28/beyond-player-types-kims-social-action-matrix/

The ability character of PD practitioner	
Technician	target – oriented, have strong analyzing ability and motivation on problem solving
Thinker	Creative and having divergent mind, provide opportunities
Coordinator	Coordinative, structural and rational,

Figure IV- 4, the ability character of PD practitioner

The index is assumed to be generated with quantitative data collected from designed survey and can be translated into the value scale of the index. Figure IV- 5 is an example of the ability index.
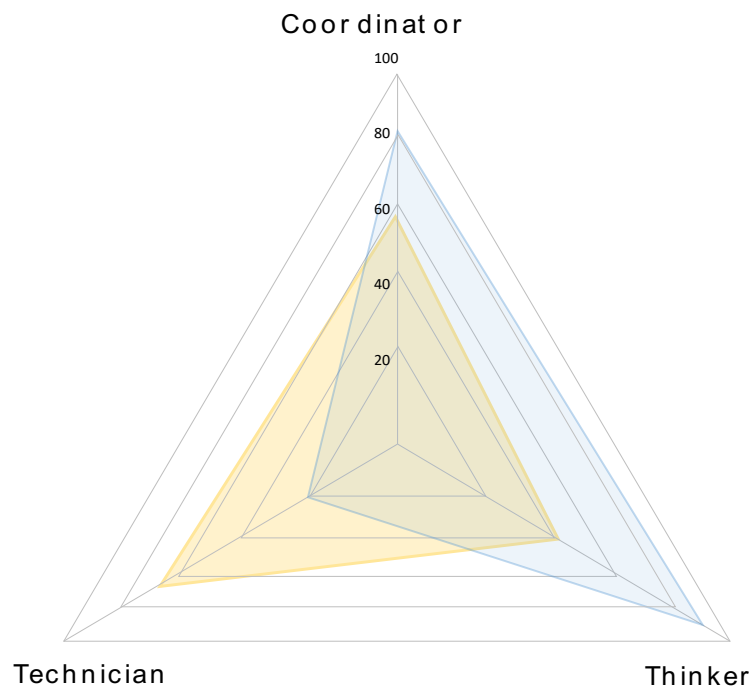
Figure IV- 5, the ability character index of PD practitioner

For the research-oriented activities, this tool can be used to categorize participants' specialty and thus the preparation for conducting activities can be target-oriented.

4 Tools for engagement

PD activities are mostly in a form of face-to-face meeting in its early development, and later many online interacted participatory activities are designed with the emerging ICT technologies (Halskov & Hansen, 2015; Sanders, Brandt, & Binder, 2010). As findings from literature review and interviews, interactions are essential parts for conduction PD activities in either way. Tools as non-humans (Rice, 2017) can be used in the middle three stages of the frame work (research, design and revise) that they on one hand replace and mediate human behavior, on the other hand increase the level of participation, and play a part in configuring the social (Rice, 2017).

Figure IV- 6, an illustration of PD workshop with playing blocks, source[1]

Figure IV- 7, co-design interactive drama with local communities (W. Wang et al., 2016)

Figure IV- 8, PD of urban planning in community (K. Li, 2014)

Through the evolvement of PD theories and practices, there are enormous number of tools applied by researchers and practitioners, which is also indicated in the literature review (Halskov & Hansen, 2015; Sanders & Stappers, 2014; Schuler & Namioka, 1993; Spinuzzi, 2005). Most of these tools are developed through the workshop-like activities (Figure IV- 6), and in fact, they may also be tools for engaging participants or potential participants in the kick-off and researcher stage (Figure IV- 7 , Figure IV- 8).

Example of tools for engagement

form	material	Complexity	Communication	Fun & re-use	pro	con
Story telling with characters	Doll / Costume	5	4	4	Easy to understand, can be impressive if character and structure is set well	Hard to create impressive characters, risk of miss the content
Hand drawing illustration animations	Animated character	4	4	4	Easy to understand, more flexible	Risk to miss the highlight of PD approach
'Tool box' Information brochure	Web/ paper / plastics based	4	3	3	Highlight the core parts, provide overview	Risk to be overwhelming,
Quiz playing card	Paper based/ web-based	4	3	5	Have more interaction, have fun	Hard to achieve ideal gaming experience, risk of miss highlights
Building blocks	Physical material (Plastics, paper, etc.)	3	3	4	Create Interaction,	Hard to provide all info,
Report	Web/paper based	1	2	1	Formal, academic	can lost interest of reading
webpage	Web	2	2	2	Can be updated,	can lost interest of reading,

Figure IV- 9, example of tools for engagement

I list a few tools as examples for creating interactions and probe the interpersonal relationships (Figure IV- 9). They also help practitioners to illustrate the purpose of PD approach and facilitation activities in certain context. I suggest the evaluation to each form of tools in terms of the properties and characters, which might be changed a bit depending on the context and is also shown as an example that future work of testing and validation are needed.

The complexity indicates the level of complexity of achieving end-result, which is ranged from 1 – 5, where 1 is lowest complexity, and 5 is the highest complexity. Similarly, communication indicates the level of efficiency and effectiveness of the end-result to express the concepts, while 'Interesting and re-use' indicates the level that practitioners and researchers have interests on and tendency of re-using the end-result in more occasions.

The ICT development brings diversified new forms of participation, to which the online platforms and social media can be used for facilitating participation, such as the social communication networks, online forums (Poplin, Pereira, & Rocha, 2013). The case of Dafo temple controversary (Deng et al., 2015) is one of the examples that indicate how the citizens in China involve to the public matters nowadays.

In literature review, I concluded that the reward systems in PD activities are essential, to which participant need to know not only the purpose of the event, but also what will return to them, though the reward systems with benefits may create the association to that the public' s genuine conscience is doubted, and it need to be recognized that participants should not only concentrate on the reward for participation. However, practitioners and researchers need to embed in some reward feedback into the PD process, especially for a long term and sustainable participation.

The experiment of Lego (Kurikko & Tuominen, 2012) can be also an example that designer looked for creative ideas from the players' forum, and developed new product together with users. This may intrigue the think of other products that also evolve generations with customers constantly feedback and suggestions, and they could be small as electronic products or large as a car or truck. Here the reward to users for providing feedback and

suggestions may be the opportunity for buying a better product in future. In game design, it might have more frequent users' feedback. What user provided, user may also experience and enjoy from it. It is the satisfaction compose such reward to users. In all, the reward systems need to be considered, and it can be the essential part to achieve sustainability for long-term PD projects with positive feedback and its effect on trust and interpersonal relationships.

5 Assumed PD scenarios

Based on the 'generalized PD processes' and the 'success-factors', in order to illustrate how practitioners and researchers could take them into consideration and practice, a hypothetical project is created with applying PD approach in project from small scale participation to large scale participation. The scenario is taken place in a community and the small town in north China where the community is located.

5.1 Assumed scenarios: PD in small scale participation

It is assumed that scenario the community members were complaining about the garbage issue that the public garbage cans create unpleasing smell, and when weather is windy, some litter came out of cans and create messy environment for the community, and less people come out for walk. Some people even blame the neighborhoods and each other that the bad situation is caused by others.

The kick-off

Because the apartments in this community is developed by commercial real-estate company, the management of the community is taken by a hired property management company. The garbage issue has been existed from a minor issue to the current accumulated sever issue in a long time, which many community members think the company didn't take their responsibility and thus refuse to pay the annual fee, while the company manager expressed the difficulties that workers need much effort to take care of the garbage can, and it is even impossible to do it with shortened income that come from the neighborhood, also, the opened community area sometimes let junk pickers come in and search the garbage, which often left messy conditions. The street neighborhood committee stresses this issue to its superior authorities and is promised to get supports from them. It is the issue that has been recorded for a while, but this time the authority department reflect the issue to the research institute, and it

is proposed to applying PD approach to conduct a pilot and research-oriented project. (Figure IV- 1 0)
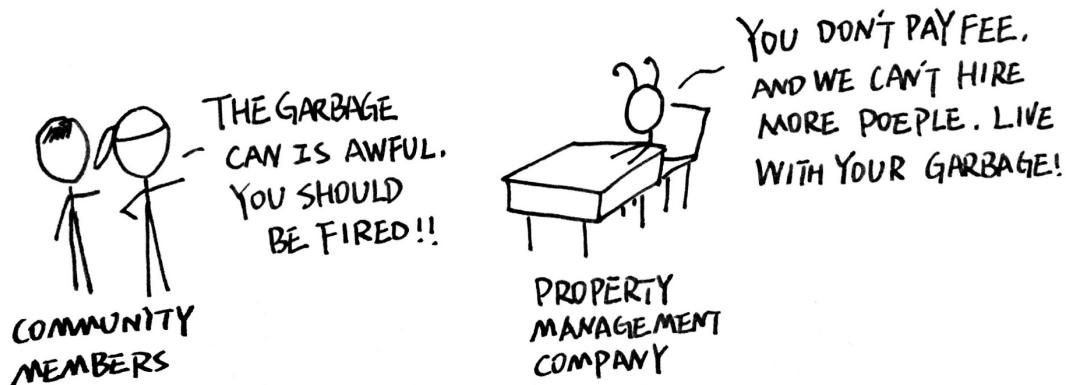

Figure IV- 1 0, community problems as triggers for kick-off of a PD project

Later, the committee gets contacted from a group of experts who are researchers, designers and from consultancies, research institutes and universities. The project is planned for a time length of six months that are defined by experts. (Figure IV- 1 1)
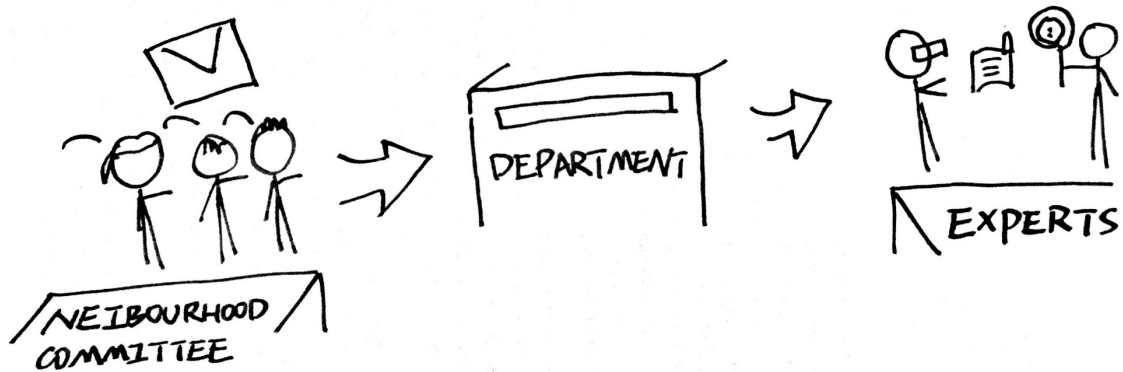
Figure IV- 1 1, community matters go through ground-level organizations

Till now, the PD has initiated from kick-off stage. Although PD is proposed by experts, the role of initiator of PD could be seen as taken by community members that they brought up the issues to solve, which is a bottom-up way, while it is still organizational behavior with institutional supports that the committee transmit the signal through the governed channel, so that the complaint doesn't lead to more sever group behavior like protest or petitioning. The experts from outside are supported by authorities, which is type of top-down action. Ideally, experts can get economic support from commercial researching funding and government funding for the cost of PD activities.

In the kick-off stage, the goal of PD is identified by experts. The goal is between solving the garbage issue for this particular community and finding a solution that could be applied to other communities with similar potential issues, which may take longer time for implementation and involve many stakeholders from society. Here, it is assumed that experts decide to find a solution for this community first and use this project as a pilot project to collect more information about this type of issues for the broader applications in future. Therefore, the scale of the PD events is defined that it is in community level, and specifically take this community as a scope.

Moreover, the experts define the stakeholders who could be involved in PD events. There could also be other stakeholders from emerging findings through following stage and can be invited into the later PD activities. Here it is assumed the participants are defined and chosen from following defined groups:

- User-group: community and neighborhood committee, property-management-company,
- Policy-maker and regulator: government functional units
- Facilitator: consultancy, design firm, research institutes (experts in this scenario)
- Other stakeholder: garbage-managing company, junk pickers

Reward for participation

As the recommendations (chapter IV,1) suggested, to stimulate the enthusiasm of participants for PD activities, experts need to indicate what participants will achieved from the demanding activities, to which there need be a reward system. Even though for community members, the end result may improve their living environment, the momentum of interests could be difficult to maintain, especially when the long-term participation seems to be a hopeless ending.

The ambiguous intellectual properties might also hamper the participation. The property rights of the outcome might need to be clarified in the beginning. Therefore, in this scenario, design consultancies and policy department are assigned to continue the final result into a further step.

Moreover, experts draw up a plan that participants' attendance and performance is recorded in a system, but the detail is not shown publicly, each time in the activity there will be small gifts for participation, and a reward for outstanding participants. In the end of the project, some of the participants will get the reward in different types. The rewarding prizes are given in various time of the projects' mile-stones, and they include medal of 'super community member', painting on flag of the community symbol, offer of having dinner with local celebrities, and opportunity of getting on to a local small TV entertainment show. It also makes sure that all participants can get reward for their participation, which the experts call it the 'comforting prize'. All of these rewards are also supported by local organizations that the experts as facilitators create a good collaboration and organizational relationships. Ideally,

participants through the series activities can cultivate the sense of ownership for the future community matters, but this really depends on its specific context and participants. It is assumed community can achieve certain level of self-regulated mechanism, which may form a type of regulated and bottom-up approach.

Research stage

In research stage, experts conduct the field research with ethnographical methods such as observation, focus group, interviews, face-to-face/online survey, and diary studies.

In this case, for observation in research stage, experts plan to observe on following people/things:
- community members, to see their daily behavioral patterns that how they dump the garbage, how they interact with other community members,
- how property-management company maintain the garbage can,
- how junk pickers use the garbage can
- how garbage company collect garbage

There, almost all stakeholders have passive participation in the observation activities, experts need to define places and tools for observation, and actions on how to minimize the external interventions to observation. Experts may also need to get support for complying local regulations and utilizing local tools for field work.
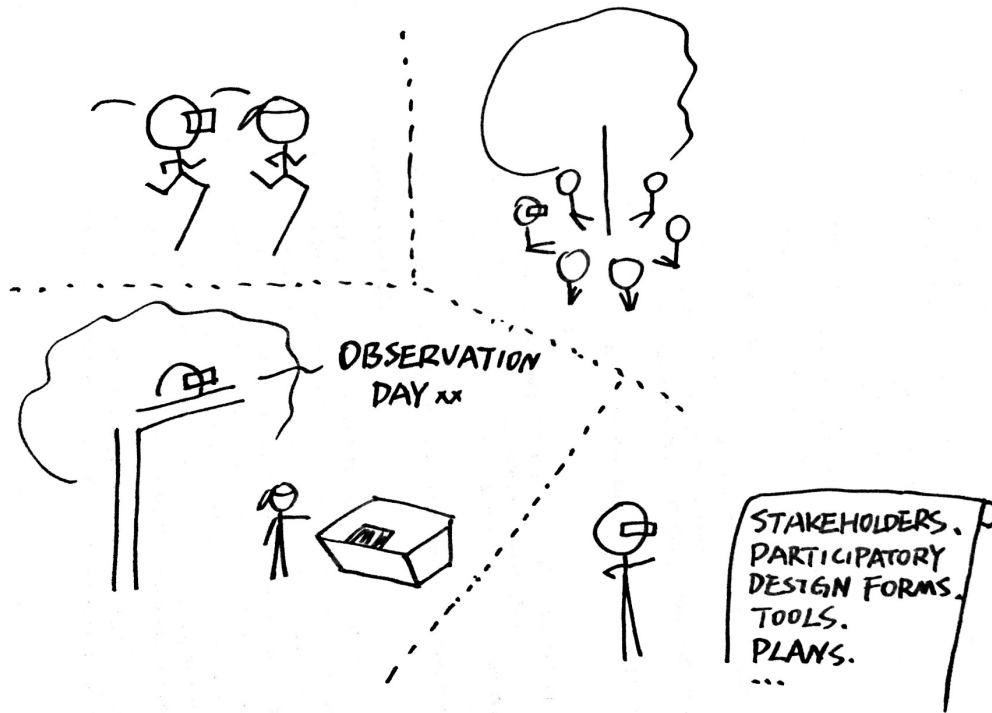
Figure IV- 1 2, acquiring local knowledge through research

Before conducting interviews and focus group of the field research, the experts actively join the community's events (Figure IV- 1 2). They come to the community, try to hide their expert' s identity and be like one of their normal neighborhoods. They chatter with the crowed, join their morning and evening exercise, meet the respected members in the community and listen their stories.

The experts organize several focus group meetings with the community members, especially respected members, the neighborhood committee and other stakeholders separately and jointly.

In the research activities of this assumed scenario, experts know from the community members that some community members often placed fast-food box filled with food near the garbage can, and the reason is that the food was left for junk pickers. But for others this 'kindness' is seen as rude to the public environment and thus neighborhood' conflicts were also provoked.

Therefore, the issues of garbage can' s mess may not be simply about the product design of garbage can, or the service that managing company has offered, they could be more related to concerns large to social level, like regulations of garbage sorting and recycling in city level, regulation of open/closed community, issues about junk pickers, to issues in micro level, like garbage can' s location choosing, design and arrangement of its surrounded architecture and facilities, product design of garbage can and how residents and maintenance worker use it.

The Design and Revise stage

With the findings from the research, the experts continue to define the tools used in design activities and the form of activity in later PD stages, and in what level participants should be involved. Besides the preparation from Research stage, the experts also define certain level of details for the PD activities in Design stage that are listed as following:

- The form of the participation, which can be round-table meeting, work shop, online-forum, online video meeting, breakfast/lunch meeting, or other possible social events.
- The time length for each interval of PD activities, and time length for each meeting, which can also be adjusted later accordingly. However, a basic rule need to be defined in the beginning.
- The tools for PD, which could be in detail as tools used in workshop, e.g. material and craft tools for illustration and making models, gadget for playing contextual game and card game, item for storytelling, etc.

At the same time, the experts use the survey mapped 'character index' of the participants. When the activities are performed by micro group work, the participants are allocated into different groups based on the characters index.

Assumed after four months, through a series of PD activity in Design stage, a prototype of garbage can is developed. Several garbage cans are constructed and placed in the community public area, and they are to be test-used for four weeks'. Management company is also suggested to provide a redesigned service flow. Community members are asked to sort garbage and pay administration fee in time to management company. Regulation about

garbage sorting and recycle is taken into consideration by government department that drafting procedure is initiated.

The Revise stage is assumed to another few weeks, during which prototype of garbage can and the service flow around it has been tested and refined in the PD activities. The issues in the beginning are also mitigated to some extent (Figure IV- 1 3).
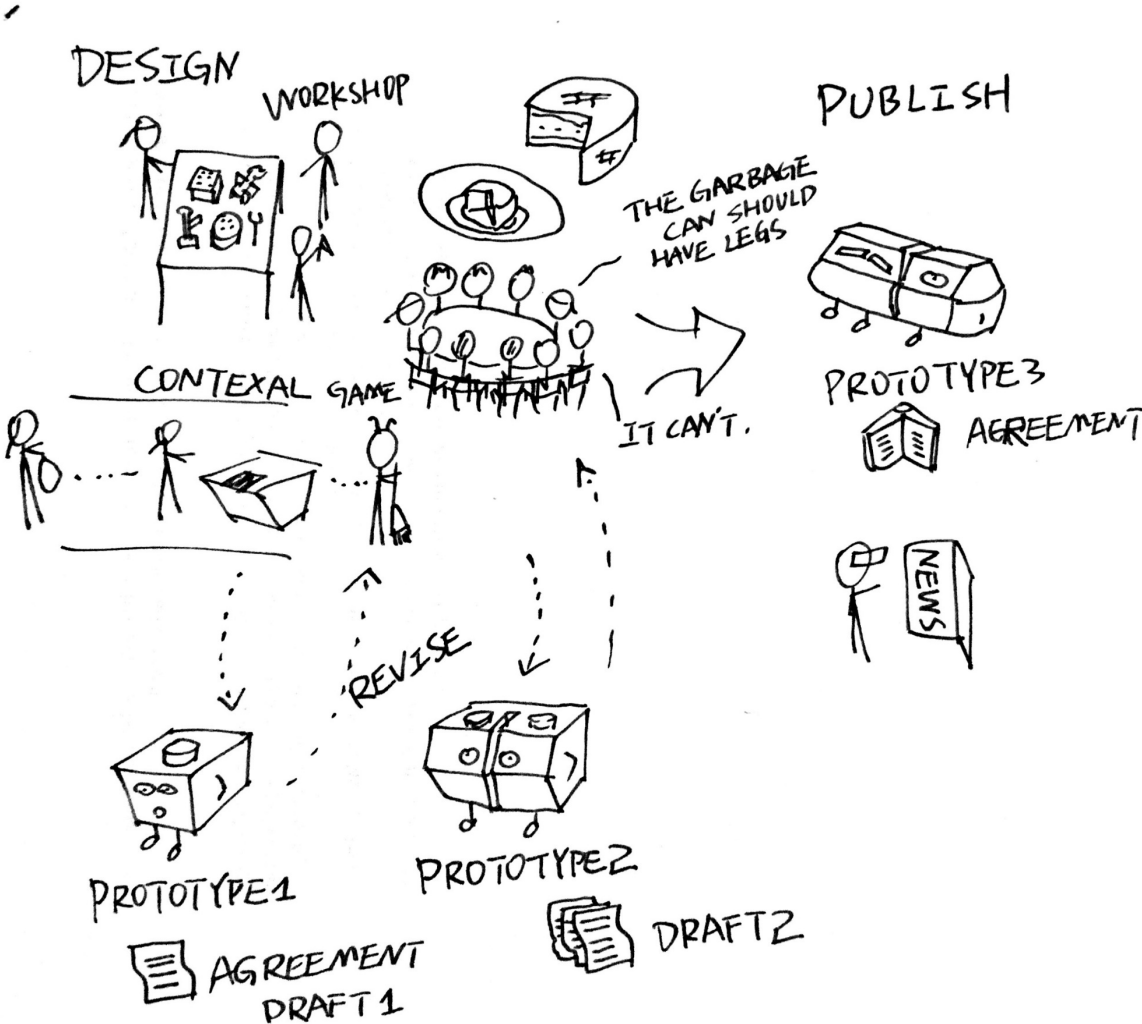

Figure IV- 1 3 PD activities facilitated by experts with participants

Publish

In the publish stage, new developed garbage can formally be released and serve for missions, its demanded services flow is also improved after iterations. Journalists report the outcomes

and illustrate the project via media channels, many people become interested while many have doubts on it. Experts reflect the whole process into report and conclude the issues for future research. Community members think the current result still need to be improved, and continually keep contact with the experts for updates and feedback. Government department think it is difficult to apply the solution for large scale application, the making of policy and regulation for such new garbage systems need to be assessed with factors like potentially increased government expense, complexity of changing current system, while it is also considered that to map a broader survey about citizens' attitudes towards garbage sorting and new development garbage can system.

5.2   Assumed scenarios: PD in large scale participation

As the finding from literature review indicated, large scale public participation in themes about design and innovation is often associated with events and activities in urban planning domain, social science domain. The participation often can be initiated by government authorities, NGOs, institutions and broader public debating (online). Moreover, the large-scale PD is often composed with a series small scale PD that happen in local communities.

Continue with the same scenario, the municipality has plan to improve the town's living environment in regard of waste disposal. Related proposals were brought to the government policy-making protocol and conference. Besides, the waste treatment in urban level can be complicated, it linked to issues of logistic of waste transportation and central treatment, effort of implementing regulations for related operational organizations (D. Q. Zhang, Tan, & Gersberg, 2010).

Kick-off and research

The experts created online forum in local social media network as a platform to collect citizens' opinions in the town and broadcast the recruitment plan for later PD sessions that both online and offline that is in similar scale but involve more mixed stakeholders including inhabitants from other communities.

Design and revise

The goal of online PD session can be drafted by the experts and participants. The theme can be varied in related domains, such as regulation and policy suggestions, service design, urban planning and product design and etc. To encourage public and stakeholders participate, the reward system is used as same as the previous PD session.

The online PD platform is funded by municipality and maintained by the experts. The PD session can be asynchronous mode that participants are not requested to be online at the same time, but they can see the progress when they log-in. Participants need their real-identity to register in the system but can be anonymous with only showing their stakeholder group in the online PD activities, thus the concerns of privacy are eased, and the reward system could be still functioning.

During PD, experts as facilitator facilitates the PD session, guide the discussion, provide needed online tools, such as visualization tools (sketching tools, uploading files, etc.), communicating tools (commenting function, vote function, etc.), log system and administrative tools and etc. (I illustrate an example as Figure IV- 1 4).
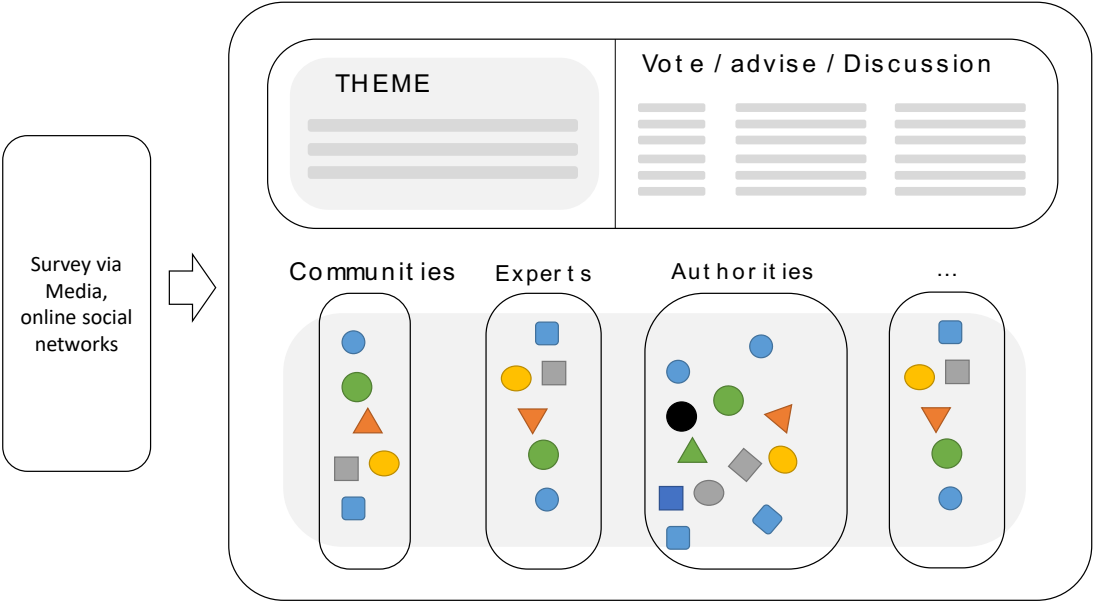
Figure IV- 1 4, an illustration of online PD platform

Publish

When the scheduled project deadline is approached, the end-result of PD activities is summarized and concluded. After PD session is closed, the end-result is published, organizations negotiate the ownership of the end-result and propose future actions with the end-result, while participants get rewards according the reward system.

No matter the end-result is accomplished result or phase-deliverables, it can be more important that all stakeholders in the current issue can learn the PD approach, and possibly initiate other PD activities as initiator form the kick-off stage.

In all, these two hypothetical scenarios are trying to illustrate the new understanding of community-based PD in the Chinese context, which synthesized the inputs from findings of literature reviews and expert interview, though there might be flaws and details that are not reflecting the realistic facts.

V. Conclusion

The aim of this thesis was to examine participatory design and its relevance in a Chinese context, and to find out current status of development, so that the study may conclude the characters of application, provide suggestions and possibly propose a suitable framework for the future practice. With the aim, this paper is conducted as a research study that includes a systematic literature review, and the empirical studies which are a series of interviews with experts who are seen as relevant to the present study.

The findings of the literature review complement those of earlier studies and show that PD and its relevance have been brought up and practiced in the context of community building by researchers from local and abroad institutions, but the amount of both research and practice of PD indicates a limited number. Meanwhile, this thesis examined PD and its relevance from broad application domains with the argument that PD can be seen as a research methodology (Spinuzzi, 2005), and PD has political characters when it is associate with community-based application (Schuler & Namioka, 1993). The results provide evidence and strengthen the ideas that PD can be applied in domains range from the orientation of design and innovation to the orientation of non-design (e.g. policy and plan), while at the same time the applications can be characterized from large scale participation to small scale participation.

This study also acknowledges and emphasizes the importance of ethnographic research methods to the PD development in the Chinese community context. The findings are concluded from both literature review and expert interviews, where it is believed that building up appropriate inter-personal relationship, acquiring access to key informants and having local institutional support are vital and evitable to conducting interviews, observations, focus group and other ethnographic research fieldwork.

Moreover, the findings indicate some practical concerns that might enlighten practitioners and researchers in conducting community-based field work in China: 1) How to build up efficient communication and knowledge transferring, and practicing with empathy, where the

contextual understanding is essential for PD practice and its relevance. 2) How to achieve sustainable PD process and outcome that may need time and effort commitment, efficiency and considerable funding support, while practitioners and researchers need certain ways to keep participants' interest of momentum. 3) How to mitigate the tokenism in PD process and find the balance position for possible top-down decision-making regime with bottom-up approach, so that the conflicts of interest could be mitigated 4) How to create reward system to maintain the participants' enthusiasm and momentum of interest.

To the end of this thesis, I tried to synthesis a general PD procedure to include these commonalities including the PD characters of large and small scale participation based on Sanders and Stappers (2014)'s models, and this five-stages model is followed by a proposed success-factors for practitioners and researchers, which stressed seven concerns corresponding to different stages as shown in figure. I also proposed an idea to build up a tool of evaluation index for practitioners and researchers organizing PD events based on Kim' s Social Action Matrix[9] , where the tool is supposed to, in short time, map out participants' ability for individual and group activities, and a list of tools that can be used in several stages to facilitate the PD events, build-up and maintain the inter-personal relationships with stakeholders as participants. Moreover, the scenarios were assumed to illustrate how community-based PD can be organized and facilitated to solve certain issue in a Chinese context, which is an example to illustrate the findings from this thesis.

Contribution of this study

This study aims to provide a general overview of PD practices in China, and summarize the PD approached that have been used by practitioners. The raised concerns and stated issues in this study may contribute to further exploration and discussions on PD research in the Chinese

---

[9] Beyond Player Types: Kim' s Social Action Matrix: http://amyjokim.com/blog/2014/02/28/beyond-player-types-kims-social-action-matrix/

context, and for research activities in other fields (i.e. research applying ethnographical methods), this study may also give certain insights for having attention to potential issues and coping with them. While PD research and practice are often conducted as pilot projects, and often are in small scale that is illustrated in the present study, the thesis points out for future research can be testing the framework with recommendations in the application of PD and related practices in the large-scale participation, particular in design and innovation domain, within in the Chinese context.

Limitations of this study

As mentioned earlier in the literature search, the scope of this study is limited in terms of excluding many of the articles within 'public participation', which the literature search initially returned large number of articles that have focus mainly on public administration and management, political research and policy studies. However, as the finding was emerging from literature review, it implied that a deeper and broader exploration on such domains may contribute to the understanding of PD of large scale participation, especially when the participation is strongly influenced by multi-decision-makers and powerful stakeholders, and with the question that how to create design and innovative activities in the form of participation.

Besides, due to the geographical inconvenience, it is unfortunate that I have been not able to conduct more field works in China, only except a short visit, and it was not possible to organize a planned focus group due to the participants limited time schedule. I also have got few feedbacks to contacts who are practitioners seen as relevant to this study, which might be due to different reasons. In the very end of this study, I have received answer from researchers who are the authors of articles from literature review or practitioners in the relevant fields. Some of them participated the expert interview, while some were not available, but they are positive to support the future work. Still, more experts can be reached out in future work to enrich the content.

It is worth to mention that in the reviewed papers, there may be different contexts in terms of administrative regime, local culture and public group among the projects in Taiwan, Hong

Kong, Macao and mainland China, also in regard of urban communities and rural communities, which could be the factors influencing the practices being untypical, thus future research could be further explore and compare these differences with their impact. Nevertheless, the diversity of application domain and participants are some of the core parts of the characters, and the various practice and understanding of PD still share commonalities, such as building up and maintaining inter-personal relationship between each party within stakeholders, practitioner and researchers.

Future works

Further research might explore the ways to cope with the challenges brought up in this study. More field research and experiment activities could be performed to verify and enrich the understandings of the present study. Moreover, considerably more work might need to be done to assess the factors influence the PD research, such as the interpersonal relationship with trust exist between each party (stakeholders, practitioners and researchers) in PD activities, the corresponding quantitative research on measuring and scaling such factors with the relevance could be useful.

In addition, the ideas of participant's evaluation tools and listed tools for engaging building up interpersonal relationships with stakeholders might be further developed and tested in real PD field work, in order to achieve its liability and validity.

At last, ethnography as a strong supportive field and subject to community-based PD in Chinese context might need practitioner and researchers to place more focus. The call for design anthropology is also emphasized and could be the field to further investigated with PD practice.

Reference

Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of planners, 35*(4), 216-224.

Bergvall-Kareborn, B., Hoist, M., & Stahlbrost, A. (2009). *Concept design with a living lab approach.* Paper presented at the System Sciences, 2009. HICSS'09. 42nd Hawaii International Conference on.

Bødker, S., Ehn, P., Kammersgaard, J., Kyng, M., & Sundblad, Y. (1987). An utopian experience.

Boks, C. (2017). Writing review papers (presentation notes). *TPD4505 Design Theory*.

Chen, S. (2018). Citizenship and the State in Contemporary China. In *The Meaning of Citizenship in Contemporary Chinese Society: An Empirical Study through Western Lens* (pp. 43-74). Singapore: Springer Singapore.

Chen, W., & Mehndiratta, S. R. (2007). Planning for laobaixing - Public participation in urban transportation project, Liaoning, China. *Transportation Research Record*(1994), 128-137. doi:10.3141/1994-17

Chen, X.-P., & Chen, C. C. (2004). On the intricacies of the Chinese guanxi: A process model of guanxi development. *Asia Pacific Journal of Management, 21*(3), 305-324.

Chu, J. T. W., Chan, S. S., Stewart, S. M., Zhou, Q. L., Leung, C. S. C., Wan, A., & Lam, T. H. (2017). Exploring Community Stakeholders' Perceptions of the Enhancing Family Well-being Project in Hong Kong: A Qualitative Study. *Frontiers in Public Health, 5*. doi:10.3389/fpubh.2017.00106

Dell'Era, C., & Landoni, P. (2014). Living Lab: A methodology between user‐centred design and participatory design. *Creativity and Innovation Management, 23*(2), 137-154.

Deng, Z. H., Lin, Y. L., Zhao, M. X., & Wang, S. F. (2015). Collaborative planning in the new media age: The Dafo Temple controversy, China. *Cities, 45*, 41-50. doi:10.1016/j.cities.2015.02.006

Du, J. C., Ming. (2016). Design strategies of participatory medium base on the exploitation of community elderly's creativity. 杜家轩, 曹鸣, 基于社区老年人创造力开发的参与式载体设计策略. *设计*(20), 132-133.

Dunning, D. (2011). The Dunning–Kruger effect: On being ignorant of one's own ignorance. In *Advances in experimental social psychology* (Vol. 44, pp. 247-296): Elsevier.

Eriksen, M. A., Seravalli, A., Hillgren, P.-A., & Emilson, A. (2016). *Collaboratively articulating urban participatory design?!* Paper presented at the Proceedings of the 14th Participatory Design Conference: Short Papers, Interactive Exhibitions, Workshops-Volume 2.

Fabrizio, C. S., Hirschmann, M. R., Lam, T. H., Cheung, T., Pang, I., Chan, S., & Stewart, S. M. (2012). Bringing scientific rigor to community-developed programs in Hong Kong. *Bmc Public Health, 12*. doi:10.1186/1471-2458-12-1129

Feng, G. (2012). returning architecture to the public－residents' participation in guaranteed housing design. World Architecture Review. 冯果川. 建筑还俗——保障房设计的住户参与. *世界建筑导报*(1), 17-19.

Feng, Y. (2011). Research on Public Participation in Urban Design in China. Urban Architecture. 冯婕. 我国城市设计的公众参与研究. *城市建筑*(2), 12-13.

Følstad, A. (2008). Living labs for innovation and development of information and communication technology: a literature review.

Forrest, R., & Yip, N.-M. (2007). Neighbourhood and neighbouring in contemporary Guangzhou. *Journal of Contemporary China, 16*(50), 47-64.

Galeazzi, F. (2015). Empowering Communities Through Design. *Architectural Design, 85*(4), 94-97. doi:10.1002/ad.1933

Halskov, K., & Hansen, N. B. (2015). The diversity of participatory design research practice at PDC 2002–2012. *International Journal of Human-Computer Studies, 74*, 81-92.

Hamari, J., & Tuunanen, J. (2014). Player types: A meta-synthesis. *Transactions of the Digital Games Research Association, 1*(2).

Huang, X., Faysse, N., & Ren, X. D. (2017). A multi-stakeholder platform involving a mining company and neighbouring villages in China: Back to development issues. *Resources Policy, 51*, 243-250. doi:10.1016/j.resourpol.2017.01.005

Huang, Y. S., Li; Liao, Kai; Xie, Siqi. (2017). Study on the Renewal and Participatory Design of Residence-Oriented City--A Case Study of Jinhua Street Transformation Project in Guizhou Province. Residential Science and Technology. 黄一如, 盛立, 廖凯, 谢司琪. 以居住为主体的城市更新与参与性设计研究——以贵州省进化街道改造项目为例. *住宅科技, 37*(10), 1-6.

Iivari, N. (2004). *Enculturation of user involvement in software development organizations-an interpretive case study in the product development context.* Paper presented at the Proceedings of the third Nordic conference on Human-computer interaction.

Ivey, M., & Sanders, E. (2006). *Designing a physical environment for co-experience and assessing participant use.* Paper presented at the Wonderground, Design Research Society International Conference.

Jalali, S., & Wohlin, C. (2012). *Systematic literature studies: database searches vs. backward snowballing.* Paper presented at the Proceedings of the ACM-IEEE international symposium on Empirical software engineering and measurement.

Jia, X. (2008). Chinese citizen participation: cases and models. 贾西津, 中国公民参与: 案例与模式. *M], 社会科学文献出版社 2008 年, 10.*

Kensing, F., & Blomberg, J. (1998). Participatory design: Issues and concerns. *Computer Supported Cooperative Work (CSCW), 7*(3-4), 167-185.

Kornreich, Y., Vertinsky, I., & Potter, P. B. (2012). Consultation and Deliberation in China: The Making of China's Health-Care Reform. *China Journal, 68*, 176-203. doi:10.1086/666583

Kurikko, H., & Tuominen, P. (2012). Collective value creation and empowerment in an online brand community: A netnographic study on LEGO builders. *Technology Innovation Management Review, 2*(6).

Lee, B. K., Sohn, S. Y., & Yang, S. (2014). Design guidelines for the Dashilar, Beijing Open Green Space Redevelopment Project. *Urban Forestry & Urban Greening, 13*(2), 385-396. doi:10.1016/j.ufug.2013.12.008

Lee, Y. (2008). Design participation tactics: the challenges and new roles for designers in the co-design process. *Co-design, 4*(1), 31-50.

Li, B. (2017). A Preliminary Study on Participatory Design: A Case Study of Community Rehabilitation Project in Wangjiaqiao, Kunming. Anhui Architecture. 李柏林, 初探参与式设计——以昆明王家桥社区修复项目为例. *安徽建筑, 24*(2), 43-44.

Li, C. M., Wei, D., Vause, J., & Liu, J. P. (2013). Towards a societal scale environmental sensing network with public participation. *International Journal of Sustainable Development and World Ecology, 20*(3), 261-266. doi:10.1080/13504509.2013.779326

Li, H. Y., Ng, S. T., & Skitmore, M. (2018). Stakeholder impact analysis during post-occupancy evaluation of green buildings - A Chinese context. *Building and Environment, 128*, 89-95. doi:10.1014/j.buildenv.2017.11.014

Li, K. (2014). Participatory Community Planning: The Fairy Tale of the Urban Planning World. Urban Planning. 李凯欣. 参与式社区规划: 城市规划世界里的童话国度. *城市规划* (A01), 121-124.

Lin, Y. L., Hao, P., & Geertman, S. (2015). A conceptual framework on modes of governance for the regeneration of Chinese 'villages in the city'. *Urban Studies, 52*(10), 1774-1790. doi:10.1177/0042098014540345

Liu, M., Gao, R., & Pusari, N. (2006). Using participatory action research to provide health promotion for disadvantaged elders in Shaanxi Province, China. *Public Health Nursing, 23*(4), 332-338. doi:10.1111/j.1525-1446.2006.00569.x

Liu, W. (2004). Public participation in urban design. Journal of architecture. 刘宛. 公众参与城市设计. *建筑学报*(5), 10-13.

Lu, F. (1989). Danwei: A special form of social organization. *Social Sciences in China, 10*(3), 100-122.

Lu, M. (2016). Anthropological interventions in the design field. Art criticism. 吕明月. 人类学介入设计领域的结合途径研究. *艺术评论*(6), 156-159.

Lu, Y. (2002). Structure and change: the household registration system in China after 1949. *Peking University Journal, 39*(2), 123-130.

Luo, X. L., Shiguo; Gong , Yisen. (2012). Analysis of the Universal Participation of Social Innovation Service Design. 罗皓天, 李世国, 巩淼森. 论社会创新型服务设计的全民参与性. *艺术与设计 (理论)*(6), 42-44.

Markopoulos, P., & Rauterberg, G. (2000). LivingLab: A white paper. *IPO Annual Progress Report, 35*, 53-65.

Men, L. R., & Tsai, W. H. S. (2012). How companies cultivate relationships with publics on social network sites: Evidence from China and the United States. *Public Relations Review, 38*(5), 723-730. doi:10.1016/j.pubrev.2011.10.006

Nisbett, R. (2004). *The geography of thought: How Asians and Westerners think differently... and why*: Simon and Schuster.

Pilemalm, S. (2018). Participatory Design in Emerging Civic Engagement Initiatives in the New Public Sector: Applying PD Concepts in Resource-Scarce Organizations. *ACM Transactions on Computer-Human Interaction (TOCHI), 25*(1), 5.

Poell, T., de Kloet, J., & Zeng, G. H. (2014). Will the real Weibo please stand up? Chinese online contention and actor-network theory. *Chinese Journal of Communication, 7*(1), 1-18. doi:10.1080/17544750.2013.816753

Poplin, A., Pereira, G. C., & Rocha, M. C. F. (2013). The participatory cube: A framework for analysis of online participation platforms. In *Planning Support Systems for Sustainable Urban Development* (pp. 395-414): Springer.

Qian, Y. S., Qingdong. (2011). The public space of participatory design pattern. Journal of Xi'an University of Architecture and Technology: Natural Science Edition. 钱缨, 苏庆东. 公共空间的参与式设计模式. *西安建筑科技大学学报: 自然科学版, 43*(1), 90-95.

Read, B. L. (2008). Assessing variation in civil society organizations: China's homeowner associations in comparative perspective. *Comparative Political Studies, 41*(9), 1240-1265.

Rice, L. (2017). Nonhumans in participatory design. *CoDesign*, 1-20.

Sanders, E. B.-N., Brandt, E., & Binder, T. (2010). *A framework for organizing the tools and techniques of participatory design.* Paper presented at the Proceedings of the 11th biennial participatory design conference.

Sanders, E. B.-N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *Co-design, 4*(1), 5-18.

Sanders, E. B.-N., & Stappers, P. J. (2014). Probes, toolkits and prototypes: three approaches to making in codesigning. *CoDesign, 10*(1), 5-14.

Schuler, D., & Namioka, A. (1993). *Participatory design: Principles and practices*: CRC Press.

Shan, X. Z. (2012). Attitude and willingness toward participation in decision-making of urban green spaces in China. *Urban Forestry & Urban Greening, 11*(2), 211-217. doi:10.1016/j.ufug.2011.11.004

Shang, C. Z., Zhengwen; Han, Xin; Huang, Yuanrong; Wu, Jing. (2016). User Participation Design, How to Start the User Effectively. Industrial Design Research. 商冲晨, 祝正文, 韩玥, 黄渊蓉, 吴静. 用户参与式设计, 如何有效启动用户. *工业设计研究*, 046.

Spinuzzi, C. (2002). *A Scandinavian challenge, a US response: methodological assumptions in Scandinavian and US prototyping approaches.* Paper presented at the Proceedings of the 20th annual international conference on Computer documentation.

Spinuzzi, C. (2005). The methodology of participatory design. *Technical communication, 52*(2), 163-174.

Steen, M. (2011). Tensions in human-centred design. *CoDesign, 7*(1), 45-60.

Tang, X. H., Ren-ke. (2017). Social Innovation Research Based on Participatory Design. 唐啸, 何人可. 基于参与式设计的社会创新研究. *艺术与设计: 理论版*(6), 29-30.

Tung, F.-W. (2012). Weaving with rush: Exploring craft-design collaborations in revitalizing a local craft. *International Journal of Design, 6*(3).

Wang, B. M., Yuexia; Liang, Ying. (2018). Study on the Innovation of Urban Community Management System——Three-component System of Administration, Overall Planning and Autonomy. Retrieved from http://mzzt.mca.gov.cn/article/hxsqyth/zbkt/200810/20081000020653.shtml

Wang, W., Bryan-Kinns, N., & Ji, T. (2016). Using Community Engagement to Drive Co-Creation in Rural China. *International Journal of Design, 10*(1), 37-52.

Wang, W., Li, H., & Cooper, T. L. (2017). Civic engagement and citizenship development: The case of homeowners' participation in neighborhood affairs in Beijing. *Administration & Society, 49*(6), 827-851.

Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS quarterly*, xiii-xxiii.

Wilkes, A. (2006). Innovation to support agropastoralist livelihoods in northwest Yunnan, China. *Mountain Research and Development, 26*(3), 209-213. doi:10.1659/0276-4741(2006)26[209:Itsali]2.0.Co;2

Xue, L. (2009). From Street-acquisition System to Community-based System: The Transformation of Urban Grassroots Governance Models - Taking the Case of "The Reform of the Community Management System of Lugu Street in Beijing" as a Case. East China Economic Management. 陈雪莲. 从街居制到社区制: 城市基层治理模式

的转变-以 "北京市鲁谷街道社区管理体制改革" 为个案. 華東經濟管理. *華東經 濟管理, 23*(9), 92-98.

Yan, M. C., & Gao, J. G. (2005). Social engineering of community building: Examination of policy process and characteristics of community construction in China. *Community Development Journal, 42*(2), 222-236.

Yin, R. K. (2017). *Case study research and applications: Design and methods*: Sage publications.

Zhan, X. Y., Lo, C. W. H., & Tang, S. Y. (2014). Contextual Changes and Environmental Policy Implementation: A Longitudinal Study of Street-Level Bureaucrats in Guangzhou, China. *Journal of Public Administration Research and Theory, 24*(4), 1005-1035. doi:10.1093/jopart/mut004

Zhan, Y. (2013). A research on Taipei metropolitan vulnerable community empowerment mode——take treasure hill for example. Architecture and Culture. 展亚东. 台北都会 弱势社区营造模式研究——以宝藏岩社区为例. *建筑与文化*(11), 98-99.

Zhang, D. (2016). Knowledge in Risk: Anthropology Reflections on Designers' Involvement in Local Traditional Crafts. Journal of Nanjing Arts Institute (Art & Design Edition). 张朵 朵.风险中的具身知识: 设计师介入地方传统手工艺的人类学反思. *南京艺术学院 学报 (美术与设计版)*(2016 年 02), 36-40.

Zhang, D. J., Tie. (2016). Collaborative design "touching" the rejuvenation of the traditional community – an example of intangible research and innovative practice of the "New Passage • Hua Yang Hua" project. Decoration. 张朵朵, 季铁. 协同设计 "触动" 传统社区复兴—— 以 "新通道• 花瑶花" 项目的非遗研究与创新实践为例. *装 饰*(12), 26-29.

Zhang, D. Q., Tan, S. K., & Gersberg, R. M. (2010). Municipal solid waste management in China: status, problems and challenges. *Journal of Environmental Management, 91*(8), 1623-1633.

Zhang, W. (2007). *Taiwan's new campus movement and its innovation - the application and regeneration of Taiwan regionalism in primary and secondary schools (Doctoral dissertation, Southeast University). 张维维, 台湾新校园运动及其创新——台湾地 区主义在中小学建筑中的运用和再生. 万方数据资源系统,*

Zhao, X. (2017). Retrieving the life in the courtyard: a preliminary study on the participatory design practice of public space in courtyards. Urban Architecture. 赵幸. 找回院子里 的生活——院落公共空间改善参与式设计实践初探. *城市建筑*(15), 52-55.

Zhou, M. Z., Jianxin. (2007). Social Development and the Changes of Chinese People's Personalities, Advances in Psychological Science. 周明洁, 张建新. 中国社会现代化 进程和城市现代化水平 与中国人群体人格变化模式. *心理科学进展, 15*(02), 203- 210.

Zhou, Q. C., Wei; Yang, Minxing (2013). Interactive Urban Design Based on Public Participation: Case Study in the New Central Harborfront, Hong Kong.. Urban Development Research. 周庆, 崔翀, 杨敏行. 公众参与的互动型城市设计——以香 港中环新海滨城市设计为例. *城市发展研究, 6*, 010.

Zhou, X. L., Li, D. Y., & Larsen, L. (2016). Using Web-Based Participatory Mapping to Investigate Children's Perceptions and the Spatial Distribution of Outdoor Play Places. *Environment and Behavior, 48*(7), 859-884. doi:10.1177/0013916515571732

Appendix

Appendix 1

Reviewed literatures in English language

		type	domain	Note
1	Chen, W. and S. R. Mehndiratta (2007). "Planning for laobaixing - Public participation in urban transportation project, Liaoning, China." Transportation Research Record (1994): 128-137.	case study and method	Architecture and urban planning	open meetings, focus group discussion, individual interviews, questionnaires, panel approach
2	Chu, J. T. W., et al. (2017). "Exploring Community Stakeholders' Perceptions of the Enhancing Family Well-being Project in Hong Kong: A Qualitative Study." Frontiers in Public Health 5.	case study	social study	focus group, in-depth interview
3	Deng, Z. H., et al. (2015). "Collaborative planning in the new media age: The Dafo Temple controversy, China." Cities 45: 41-50.	case study	Architecture and urban planning	information tracking (online) and questionnaires,
4	Fabrizio, C. S., et al. (2012). "Bringing scientific rigor to community-developed programs in Hong Kong." Bmc Public Health 12.	case study	social study	a community-based participatory research (CBPR) framework.

		type	domain	Note
5	Forrest, R., & Yip, N.-M. (2007). Neighbourhood and neighbouring in contemporary Guangzhou. *Journal of Contemporary China, 16*(50), 47-64.	critique	social study	
6	Galeazzi, F. (2015). "Empowering Communities Through Design." Architectural Design 85(4): 94-97.	critique	Architecture and urban planning	/
7	Huang, X., et al. (2017). "A multi-stakeholder platform involving a mining company and neighbouring villages in China: Back to development issues." Resources Policy 51: 243-250.	case study	social study	interviews
8	Kornreich, Y., et al. (2012). "Consultation and Deliberation in China: The Making of China's Health-Care Reform." China Journal 68: 176-203.	case study	social study	Online feedback
9	Lee, B. K., et al. (2014). "Design guidelines for the Dashilar, Beijing Open Green Space Redevelopment Project." Urban Forestry & Urban Greening 13(2): 385-396.	case study	Architecture and urban planning	survey with conjoint analysis, choice simulation
10	Li, C. M., et al. (2013). "Towards a societal scale environmental sensing network with public participation." International Journal of Sustainable Development and World Ecology 20(3): 261-266.	case study	environmental study	Collaborative Environmental Sensing Network CESN
11	Li, H. Y., et al. (2018). "Stakeholder impact analysis during post-occupancy evaluation of green buildings - A Chinese context." Building and Environment 128: 89-95.	case study	Architecture and urban planning	first 28 semi interview, pilot study before structured questionnaire, later followed up with semi interview
12	Lin, Y. L., et al. (2015). "A conceptual framework on modes of governance for the regeneration of Chinese 'villages in the city'." Urban Studies 52(10): 1774-1790.	case study and method	Architecture and urban planning	

		type	domain	Note
13	Liu, M., et al. (2006). "Using participatory action research to provide health promotion for disadvantaged elders in Shaanxi Province, China." Public Health Nursing 23(4): 332-338.	case study	healthcare study	PAR
14	Men, L. R., & Tsai, W. H. S. (2012). How companies cultivate relationships with publics on social network sites: Evidence from China and the United States. *Public Relations Review, 38*(5), 723-730. doi:10.1016/j.pubrev.2011.10.006	critique	social study	/
15	Poell, T., de Kloet, J., & Zeng, G. H. (2014). Will the real Weibo please stand up? Chinese online contention and actor-network theory. *Chinese Journal of Communication, 7*(1), 1-18. doi:10.1080/17544750.2013.816753	critique	social study	/
16	Read, B. L. (2003). Democratizing the neighbourhood? New private housing and home-owner self-organization in urban China. *The China Journal* (49), 31-59.	critique	social study	/
17	Read, B. L. (2008). Assessing variation in civil society organizations: China's homeowner associations in comparative perspective. *Comparative Political Studies, 41*(9), 1240-1265.	critique	social study	/
18	Shan, M., Carter, E., Baumgartner, J., Deng, M. S., Clark, S., Schauer, J. J., . . . Yang, X. D. (2017). A user-centered, iterative engineering approach for advanced biomass cookstove design and development. *Environmental Research Letters, 12*(9). doi:10.1088/1748-9326/aa804f	case study	industrial design	user-centered, iterative engineering approach
19	Shan, X. Z. (2012). "Attitude and willingness toward participation in decision-making of urban green spaces in China." Urban Forestry & Urban Greening 11(2): 211-217.	case study	Architecture and urban planning	face-to-face questionnaire surveys

		type	domain	Note
20	Tung, F.-W. (2012). Weaving with rush: Exploring craft-design collaborations in revitalizing a local craft. *International Journal of Design, 6*(3).	case study and method	industrial design	PD
21	Wang, W., et al. (2016). "Using Community Engagement to Drive Co-Creation in Rural China." International Journal of Design 10(1): 37-52.	case study and method	industrial design	PD
22	Wang, W., Li, H., & Cooper, T. L. (2017). Civic engagement and citizenship development: The case of homeowners' participation in neighborhood affairs in Beijing. *Administration & Society, 49*(6), 827-851.	case study	social study	/
23	Wilkes, A. (2006). "Innovation to support agropastoralist livelihoods in northwest Yunnan, China." Mountain Research and Development 26(3): 209-213.	case study	social study	participatory technology development and co-management
24	Yan, M. C., & Gao, J. G. (2005). Social engineering of community building: Examination of policy process and characteristics of community construction in China. *Community Development Journal, 42*(2), 222-236.	critique	social study	/
25	Zhou, X. L., et al. (2016). "Using Web-Based Participatory Mapping to Investigate Children's Perceptions and the Spatial Distribution of Outdoor Play Places." Environment and Behavior 48(7): 859-884.	case study and method	Architecture and urban planning	web-based participatory mapping tool

Appendix 2

Reviewed literatures in Chinese language

	Author, year and title	type	domain
1	Du, J. C., Ming. (2016). Design strategies of participatory medium base on the exploitation of community elderly's creativity. 杜家轩, 曹鸣, 基于社区老年人创造力开发的参与式载体设计策略. 设计 (20), 132-133.	method and practice	industrial design
2	Feng, G. (2012). returning architecture to the public－residents'participation in guaranteed housing design. World Architecture Review. 冯果川. 建筑还俗——保障房设计的住户参与. 世界建筑导报(1), 17-19.	practice	architecture
3	Feng, Y. (2011). Research on Public Participation in Urban Design in China. Urban Architecture. 冯婕. 我国城市设计的公众参与研究. *城市建筑*(2), 12-13.	method and practice	social study
4	Huang, Y. S., Li; Liao, Kai; Xie, Siqi. (2017). Study on the Renewal and Participatory Design of Residence-Oriented City--A Case Study of Jinhua Street Transformation Project in Guizhou Province. Residential Science and Technology. 黄一如, 盛立, 廖凯, 谢司琪. 以居住为主体的城市更新与参与性设计研究——以贵州省进化街道改造项目为例. *住宅科技, 37*(10), 1-6.	practice	architecture
5	Jia, X. (2008). Chinese citizen participation: cases and models. 贾西津, 中国公民参与: 案例与模式. *M], 社会科学文献出版社 2008 年, 10.*	critique	social study
6	Li, B. (2017). A Preliminary Study on Participatory Design: A Case Study of Community Rehabilitation Project in Wangjiaqiao, Kunming. Anhui Architecture. 李柏林, 初探参与式设计——以昆明王家桥社区修复项目为例. *安徽建筑, 24*(2), 43-44.	practice	architecture
7	Li, K. (2014). Participatory Community Planning: The Fairy Tale of the Urban Planning World. Urban Planning. 李凯欣. 参与式社区规划: 城市规划世界里的童话国度. *城市规划*(A01), 121-124.	practice	architecture

	Author, year and title	type	domain
8	Liu, W. (2004). Public participation in urban design. Journal of architecture. 刘宛. 公众参与城市设计. *建筑学报*(5), 10-13.	method	architecture
9	Lu, M. (2016). Anthropological interventions in the design field. Art criticism. 吕明月. 人类学介入设计领域的结合途径研究. *艺术评论*(6), 156-159.	method	Anthropology
10	Luo, X. L., Shiguo; Gong , Yisen. (2012). Analysis of the Universal Participation of Social Innovation Service Design. 罗皓天, 李世国, 巩淼森. 论社会创新型服务设计的全民参与性. *艺术与设计 (理论)*(6), 42-44.	critique	industrial design
11	Qian, Y. S., Qingdong. (2011). The public space of participatory design pattern. Journal of Xi'an University of Architecture and Technology: Natural Science Edition. 钱缨, 苏庆东. 公共空间的参与式设计模式. *西安建筑科技大学学报: 自然科学版, 43*(1), 90-95.	method and practice	architecture
12	Shang, C. Z., Zhengwen; Han, Xin; Huang, Yuanrong; Wu, Jing. (2016). User Participation Design, How to Start the User Effectively. Industrial Design Research. 商冲晨, 祝正文, 韩玥, 黄渊蓉, 吴静. 用户参与式设计, 如何有效启动用户. *工业设计研究*, 046.	method and practice	industrial design
13	Tang, X. H., Ren-ke. (2017). Social Innovation Research Based on Participatory Design. 唐啸, 何人可. 基于参与式设计的社会创新研究. *艺术与设计: 理论版*(6), 29-30.	critique	industrial design
14	Zhan, Y. (2013). A research on Taipei metropolitan vulnerable community empowerment mode——take treasure hill for example. Architecture and Culture. 展亚东. 台北都会弱势社区营造模式研究——以宝藏岩社区为例. *建筑与文化*(11), 98-99.	practice	architecture
15	Zhang, D. (2016). Knowledge in Risk: Anthropology Reflections on Designers' Involvement in Local Traditional Crafts. Journal of Nanjing Arts Institute (Art & Design Edition). 张朵朵.风险中的具身知识: 设计师介入地方传统手工艺的人类学反思. *南京艺术学院学报 (美术与设计版)*(2016 年 02), 36-40.	method and practice	industrial design
16	Zhang, D. J., Tie. (2016). Collaborative design "touching" the rejuvenation of the traditional community – an example of intangible research and innovative practice of the "New Passage· Hua Yang Hua"	practice	industrial design

	Author, year and title	type	domain
	project. Decoration. 张朵朵, 季铁. 协同设计 "触动" 传统社区复兴——以 "新通道· 花瑶花" 项目的非遗研究与创新实践为例. *装饰*(12), 26-29.		
17	Zhang, W. (2007). *Taiwan's new campus movement and its innovation - the application and regeneration of Taiwan regionalism in primary and secondary schools (Doctoral dissertation, Southeast University).* 张维维, 台湾新校园运动及其创新——台湾地区主义在中小学建筑中的运用和再生. 万方数据资源系统,	method and practice	architecture
18	Zhao, X. (2017). Retrieving the life in the courtyard: a preliminary study on the participatory design practice of public space in courtyards. Urban Architecture. 赵幸. 找回院子里的生活——院落公共空间改善参与式设计实践初探. *城市建筑*(15), 52-55.	practice	architecture
19	Zhou, M. Z., Jianxin. (2007). Social Development and the Changes of Chinese People's Personalities, Advances in Psychological Science. 周明洁, 张建新. 中国社会现代化进程和城市现代化水平 与中国人群体人格变化模式. *心理科学进展, 15*(02), 203-210.	critique	Anthropology
20	Zhou, Q. C., Wei; Yang, Minxing (2013). Interactive Urban Design Based on Public Participation: Case Study in the New Central Harborfront, Hong Kong.. Urban Development Research. 周庆, 崔翀, 杨敏行. 公众参与的互动型城市设计——以香港中环新海滨城市设计为例. *城市发展研究, 6*, 010.	practice	architecture

Appendix 3

Example of interview questions

Questions:

Interviewee background:

1. Personal info
   1.1. where from,
   1.2. multi-cultural experience
   1.3. educational background,
   1.4. position/role) in organization
2. What research area do you mainly focus on?
   2.1. How long time have you been working on it?
3. Have ever been to China for field research?
   3.1. How long period have you spent there?
   3.2. How were the projects related to design or innovative activities? In which field?

The research in China:

4. Can you describe the research method that you used? (Interview/ Observation/ Focus group/ Workshop/Others?)
5. Also, in the research that you were as participants?
6. What are the highlighted differences between doing research in China and in Norway, in your opinion?
   6.1. Examples?
   6.2. Did you feel that you have to compromise on research methods because of available resources? For instance, turn to different methods, scaling down or limit scope of research
      a. What resources? Available money, available time, access to participants etc.? How did you cope with them?
      b. Do you think others had the same situation? Why?
   6.3. How did you adapt your methods into the local context? (was it consciously?)

7. What factors, things or people that are challenging for the research there?
   7.1. Any examples?
   7.2. How did you face the challenge?
   7.3. What would you do if you have the same situation again?
8. I've read form literature that in some projects that involve public's participation, there was concern about the mechanism of participation, which is not bottom-up. What do you think of it with your experience?

9. When a modern designer co-design a thing with people rooted in strong and traditional culture, and often commercialized their outcomes, there are concerns about that such modern intervention may impact the original value of the local culture. How do you think of that?

About social desirability bias: (In order to create a good impression, tend to substitute the willingness to meet the criteria of socio-cultural values to replace the genuine intention to answer questions. Examples: 1. Trump vote in US / 2. Ask community member if he/she think the community culture should be kept, the answer is yes, but the genuine thought maybe don't care or should pursue economic value, however, the answer is to fulfill the surrounding main stream value)

10. How do you interpret social desirability bias?
    10.1.   What experience can be associated with it?
    10.2.   How did you mitigate the bias?
    10.3.   What would you do if you have the same situation again?
11. hypothesis about personalities that people in high level of modernization generally have high 'openness', and with low level of modernization, the 'interpersonal relationship' is high, and to which the 'openness' could be interpreted as the spirit of reasoning and seeking for truth, while the 'interpersonal relationship' is more to 'avoid confrontation', 'keep harmony relationship' and the term interested by many westerners - 'face' (which may be associated to nobility and dignity). What do you think of it?

12. What did you do for monitoring and following up the participants in research?
13. What factors can be helpful for the research in China?
    13.1.   Why?
    13.2.   Any examples?

Close interview:

14. Do you have anything you have not talked about that you would like to add?
15. Do you have ideas of anyone you suggested that I could talk to?
16. Thank you so much for taking part the interview. I will integrate this interview into my project and continue with my work. In case of additional information, I may need to come back to you later on. Will that be ok for you?

Thanks interviewee and finish