Crafting Sustainability

A Study of Traditional Craft Practices in Central China

Wanlin Zhang

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Candidate Information

Name

Wanlin Zhang

Existing Degrees

BA (Central South University, China)

MA (Hunan University, China)

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Declaration

I hereby declare that this thesis titled "Crafting Sustainability: A Study of Traditional Craft Practices in Central China" is the result of my own research and work done during my PhD in Design at Lancaster University. The concepts and ideas resulting in my work are stated here on in my own words, and where I include the ideas of others I have cited and referenced the original sources accordingly. This thesis has not been submitted in support of an application for another degree at this or any other university. Many of the ideas in this thesis were the product of discussion with my supervisors Professor Stuart Walker and Dr David Hands.

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Also, as a researcher, I have contributed to the Located Making project, which is a collaborative three-year project funded by the UK Arts and Humanities Research Council (AHRC) Newton Fund. Part of my findings was also published in the following manuscripts co-authored with the Principle Investigator and Co Investigator of the project, and they are re-presented in this thesis, mainly in two chapters – chapter 7 and chapter 8.

Walker, S., Evans, M., **Zhang, W**., and Zhan, X. (2021a). Located Making: A Framework for Supporting Heritage Making Practices in China. Lancaster University. (*in press*)

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Wanlin Zhang
Lancaster University, UK

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Abstract

Today, traditional handmade crafts with a particularly local provenance are being appreciated and valued by consumers around the world. Noticeably, many designers have been involved in the re-examination and reassessment about the contemporary value and contribution of traditional craft practices and craft objects or artefacts. In China, in response to the UNESCO (the United Nations Educational, Scientific and Cultural Organisation) Convention for the Safeguarding of ICH (Intangible Culture Heritage), China has implemented a mechanism characterised as a combination of central initiative and local participation to create its own ICH and ICH Inheritors lists at multiple levels. Although much traditional heritage craft has been officially recognised as ICH, this does not necessarily mean that they are well-developed.

This research aims to determine the relationship of traditional craft practices to sustainability in the Chinese context, to investigate and delineate the role of design in relation to Chinese craft revival activities, to identify sustainability-related issues, and to identify areas in which design can contribute to the long-term continuation of traditional craft practices. It draws upon the fields of craft and sustainability studies to provide a theoretical base for the research. The concept of 'crafting sustainability' is proposed, and four research propositions are formulated to explain the relationship of craft traditions to sustainability. Constructive methods are used in this research, including in-depth observations and thirty-two semi-structured interviews with a range of experts in craft fields. Primary data collected in three provinces of central China were coded and analysed. Analysis of the research helps validate the four research propositions developed from the literature. Also, their connections to place and people, significant values and ways in which craftspeople take their practices and conduct their businesses, and existing design interventions are interpreted from results.

Overall, this study identifies 1) a variety of heritage making practices within the Chinese context; 2) a range of top-down support mechanisms provided by the Chinese government; 3) the relationships of craft makers and their practices/businesses to sustainability; 4) significant values that influence craft makers' practices and their business; and 5) design opportunities for sustainability and viability.

Table of Contents

List of Figures

List of Tables

CHAPTER 01

Introduction

CHAPTER 1: Introduction

1.1 Motivation for the research

I was born and raised in the city of Zhengzhou, which lies on the southern bank of the Yellow River in central China. My hometown is renowned as one of the eight historical capitals of China, and it has played a significant role in Chinese civilisation. When I was a child, my family often took me to visit local museums, historical sites, and cultural relics. A 35mm point and shoot camera of the 1990s was used to capture some memorable moments. One old photo shows me staring curiously at an ancient bronze vessel with delicate patterns, which was exhibited in the Henan Museum, and another is in front of the largest Buddhist stone statue of the Longmen Grottoes in which I had a broad smile and an ice cream in my hand. Perhaps such early cultural tourism began my interest in cultural traditions.

When I grew up, I showed an interest in painting. This was supported by my parents and I attended art and design courses from primary school. It seemed to be a perfectly natural decision to study product design in my undergraduate degree. During the final year of my studies, I had an opportunity to work in a creative consultancy, and was involved in several projects to explore new business opportunities and drive growth for small and medium-sized enterprises. From this first-hand internship experience, I learned how to apply design thinking and skills in a commercial context and also realised the power of design for driving innovation. A year later, I entered the DESIS (Design for Social Innovation and Sustainability) Lab at Hunan University, China as a design researcher. I was involved in a funded social design project that aimed to enhance growth and prosperity in rural regions through design. From 2014 to 2017, we looked into heritage-based, culturally significant craft practices in the mountainous terrain of Hunan province in the southern China and Tibetan plateau of Qinghai province in the western China, and also developed a brand to promote textile produced by local weavers.

By speaking to villagers, craftspeople, and nomads in rural regions, we were surprised to learn that they were fascinated by the outside world and wanted to do things to fit in modern society rather than continuing the livelihood that they had had for centuries. This prompted me to reflect on the negative effects caused by the rapid modernisation and urbanisation happening in Chinese society, and also motivated me to think further about the meaning of traditions in contemporary design. I discussed narrative-based design on my master thesis, and also made recommendations to better convey cultural traditions through product-service design.

Previous studies and research experience inspired me to further explore the possibility of design in solving "wicked problems" (Buchanan, 1992), especially how design expertise can contribute to the long-term development of traditional craft communities. With this idea, I was encouraged by my friends, colleagues, and family members to apply for research funding to continue my research. Luckily, my application for China Scholarship Council (CSC) PhD scholarship Programme was granted, and then I began this PhD adventure.

1.2 Research context

In China, craft activities are situated within the policy framework of Wenchuang Chanye (Culture-related Industry). Through China's enthusiastic involvement in the UNESCO Intangible Cultural Heritage (ICH) programme, by December 2018, 40 Chinese folk arts and crafts had been included in the UNESCO ICH List, and 3152 examples with 10 categories are inscribed at the national level (UNESCO, 2018; ICH China, 2020a). The best individual craftspeople are given the designation 'ICH Inheritor'. To date, according to five national ICH Inheritor Lists (2007, 2008, 2009, 2012, 2018), a total of 896 artisans have been designated as ICH inheritors (ICH China, 2020b). An annual stipend is provided by the government for these artisans to disseminate aspects of their ICH to the public and to participate in related training events (Maags, 2019). Moreover, since March 24, 2017, as the Plan on Revitalizing China's Traditional Crafts was released by the State Council, there has been a wave of crafts revitalisation practices happening in Chinese society. Developing folk crafts, especially in less-developed areas of rural China, is also seen as an important way of economic empowerment and poverty reduction (MCTPRC, 2018).

The region of interest for this present research is central China, comprising 3 provinces, 42 cities and 2 autonomous prefectures, all of which are seeing rapid development in high and new technologies, with the support of the "Rise of Central China Plan" (CGSS, 2012). This region is a representative multi-cultural region of China where many ethnic minorities live, including the Tujia, Miao, Dong, Hui, and Yao ethnic groups, and their rich crafts embody their unique cultures. In addition, this region has a long history of craft practices, among which 372 crafts are included in the list of Intangible Cultural Heritage at the international, national and provincial levels (ICH China, 2020a; ICH Henan, 2019; ICH Hunan, 2019; ICH Hubei, 2019).

Although much traditional heritage craft has been officially recognised as ICH, this does not necessarily mean that they are well-developed. For example, there is still a sharp decrease

in the number of craft-makers (Cao, 2018). Meanwhile, due to the impact of mass-production, traditional handcrafted products, especially those made by village artisans, are being marginalised in modern markets (Li and Shu, 2013). Also, in some cases, inappropriate and superficial design interventions that lack cultural relevance and context-sensitive, sustainable considerations have been criticised (e.g. Bissett-Johnson and Moorhead, 2019; Murray, 2010). Therefore, there needs to be a better understanding of how design expertise can offer suitable support for the creative economy; support that is respectful of the cultural legacy of place, and in accord with contemporary understandings of sustainability, inclusivity and resilience.

1.3 The focus of the research

This research aims to investigate traditional heritage-based craft practices in the Chinese context, delineate these practices and their current state through the lens of sustainability, and explore the potential of design in supporting their long-term development. It also seeks to explore if and how technological and economic development can be part of traditional craft making, but without sacrificing sustainability-related values, such as strong connections to place and community, intrinsic human values and traditional roots, that are inherent to many crafts. In particular, this research is interested in design's contributions in helping to ensure product viability and in conveying the values of traditional heritage crafts in a particular region.

The study is centred on the main research question, namely:

- **RQ:** *How can design make a meaningful contribution to the continuation of traditional craft practices in the Chinese context, in relation to the core principles of design for sustainability?*

To answer this research question, three research objectives were developed, which provided direction to take the project forward:

- **OB1**: *determine the relationship of traditional craft practices to sustainability in the Chinese context.*
- **OB2**: *investigate and delineate the role of design in relation to Chinese craft revival activities and identify sustainability-related issues;*
- **OB3**: *on a case by case basis, identify areas in which design can contribute to the long-term continuation of traditional craft practices.*

The literature review presents the landscape of two key theories within this study, i.e. *craft* and *design for sustainability*. By linking these together, the concept of "crafting sustainability" was developed. i.e. traditional making practices as a way contributing to

contemporary understandings of sustainability. Rather than Elkington's well-known *Triple Bottom Line of Sustainable Development for Business* (which in 2018 Elkington recognised has not been effective), here Walker's more comprehensive *Quadruple Bottom Line of Design for Sustainability* is used as a framework for considering sustainability in the crafts Walker, 2011, p.187-190; 2014, p.92-93). It has four interdependent elements that are necessary for sustainable transformation.

In addition to the **RQ** and the three **OBs**, four research propositions were further formulated to explain the relationship of craft traditions to sustainability:

- **RP1**: Traditional crafts are place-based and serve utilitarian needs while minimising negative environmental impact.
- **RP2**: Important context-related social and ethical knowledge and practices, which are vital to cultural continuance, are rooted in traditional craft practices.
- **RP3**: Traditional crafts convey important human values, including moral rectitude and conscience, a sense of contribution to community, and personal wellbeing rooted in inner values and/or spiritual fulfilment**.**
- **RP4**: Traditional hand-made crafts are economically beneficial to contemporary society, and their focus on high quality and product life cycle are compatible with contemporary understandings of sustainable consumption and production.

Combined with deductive theoretical understandings on craft and sustainability drawn from literature, empirical research via ethnographic field studies in central China offers an inductive approach to expand and strengthen the understandings, especially in regard to particular contexts and practices. A constructivist methodology is employed in this study, and knowledge, values, and priorities valued by local craft community were interpreted from qualitative data collected during thirty-two in-depth interviews with experts from various craft fields (Crotty, 1998, p.42). Thematic analysis was used to understand and interpret the data and findings are discussed in relation to the research question and objectives, and recommendations for feasible design strategies were offered.

1.4 The structure of the thesis

The thesis comprises eight chapters organised into theoretical understandings (Chapter 2-4), methodology (Chapter 5), analysis (Chapter 6-7), and conclusions (Chapter 8).

Chapter 2 provides a review of literature on a) craft in general and b) craft in the Chinese context. This chapter starts with the question of defining 'craft'. As an expansive and elusive concept, the literature shows that different meanings of 'craft' are interpreted from different perspectives and various classification systems have been applied. To make sense of craft,

scholarly descriptions are examined, and its core values are identified in relation to expertise, human intelligence, tradition, and localisation. A historical perspective is also used to understand craft in different time periods. Within the Chinese context, relevant policy, craft revival activities and design practices are investigated through secondary sources, and this helped narrow down the research topic from a broad, abstract 'craft' concept to a specific area, i.e. local, long-established, traditional craft practices that are regarded as part of the ICH of the region or the country.

Chapter 3 is a literature review of sustainability as it informs design practices. It begins with a brief history of sustainability, which highlights an important shift in its focus from primarily environmental stewardship to a broader range of concerns that also include social and economic elements. Second, the contemporary evolution of sustainability is reviewed. Key theories of sustainability from management science, environmental science, social science, and sustainability-related legislation are summarised. Lastly, as an important part of this bigger picture, the role of design in response to sustainability is discussed, along with different approaches and arguments in four respects – environment, economy, society and systematic levels.

Chapter 4 discusses the findings from literature reviews of craft, sustainability and design (Chapter 2 and Chapter 3). First, through placing traditional crafts in the context of sustainability, their contemporary meanings are revealed in four aspects, including 1) the expression of intrinsic values that are positively associated with ecological behaviours, personal wellbeing, and social responsibility, 2) strong connections to place and localisation, 3) great significance for cultural continuation, 4) as well as contributions to sustainable consumptions. These four aspects establish theoretical propositions about the relationship between traditional crafts and sustainability. In addition, contemporary craft-design collaborations and existing design interventions in Chinese craft sector are also discussed, and a number of sustainability-related problems are identified. This boosts some further refinement of the main research question and the development of research objectives as guidelines for field research.

Chapter 5 explains how this research is designed and the rationale behind research methods selected for data collection and data analysis. Key components that underpin the research design is firstly discussed, including the general paradigm, available research methods, theoretical basis behind these approaches, and strategies of inquiry. Informed by this, this research design is rooted in the constructivist paradigm, whereby the local knowledge, situations, and the priorities and values of local craft community were interpreted

from qualitative data collected during thirty-two in-depth interviews with highly accomplished craft makers, talented design makers, and key stakeholders. These interviews are supplemented with direct observation of their making practices in their places of work, and an inductive approach is adopted to see what themes emerge from data analysis.

Chapter 6 presents a thematic analysis that extracts key findings from the primary data. It contains analysis of the research data collected through thirty-two semi-structured interviews. After repeated and iterative coding and clustering, five key themes are identified, including 1) craft-related policies in the Chinese context, 2) motivations of craft-makers and design-makers, 3) craft practices, 4) craft business, and 5) relevant design practices.

Chapter 7 discusses the research findings from Chapter 6 in the context of the research question and objectives. The relationship of craft practices to sustainability in the Chinese context is firstly examined within the *Quadruple Bottom Line of Design for Sustainability,* and some problems related to sustainability are identified. Second, the connections of craft practices to 'place' and 'people' are addressed. With such understandings, third, feasible strategies, appropriate craft-design collaborations, and potential design contributions are then developed.

Chapter 8 provides the conclusions of this study. This chapter starts with discussions on findings in respect of three research objectives, and then provides the answers to the research question. This is followed by a description of conclusions, the contribution to knowledge, the limitation of this study, and future research directions. This chapter ends up with a final summary and concluding marks of this thesis.

1.5 Summary

This chapter has explained the researcher's motivation, introduced a specific Chinese context for conducting this research, and stated the aims, the main research question and research objectives. It also provides a brief overview of each chapter to help the reader make sense of the contents of the thesis.

CHAPTER 02

Craft in General & in the Chinese Context

CHAPTER 2: Craft in General and in the Chinese Context

2.0 Introduction

This chapter describes the landscape of craft theory. It comprises two main areas: Craft in general; and Craft in a specific Chinese Context. It examines different bodies of craft literature, including:

- Theoretical understandings of craft
- Craft's form at different times
- Literature relating to Chinese craft activities

This chapter starts with definitions of 'craft' and various meanings of 'craft', as it is valued from different angles (shown in section 2.2.1). When these understandings of craft are applied to the various craft categories discussed in section 2.2.2., it becomes evident why craft is often described as an 'ambiguous' or 'slippery' concept; it is if difficult to define in general terms because the various kinds of craft do not fit within with one necessary and sufficient condition. As suggested by Wittgenstein (1968), in dealing with such concepts, more emphasis should be put on 'similarities, relationships and a whole series of them at that' which is coined as *family resemblances*. Following with this direction, section 2.1.3 examines core scholarly descriptions of 'craft' in the literature. From this, craft is found to be closely linked to terms that imply expertise, human intelligence, tradition, and localisation. These terms help us better understand the essence of craft activities. Combined with a review of craft history in section 2.1.4, the evolution of craft and its relationship with art and design are further revealed.

The second section of the chapter, introduces and examines 'craft' within the Chinese context. In line with UNESCO's Intangible Cultural Heritage programme (2018), China has developed its own framework to support traditional making practices, as shown in section 2.2.1. With such top-down support mechanisms, Chinese society is witnessing a growing interest in, and resurgence of, traditional crafts. Based on secondary sources, relevant craft revival activities and design projects are grouped into categories, discussed in sections 2.2.2 and 2.2.3. Discussions of the findings and conclusions from this chapter are drawn in section 2.3.

2.1 Craft in general

This session comprises four main areas: 1) Definitions, meanings and connotations of 'craft'; 2) Craft taxonomies; 3) Scholarly descriptions of 'craft', and 4) Craft's historical development.

2.1.1 Ambiguous 'craft' concept

Like so many important words in English, the word 'craft' is "brief, pungent but ambiguous" (Lucie-Smith, 1981, p.12). Its ambiguity is reflected in a shift in the meaning of the word itself. According to the *Oxford English Dictionary* (2020), the word of 'craft' is inherited from Germanic word 'kraft', and it could simply mean 'strength and power'; this usage can be found in some sixteenth century texts (Lucie-Smith, 1981, p.12). References from the Middle Ages indicate it could also mean "occult skills or supernatural power", for example, in the word of 'witchcraft', as included in Samuel Johnson's *Dictionary of the English Language* (1773). A vestige of this meaning remains in the modern usage of 'crafty'; especially in a pejorative sense, it implies "cunning, deception or guile" (Risatti, 2007, p.9). In the British newspaper, *The Craftsman* edited by Caleb D'Anvers in 1729, 'craft' took on strong political implications through critique of the great problems of the day, and therefore the term 'the craft' came to mean "power and secret knowledge" in the 18th century (Greenhalgh, 1997, p.21-22).

These earlier meanings do not wholly characterise the word's modern usage. Today, 'craft' is variously defined by different people according to perspective or context. For example, in different disciplines, meanings or connotations are developed according to specific disciplinary focus, as noted by Frayling (2011):

> *"To **a sociologist**, the word 'craft' is associated with 'skilled manual labour' or 'the aristocracy of labour'. To **an economist**, with a stage in economic development preceding capitalism. To an **anthropologist**, with the maker as user, with homo faber or the maker of things and homo ludens or the 'deep play' of everyday life. To a **countryman**, with traditional rural pursuits. To **a literary historian**, with the anti-establishment stance of the Romantics. To **a laboratory scientist**, with the use of equipment to do science…**Policy-makers** today prefer to see 'craft' as a stimulus to local or regional economies, skills and materials, sometimes to wider networks. To **an art critic**, the word 'craft' is about the distinction between an 'art' – as in intellectual/conceptual – and a 'mere craft' – as in manual…To **a designer**, 'craft' is about the workmanship of risk and – most recently – the*

*slow design movement…To **educationalists**, the word is associated with learning by doing – experiential learning – rather than learning from books or from screens." (p.13-15)*

Craft today occupies a grey area between art and design. According to research on the self-identity of makers, terms like 'craftspeople' or 'craft-maker' are seldom used, they prefer to identify themselves as 'artists', 'artist-makers' or 'design-makers' (Schwarz and Yair, 2010, p.18-19). For those who position themselves in the art world, a high value is put on individuality and self-expression, whereas those who see themselves as design-makers place more emphasis on utilitarian ideas and function (Shiner, 2012). Such a passive position – as an adjunct to art or design, has raised prejudices about craft and craft knowledge, but to some extent, it has also been a driver to research into craft (Valentine, 2010, p.81).

2.1.2 Various craft categories

To better undertake research into craft, classification systems, or taxonomies, are often used to categorise the abundance of different crafts into specific fields (Risatti, 2007, p.31). Craft objects with common features are grouped together, and the characteristics and interrelationship among are explored. However, the criteria for categorisation varies, which means there are also many different classification systems.

The most common taxonomy is based on **materials**, and craft objects are classified according to different materials, such as, glass, ceramics, fibres, metals and wood. Another typical classification of craft is centred on **technical processes**, and 'craft' is understood as a **profession** that needs a high level of techniques and craftsmanship. According to Risatti (2007, p.160), 'technique' is a French word with a root in ancient Greek 'techne', referring specifically to "the knowledge of how to do or make things". The term of 'technique' is sometimes replaced by other words, such as 'workmanship' (Pye, 1968), 'technology' (Dormer, 1997) or 'skill' (McCullough, 2010), but there is a common focus on the means of making or doing things in these expressions. Examples of this technique-based classification contains the identification of different craft practitioners by common proper names (e.g. carver, smith, and turner), the organisation of craft objects by terms like weaving, blowing, carving and turning, and the identification of craft types by combining specific materials or specific types of objects with the verb form, such as wood carving, glass blowing, and furniture making (Risatti, 2007, p.159-160).

Crafts are also sometimes referred to and identified according to their **morphology** (structure and form), for example, dividing between two- and three-dimensional forms. And

further, 3D objects can be divided into cuboid shapes, such as drawers and boxes, and spheroid shapes, such as pots, vases, bowls and baskets; while the two-dimensional classification could include 'flat' forms that are rectangular, circular or ovoid, such as dishes, trays and rugs (Risatti, 2007, p.33-34). However, classification based on form can be problematic because the same craft object could overlap several categories at the same time. For example, a spherical bowl could be blown from glass or hand made by clay. The same confusion also exists in taxonomic sets according to material and technique, and therefore Risatti (2007) proposes an ingenious definition based on **applied function** in satisfying the body's physiological needs. Regarding a focus on function in this classification, he remarks:

> *"Function forces us to understand [form, material, and technique], not as discrete components, but as a constellation of interrelated elements residing at the core of the craft object. Thus, rather than approaching the field simply as a group of unrelated activities producing objects of widely divergent forms and materials worked through various diverse techniques, a taxonomy based on applied function provides a basis unified approach to the field."* (p.36)

All craft works, Risatti claims (2007, p.37-38), fit into one of three basic categories: containers, covers, or supports. Simply speaking, 'containers' include objects that are used to keep things in (e.g. jugs, baskets, bowls, and pots); 'covers' refers to objects that cover the human body (e.g. clothing, quilts and scarves), and 'supports' are objects used to supporting the human body (e.g. beds, chairs and table). His scheme, based on function, works well as a taxonomy, but also raises oppositions between 'function' and 'decoration/adornment'. Some traditional craft objects, although they do have a purpose, their primary role may be decorative, spiritual or conceptual. These kinds of objects include such things as amulets i.e. jewellery with an apotropaic function i.e. associated with good luck or good omen; Roman and Byzantine mosaics and stained glass with religious meanings; However, Risatti's insistence on physical functions leads him to deny these as crafts (2007, p.48- 49).

In addition, there are other typological taxonomies that attempt to integrate different components, and 'craft' here refer to **a dynamic process** related to keywords such as skill, creativity, techniques, aesthetics, and materials. For example, three concepts of 'material, function and demand' have been considered by Jenkins in his classification of Britain country crafts. These are categorised as *processing crafts*, *service crafts* and *creative crafts* (1978, p.9). Similarly, referring to applied art that combines aesthetics and design, Dormer (1994,

p.37) identifies four distinct crafts, including *Functional Crafts* that have a practical end, *Representational Crafts* that are designed for decoration, *Figurative Crafts* that feature human figures, animal and natural elements, in either two or three dimensions, and *Self-referential Crafts* or Objets d'art.

Philosopher Sōetsu Yanagi, who is seen as the father of the Japanese craft movement, he considered craft as **a heritage with cultural, societal and political meanings.** He loosely categorised Japanese crafts as four types, including folkcrafts, individual or artist craft, industrial craft and aristocratic crafts (Yanagi and Leach, 2013, p.198). Among these categories, Yanagi values folkcrafts most, seeing them "the purist form of the craft" and representing "the true beauty of the craftsmanship", because they encompass unself-conscious traditional values which have been recognised by the great mass of the people (Yanagi and Leach, 2013, p.198-199). Similar to Yanagi, Metcalf (1997, p.70-71) also emphasises traditional crafts with their use of traditional materials, traditional skills and forms that are kept from pre-industrial society.

2.1.3 Scholarly descriptions of 'craft'

As discussed in previous two sections, craft is an 'ambiguous' or 'slippery' concept, and different criteria is explored to categorise this broad craft into specific fields. Today, because craft is being studied today by a variety of academic disciplines, including ethnology, anthropology, psychology and science, and new understandings are continually being revealed. Among these, core themes about craft research are further echoed in different parts of the literature and provide insights into its essence and values. Various scholarly descriptions of 'craft' are summarised in this section as following:

- Craft as the mastery of material and technique
- Craft as a form of human intelligence and as the embodiment of human values
- Craft as the continuity of tradition
- Craft as an expression of localisation

2.1.3.1 Craft as the mastery of material and technique

Craft is described by Brulotte and Montoya (2019, p.21) as "a by-product of 'skilled technique'. The skilled nature of craft centres on the ability of the hand, including the strength and skill of the hand, the use of hand tools or power tools, or other common characteristics of handcrafts (Risatti, 2007, p.178; Pye, 1995, p.208). 'Hand knowledge' is

sometimes specifically discussed in the context of material culture – as an embodiment of human interactions with the material world, which involves "procedures for preparing material as well as sophisticated skill in the manipulation of that material by the hand" (Risatti, 2007, p.160). According to Metcalf's research (1997, p.78), many craft practitioners are motivated to start their career through the contact with raw materials. An understanding or feel for materials goes to the very heart of craft activities (Schwarz and Yair, 2010, p.109; Adamson, 2007, p.4). Hence, craft is concerned with an understanding of objective properties, including different factors affection physical properties and subjective qualities, such as density, mass, melting point, elasticity, and wear resistance (Pye, 1968, p.47; Risatti, 2007, p.227; McCullough, 2010, p.47).

However, this does not necessarily mean craft is only manual; it is also intellectual. Two centuries ago, the ancient saying - "the hand is the window on to the mind" by German philosopher Immanuel Kant had revealed close relationships between hand and human thinking (cited in Sennett, 2008, p.149). Heidegger (1968) explains their relationship in a detail as following:

> *"The hand is a peculiar thing. In the common view, the hand is part of our bodily organism. But the hand's essence can never be determined, or explained, by its being an organ that can grasp…The hand does not only grasp and catch, or push and pull. The hand reaches and extends, receives and welcomes – and not just things: the hand extends itself and receives its own welcome in the hands of others. The hand holds. The hand carries. The hand designs and signs, presumably because man is a sign…Every motion of the hand in every one of its works carries itself through the element of thinking, every bearing of the hand bears itself in that element. All work of the hand is rooted in thinking. Therefore, thinking itself is man's simplest, and for that reason hardest, handiwork, if it would be accomplished at it proper time."* (p.16)

Similar to any other skilled work, the development of craft skills relies on a continuing involvement and repetitive training process (Sennett, 2008, p.38), so as to achieve "complex skills of making to become so deeply engrained that they are there, readily available, almost without the craftsmen being conscious of it" (MacCarthy, 2008). Such a long accumulative process is further depicted by Sennett as a linear progression (2008, p.238): it begins with awaking the sense of touch through the fingertips, followed by the integration of hand, wrist, and forearm, and then coordination between hand and eye. Skills gained from this process are

seen as “embodied knowledge” or “procedural knowledge” in cognitive science, which refers to a form of knowledge in which the body knows how to perform a specific skill or task (Tanaka, 2011, p.149-150).

2.1.3.2 Craft as a form of human intelligence and as the embodiment of human values

According to Dormer (1994, p.8), there are some long-lasting prejudices against craft. One common misunderstanding is that craft skills are mechanical and rule-based, and therefore they are irrelevant to personal creativity (Dormer, 1994, p.40). However, modern science has sought to prove practical manual skills and physical movement that forms the basis of craft as a form of human intelligence. In 1950, the first intelligence test was created by Alfred Binet and Theodore Simon, and this notion of intelligence was then broadened by Gardner in his book *Frames of Mind*, including Logical/Mathematical, Linguistic, Musical, Spatial, Bodily-Kinesthetic, Naturalist, Interpersonal, and Intrapersonal (Marenus, 2020). As craft is tied to labour and physical handling, “bodily-kinaesthetic intelligence” is specifically significant to any consideration of craft activities (Metcalf, 1997, p.75). Regarding to this concept, Gardner (2011) remarks:

> *“Characteristic of [bodily] intelligence is the ability to use one’s body in highly differentiated and skilled ways, for expressive as well as goal-directed purposes… Characteristic as well is the capacity to work skilfully with objects, both those that involve the fine motor movements of one’s fingers and hands and those that exploit gross motor movements of the body.”* (p.218)

Once craft skills are developed to a higher level, an imagination-led stage begins to deepen technical understandings. Some typical examples are given by Sennett in his book *The Craftsman* (2008, p.195-213), and he highlights that imagination is particularly reflected in the use of tools – how craftspeople invent or improve imperfect or incomplete tools to fit specific needs. More importantly, there is a constant interplay between “tacit knowledge (serving as an anchor) and self-conscious awareness (serving as critique and corrective)” (Sennett, 2008, p.50). A pursuit of good quality also emerges from this stage. Unlike the beginner with a basic focus on ‘likeness’, master artisans have the ability to discriminate and see mistakes (Dormer, 1994, p.44-45). Such craft connoisseurship and knowledge are difficult to be expressed or shared in words, and therefore they are considered as tacit or personal knowledge (Polanyi, 1983), and resistant to rationalisation (Dormer, 1997, p.225;

Fry, 1995, p.208-209).

In addition, with reference to Schwartz's research on human values (2012), the values and priorities of those engaged in traditional making practices and contemporary craft objects are different (Walker, Evans, and Mullagh, 2019a). As central concepts in the social sciences, human values are generally described as "abstract ideals that guides human behaviour" (Hanel, Litzellachner, and Maio, 2018). Rokeach's book *The Nature of Human Values* published in 1973 shows that the value systems are large and dynamic. According to Schwartz (2012), values work together in a circular form, and these values can be divided as four categories, namely, openness to change, self-enhancement, conservation and self-transcendence. The cluster of openness to change values and self-enhancement values are related to external approval and rewards, like "financial success (money), social recognition (fame) and appealing appearance (image)" (Kasser and Ryan, 1996). In contrast, the cluster of self-transcendence values and conservation values are associated with intrinsic character, like community, family, religiosity, self-regard, caring for others and affiliation (Kasser and Ryan, 1996; Kasser, 2016). In general, intrinsic values and extrinsic values are correlated, but to some extent, they are also conflict with each other.

2.1.3.3 Craft as the continuity of tradition

Contemporary understandings of craft are often associated with 'tradition' in the use of traditional materials, traditional techniques, and a traditional context, which have survived from the period of pre-industrial production (Metcalf, 1997, p.70-71). In craft learning, it is of vital importance to inherit skills and knowledge from master craftspeople within the community, and associated traditional knowledge, including beliefs, behaviours and customs, which are handed down from one generations to the next (Zhan et al., 2017).

However, in humanities, and especially in relevant anthropological research, the notion of 'tradition' is normally associated with sad images of 'vanishing', 'disappearing' or 'residual' phenomena, which results in 'nostalgic', 'romantic', 'idealised' and 'fictionalised' understandings of culture (Varutti, 2015). Consequently, it is hardly surprising that tradition is often placed in counterpoint to innovation. Also, important components linked with the past, such as traditional designs, materials, manufacturing, techniques, values and beliefs, are frequently seen as obstacles to modern development (Holmquist, Magnusson and Livholts, 2018).

Instead of a rather narrow focus of the old dichotomies "tradition versus innovation", some scholars address potential innovation and value creation through tradition (Holmquist,

Magnusson and Livholts, 2018; Kouhia, 2016). The development of new knowledge is largely dependent on a recombination of already-existing understandings, and similarly, innovation can be achieved through the development of traditional knowledge (Cohen and Levinthal, 1990; Henderson and Clark, 1990). This is evident in craft-related research. For example, six case studies of family-based craft businesses show that traditional knowledge, including the use of traditional materials, forms and shapes, or the continuity of traditional manufacturing and finishing methods, contribute to the generation of radically new meanings and values (De Massis et al., 2016). Kouhia's research (2016) also reveals how tradition can be used as a resource in creative craft- and design-making. In such research, tradition is positively understood as "interactive, creative, and adaptive processes" that links past, present and future, and thus as a source of transformation to facilitate innovation (Clifford, 2013, p.28-29).

In addition, 'heritage', as a synonym for 'tradition', is also widely seen in craft-related literature. UNESCO recognises traditional making practices as important elements of cultural heritage, contributing to humanity's rich cultural diversity (UNESCO, 2001). Through its 2003 International Convention for the safeguarding of the Intangible Cultural Heritage, greater efforts are paid to sustainment of the intangible aspects that enable the creation of artefacts, including the continuity of knowledge, practices, skills, expressions, beliefs and traditions within communities (UNESCO, 2018, p.5). Up until July 2020, 180 countries have ratified, approved or accepted the convention, and an international network has been built to preserve traditional craft heritage worldwide (UNESCO, 2020a).

2.1.3.4 Craft as the expression of localisation

When globalisation, commercialism and mass communication lead to geographical uniformity and cultural homogeneity, there is an eradication of diverse places and a loss of the knowledge and values rooted in these places (Merchant, 2003, p.2; Jessop and Sum, 2000; Shim and Santos, 2014). According to human geographer Edward Relph, this phenomenon is labelled as *placelessness*. The term is often used to signify a lack of place-based consideration, and two main forces that give rise to a sense of placelessness - an uncritical acceptance of kitsch as mass culture, and an overwhelming reliance on technique to improve efficiency as an end (Relph, 1976, p.143). Based on his research, place, rather than an abstract, inauthentic, and a historic setting or space, is a location endowed with local meanings and values (J.T. Johnson, 2012).

Craft activities are often linked to ideas of 'place' and 'localisation' as they provide

insights into a long-standing local approach to material culture (Chudasri, Walker and Evans, 2012; Chudasri and Saksrisathaporn, 2017). Local, commonly available materials are often used in craft making, such as wood, bamboo, cotton or glass, which are renewable and/or recyclable (Zhan and Walker, 2019). Such place-based knowledge about materials and environmental conditions contribute to local ecological balance and environmental stewardship. Small-scale place-based production is also often adopted in craft business (e.g. Vitasurya and Pudianti, 2016). Compared with mass production, this local production system produces little waste and has less energy consumption and air pollution from transportation.

Today, original, unique and exclusive objects with a particularly local provenance are being appreciated and valued by consumers as "good work" (McIntyre, 2010, p.9, p.49; Petts, 2008; Woolley, 2010, p.141). These local connections contribute to fostering a sense of authentic human belonging and a sense of uniqueness (Brown, 2014, p.6; Williams et al., 1992; Casey, 2001). Relevant policy is also developed by the government or institutions to support place-based craft products. For example, the 'Spirit of Place' scheme run by Craft Northern Ireland and National Trust Northern Ireland strongly supports Irish makers in selling their piece of work at one of nine participating retail stores located in the National Trust for a six-month period (Brown, 2014, p.21). There is also a growing number of Buy Local and Buy Handmade campaigns all around the world, designed with an aim of promoting local makers and designers and supporting local economies and business (Brown, 2014, p.23), e.g. *Buy Local Craft* campaign launched by the Craft NI in the run up to 2020 Christmas (Craft NI, 2020). Such campaigns are particular important, because a place-based approach does, by its very nature, largely helps build resilience within the community to respond to radical changes and risks (S.S. Patel et al., 2017), and tends to develop a distributed and collaborative system characterised as "small, local, open, and connected" (Manzini, 2011).

2.1.4 Craft's historical development

In this section, history is used as a tool to reveal the status of craft, which has fluctuated over the years alongside social developments. This is presented as four phrases:

1. Craft and pre-industrialisation (before mid-18th century)
2. Craft and industrialisation (from the mid-18th century to the 20th century)
3. Craft renaissance (from the 20th century)
4. Craft and innovation (from the 21th century)

2.1.4.1 Craft and pre-industrialisation (before mid-18th century)

Prior to industrialisation, normally in rural areas, craft objects were handmade by craftsperson on a small-scale basis to supply the community with its day-to-day necessities. As British historian John Geraint Jenkins (1978) describes:

> *"If a farmer required a plough then a plough was made [by the craftsman]; if this wife required a butter churn, then the local cooper made one; if the daughter required a dresser as part of her dowry, then the local carpenter built one. The craftsman's chief quality is his ability to make these simple things; to make something useful and durable without any unnecessary adornments and decorations."* (p.6)

Typical characteristics of pre-industrial society, including agrarian economy, limited production, low division of labour and small population, largely contributed to social stability at that time (Henry, 1966, p.8). This helps give the craftsmen a sense of satisfaction to their work, high self-esteem, and pride in their skills (Thomas, 1964). At that time, the understanding of 'design' and 'craft' were under the same umbrella of human creation, which refers to the design and the production of daily-use objects. As shown in the *Design Family Tree* drawn by David Walker in 1989 (Figure 1), craft is depicted as the foundation of design, and different design fields, design skills and design approaches are connected through craft roots (W.T. Li., Ho and C. Yang, 2019).

In Europe, during the first or second medieval period in Europe, this was "the period of pure handicraft" (Morris, 1888), as fine craftsmanship was respected for religious reasons and craftwork was supported by the guild system (Lucie-Smith, 1981, p.122, p.126). At that time, art and design had not yet been distinguished as two distinct specialities, but were included in the broad range of workshop skills (J. A. Walker, 1989, p.38). By the Renaissance, fine artists were separated from the community of medieval craftsmen and "began to accumulate the outward honours and signs of respect which confirmed his rise in the social hierarchy", as its art–theory was inclined to see art as intellectual activity superior to craft as physical endeavours (Lucie-Smith, 1981, p.160, p.165). However, Sennet (2008, p.70) pointed out such view is obviously incorrect, he exemplified medieval building practices and argued they were innovatively designed and well-constructed. Yet such innovation was achieved through a relatively long accumulated process with collective effort, which means it might not be easily observed and not be well perceived.

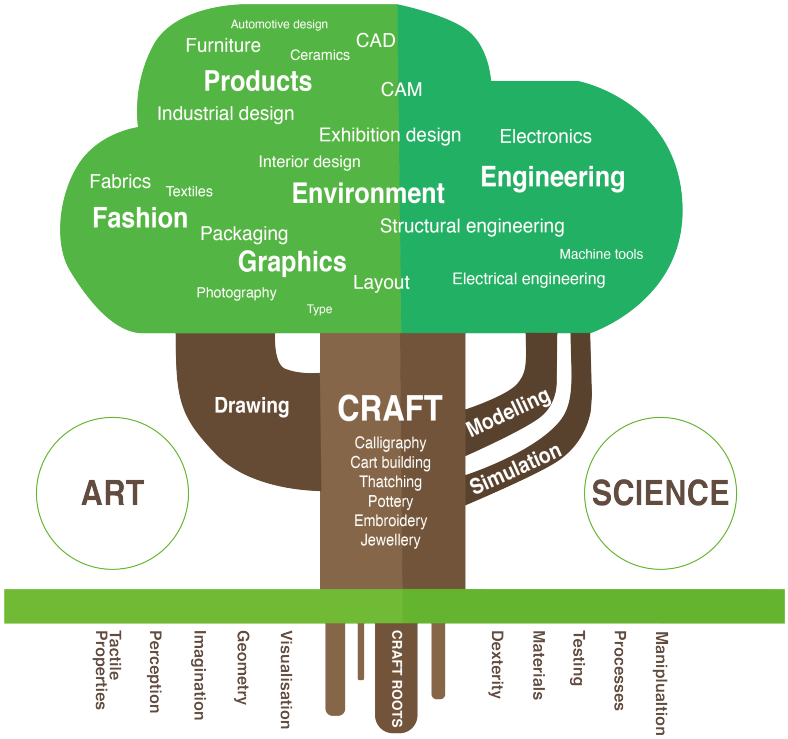


Figure 1 Design family tree drawn by David Walker in 1989 (adapted from W.T. Li, Ho, and C. Yang, 2019)

2.1.4.2 Craft and industrialisation (from the mid-18th century to the 20th century)

Entering the seventeenth century, there were more power-driven machinery, assembly lines, and growing automation; The later Industrial Revolution further accelerated the growth of capital industry and decisive expansion in the market for household products (J. A. Walker, 1989, p.38-39). As a result, this period brought out the more intensive labour divisions, and new roles of industrial artists and draftsmen appeared. This change signals concept development has been separated from traditional artisanal mode in which craftsmen used to responsible for both design and production (Heskett, 2001, p.23). Due to such significant changes, in seventeenth and eighteenth centuries, there was a decline of craft production. Since then, a depressing scenario has been linked to craft, as shown in the following description:

> *"The crafts necessarily appear today as residual phenomena, anachronisms or survivals from the past. The less a society is developed industrially and technologically, the more it relies upon crafts in everyday life, hence they continue to play an important role in third world countries. Within advanced societies, in sharp contrast, crafts tend to be part of the luxury and gift markets. First and third worlds come together in the craft*

products made by the poor for affluent foreign tourists, that is the so called 'ethnic', 'tourist' or 'airport arts'. It might seem that the destiny of the crafts is to vanish altogether." (J. A. Walker, 1989, p.39)

With the development of modern industry, the nineteenth century saw a further need for specialisation. Design was thoroughly separated from craft, and two separate strands - industrial and engineering design evolved (Von Stamm, 2008, p.525). However, there were dissenting voice of machinery and industrial products since the mid-19th century. In Britain, John Ruskin, William Morris and their followers in British Arts and Crafts movement passionately argued a return of craft production and saw this as a way of bring humanity back into the workplace. However, their idealised solution relying on craftsmanship as antidote against machinery and industrial products finally fell into nostalgia (Heskett, 2001, p.23).

As an influential social ethos, British discussions on craft, design and industrialisation later spread across Europe and the United States, and also expanded to Asia. But different from Britain's negative or ambivalent attitude towards machine, European artists and designers tended to embrace machine production more readily. This belief has continued to be strongly influential until today in design fields in countries such as Germany and Scandinavia (Heskett, 2001, p.24). In the United States, its Arts and Crafts Movement was more a philosophy of living rather than a distinct aesthetic pursuit (Magoulis and Krause, 2018, p.8). But it soon ended in the early-twentieth century as designers and artists were forced to adapt to machine-age modernity and social development with the pursuit of a national identity (Lucie-Smith, 1981, p.232). In the far east, Sōetsu Yanagi launched Mingei (folk craft) movement in the early 1920s in Japan, and the integration of Buddhist philosophy provided a different insight into the beauty of craftsmanship (Leach, 2013, p.90-93)

2.1.4.3 Craft renaissance (from the 20th century)

In the twentieth century, craft experienced a renaissance, and its meaning was re-examined in the context of modern movement. Two influential design schools were established in Germany in this period: the Bauhaus and Ulm School of Design. The Bauhaus attempted to unify principles of industrial production with aesthetics of craft, and the latter Ulm School of Design further incorporated scientific technology into its education system, so as to suit a more complex modern industry system (Takayasu, 2017). As Bauhaus teachers emigrated at the end of the 1930s, the influence of the Bauhaus spread across Europe and to the United States of America. This Bauhaus pedagogical model sparked heated debate about

the "relative status of craft and industry, the relationship between prototype and manufacture and the role of spiritual values in a modern, increasingly materialist world" (Frayling, 2011, p.120). Such discussions lasted until the mid- and late-twentieth century. For example, in the 1970s, the concept of craft-based design originated from the Radical Design Movement in Italy (Holmquist, Magnusson and Livholts, 2018). Handmade- and craft-based approaches were embraced by designers to explore new materials, forms and objects, in order to challenge a dominated ethos which is subordinate to the market (Rossi, 2013). Such craft-based explorations are seen as an important part of the twentieth-century's design movement. According to historian Paul Greenhalgh (1990), he notes this period had two phases:

> "*The first I will fashion the **Pioneer phase**, this opening amid the deafening thunder of the guns of the First World War and closing with the demise of the key movements between 1929 and 1933. The second phrase [from early 1930s to 1970s], I will label the **International Style**…the first phase was essentially a set of ideas, a vision of how the designed world could transform human consciousness and improve material conditions... The second phase was less of an idea than a style and a technology; a discourse concerned principally with the appearance of things and with their manufacture*." (p.2-3)

In addition, in the 1970s, the foundation of state-backed organisation – the Crafts Advisory Committee (now the Crafts Council) in UK is seen as a milestone of British craft resurgence, because it effectively crystallised craft as an industrial sector with benefits linked to economic development (Peach, 2013). With this great promotion, craft was included into the UK higher education almost at the same time, and students were encouraged to learn craft skills and to consider their careers in the craft sector (Valentine, 2010, p.75). Since then, there has been a shift from "craft as an adjunct to art and design" to "craft as a discipline in its own right" in UK (Valentine, 2010, p.78). Similarly, in the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden), since the early 1990s, craft's theoretical meaning has been examined with a multidisciplinary approach under the umbrella of 'craft science', and craft courses (i.e. textile and technical skills) has been introduced as a compulsory subject for all pupils (Kokko et.al., 2020). Today, in Finland, according to its National Core Curriculum for Basic Education, a holistic approach is implemented in craft education, which relates to design and problem-solving (Pöllänen, 2009).

2.1.4.4 Craft and innovation (from the 21st century)

From the 21st century, as lifestyles, society, culture and science change continuously, craft-makers utilise some advantages offered by modernity to drive innovation (Nugraha, 2012, p.6).

Especially with technological development and the '4th industrial revolution ('Industry 4.0')' (KPMG, 2016, p.12), "a new maker community is emerging, connecting the culture of traditional skills and materials with modern digital production, distribution and interaction techniques" (Yair, 2011); In particular, innovations in five areas, biotechnology, manufacturing, engineering, material, and digital and communication technology, have become key directions (Yair, 2011). Bio-jewellery, for example, is a collaborative project between researchers at the Royal College of Art and Guys Hospital, London (Martin, 2006). Bone cells are used as materials in order to shape final bone tissue into rings, with the support of a bioactive scaffold. Meanwhile, with the advent of 3D manufacturing processes, such as 3D printing and 3D weaving, makers' creative concepts can be quickly realised and tested. Ceramicist Michael Eden has creatively combined a non-fired ceramic coating technique with rapid prototypes plaster and gypsum (Yair, 2011). Many craftspeople today also make good use of digital and communication technology, such as the creation of personal website, the promotion or selling via online platforms. And these strategies help convey craft values to consumers and generate new potential for business development (Brown, 2014, p.11).

In addition, there are new craft business models, such as craft towns and craft-based tourism (Brown, 2014, p.17-18). For example, located on the North Ayrshire coastline overlooking Arran, West Kilbride is designated as Scotland's only Craft Town (http://www.crafttownscotland.org/). Nine subsidised craft studios are situated along the main street, and there are many craftspeople, many of them, like outstanding silversmith Marion Kane, with an international reputation (Craft Scotland, 2020). A refurbished church is also used as a craft exhibition space and a hub for the town's burgeoning creative industry (Ibid). In 2006, the town was named as the UK's Capital of Enterprise, and in 2012, it was the winner of Scotland's Creative Place Award (Scott, 2012). Similarly, Guy Mallinson, a wood maker and furniture maker, has opened his woodland workshops (https://www.mallinson.co.uk/), which have become an important cultural tourism destination in Dorset, England. With new opportunities emerged from niche markets, there is a call for craftspeople to collaborate with people in different areas, in order to develop, promote and sell their work. Especially, business training and entrepreneurship education are welcomed by craftspeople (Schwarz and Yair, 2010, p.99; Crafts Council et al., 2012, p.3).

2.2 Craft in the Chinese context

In many regions, such as Europe, the UK, the Nordic countries, and Australia, craft is considered as one of the constituent disciplines that make up the creative industries (European Commission, 2018, p.21; Department for Digital, Culture, Media and Sport, 1998; Kong, 2014; Masalin, 2015, p.40-51). Rather than their top-down support mechanisms aim to help sustain the continuity of crafts for primarily commercial purposes, in China, its emphasis is mainly given to cultural reasons. To better understand craft in the Chinese context, this section presents literature relating to the Chinese traditional crafts and relevant craft revival activities, as well as design practices.

2.2.1 Traditional crafts as part of China's Intangible Cultural Heritage Programme

For a long time, our understanding of 'heritage' has been limited to the tangible aspects of culture, e.g. monuments and historical sites (World Commission on Culture and Development, 1995, p.195). For example, in the UK, the main focus of heritage and conservation activities today is still on *tangible* heritage in the form of buildings and artefacts (Walker et al., 2019). It was in the post-WWII era that Japan took the lead in safeguarding intangible cultural heritage (Kurin, 2004). According to its Law for the Protection of Cultural Properties passed in 1950, tangible and intangible cultural heritage, as well as best individual artists and craftspeople as "living treasure", were designated as "national resources and assets to be protected, appreciated, utilized and managed" (Thornbury, 1994; Kurin, 2004).

Since the late 20th century, the United Nations Educational, Scientific and Cultural Organisation (UNESCO), a specialised agency of the United Nations (UN), has also been making significant efforts to conserve intangible cultural heritage. In 1989, its Recommendation on the Safeguarding of Traditional Culture and Folklore was introduced, and intangible aspects of traditional culture and folklore were noted. In 1992, its Intangible Cultural Heritage programme was created, and one year later, the Living Human Treasure System was introduced (Aikawa, 2004). The landmark undertaking was the ratification of the International Convention for the safeguarding of the Intangible Cultural Heritage in 2003. Intangible cultural heritage is defined as 'the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognise as part of their cultural heritage' (UNESCO, 2018, p.5). Traditional crafts are generally regarded as the 'most important tangible manifestations of ICH', and it recognises that more

effort needs to be given to the continuity of skills and knowledge embedded in craftsmanship, rather than focusing on craft objects themselves (UNESCO, 2020b).

In 2004, China signed up to the UNESCO Convention for the Safeguarding of ICH; one year later, the State Council announced every second Saturday of June as China's Cultural Heritage Day, and the Intangible Cultural Heritage Law was later passed in 2011(Gao, J. Zhang and Long, 2017). Today, the ICH Department of the Ministry of Culture and Tourism is responsible for ICH safeguarding activities (MCTPRC, 2019a). A mechanism characterised as 'central initiative and local participation' is employed to create ICH and ICH Inheritors lists at the national, provincial, municipal and county levels (Kuah and Liu, 2016). Inheritors are 'carriers' of ICH and have had this expertise passed down through their family and are often in a long line of craft makers who bear the responsibility for the inheritance and protection of national ICH practices through recognised representativeness, authority and influence (Su et al., 2020). The ICH Inheritor programme is a national-level initiative which 'aims at protecting traditional culture while also recognizing outstanding individuals in order to encourage more people to become involved in promoting and developing China's intangible cultural heritage' (Beijing Tourism, 2018). To apply for the ICH Inheritor programme, craftspeople submit an application to their local ICH department where their application is assessed through a strict screening process by an evaluation committee including academics and government representatives (MCTPRC, 2019b). If the application is approved, an annual stipend is provided by the government for artisans to disseminate aspects of their ICH to the public and to participate in related training events (Maags, 2019). For example, a nationally-recognised inheritor receives an annual allowance of 20,000 yuan (about £2,300). To date, according to five national ICH Inheritor Lists (2007, 2008, 2009, 2012, 2018), a total of 896 artisans have been designated as ICH inheritors (ICH China, 2020b).

2.2.2 Relationship of traditional craft heritage to China's Cultural Self-confidence agenda

Culture is emphasised as a country's inner spirit and a form of the country's "*soft power*" (Nye, 1990). China has witnessed rapid economic growth in recent decades. However, in comparison to such an impressive achievement in economic development, China's long cultural heritage has had only limited influence both domestically and internationally (Y. Zhang and Ye, 2018). To redress this imbalance, a national agenda of 'Cultural Self-

confidence' is created, and the word 'cultural self-confidence' is described by politicians as *"a state of mind that is based on the full affirmation of the country and the culture of the country, resulting in a sense of cultural honour and firm faith"* (H. Yang, 2018).

In the history, Chinese cultural confidence has fluctuated with the nation's development (Zhou, 2012). Ancient China was home to one of the four early civilisations in human history. Its Confucianism-oriented culture dominated Chinese feudal society for more than 2000 years and deeply influenced East Asian communities (Wu, 2014, p.52). By the eighteenth century, China's cultural influence had been extended as international trade increased and Chinese luxury goods (particularly silk, porcelain and tea) were exported to the West. However, this came to an end with the outbreak of the First Opium War in 1840. Constant wars with 'western ideological invasion' put China in a deep cultural predicament (J. Zhang, 2017). Even though some attempts had been made for cultural reconstructions from the mid-nineteenth century to the mid-twentieth century, such as the New Culture Movement (1919) and the Cultural Revolution (1966–76), one common problem of these attempts was the self-denial of the traditional Chinese culture (J. Zhang, 2017).

As discussed in section 2.2.1, entering the twenty-first century, an Intangible Cultural Heritage (ICH) fever has swept across Chinese society (Maags, 2018, p.122). In keeping with national Cultural Self-confidence agenda, cultural revitalisation where ICH crafts protection has been given a high priority at the political level, contributing to the country's social cohesion and economic advancement.

2.2.3 Traditional craft revival activities occurring in modern China

The Chinese government have contributed to a shift of the country's industrial focus: from 'made in China' to 'created in China' (Moon, 2018). As a result of this policy, thousands of *Wenchuang Chanye* (culture-related industry) hubs have been created in urban metropolises, and traditional craft enterprises and makers are encouraged to adapt and evolve to suit a consumer niche in the commercial market (Francis, 2019). Also, since the Plan on Revitalising China's Traditional Crafts was implemented in 2017, considerable efforts have been made to improve the design, production and quality of traditional products (Hu, 2017). According to a recent report by the UNCTAD (United Nations Conference on Trade and Development) (2018, p.11), by 2018, the largest exporter of creative products worldwide is China.

To make sense of traditional crafts revival activities and craft-related design innovations happening in Chinese society, a preliminary investigation is conducted. Due to limited academic resources, this investigation is mainly based on online secondary materials. Keywords, such as 'crafts revival' and 'traditional crafts revival', were used on Chinese largest search engine Baidu. According to search results, except for government documents, related crafts revival information was normally shown on the website of big companies, in reports by academic intuitions or universities, in news about historic old brand craft enterprises, and documentary films about design-makers. For each category, 1-4 typical examples were further analysed, and their characteristics can be identified as:

Corporate Social Responsibility (CSR) projects supported by big companies: in response to China's initiative to revive and appreciate its traditional crafts industry, many large companies provide various forms of support via their "corporate social responsibility" (CSR) projects (Jamali, and Mirshak, 2007). One typical example is BMW's CSR programme called China Culture Journey. This programme helps sustain Chinese ICH and traditional crafts in a variety of ways, including cultural exchanges, creative collaborations and exhibitions (BMW, 2018). Since 2017, its project team has conducted field research in 22 provinces with visits to 337 intangible cultural heritage in 6 national-recognized Eco-Cultural Preservation Areas. To date, more than 16,000,000 yuan (about £1,799,775) has been paid to support academic research and projects on 90 endangered crafts.

Funded research projects conducted by academic intuitions or universities: many craft-related research projects are supported by central or local governments. For example: The China National Arts Fund (CNAF) is a non-government organization formed in 2013 to boost China's cultural influence. Some of its recent funded projects provide training for traditional makers and are conducted by academic institutions and universities (CNAF, 2018). In general, these projects look into problems and challenges in specific regions, such as a project called Shouyi Nongcun that investigates endangered crafts in rural areas (Pan, 2011), make efforts to attract more people to be involved, e.g. by in-depth craft experience activities in Hexu training programme (Kunming Government, 2011), and explore to facilitate innovative collaborations in different fields, e.g. in Yicun Yipin project.

Design projects led by historic old brand enterprises or design-makers: innovation within traditional crafts is often explored in these projects. For example, in Cixi city, many local Yue ware historical brands explore to integrate contemporary elements to their traditional designs in order to expand product lines (Y. Zhang, 2015). Meanwhile, many designs today get inspirations from traditional crafts (e.g. patterns, techniques and materials),

to develop tradition-based designs, such as Rong project (http://www.handmadeinhangzhou.com/). Noticeably, a collaborative approach is normally adopted. For example, designer Li collaborate with experienced weavers to make round fans that suits contemporary aesthetics (The Great Channel, 2016, 04:25).

2.3 Summary

This chapter has examined definitions and descriptions of 'craft' in order to reveal its various meanings, associations and connotations. Different bodies of literature were used to build an understanding of craft and perspective of craft practices. The discussion included theoretical understandings of craft, craft's diverse forms at different times, and how craft is regarding and being supported in today's China.

The literature frames craft as an expansive and elusive concept. A general definition of craft that adopts one necessary and sufficient condition cannot be applied to all cases. This was explained in section 2.1.1 in terms of: 1) changing meanings and understandings of the word 'craft' itself, 2) the various connotations valued by different people with different perspectives, and 3) the blurred boundaries and hybrids among craft, art and design. However, the literature also provides insights into craft essence and values. Key elements of craft activities and core themes about craft research are discussed in sections 2.1.2 and 2.1.3. A particular emphasis on traditional crafts practices in the Chinese context is also revealed in section 2.2. This helps narrow down my research topic from a broad, abstract 'craft' concept to a specific area, i.e. local, long-established, traditional craft practices that are regarded as part of the ICH of the region or the country. Key findings of craft are summarised in Table 1.

In addition, in section 2.1.4, craft's diverse forms at different times are presented. In pre-industrial society, there was a traditional artisanal mode in which craftsmen was responsible for both design and production. There was a balance between production and needs at that time, and craft objects were handmade for the community to suit daily needs. It was after the Industrial Revolution with a more intensive labour divisions, craftsmen were largely replaced by industrial artists and draftsmen. This signals design was separated from craft, and two separate strands – industrial and engineering design evolved. Since then, craft had experienced a long period of low status. Until the 20th century, within the context of modern movement, the meaning of crafts was re-examined, and new relationships between craft, design and industry were explored. Entering the 21st century, we are witnessing a wave of craft resurgence, and new opportunities emerge from craft market call for further craft-design

collaborations. Such collaborations are mainly supported in three ways in the Chinese context, including CSR projects by large companies, research projects by academic institutions and universities, and 3) design projects led by historic old brand enterprises or designers. Key findings drawn from this part of the chapter are summarised in Table 2 regarding the relationship between craft and design.

Key findings from this chapter are summarised in Tables 1-2. They lay the theoretical foundation for the primary research which is at the core of this thesis, and provides secondary-source data about Chinese traditional craft practices and craft activities occurring in Chinese modern society. Because terms like 'revival', 'sustainment', 'continuity' and 'sustainable development' are echoed in different parts of the literature, the theoretical potential of relating craft research to sustainability emerge. Led by this direction, in chapter three, 'sustainability' as another important area, is reviewed, and the relationship between design and sustainability are also discussed.

Table 1 Summary of craft in general and craft in the Chinese context

Finding No.	Description	Chapter Sections
F 2.1(a)	• Craft is a holistic concept with a variety of interrelated core components.	2.1.2
F 2.1(b)	• Craft integrates technical skills with material knowledge in ways that depend on long-term and systematic learning and repeated practice.	2.1.3.1
F 2.1(c)	• Craft is not only manual work, but also an intellectual and creative process.	2.1.3.2
F 2.1(d)	• Craft is the embodiment of human values, and the values and priorities of those engaged in traditional making practices and contemporary crafts are different.	2.1.3.2
F 2.1(e)	• Craft is the manifestation of tradition and heritage, sustaining cultural continuity within local communities.	2.1.3.3
F 2.1(f)	• Craft is an expression of localisation with place-based considerations.	2.1.3.4
F 2.1(g)	• Craft today is being influenced by modern markets and is re-shaped by modern manufacturing technologies.	2.1.4.4
F 2.2(a)	• In China, there is a particular focus on traditional craft practices, and they are supported by a top-down approach – with the support of China's ICH programme, national Cultural Self-confidence agenda, the Plan on Revitalising China's Traditional Crafts and associated Wechuang Chanye (culture and creative economy) government initiatives and programmes.	2.2.1 2.2.2 2.2.3
F 2.2(b)	• Craft revival activities occurring in China are categorised into three types, 1) CSR projects supported by large companies, 2) research projects launched by academic institutions and universities, and 3) design projects led by historic old brand enterprises or designers.	2.2.3

Table 2 Summary of the relationship between craft and design

Finding No.	Description	Chapter Sections
F 2.3(a)	• Craft and design overlap in the creation of physical objects (e.g. the use of hand skills, the selection of materials and the consideration of forms).	2.1.4.1
F 2.3(b)	• The designing and the making are separated in the mass-production process. Since the nineteenth century, product design had been highly developed with an emphasis on engineering, industry and technology.	2.1.4.2
F 2.3(c)	• Design and craft can be connected via developments in terms of aesthetics, functions, potential markets and production technologies, e.g. successful attempts in the Bauhaus and Ulm school of Design.	2.1.4.3
F 2.3(d)	• Craft and design are identified as creative industries in UK, while craft activities and relevant design practices are situated within the policy framework of culture-related industry in the Chinese context. But they are all recognised with benefits linked to economic development in UK and China.	2.1.4.3 2.2.3
F 2.3(e)	• The craft process is linked to design and problem-solving, e.g. the integration of craft education and design thinking in Finland.	2.1.4.3

CHAPTER 03

Sustainability & Design

CHAPTER 3: Sustainability and Design

3.0 Introduction

Inspired by key findings from chapter two, this chapter seeks to make sense of 'sustainability', and also explore the relationship between design and sustainability. To do so, core bodies of literature, including 1) the emergence and development of sustainability, 2) core understandings of sustainability in the contemporary world, and 3) the role of design in response to sustainability, and 4) design approaches to sustainability. All these are critically reviewed or examined.

The chapter begins with a brief history of sustainability in order to answer two questions: where did this word come from? and what does it actually mean? Sections 3.1 shows this concept can be traced back to ancient civilisations, and a concern for the future of our resources has been a constant issue throughout human history. With development of sustainability understandings, there has been a shift in its focus from primarily environmental stewardship to a broader range of concerns that also include socio-cultural and economic issues. As sustainable development has been recognised as a long-term goal since late 20th century, new connotations and explanations have been being added to the word. In the following, section 3.2 critically examined contemporary understandings of sustainability, including pillar-based theories, technology-based arguments, the UN Sustainable Development Goals, and relevant legislation/regulations aimed at driving sustainable development forward. With these understandings, the role of design in response to environmental/social issues is discussed in section 3.3, and different design approaches to sustainability are compared.

In essence, this chapter focuses on debates that help understand design within sustainable contexts, instead of a broader review of the dispersed sustainability-related literature. Key findings from this chapter are discussed in section 3.4.

Note: Two terms – "sustainability" and "sustainable development", are frequently mentioned in this chapter, but they are not interchangeable with each other. Sustainable Development was defined by the Brundtland report (see its detailed description in section 3.1.4). It means continued notions of development which is usually understood as material improvement, innovation and economic growth according to the Triple Bottom Line, which Elkington (its creator) (2018) has admitted has not worked due to a lack of integrated implementation. Sustainability is about a state of being, a way of living that, in a fully integrated and interdependent manner, is environmentally responsible and meaningful to

people at the practical, social, and personal levels. To achieve it, we also have to ensure our approaches are economically viable. One typical example of this is Walker's Quadruple Bottom Line of Design for Sustainability, see section 3.3.4.

3.1. The emergence and development of sustainability

This section discusses the evolution of sustainability following a quasi-chronological pattern that provides an overview of the sustainability field in four phases:

1. ancient philosophy and practices addressing environmental issues;
2. early concepts of sustainability;
3. growing awareness of sustainable development; and
4. sustainable development as a global goal.

3.1.1 Concern about environmental problems in ancient philosophy

Even though notions of 'sustainability' or 'sustainable' were officially included in the Oxford English Dictionary only in the late 20th century, the concept of environmental sustainability is actually one that has been around for as long as humans have: a balance between human activities and nature (Van Zon, 2002, p.1, p.9-10). In bygone civilisations, ideas that we would today refer to as sustainability problems can be found. For example, in ancient India, Hindu religion had stressed awareness in the conservation of forests, trees and wildlife; in its ancient scripture Vedas and Upanishads, there were references to ecological balance, weather cycles, hydrological cycle and rainfall phenomena (Renugadevi, 2012). Similar concern for environmental problems, e.g. land deforestation and soil erosion, also appeared in ancient Egyptian, Mesopotamian, Greek and Roman civilisations (Du Pisani, 2006).

In the west, well-known ancient philosophers, including Plato in the 5th century BC, Strabo and Columella in the 1st century BC and Pliny the Elder in the 1st century AD, discussed environmental damage caused by human activities in their publications (Du Pisani, 2006). In China, an ancient social and ethical philosophy called *Tianren Heyi*, which means the harmony between nature and human beings, is still influential toady (Yao, 2014). This philosophy is seen as the core of Taoism and Confucianism, and it dominated Chinese feudal society for more than 2,000 years. Such ancient knowledge or practices of caring for the natural environment can be seen as the earliest understandings of 'sustainability'.

3.1.2 Early Modern concepts of sustainability (from 18th century to 19th century)

In the European early modern period, whose beginning are approximately in the early 16th to the mid-18th century, there were significant social changes and ideas about progress and growth started being developed. Following the European Renaissance, many traditional ways of thinking were questioned, and society witnessed the spread of humanism in the formal of liberal arts, the Reformation in religion, the rise of global trade and the spread of European colonial empires. The Enlightenment and Industrial Revolution led to many developments in technology, science and industry and major social transformations and modes of working. These changes led to the industrialised-production of products along with population migrations from rural areas to urban centres and, in the 20th century, to the mass-production of consumer products. These developments meant that western society became more "individualistic, rationalistic, secular and far more urbanised" (Walker, 2006, p.19). With the influence of modernism, some scholars expressed their concern about the problems caused by industrialisation, such as the magnitude of resource consumption and population growth (Malthus, 1926, p.13-14, p.346; cited in Du Pisani, 2006).

This period also witnessed growing concern about the natural environment. Georgius Agricola (1950, p.8), a German scholar and scientist known as 'the father of mineralogy', pointed out the negative influence on wild animals caused by human woodcutting and mining activities. In the 18th century, due to massive consumption of wood for shipbuilding, mining or other industries, there arose a serious shortage. This raised concerns about the future of natural resources, which is the very same argument of 'sustainable development' today (Van Zon, 2002, p.19-20, p.55-58). In 1713, Hans Carl von Carlowitz refined ideas for the *nachhaltende Nutzung* (sustainable use) of forest resources (Du Pisani, 2006). His view was that "only so much wood should be cut as could be regrown through planned reforestation projects", and this laid a basis for contemporary forestry (ESP, 2020). In the 19th century, some scholars also expressed concerns about unlimited extraction of energy resource. For example, Jevons stressed that coal was a type of finite, non-renewable fossil fuel, and therefore he argued adopting, "every means of sparing the fuel which makes our welfare" (1866, p.5).

3.1.3 Growing awareness of sustainable development (from 20th century)

In the 20th century, after a long period of industrial, scientific and commercial development and expansion, a series of problems caused by human activities emerged. For

example, the Great Smog of London, which occurred in 1952, was one of the worst air pollution episodes in history and resulted in around 4,000 deaths in the city (Wilkins, 1954). In the face of the devastating consequence caused by human activities, the Clean Air Acts of 1965 and 1968 were introduced to make environmental improvements. Subsequently, the 1973 oil crisis, which began with the oil embargo by the Organisation of Arab Petroleum Exporting Countries (OPEC), partly facilitated the development of alternative energy sources (Walker, 2006, p.20-21).

These challenges - environmental pollution, damage and energy crises, characterised much of the latter half of the 20th century. It was a time of considerable reflection and change, especially the emergence and expansion of a growing 'Green' movement (Walker, 2006, p.21). For example, many influential international institutions and NGOs for environmental protection were set up between the early 1960s and the early 1970 (see Table 3 in the following).

Table 3 Influential international institutions and NGOs for environmental protection established from 1960 to early 1970

International institutions/NGOs	Year Establ.'d
The World Wildlife (WWF)	1961
The Environmental Defense Fund	1967
The Club of Rome	1968
US Environmental Protection Agency	1970
Friends of the Earth	1971
Greenpeace	1971
United Environmental Programme (UNEP)	1972

During these same years, movements in social issues and human rights were advanced, which contributed to current concept of sustainability. Specifically, there were three key words, namely: Civil Rights, Feminism and Gay Rights (Walker, 2006, p.21). The civil rights movements peaked in the 1960s, including a series of worldwide political movements aimed at achieving equal rights under the law. One symbolic example during this period was the campaign for African American rights, and the significant historical events include Martin Luther King's speech in 1963, race riots occurred in major cities across the US during the mid-1960s and desegregation eventually announced by the US Supreme Court in 1969 (Walker, 2006, p.21). Also, important milestones in fighting for women and gays' rights included the legalisation of abortion for women in the US and the elimination of homosexuality from the list of mental disorders from American Psychiatric Association.

When looking back at modern history, environmental and social movements occurred

during the period of the 1960s and early 1970s laid the foundations for contemporary understandings of sustainability (Walker, 2006, p.22). People started taking actions and establishing organisations in response to environmental problems, energy crisis, social inequality and human rights issues. The publication of *The Limits to Growth* by the Club of Rome in 1972 predicted in a negative way that many natural resources vital to human development would be depleted within one or two generations (Kuhlman and Farrington, 2010). This publication helped raise public consciousness about sustainability, especially the relationship between people's economic activities and environment (Meadows et al., 1972, p.181).

3.1.4 Sustainable development as a global objective

In 1987, *Our Common Future* (commonly known as the Brundtland Report) was published by the World Commission on Environment and Development, and the concept of 'sustainable development' was formally introduced as a 'global objective' that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, p.12, p.43). Five years later, in 1992, the United Nations Conference on Environment and Development (UNCED) took place in Rio de Janeiro, and political leaders from all around the world pledged to support sustainable development goal (Dresner, 2008, p.2). Since then, this has been seen as a vital way out of our environmental crisis and its potentially disastrous consequences (Kuhlman and Farrington, 2010; Walker, 2006, p.17).

Until now, the WCED definition is still one of the most quoted concepts of sustainability. It is conceived as an attempt to reinforce environmentalist ideas, challenging the economy-centred policy of the time (Dresner, 2008, p.69). However, this attempt is criticised as meaningless because there is a tension between "environmental sustainability" and "economic development", and therefore it is hard to achieve an ideal balance in the practice (Dresner, 2008, p2, p69). For example, some economists who emphasise development through economic growth claimed almost everything can be understood as part of sustainability, which can be misused as a cover for destroying the natural environment (e.g. Dresner, 2008, p.2, p.70). In contrast, for environmentalists who consider sustainability via environmental protection, their excessive concern about depletion of natural resources can result in the unnecessary sacrifices to economic growth (e.g. Dresner, 2008, p.2). Another weakness of the WCED definition is its anthropocentrism, which ignores other fundamental aspects and lacks respect for other, non-human species and the importance of biodiversity

(e.g. Seghezzo, 2009; Ceschin and Gaziulusoy, 2016; Dresner, 2008, p.69). Therefore, the original understanding of 'sustainable development', as defined in the Brundtland Report, is no longer regarded as entirely suitable for the contemporary context.

3.2 Contemporary understandings of sustainability

Passionate debates over the intervening years have advanced our understanding of sustainability, and sustainable forms of development have been identified as important goals in many academic areas, including environment science, business, governance, education, etc. This section critically reviewed contemporary sustainability-related literature, and categorises them under four areas:

1. pillar-based understandings originated in the world of management science,
2. eco-related theories emerging from environmental science,
3. the integration of social sphere into sustainability; and
4. relevant legislation on sustainable development.

3.2.1 Pillar-based understandings

Elkington introduced the *Triple Bottom Line* (TBL) of sustainable development for business in the late 1990s (Elkington, 1999, p.70) and this subsequently became a widely-accepted idea. In this TBL, three dimensions were taken into account in a holistic, integrated fashion, namely, economic prosperity, environmental quality and social justice. This was seen as a way to operationalise corporate social responsibility (CSR) (Elkington, 1999, p.70). Although this approach originated from the world of management science, it inspired people to treat sustainable development in a multi-scale and systemic manner. Other similar representations of the triple bottom line appeared following this, such as the three Es of Economy, Ecology and Equity, and the three Ps of People, Planet and Prosperity (European commission, 2002). There is also Persons, Place and Permanence proposed by Seghezzo (2009).

Noticeably, in much of the literature, a number of pillars are used to build the conception of sustainability. For example, the WCED definition and the TBL approach respectively reflect the two pillars version (ecological and socio-economic) and three pillars version (environmental, economic and social) (Gibson, 2006, p.10). Other similar understandings include policies and programmes which promote culture as the fourth pillars of sustainable development (e.g. the committee on culture of the world organisation of United Cities and

Local Government (UCLG)), and a quintuple framework with the complement of cultural and political considerations proposed by the Canadian International Development Agency in 1997 (Gibson, 2006, p.17). In some cases, pillars are replaced by circles, and these circles are often organised in an intersecting way or in a concentric way. As shown in Figure 2, the concentric circles suggest a hierarchy that prioritise ecological considerations as the foundation, while the intersecting circles tend to give equal attention to different disciplinary categories (see Figure 2) (Gibson, 2006, p.17). Also, in another strategic tool developed by Forum for the Future in the UK, five capitals (natural, human, social, manufactured, and financial capitals) are used to guide companies to develop the business case for sustainable development (Bhamra and Lofthouse, 2008, p.25-26). Although there is a change in terminology (pillars, circles or capitals), these terms are fairly interchangeable. Essentially, they are used to indicate areas in which damage must always be avoided and improvements always be sought.

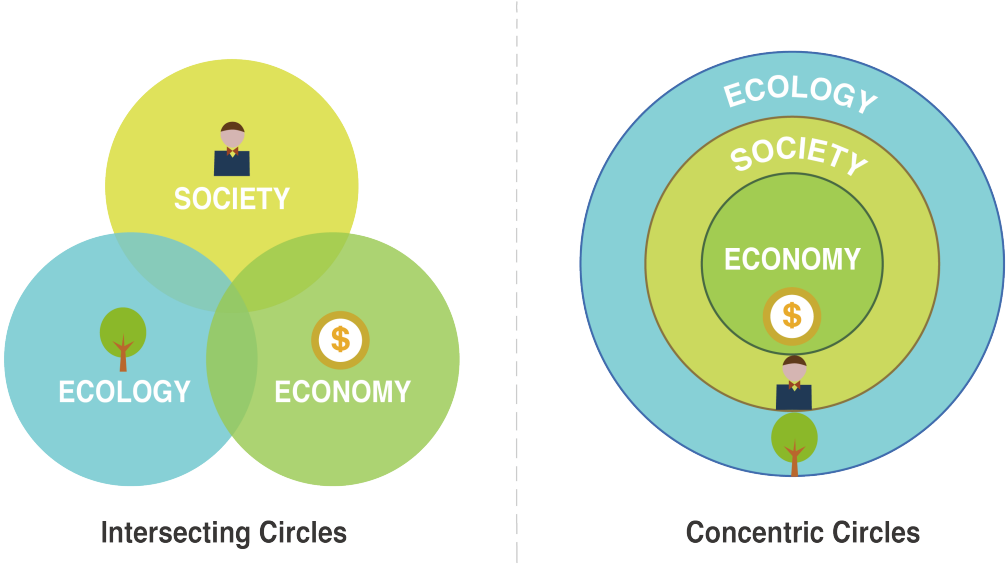


Figure 2 A comparison between intersecting circles and concentric circles (adapted from Gibson, 2006, p.17)

In such an ideal world of sustainability delineated by different pillars, each one is interconnected with others rather than standing alone, searching for the realisable optimum solution to problems (Nugraha, 2012, p.48). But in the real world outside the sustainability literature, one often needs to make compromises, and thus this pillar-based approach raises competition between different components. For example, there has been the fierce debate between the two opposing paradigms of sustainability - "strong" versus "weak" sustainability, and this creates false rivalries between economic pillar and the ecological pillar (Nugraha, 2012, p.48; Gibson, 2006, p.11; Kuhlman and Farrington, 2010; Dresner,

2008, p.81). Also, Elkington admitted in 2018 that the TBL had not been effective because the approach had not been implemented in an integrated and holistic way; Instead, corporations had reported on the three pillars separately. As the previously mentioned pillars-based approaches suffer from some limitations, a more comprehensive framework for considering sustainability is required.

3.2.2 Eco-efficiency, Eco-effectiveness, and Eco-modernism

The past three decades have seen increasingly rapid advances in eco-related theories, mainly in three aspects: eco-efficiency, eco-effectiveness, and eco-modernism. Back in 1992, as the World Business Council for Sustainable Development (WBCSD) officially introduced the term of eco-efficiency in his publication *Changing Course* (Ehrenfeld, 2005), it has been widely accepted as a strategy for global business to facilitate sustainable development. To be eco-effective, businesses are encouraged to use less resources and generate lower emissions, and a quantitative approach is normally adopted to measure eco-efficiency. For example, according to a manual book published by UNCTAD in 2004, five elements, including water use, energy use, global warming contribution, ozone depleting substances, and waste, are identified as eco-efficiency indicators, and the ratio between environmental costs and economic benefits can be calculated in order to examine the environmental performance of businesses (UNCTAD, 2004, p.2). The fundamental principle behind eco-efficiency is "doing more with less" - creating more economic values with less environmental impacts (G. Wang and Côté, 2011). Similar to eco-modernism, a techno-optimistic position is adopted to increase efficiency, and speeding up technological developments is idealised as an effective solution to decouple human activities from environmental impacts (Grunwald, 2018; Asafu-Adjaye et al., 2015, p.7).

However, although research on eco-efficiency has showed positive changes in terms of reducing use of energy and materials compared to decades ago, the fact is that there is still an increase in overall consumption of environmental resources because aggregate consumption continues to grow (Manzini, 2011). As criticised by Braungart, McDonough, and Bollinger (2007), eco-efficiency has serious limitations because it is principally a profit-oriented reactionary approach that does not address radical changes of industrial systems. Similarly, eco-modernist strategies that rely on increased efficiency and technical progress are also questioned (Grunwald, 2018). As early in 1984, Hans Jonas warned people about unexpected side effects of new technologies (cited in Grunwald, 2018). Today, many environmental

issues seem to prove his concern. For example, combustion engines or fossil power plants are the results of technological advancement that increase efficiency, but they are also major emitters of carbon dioxide today, contributing to global warming. In response to such perceived limitations, many scholars argue the only pursue of high eco-efficiency is far from enough for sustainability (e.g. Jalas, 2002; Sharma and Ruud, 2003; Figge and Hahn, 2004).

Instead of "damage management and guilt reduction" embedded in eco-efficiency, supporters of eco-effectiveness stress the importance of innovation (Bhamra and Lofthouse, 2008, p.27). This concept proposes the transformation of products and industrial systems that improve resource efficiency through life cycle management (McDonough and Braungart, 2009, p.76; Braungart, McDonough, and Bollinger, 2007, p.1137-1138). Nature's model of "waste equals food" is embraced, and a regenerative approach is used to "close the loop" (Braungart, McDonough, and Bollinger, 2007; Benson and Fine, 2010). The goal is to change from a liner cradle-to-grave flow of materials to a regenerative cradle-to-cradle "metabolism" in both ecological and economic systems (Braungart, McDonough, and Bollinger, 2007).

G. Wang and Côté (2011) distinguish between eco-efficiency and eco-effectiveness and the comparison shows their differences in terms of perspective, measures, methods, character, tropism, features, and result, see details in Table 4. Despite their differences, a growing trend today is to integrate both of them into industrial systems (e.g. Niero et al., 2017; Hauschild, 2015). Influenced by this, some contemporary popular conceptions of sustainability, e.g. circular economy and industrial symbiosis, are further developed (Korhonen, Honkasalo, and Seppälä, 2018).

Table 4 Comparison of eco-efficiency and eco-effectiveness (G. Wang and Côté, 2011)

	Eco-efficiency	**Eco-effectiveness**
Perspective	Less bad, reduce impact on Earth's carrying capacity; slows contamination, destruction and depletion (or is less harmful)	Waste equals food; decompose or circulate in cycles, balance equity, economy and ecology; diversity, relies on solar income
Measures	Quantitative	Qualitative
Methods	Process-oriented	Eco-design, life cycle management
Character	Progressively reducing continual improvement	Revolutionary change
Tropism	Doing more with less	Regenerative with no dissipation
Features	Reduce material, energy and toxic substances and service; dematerialisation	Redesign, no harmful products and services for closing material flow systems; degradable or recyclable
Result	Doing better within a flawed system	Redesign whole industrial system

3.2.3 Social Sustainability and Sustainable Development Goals

As discussed earlier, a concern of sustainability arguments today is that sustainability it being built on the foundation of business and management, and many strategies/indicators have been developed for corporations to integrate environmental considerations into their socio-economic activities. This means that sustainability-related research or practices are often dominated by economic and environmental concerns, which are normally well defined and commonly understood (Bhamra, Lilly, and Tang, 2011). However, in practical terms, there are many internal contradictions that prevent the various dimensions from working effectively together, such as the conflict between the environment and economics. Due to such perceived limitations, Kuhlman and Farrington (2010) argue to understand the very essence of 'sustainability' itself, i.e. the human aspirations towards a better life, and this is why other indices originated from social disciplines, such as the Human Development Index focusing on people or the Gross National Happiness Index based on well-being and happiness (Kuhlman and Farrington, 2010).

Compared with well-developed sustainable frameworks at economic and environmental levels, social sustainability is less-well understood and developed (Eizenberg and Jabareen, 2017; Vallance, Perkins, and Dixon, 2011). As a broad term, it covers a number of themes, such as urban development, justice and equality, security, community resilience, quality of life, health, well-being and happiness, democratic participation (Eizenberg and Jabareen, 2017; Magis, 2010; M. Davidson, 2009).

As another important step forward, in 2012, the Sustainable Development Goals (SDGs) were born at the United Nations Conference on Sustainable Development in Rio de Janeiro, and a set of goals were proposed to meet the urgent global challenges (United Nations, 2021). Different from previous understandings of sustainability which emphasised environmental and economic issues, social issues became more prominent, including poverty, inequality, prosperity, peace and justice, as well as important ideas about putting sustainable development into practice (see detailed descriptions of 17 goals in Table 5) (United Nations, 2015, p.18).

Table 5 Sustainable Development Goals (United Nations, 2015, p.18)

No.	Sustainable Development Goals
1	End poverty in all its forms everywhere
2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3	Ensure healthy lives and promote well-being for all at all ages
4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5	Achieve gender equality and empower all women and girls
6	Ensure availability and sustainable management of water and sanitation for all
7	Ensure access to affordable, reliable, sustainable and modern energy for all
8	Promote sustained, inclusive, sustainable economic growth, full & productive employment & decent work for all
9	Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation
10	Reduce inequality within and among countries
11	Make cities and human settlements inclusive, safe, resilient and sustainable
12	Ensure sustainable consumption and production patterns
13	Take urgent action to combat climate change and its impacts
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

In September 2015, world leaders gathered together at the United Nations Headquarters in New York, and a long-term goal was set to achieve SDGs by 2030 (United Nations, 2015, p.6). To do so, an "effective translation between global and national aspirations" is highlighted, and the UN proposes to contextualise SDGs into place-based settings (Biermann, Leemans, and Solecki, 2017; Rootes, 2007). Informed by this, place-based knowledge and context- and culture-specific strategies are considered at the core of sustainable development (Escobar, 2001; Walker, 2018a, p.270-271).

3.2.4 Legislation on sustainable development

To support the implementation of sustainable development, relevant laws, standards and rules are developed in different regions. For companies engaged in international business today, it is vital to ensure compliance with regional legislation and required standards (Hauschild, Jeswiet, and Alting, 2004). For consumers, such legislation also helps nudge their sustainable purchasing and behaviour. Here, three prominent frontrunners in sustainable development -the US, the UK and the European Commission (EU), are discussed, and their influential environmental legislation and policies are briefly introduced.

In the US, the government initially brought in legislation in the late 1950s in order to decrease water and air pollution in response to public demands (Munter, Sacasas, and Garcia, 1996). Since the Environmental Protection Agency (EPA) (https://www.epa.gov/) was founded in 1970, an environmental regulatory framework had been developed, from clean air/water and endangered species to toxic substances control and resource conservation and recovery (EPA, 2021a, 2021b). Today, as an independent executive agency of the US federal government, the EPA tends to initiate programmes to support waste recycling and call for improvements in product design and manufacture (EPA, cited in Bhamra and Lofthouse, 2008, p.30).

Much earlier than the US, the UK government's efforts on environmental legislation can be traced back to the fourteenth century when restrictions on air and water pollution were documented. By the 1860s, the concept of "best practicable means" was introduced to combat industrial pollution (Holland and Foo, 2003). In 1990, the UK government passed the Environmental Protection Act, and two years later in 1992, the world's first environmental management systems standard called BS 7750 was published by the British Standards Institution (Rowland-Jones, Pryde and Cresser, 2005). This provided the template for the International Standards Organisation (ISO) to develop a series of policy tools regarding contemporary environmental management (ISO, 1997, p.26, p.36). Up to now, the ISO 14000 family of environmental standards has been implemented by 165 member countries (ISO, 2021). Because of this worldwide participation, the ISO series has been the standard for international trade (DeMendonça and Baxter, 2001).

In Europe, in 1972, the then members of the European Economic Community (now the EU) agreed to formulate a common transnational policy on environmental management (Fuad-Luke, 2009, p.12). In 1985, the Environmental Impact Assessment (EIA) Directive was passed by the EU, and its latest version (2014/52/EU) entered into force in 2017, which ensures that environmental considerations are properly taken into account when project decisions are made (EU, 2021a, p.1-2). Other early legislative advances include the adoption of the Directive on the Assessment of the Effects of Certain Public and Private Projects on the Environment 1985, and the Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna 1992 (Fuad-Luke, 2009, p.12). Particularly, the European Commission developed the Eco-Management and Audit Scheme (EMAS) in 1993. Its latest version integrates the new ISO requirements, and particular concerns about legal compliance, performance improvement, and transparency are raised (EU, 2021b).

Entering the 2000s, the EU has implemented Directives on more specific fields, from the

end of life vehicle, waste electrical and electronic equipment to packaging and packaging waste, batteries, and the energy using product (Bhamra and Lofthouse, 2008, p.31-34). Over the past five years, the EU made great progress towards SDGs goals, and also plays a leading role in the implementation of the 2030 Agenda (EU, 2021c, p.10).

3.3 Design for sustainability

The previous two sections look at the evolution of sustainability theory and its contemporary understandings developed from different academic fields. As part of the bigger picture of sustainable development, design community has focused on sustainability since 1960s. This section investigates the concept of design for sustainability (DfS), and key approaches and arguments are discussed in the following four aspects:

- Design for environment
- Design for sustainable behaviour and sustainable consumption
- Design for social change
- Design by systematic considerations

3.3.1 Design for environment

The concept of DfS can be traced back to the 1960s, when there were increasing concerns about natural resources consumption and environmental issues, and designers began to actively considered the wider implications of design for environment. One example of this is the so-called Outlaw Designers - Jay Baldwin, Buckminster Fuller and Stewart Brand, who encouraged a more comprehensive approach uniting nature, humanity and technology (Benson and Fine, 2010). Also, in 1960s and 1970s, a number of critical writings on modernism and unstainable development were published in order to call for alternatives, such as Packard's *The Waste Makers* (1963), Papanek's *Design for the Real World* (1971), and Schumacher's *Small is Beautiful* (1973). Amongst them, design educator Papanek suggested a more compassionate approach addressing a radical transformation towards sustainability in design profession (Papanek, 1985, ix).

Influenced by environmental attitudes and green politics promoted in the western world in the 1980s, the concept of green design was developed (Madge, 1997). The term of **green design** is often used to refer to the practices which are aimed at reducing the lifetime environmental impact of products (Glantschnig, 1994). Every aspect of a product's life is considered, "from manufacture and use to repair and disposal, and from the choice of

materials and the efficiency with which energy is used to the longevity of the product's life and the effects of its eventual disposal" (Burall, 1991, p.16). However, many green design practices are criticised to be confined to tackling a single issue, such as replacing toxic materials with non-toxic ones, or using renewable energy like solar energy, etc. (Ceschin and Gaziulusoy, 2016).

In 1989, as the Ecological Design Association and its official journal was established, there had been a change of focus from 'green design' to '**ecodesign**'. Some design concepts developed over this period are often interchangeable with ecodesign, including *Design for Environment* (DfE) (Allenby, 1991; Glantschnig, 1994; Mackenzie, 1997), *Life Cycle Design* (LCD) (Tipnis, 1993), *Design for Recycling* (Cooper, 1994a), and *Design for Disassembly* (Madge, 1997). In general, ecodesign practices focus on the whole life cycle of the product, and life cycle assessment (LCA) methods originated in the management science are often used to monitor the environment impact of products (Ceschin and Gaziulusoy, 2016; Rink and Swan, 1979). According to Hauschild, Jeswiet, and Alting (2004), the emphasis is often placed on three domains in most LCA methods, including the disposal of the products, the use of specific materials for products and the extension of product life. For example, ecodesigners pay attention to materials selection, and biodegradable, renewable, and recycled materials are given the first priority (Bhamra and Lofethouse, 2008, p.41-44). Many companies also develop their own checklists (normally white, grey and black ones) to make materials specification decisions, e.g. the Volvo's corporate standards for materials (Luttropp and Lagerstedt, 2006). Furthermore, LCA and ecodesign strategies have been included in current legislation in many regions, such as the European RoHS Directive with tight restrictions on the use of hazardous materials in electrical and electronic product design (EU, 2021d).

Today, many tools and guidelines are further developed from ecodesign. For example, according to a tool the *Ten Golden Rules* designed by the Royal Institute of Technology (KTH), the product development process is divided as three phases (pre-use, use and after use), and step-by-step guides are provided in line with life cycle assessment (Luttropp and Lagerstedt, 2006). **Cradle-to-Cradle design** is also developed from a life-cycle approach **(**Braungart, McDonough, and Bollinger, 2007**)**. But different from eco-design, this approach place emphasis on eco-effectiveness instead of eco-efficiency (see detailed descriptions in section 3.2.2). Another typical example is a ecodesign framework developed by the EU, which is used to examine the ecological performance of energy-using and energy-related products sold in the Europe; This helps promote product life cycle management as a primary

focus for most major companies (EU, 2009).

In summary, ecodesign strategies put emphasis on life cycle assessments. However, there is a lack of proper considerations of the social aspects of sustainability, such as the product's social impact and the distribution of resources (Ceschin and Gaziulusoy, 2016). Another limitation of ecodesign is its "technocentric" belief, and many approaches highly rely on the development of human science and technology to gain efficiency, such as some tools shown in the *Ecodesign Navigator* (O'Riordan, 1981, p.3-17; M. Simon et. al., 1998). However, as discussed in section 3.2.2., this direction is problematic, because environmental gains on a product basis cannot essentially resolve the impacts caused by ever increasing consumption of products (Ryan, 2003). Also, an overemphasis on technology result in the ignorance of human aspects (Ceschin and Gaziulusoy, 2016). Informed by this, the focus of DfS changes from product or product system itself to the user-product relationship, and a long-term view of the changes in consumer attitudes and behaviours has been formed (Mugge, Schoormans, and Schifferstein, 2005). This will be discussed in the following section.

3.3.2 Design for sustainable behaviour and sustainable consumption

In the *Design for the Real World*, Papanek (1985, p.346-347) provided an in-depth critique of 'design for profit and consumption', and called for responsible design that are ecologically responsible and socially responsive. However, early green or eco design practices gave more emphasis to economic and environmental concerns (Bhamra, Lilly, and Tang, 2011). It was 1995 when the World Business Council for Sustainable Development (WBCSD) published a report entitled *Sustainable Production and Consumption: A Business Perspective*; environmental and social impacts of product were equally highlighted to limit (Fuad-luke, 2009, p.14). Since then, sustainable consumption has been promoted, and the new "consumer agenda" is later proposed in supporting sustainable consumptions habits and sustainable production patterns (Nash, 2009; EU, 2020, p.1-2).

For many replaced durables end up in the waste stream, it is estimated that only 22 per cent of them cannot function properly (Van Nes, 2003). Regarding why consumers replace products which still function properly, a series of incentives can be found in the literature, such as product loss over time, technologically obsolete, new legislation on products, out of fashion, and changes in family/financial circumstances (Mugge, Schoormans, and Schifferstein, 2005; Van Nes, 2003; Bayus and Gupta, 1992). With a belief that product lifetime is primarily determined by the user (Stahel, 1986), sustainable consumption draws an

attention to change consumer behaviours (Cooper, 1994b). As designers shape the ways that users interact with products, a new research field is then developed - **Design for Sustainable Behaviour** (DfSB) (Daae and Boks, 2015).

> *"Products, as the interface between consumers and consumption activities, can give immediate and direct responses to users' operations: how they are perceived, learned and used. Designing a product means designing a user experience with the product, which also determines the compound impacts of this experience." (Bhamra, Lilley and Tang, 2011)*

A user-focused perspective is often adopted to explore how design could trigger change in lifestyle and behaviour in order to limit environmental and social impacts of product (Thorpe, 2010; Bhamra and Lofthouse, 2008, p.48-49). Three approaches are proposed by Lilley (2009), including Eco-feedback, Behaviour Steering and Persuasive Technology or Captology. Eco-feedback takes advantage of tangible aural, visual, or tactile signs to remind consumers about resource use, such as offering real-time data on electricity, gas, and water usage in homes and businesses (Lilley, 2009; Froehlich, Findlater, and Landay, 2010). The idea behind "behaviour steering" or "scripts" is "a kind of user manual inscribed into an artefact" which can be used to encourage users to behave in certain ways (Jelsma and Knot, 2002; Bhamra and Lofthouse, 2008, p.48). Persuasive Technology, a term coined by Stanford researcher Fogg (2003), attempts to integrate insights from psychology into product design in order to change consumer's habits and belief. These three approaches provide theoretical understandings of the relationship between product human behaviours and habits. The *Design for Sustainable Behaviour* model later developed from the same research group at the Loughborough University (Bhamra, Lilley and Tang, 2011) introduces seven behaviour interventions strategies, including education, empowerment, eco-feedback, rewards and punishments, affordances and constraints, technical intervention, and innovation (see details in Figure 3).

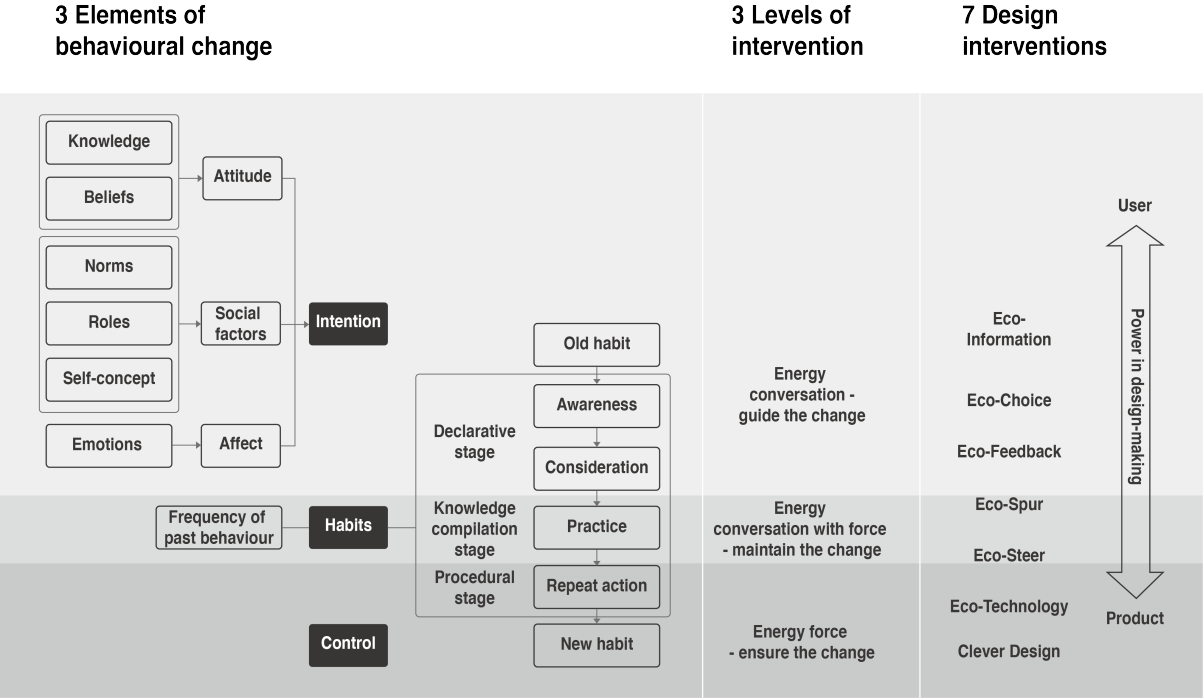


Figure 3 Design for Sustainable Behaviour model (Bhamra, Lilley and Tang, 2011)

In addition, as many sustainable production and consumption models emerged in the end of the 1990s, this facilitates the development of another concept, i.e. **Design for Product-Service System** (PSS) (Vezzoli et al., 2014, p.4). PSSs can be defined as "a mix of tangible products and intangible services designed and combined so that they are jointly capable of fulfilling final customer needs" (Tukker and Tischner, 2006). Product-Service System innovation tends to satisfy users through offering services instead of selling products themselves (e.g. from selling cars to offering mobility services). This motivates the consumption onto an access-based and collaborative way, changing from a throw-away society to a repair/leasing society (Mont, 2002). Because PSS methods look into a complex system composed of products, services, supporting networks and infrastructure, this requires a more systematic perspective (Doualle et al., 2016; Mont, 2002). An initial focus on PSS design was eco-efficiency with the integration of environmental considerations into economic activities, and series of methods were developed called as **PSS design for eco-efficiency**, such as Design of eco-efficient services methodology (DES) (Brezet et al., 2001), Methodology for Product-Service System development (MEPSS) (Van Halen, Vezzoli, and Wimmer, 2005). This was followed by an exploration towards **PSS design engineering approaches** (Cavalieri and Pezzotta, 2012), and methods originated from engineering were further developed, such as the integrated development of products and services (Aurich, Fuchs, and Wagenknecht, 2006), modular design methods for PSSs (P.P. Wang, et al., 2011),

and computer-aided design methods for PSS engineering (Sakao et al., 2009). More recently the focus has shifted to **PSS design for sustainability**, integrating socio-ethical dimensions into design profession and triggering change at socio-technical levels (Vezzoli et al., 2014; Vezzoli et al., 2018).

However, the literature also reveals big challenges to integrate sustainable consumption into design practices. Current studies have indicated a gap between users' good intentions and their actual behaviour, called as the attitude-behaviour or intention-action gap (EU, 2020, p.3). Given this, although DfSB and PSSs approaches challenge existing consumers' habits but it is hard to facilitate real actions (Bhamra and Lofthouse, 2008, p.49; Catulli, 2012). Relevant ethical issues should be also further discussed, e.g. to what extent that designers and companies are given the right to influence user behaviour (Bhamra, Lilley and Tang, 2011). In practical terms, the application of DfSB approaches and PSSs innovation might generate unexpected environmental rebound effects, e.g. the use of additional materials and resources, and an increase in transportation impacts (Ceschin and Gaziulusoy, 2016). How to tackle these problems should be further explored.

3.3.3 Design for social change

In the past two decades, design researchers have shown an increased interest in how design can make a contribution to society (Vezzoli et al., 2014, p.4; EU, 2006, p.4). Two typical examples of this direction are **Design for The Base of the Pyramid (DfBoP)** and **Design for Social Innovation (DfSI)**, and they will be discussed in the following section.

According to three segments of the world income pyramid, the Base of the Pyramid (BoP) refers to the largest but poorest socio-economic group (Prahalad, 2010, p.27-28). The Credit Suisse's annual report on global wealth shows that just 1% of the world's adult population controls almost half of the total wealth, while the bottom 53.6% have less than $10,000 each (Shorrocks, Davies, and Lluberas, 2020, p.29).

> *"The top 1% of wealth holders in a country typically own 25%–40% of all wealth, and the top 10% usually account for 55%–75%... At the end of 2019, millionaires around the world – which number exactly 1% of the adult population – accounted for 43.4% of global net worth. In contrast, the 54% of adults with wealth below USD 10,000 together mustered less than 2% of global wealth" (Shorrocks, Davies, and Lluberas, 2020, p.29).*

Around two-fifths of the world population is identified as poor, with a daily income of less than $2, and about a fifth is considered extremely poor, with a daily income of less than $1.25 (Karnani, 2011, p.1). With incomes below the minimum standard of living, the BoP cannot meet basic human needs, such as health, food and water, sufficient rest, clothing and shelter (Karnani, 2011, p.1; Maslow, 1943; Maslow, 1970). UNICEF, the United Nations Children's Fund (UNICE, 2019, p.2) reports, serious social problems negatively influence millions of children in these regions. Over the last decade, poverty alleviation has been integrated into business development, and opportunities arising from the BoP have received company's attention (Prahalad, 2010, P.27; Nakata, 2012). From a market-based perspective, the poor at the BoP are considered as producers and consumers instead of victims, and low-income markets are valued (Jagtap et al., 2014). In this way, a win-win situation is expected to achieve: companies can realise profit, and at the same time provide the poor with available cheaper products and services (Prahalad, 2010, p.27).

In recent years, some universities and institutions have conducted design projects or offered design courses in the area of design for the BoP. For example, the Design for Extreme Affordability course at the Stanford University encourages students to develop products and services that will improve the lives of the poorest citizens (see https://extreme.stanford.edu/about-extreme/). Also, MIT (Massachusetts Institute of Technology) D-Lab team (see https://d-lab.mit.edu/) devotes to providing solutions for social issues in economically underdeveloped areas, such as helping traditional biomass fuel and cookstove users improve their cooking solutions. For the BoP designers, problem-driven strategies are often adopted, and great emphasis is given to the identification of needs, unfamiliar issues emerging from the BoP market, and necessary cost reduction in terms of materials and energy/power (Jagtap et al., 2014).

In addition, since the early 2000s, another concept of 'social innovation' has come to prominence in government, organisations, business, and academic communities (e.g. Nesta, 2008; EU, 2021e; WHOSICP, 2021; Milley et al., 2018). Social innovation is generally described as "new ideas that work in meeting social goals", and a creative re-combination of existing assets is argued as an effective way to trigger changes in response to social problems (Mulgan et al., 2007, p.8; Manzini, 2014). Noticeably, many designers have been involved in relevant activities, and showed the massive potentialities of design in addressing complex problems. This fast-growing area is defined by Manzini (2015, p.62) as "*design for social innovation - everything that expert design can do to activate, sustain, and orient processes of social change toward sustainability*"; and three main approaches are employed: a) top-down

(led by experts, decision makers and political activists), b) bottom-up (launched by local communities and grassroots), and c) hybrid (a combination of the two) design processes (Manzini, 2014).

Until now, the evolution of design for innovation has experienced several important phases. Its initial focus was to collect and analyse relevant cases, and "creative communities" (Meroni, 2007), consisting of small local communities, organisations and ordinary people, are found to play a key role in improving social services, from social care and support for the elderly and public garden to organic food market and self-service car rental system. Followed by this, the main contribution of design in these cases was further analysed, and designers are identified as three main roles: a) *facilitators* in supporting ongoing initiatives, as b) *triggers* starting new social conversations, as c) *co-design team members*, or d) as *design activists* launching socially meaningful projects (Manzini, 2014). Furthermore, different tools and guidelines were developed to conduct social innovation projects, e.g. DIY (Development, Impact, and You) Toolkit created by Nesta (Nesta, 2014), and a short guide designed for practitioners (J. Simon et al., 2014). More recently, DfSI changes to focus on more specific social fields and contexts, such as public health care (Valentine et al., 2017), and the sustainment of textile artisan communities (Mazzarella, Mitchell, and Escobar-Tello, 2017).

Although the last two decades have seen a growing trend towards social design, such as design for the Base of the Pyramid and design for social innovation, the discourse on them is not so mature. For example, designing for low-income markets and the poor has raised criticisms at moral levels, because its market-based approaches may cause non-essential goods with extra environmental/social problems (K. Davidson, 2009). Similarly, in some social innovation projects, unrealistic or superficial solutions with high cost services are also problematic (Ceschin and Gaziulusoy, 2016). Therefore, there is a need for more systematic and holistic approaches to sustainability, and this will be discussed in the following session.

3.3.4 Design by systematic considerations

The current understandings suggest that sustainability requires a process seeking balances. This imbalance now reflects in the contradiction between opposite components, such as needs versus wants (Henry, 1966, p.9), localism versus globalism (Dresner, 2008, p.170-172), the short versus the long term (Kuhlman and Farrington, 2010), and tradition versus modernity (Nugraha, 2012, p.46-47). In the comparison between traditional and modern worlds, in the past there was a balance between "what is produced and what is desired", which resulted in a

remarkable stability (Henry, 1966, p.9). But unlike the fixed bundle of wants in traditional societies, our contemporary dynamic lacks a ceiling in terms of property and possessions, consequently, there is increasing growth of consumption accompanied by excessive energy use, resource use and waste (Walker, 2018a, p.270-271).

In this ongoing debate, often from opposite viewpoints, people keep questioning whether the end of sustainability is localism or globalism? If we should go back to traditional ways or keep embracing innovation and modernity? With this background, a more neutral voice is an emphasis on balance. Early examples of this are the Dutch Sustainable Technology Development (STD) Programme and EU funded Strategies towards the Sustainable Household (SusHouse) Project (1998-2000), and innovation within a socio-technical system (Green and Vergragt, 2002). However, these early projects are limited to a techno-centric view, which has been shown to be far from enough for sustainability (Gaziulusoy and Boyle, 2008). Therefore, the term of 'System Innovation (SI)' is further proposed to encourage multi-levels innovations (not just technological innovations, but social, organisational and institutional innovations) (Geels, 2004, p.19).

In the literature of DfS, some design scholars' work is built upon system innovation or a system-like concept. One example of this is the **Design for System Innovations and Transitions**, and it explores how sustainability science, futures studies, transition theories and system innovations can be integrated into design theory, education and practices (Gaziulusoy, 2015; Gaziulusoy and Erdoğan Öztekin, 2019). Similar attempts can be found in some product-service system design projects (Ceschin, 2013; Joore and Brezet, 2015). In addition, the supporters of **Systemic Design** propose absorbing insights from biomimicry, Cradle to Cradle, and industrial ecology, and outputted industrial products and complex industrial systems are expected to make great socio-economic impacts (Ceschin and Gaziuluso, 2016; Barbero and Toso, 2010). However, due to an ecocentri view, system design is criticised as ideal and immature (O'Riordan, 1981, p.3-17). With the evolution of ecological science, the idea of nature or ecology has been proven to consist of "unpredictable, dynamic, evolving, self-adaptive systems" (Worster, cited in Madge, 1997). Therefore, design activities that mechanically imitate ecosystem would doomed to failure as the real world does not work in that way.

Recent developments in design for sustainability have heightened the need for driving system-level change. For example, within broader socio-economic and political paradigms, **Transition Design** is proposed to look into *cosmopolitan localism*, a place-based lifestyle in which solutions to global problems are designed to be locally appropriate, and its framework

bring together relevant skillsets, transdisciplinary knowledge, and practices for unlocking system-level change and social transitions towards more sustainable futures (Irwin, 2015). Another example is **the Quadruple Bottom Line of Design for Sustainability** (QBL) (see Figure 4) (Walker, 2014, p.42, p.65). This differs from technology-driven, eco-modernist (Davison, 2001, p.22-29), growth-based, consumption-oriented approaches, as presented in the Triple Bottom Line (Elkington, 1999) and Cradle to Cradle (Braungart, McDonough, and Bollinger, 2007), and from the primarily materials-based Circular Economy (Geissdoerfer et al. 2017). Instead, the QBL is a design approach to sustainability that is based on understandings of human needs (McLeod, 2020), human values (Schwartz, 2012) and, critically, human meanings (Hick, 1989).

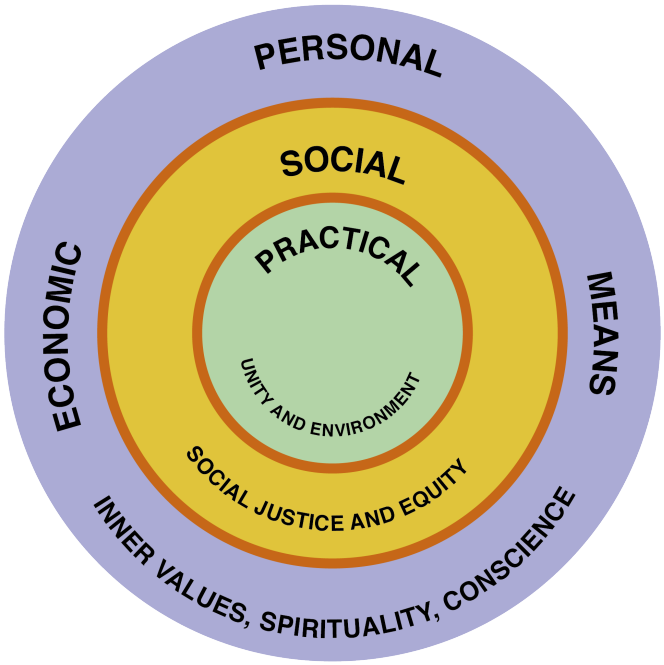


Figure 4 The Quadruple Bottom Line of Design for Sustainability (Walker, 2017, p.93)

The three primary factors of the Quadruple Bottom Line of Design for Sustainability are:

- **Practical Meaning, including environmental impacts** – products and services are beneficial in terms of their utility, their production employs relatively low-energy processes, their dominant materials are renewable, and they are maintainable and enduring.
- **Social meaning** – ensuring our activities are benevolent, ethically responsible and encapsulate a strong commitment to community and place.
- **Personal meaning** – production and use are creative, personally fulfilling, in accord with personal values, conducive to personal well-being and spiritually nourishing.

However, as Figure 4 demonstrate, the 4th element in the sustainability evaluation is the:

- **Economic means –** a means to the end of sustaining the other three. An enterprise can only remain in business if it is economically viable – for the enterprise itself and the employees within it.

(Walker, 2011, p.187-190; 2014, p.92-93)

3.4 Summary

Chapter 3 has reviewed core theories of sustainability by considering its emergence, development, contemporary understandings and its relationship to design.

The literature reveals the concept of sustainability is one that has been around for as long as humans have. The earliest expression of sustainability can be traced back to the descriptions of the use of natural resources and its impact on the environment in ancient philosophy. In the early modern period, with the development of technology, science and industry, the society was confronted with many serious environmental problems, such as air pollution, forest degradation and the shortage of natural resources. These issues had led to growing awareness of the limits to growth in the mid-20th century. Nearly at the same time, there were social movements for civil rights and equality, and these advances contributed to the development of social sustainability. Since the concept of sustainable development was official introduced in the Brundtland Report, how to reconcile the relationship between economic development and the environment has been attracted a lot of interest. Throughout reviewing the emergency and the evolution of the concept of 'sustainable development', three interrelated areas, i.e. environmental stewardship, social equity and justice, and economic issue are revealed to lay the foundations for sustainable futures.

However, as a continuously growing concept, the idea of sustainability is still ideological, immature, and complex. This means huge difficulties emerge in its operationalisation. To narrow this gap between the theory and practice in the contemporary, different forms of 'sustainability' have been discussed from different disciplinary perspectives, and key findings are summarised in the following Table 6:

Table 6 Understanding of sustainability in different disciplines

Finding No.	Description	Chapter Sections
F3.1(a)	• The literature indicates that sustainability is mainly understood through four interconnected domains of **environment, society, economy, and human**, and an approach with comprehensive considerations at such four levels is expected to facilitate system-level change.	3.1 3.2
F 3.1(a)	• Predominantly in the area of **management science**, there is an attempt to understand sustainability on a number of pillars (generally economic, ecological/environmental and social pillars); but in practical terms, these interdependent pillars normally serve for a controversial growth-based and consumption-oriented goal.	3.2.1
F 3.1(b)	• In the field of ecology and **environmental science**, there are two main trends towards sustainable development - a "ecocentric" view and a "technocentric" view. But both of them have limitations: an ecocentric approach towards an idealised balanced system is immature, while unexpected environmental rebound effects can be caused by the heavy reliance on technology.	3.2.2
F 3.1(c)	• **The socio-cultural sphere** has been integrated into the research on sustainability. For example, many 'wicked' social issues, such as poverty, public health, well-being, and gender equality, have been included in the UN Sustainable Development Goals confronting the 21st century societies, and **a place-based approach** is adopted to transform such general sustainable goals into a local context.	3.2.3
F 3.1(d)	• **The law/legislation** is used as a tool to catalyse the implementation of sustainable development in the contemporary. For companies involved in international business, it is necessary for them to analyse requirements from relevant legislation, international standards and regional regulations. This also helps **push consumers toward sustainable purchasing and behaviour.**	3.2.4

As the most important part of this chapter, designers' efforts at sustainability are discussed in section 3.3. Key design approaches to sustainability are summarised in Table 7:

Table 7 Summary of DfS approaches

Design Direction	Approach Reference	Approach	Focus/Goal and Limitations	Chapter Sections
Environmental domain - Reducing environmental impacts at product-production level	A 3.1(a)	Green Design	- Reducing the lifetime environmental impacts of products, and focusing on every aspect of a product's life. - In practice, emphasis is often given to single issues and therefore does not achieve significant environmental gain.	3.3.1
	A 3.1(b)	Eco-Design	- Lowering environmental impacts of product through a life-cycle approach. - Eco-design addresses the importance of environmental impacts of product, but important social dimensions are excluded in life-cycle assessments. - With a strong technocentric belief to gain efficiency on a product basis, its final environmental gains cannot resolve the impacts caused by ever increasing consumption of products. - Two limitations of this approach - relying on technology development and lacking the considerations of human aspects, bring debates over the ethical dimension.	3.3.1
	A 3.1(c)	Cradle-to-Cradle Design	- Embracing nature's model of "waste equals food", and adopting a regenerative approach to close the loop. - Achieving eco-effectiveness labelled as "regenerative with no dissipation" through CTC is relatively ideal, and a growing trend is to integrate both eco-efficiency and eco-effectiveness into industrial systems.	3.3.1 3.2.2
Human domain and economic means - Nudging consumer toward sustainable behaviour and lifestyle	A 3.2(a)	Design for Sustainable Behaviour	- Triggering change in lifestyle and behaviour in order to limit environmental and social impacts of product. - Due to attitude-behaviour or intention-action gap, it is challenging to really change consumers' habits. - Ethical considerations - to what extent that designers and companies are entitled to influence user behaviour. - Additional materials and resources might be required.	3.3.2
	A 3.2(b)	Design for Product-Service System	- Satisfying users through a combination of tangible products and intangible services for a repair/leasing society. - PSS design for sustainability: integrating socio-ethical dimensions into the design process and triggering socio-technical transitions to sustainability. - Environmental rebound effects. For example, PSS innovation might result in increase in transportation impacts. - Existing consumers' habits might be hard to change.	3.3.2

Social domain - Facilitating societal transitions toward more equitable and sustainable futures	A 3.3(a)	Design for the Base of the Pyramid	- Offering products and services that will improve the lives of low-income group, and at the same time realising profit for company. - Criticisms have been raised about designing for BoP, because its market-based solutions cause non-essential goods.	3.3.3
	A 3.3(b)	Design for Social Innovation	- Triggering and supporting social change toward sustainability through a creative re-combination of existing assets. - Some unrealistic or superficial solutions with high cost services have been criticised. - A sole focus on social innovation is unlikely to achieve changes required in larger socio-technical systems, such as satisfying needs for energy use, mobility or housing/infrastructure.	3.3.3
System-level change - Treating sustainability in a systematic way and seeking the interconnectedness of different components	A 3.4 (a)	Design for System Innovations and Transitions	- Transformation of socio-technical systems through multilevel innovations (technological, socio-cultural, organisational, and institutional innovations). - Literature on this area has just emerged in the past decade, and the discourse is not well-developed.	3.3.4
	A 3.4 (b)	Systemic Design	- Absorbing insights from biomimicry, Cradle to Cradle, and industrial ecology, and creating productive industrial systems for socio-economic needs. - As a nature-inspired approach, designing systems or products based on a mechanistic imitation of ecosystem might be unsuccessful as the real world does not work in that way.	3.3.4
	A 3.4 (c)	Transition Design	- Emphasis on cosmopolitan localism, a place-based lifestyle in which solutions to global problems are designed to be locally appropriate.	3.3.4
	A 3.4 (d)	Quadruple Bottom Line of Design for Sustainability	- Emphasis on human needs, human values, and human meanings.	3.3.4

CHAPTER 04

Discussion of Findings from Literature
Research Propositions
Research Question & Objectives

CHAPTER 4: Discussion of Findings from Literature, Research Propositions, Research Question and Objectives

4.0 Introduction

This chapter discusses findings from the previous two chapters. First, by linking traditional craft practices to contemporary understandings of sustainability, strong connections between them are revealed. The concept of 'crafting sustainability' is proposed, and four research propositions are formulated to explain the relationship of craft traditions to sustainability (section 4.1.1). Following this, the role of design in enabling the continuation of traditional craft practices in ways that comply with the core principles of sustainability. A preliminary investigation into Chinese craft revival activities reveals three main areas in which design has made contributions: 1) digital platforms and marketing, 2) product and packaging design, 3) branding (section 4.1.2). Also, some concerns are identified in relation to sustainability (section 4.1.3). This identifies a need for meaningful design interventions that have socio-cultural appropriateness, context-sensitive, and are in accord with contemporary understandings of sustainability, and therefore the main research question, and research objectives are developed further and restated, which provides direction to take the research project forward.

4.1 Discussion of findings from the literature

4.1.1 Relationship of craft traditions to sustainability

In the Chinese context, a particular emphasis on craft research is identified as traditional designs and craftsmanship which have achieved longevity by honing over generations. This helps narrow down the topic of this research from a broad, abstract 'craft' concept to local, long-established, traditional craft practices that are regarded as part of the ICH of the region or the country. As Chapter 3 revealed, sustainability is mainly defined through four interconnected domains of environment, society, economy, and human, the values of traditional crafts are further examined in the context of sustainability at four levels.

Chapter 2 showed that traditional crafts have been constantly made by communities and groups in response to their environment, including their interactions with nature and their continuation and adaptation of practices handed down from their predecessors. These practices and traditionally rooted artefacts provide local people with a sense of identity and contribute to cultural distinctiveness (Jung and Walker, 2018). UNESCO recognises these

traditional making practices as important elements of cultural heritage. Through this convention, greater efforts are paid to sustainment of the intangible aspects that enable the creation of artefacts, including the continuity of knowledge, practices, skills, expressions, beliefs and traditions within communities (UNESCO, 2018, p.5). Specifically, in the less economically developed countries, the development of traditional crafts has been strongly supported by UNESCO, and these craft programmes are closely related to local community self-empowerment, youth employment, gender equality and the eradication of poverty (Vencatachellum, 2019, p.28, p.36).

Traditional crafts practices, because they are localised and place-specific, normally take into consideration and ameliorate any environmental impacts associated with the activities. Local, commonly available materials are often used, such as wood, bamboo, cotton or glass, which are renewable and/or recyclable (Zhan and Walker, 2019). Such place-based knowledge about materials and environmental conditions contribute to local ecological balance and environmental stewardship. Through life cycle assessment, handmade craft products have been confirmed to have low environmental impacts of the production of a product from cradle to grave (Vartiainen and Kaipainen, 2012; Väänänen and Pöllänen, 2020; Väänänen et al., 2017). Therefore, craft practices are seen as a catalyst to reassess the relationship with "natural environment and with each other" (Ferraro et al., 2011), and they are strongly encouraged as a subject in environmental education in order to nurture students' deeper sense of engagement, interaction and reciprocation with the natural world (MacEachren, 2000).

In addition, with reference to Schwartz's research on human values (2012), the values and priorities of those engaged in traditional making practices tend to fall mainly within the cluster of intrinsic values, which can be understood as self-transcending (beyond self - benevolence and universalism) and conservation (tradition and security) values (Walker, Evans, and Mullagh, 2019a). Substantial evidence has shown that intrinsic values are positively associated with ecological attitudes and behaviours (Brown and Kasser, 2005; Richins and Dawson, 1992; Sheldon and McGregor, 2000; Dittmar et al., 2014), personal well-being (Richins and Dawson, 1992; Kasser, 2002; Dittmar et al., 2014) and socially responsible behaviours (such as helping others and volunteering, Briggs et al., 2007; Sheldon, Kasser and Geen, 1995). The values of traditional crafts to sustainability is shown in Figure 5. Also, it has been previously observed that positive psychological functioning is linked to creative craft activities, such as self-actualisation and self-identity (Howie, Coulter and Feldman, 2004; J.S. Johnson and Wilson, 2005; Riley, 2008), happiness and reducing anxiety

(Collier, 2011; Mason, 2005; Reynolds, 2008), and coping with mental health problems (Griffiths and Corr, 2007; Griffiths, 2008).

With the relatively recent growth in industrial standardisation, cultural homogenisation and consumption-oriented economics, products that are place-based, culture-specific and long-lasting are being re-examined by users around the globe. In particular, people value the perceived authenticity, uniqueness and originality of handmade objects, which has led to a growing market for both traditional and contemporary crafts. For example, in 2020, the craft sector contributes £4.8bn to the UK economy (Metro Dynamics, 2021, p.7). In developing countries, crafts can be even more significant to the economy. In Tunisia, for example, its 300,000 craft workers produce 3.8% of the country's annual GDP, and in Morocco, the craft economy accounts for 19% of its GDP (Vencatachellum, 2019, p.31).

As discussed, existing literature indicates that craft traditions can be very meaningful in terms of social-cultural continuity, environmental stewardship, human values, and economic viability. Therefore, the concept of "crafting sustainability" is proposed here. i.e. traditional making practices as a way contributing to contemporary understandings of sustainability, and four theoretical propositions regarding the relationship of craft traditions to sustainability are developed, as shown in Table 8.

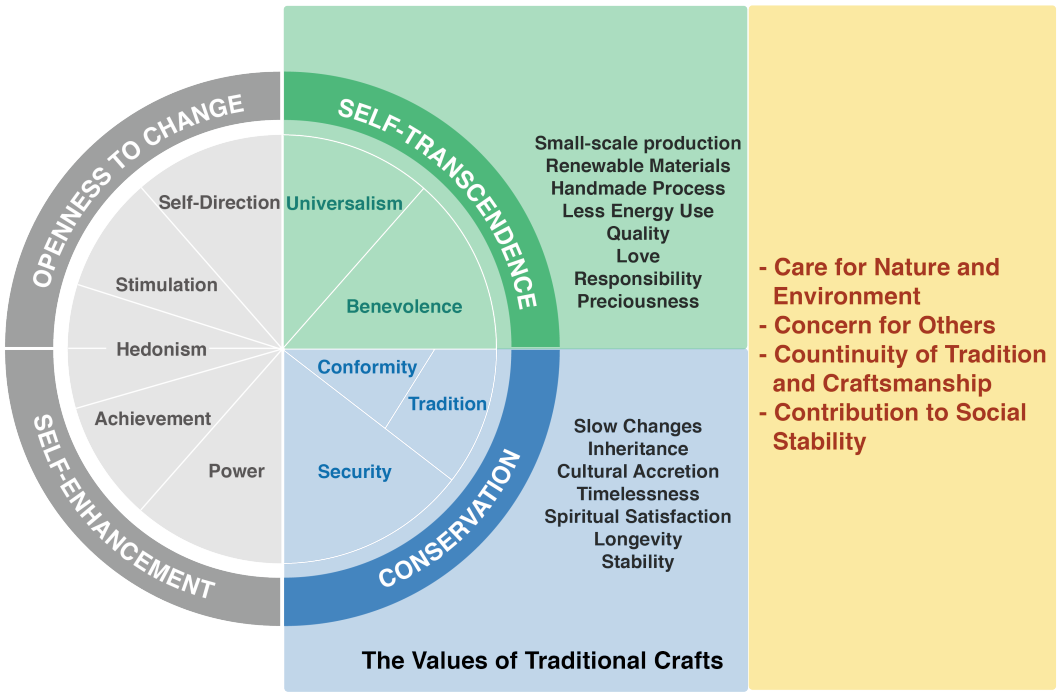


Figure 5 Values of traditional crafts in relationship to sustainability, developed by the author from Schwartz's value circumplex (2012)

Table 8 Theoretical propositions: the relationship of craft traditions to sustainability

Aspect of sustainability	Description of the relationship of traditional crafts to sustainability	Finding reference
RP1: Traditional crafts are place-based and serve utilitarian needs while minimising negative environmental impact.		
Environment	• Environmental considerations are inherent in craft practices, mainly reflecting in "the application of skills and material-based knowledge to relatively small-scale production" (Adamson, 2010, p.3). Locally natural materials selected for making traditional crafts are often renewable; Handmade process and locally appropriate small production are also often adopted, which generates less energy consumption. Such context-based considerations are supported by the relationship between sustainability and the particularities of place (Van der Ryn and Cowan, 2007, p.57-81).	F2.1 (f) F3.1 (c)
RP2: Important context-related social and ethical knowledge and practices, which are vital to cultural continuance, are rooted in traditional craft practices.		
Society	• Traditional craft practices are normally distinctive to the local community and culture, which contributes to community belonging and cultural identity. Some crafts take on important symbolic significance as they are used in traditional celebrations, social ceremonies and cultural festivals. Many practices also have a long heritage of intergenerational cultural transmission. Not only craft skills, but also socio-cultural traditions, beliefs and meanings have been passed on from one generation to the next.	F2.1 (e) F3.1 (c)
RP3: Traditional crafts convey important human values, including moral rectitude and conscience, a sense of contribution to community, and personal wellbeing rooted in inner values and/or spiritual fulfilment.		
Human	• Making good is much important than making quick. This making philosophy convey makers' belief and virtue, such as responsibility, persistence and love. With reference to Schwartz's research on human values (2012), the values and priorities of those engaged in traditional making practices tend to fall mainly within the cluster of intrinsic values, and intrinsic values are positively associated with sustainable purchasing and behaviour. Positive aspects associated with creative processes, such as self-actualisation, fulfilment and happiness, show strong associations between these practices and personal well-being.	F2.1 (c) F2.1 (d)
RP4: Traditional hand-made crafts are economically beneficial to contemporary society, and their focus on high quality and product life cycle are compatible with contemporary understandings of sustainable consumption and production.		
Economy	• As consumers value the perceived authenticity, uniqueness and originality of craft objects, there is a growing market for both traditional crafts and contemporary crafts. Various supports are also provided by governments, institutions, companies and universities to develop craft sector as important parts of cultural and creative industry.	F2.1 (g) F2.2 (a) F2.2 (b) F3.1 (d)

4.1.2 Design for the continuation of traditional crafts

As discussed in chapter 2, in pre-industrial society, craft and design were under the same umbrella of creative activities, but greater specialisation within modern industry led to the separation of design from craft. After a long period of low status in modern history, there has been a renaissance of interest in craft since the start of 21st century. Nowadays, many designers, who some regard as 'an indispensable intermediate', have been involved in craft revival projects, in order to re-examine and reassess the contemporary value and contribution of traditional knowledge and skills (Vencatachellum, 2019, p.32). In general, relevant design practices or projects or research involve:

- **transmission of craft knowledge** (Härkönen, Huhmarniemi, and Jokela, 2018; Wood, Rust and Horne, 2009)**;**
- **continuity of tradition and human values** (Twigger Holroyd et al., 2017; Niedderer and Townsend, 2014)**;**
- **the potential of design for sustainability** (Zhan and Walker, 2019; Väänänen and Pöllänen, 2020)**;**
- **cultural self-empowerment and social transformation through craft practices** (Mamidipudi, 2018; Vencatachellum, 2019);
- and **new opportunities facilitated by craft-design collaborations** (Tung, 2012; Chudasri, Walker, and Evans, 2020; W. Wang, Bryan-Kinns, and Ji, 2016).

In China, similar efforts are also being made by designers, design researchers and design institutions in order to develop new opportunities related to their local crafts often aspiring to develop innovation with tradition. Combing with findings from section 2.2.3, another preliminary investigation was employed to understand the role of design in current craft revival activities, and keywords - "craft and design" and "craft-design collaboration" were used on Chinese largest search engine Baidu. Based on the analysis of search results, design's main contributions are identified in three terms, 1) digital platforms and marketing, 2) product and packaging design, 3) branding, and detailed descriptions are provided in the following.

Digital platforms and marketing

There are many applications and websites specifically designed to sell craft products and gathering craft-related stakeholders in China. These intermediation platforms create a closer interaction between producers and consumers/users (Saikaly and Krucken, 2011). Especially for rural artisans and craftspeople, this opens a 'window' for them to understand

contemporary consumers' preference, needs, and thoughts. One great example of this is a mobile application called *DongJia*, which aims to connect Chinese young craftspeople with high-end consumers. This platform now has more than 4,000 talented craftspeople offering their craft work online, ranging from relatively cheap utilitarian crafts to expensive decorative art objects; With its 1.5 million of registered users, the platform generates monthly sales of about RMB 35 million (about GB£ 3.98 million) (China Hands, 2018). Different from other platforms, Dongjia's e-commerce ecosystem is based on people instead of products themselves (China Hands, 2018). A social-networking function called *She Qu* (Community) is designed for craft-makers to post their personal stories, design inspirations, videos, and short articles, and its livestreaming also immerse visitors through direct interactions with artisans. In addition, there are also many crafts-themed accounts on Chinese social media platforms. These social media platforms have made contributions in sharing crafts-related information as well as connecting different craft communities and individuals. For example, up to 1 March 2021, nearly 340,000 people follow 'Craft Revival' on the largest microblogging platform *Weibo* (https://www.weibo.com/u/3163937325?is_hot=1). And a series of mini-documentary films the *Great Shokunin 2* that tell craft inheritors' stories has been watched more than 130 million times on the Chinese video sharing platform Youku (China Daily, 2017a).

Product and packaging design

In many cases, designers collaborate with craftspeople to develop new craft products, and such collaboration has been proved as the impetus for innovation (Yair, Press, and Tomes, 2001; Temeltaş, 2017; Tung, 2012). One typical design project of this is the New Channel (http://newchannel.design-engine.org/), and the application of design expertise helps develop local rural community. Hence, this project is promoted by the central government as China's flagship poverty alleviation project (MEPRC, 2017). In this project, a co-creation approach is adopted to facilitate the knowledge exchange between the outside designers and local craftspeople, and many design outcomes with local unique genes have been developed (D. Zhang and Ji, 2016). For example, in the ethnic group called Huayao in southern China, a series of packaging designs for local specialties and traditional food are developed, and local natural materials (e.g. bamboo, grass and cloth) and locally traditional embroidery and dyeing skills are used to develop new designs (B. Wang, 2018). In another ethnic minority called Dong, its traditional weaving techniques, craftsmanship and patterns which has been recognised as national ICH are integrated to a series of contemporary scarf designs (Guo and

Ji, 2018). Also, in Sichuan province in southwestern China, locally traditional stapling skills and lacquer technique are re-used in modern ceramic design (Y. Zhang, 2015). However, an imbalanced relationship between the artisan and designer in this project is criticised. According to D. Zhang's research (2016), outside designers tend to lead the collaborative process, while local craftspeople often act the role of 'manual worker' to achieve their concepts. As local artisans' voices are neglected, important local traditions and place-based knowledge which are valued by them might be also ignored.

Brand design

Design expertise is used to develop strong branding, and a good example of this is Norlha. It is a high-end brand of Yak wool scarves, clothing and other treasures handwoven by nomad on the Tibetan Plateau (https://www.norlha.com/), and the concept of sustainability is linked to its branding. The enterprise manages the entire production flow of their products, from the extraction of local raw materials from Tibetan Yaks to its production process with few energy consumption (Yi Xi, 2017, 11:14). Furthermore, as local nomads are able to make a living through Yak wool making, to some extent, this change alleviates overgrazing on the Tibetan Plateau (Yi Xi, 2017, 13:14). Its online presence, story-telling and branding also convey makers' stories, Tibetan culture and traditions behind the products. For local people, they now have a steady source of income in their hometown, so they do not need to work far away from their family as before. This change is positively associated with locally cultural sustainability, social stability and personal wellbeing (Yi Xi, 2017, 10:49).

In addition, Norlha's Yak wool products are designed for the modern luxury market, which is defined as 'luxury fashion' (Norlha, 2021). However, the fashion industry has been heavily criticised for its growth-based and profit-oriented essence, and the environmental concerns caused by its global operations (Kapferer and Bastien, 2009; Kapferer and Michaut-Denizeau, 2014). Informed by this, such conflict between fashion business and sustainability should be further considered in Norlha's future development. Also, big social changes to local communities should be critically discussed. For example, to earn a decent living, local nomads currently tend to be involved in yak wool weaving instead of grazing, and their traditional nomadic lifestyle is being changed to a settled way of life. But in the long term, a decline in grazing and farming activities could well negatively influence local pastoral grassland ecosystems and species composition (Schieltz and Rubenstein, 2016).

4.1.3 Sustainability related problems in current design interventions

Noticeably, the craft sector is now becoming influenced by modern markets and is re-shaped by modern manufacturing technologies. Many craft enterprises and brands turn to luxury and fashionable goods. On the one hand, it makes sense that local, hand-made crafts should be positioned as high end, to ensure makers are able to receive and appropriate financial return and a decent living from their expertise, time and skills. At the same time, doing so caters to an aspirational 'socio-positional' market, which is linked to driving forward, increasing consumption, and satisfying consumers' externally-oriented goals and extrinsic values, (e.g. personal aspiration and financial success, social status and recognition, and self-image as addressed by Kasser and Ryan, 1996). However, the primarily intrinsic values represented by traditional crafts, which reflects sustainable ways of making and using, as discussed before, seems to be largely neglected. Therefore, a design direction that constantly contributes to the market, economic growth, consumption and innovation is problematic in terms of sustainability; not least because these are invariably accompanied by excessive energy use, resource use and waste production caused by rapid obsolescence and replacement of 'positional' and fashion-oriented goods.

In this study, a meaning-based, sustainability-oriented design approach, i.e. the *Quadruple Bottom Line of Design for Sustainability* (QBL) proposed by Walker (2011, p.187-190; 2014, p.92-93), is used as a lens to critically examine design interventions in traditional craft. This approach has been used to investigate many traditional making practices all around the world (Walker, Evans, and Mullagh, 2019a). According to Walker, design interventions in traditional crafts can be considered at four levels. Significantly, in this approach, a meaningful action is understood to be an approach that is appropriate to the context in which it is performed. The fourth element, which relates to economics, is seen as the means for enabling the first three:

- **Practical Meaning** – actions that are context appropriate and serve utilitarian needs while taking into account and minimising negative environmental impacts;
- **Social Meaning** – the context-related social and ethical implications of craft practices and cultural continuance;
- **Personal Meaning** – priorities valued by craftspeople as individuals, including moral rectitude and conscience, a sense of contribution and spiritual significance, and inner values and well-being;
- **Economic Means** – ensuring financial viability of the practice to enable the first three elements.

(Walker, 2011, p.187-190; 2014, p.92-93)

4.2 Research question, research propositions, and research objectives

In keeping with Walker's QBL, the primary question for this research study is as follows:

- **RQ**: *How can design make a meaningful contribution to the continuation of traditional craft practices in the Chinese context, in relation to the core principles of design for sustainability, as described in Walker's QBL?*

In order to answer this research question, the aim of this PhD research is to understand the Chinese context in which craft making practices operate, and to identify areas in which design can contribute to the long-term continuation of traditional craft practices that accords with sustainable principles. Three research objectives, which provides direction to take the research project forward, are described in the following:

- **OB1**: *determine the relationship of traditional craft practices to sustainability in the Chinese context.*
- **OB2**: *investigate and delineate the role of design in relation to Chinese craft revival activities and identify sustainability-related issues;*
- **OB3**: *on a case by case basis, identify areas in which design can contribute to the long-term continuation of traditional craft practices.*

In summary, this research aims to explore design for sustainability and its role for supporting craft heritage in the Chinese context. Combined with findings from the preliminary investigation into local craft revival activities, design's main contributions are initially identified in three areas - marketing, product and packaging, and branding (as shown in section 4.1.2). As part of the bigger picture of sustainable development, sustainability has been considered to different branches of design at multiple levels, ranging from product-production levels and organisational levels to socio-technical and systematic levels). In keeping with this, relevant design interventions are critically examined through the lens of sustainability, and four dimensions of Walker's QBL approach - practical meaning and environmental implications, social meaning, personal meaning, and economic viability) are used to further identify areas in which design can improve craft's sustainable performance and therefore contribute to distributed, located economic flourishing.

CHAPTER 05

Research Methodology

CHAPTER 5: Research Methodology

5.0 Introduction

As noted in Chapter 4, the concept of "crafting sustainability" was proposed to describe the meaning of traditional crafts in the contemporary, and four research propositions were developed to explain their relationship to sustainability:

- **RP1:** *Traditional crafts are place-based and serve utilitarian needs while minimising negative environmental impact.*
- **RP2:** *Important context-related social and ethical knowledge and practices, which are vital to cultural continuance, are rooted in traditional craft practices.*
- **RP3:** *Traditional crafts convey important human values, including moral rectitude and conscience, a sense of contribution to community, and personal wellbeing rooted in inner values and/or spiritual fulfilment.*
- **RP4:** *Traditional hand-made crafts are economically beneficial to contemporary society, and their focus on high quality and product life cycle are compatible with contemporary understandings of sustainable consumption and production.*

Based on these propositions, combined with a preliminary investigation into craft revival activities and craft-related design projects in modern China, the research aims were set out as follows:

- **OB1:** determine the relationship of traditional craft practices to sustainability in the Chinese context.
- **OB2:** investigate and delineate the role of design in relation to Chinese craft revival activities and identify sustainability-related issues;
- **OB3:** on a case by case basis, identify areas in which design can contribute to the long-term continuation of traditional craft practices.

Research activities, including research design, data collection, data analysis, data display, and the validation of results, were included to achieve such the objectives. This chapter presents the research process. It comprises: detailed discussion of key components of research design and a description of how this particular research was designed (section 5.1); the research methodology employed for data collection and data analysis (section 5.2 and 5.3); and a summary of the chapter (section 5.4).

5.1 Research design

Research design is a general plan about what the researcher will do in order to answer the research question(s). The design of this plan can range from the general philosophical ideas behind the inquiry to minute details of data collection and analysis procedures (Ragin, 1994,

p.146; Creswell, 2003, p.3). Four key components that are frequently mentioned in the methodology-related literature, which are identified here to underpin the research design:

- the general research paradigm (epistemology alongside with ontology),
- approaches to theory development (induction, deduction, or abduction),
- methodological choice (quantitative, qualitative, or mixed methods), and
- strategies of inquiry.

This section presents details of these concepts (sections 5.1.1-5.1.4), and discusses how this research is design with the consideration of them (section 5.1.5).

5.1.1 Research paradigms

The term paradigm means "a pattern or model" (Oxford English Dictionary, n.d.). A research paradigm is "the researchers' belief and values about the world, the way they define the world and the way they work within the world" (Kamal, 2019). This is also described as an initial conceptual framework, supporting researchers to undergo "scaffolded learning" in order to developing knowledge in a particular field (Crotty, 1998, p.1). Other terms, such as the philosophical assumptions (Crotty, 1998), or broadly conceived research philosophy (Patton, 2002, p.79) and philosophical worldview (Creswell, 2014, p.6), are also interchangeable with the term - research paradigms. According to Guba (1990, p.18), The research paradigm comprises ontology, epistemology and methodology. Ontology deals with the science or study of being, with the nature of reality (Dudovskiy, 2018, p.39). While epistemology is concerned with "the nature of knowledge, its possibility, scope, and general basis" (Hamlyn, 1995, p.242), and it provides "a philosophical grounding for deciding what kinds of knowledge are possible and how we can ensure that they are both adequate and legitimate" (Maynard, 1994, p.10). In short terms, ontology is the study of understanding *what is*, while epistemology embodies understanding *what it means to know* (Gray, 2018, p.21).

Although efforts have been made to keep ontology and epistemology apart conceptually, the combination of both provides a holistic view of the origins, nature and evolution of knowledge (S. Patel, 2015). According to Crotty (1998, p.4-5, p.10), the theoretical stance taken by the researcher is influenced by the research paradigm, and this further informs the methodology and methods employed. As shown in the diagram below, there is a close link between the theoretical perspective, the methodology and methods employed, and epistemology alongside with ontology referring to the research paradigm.

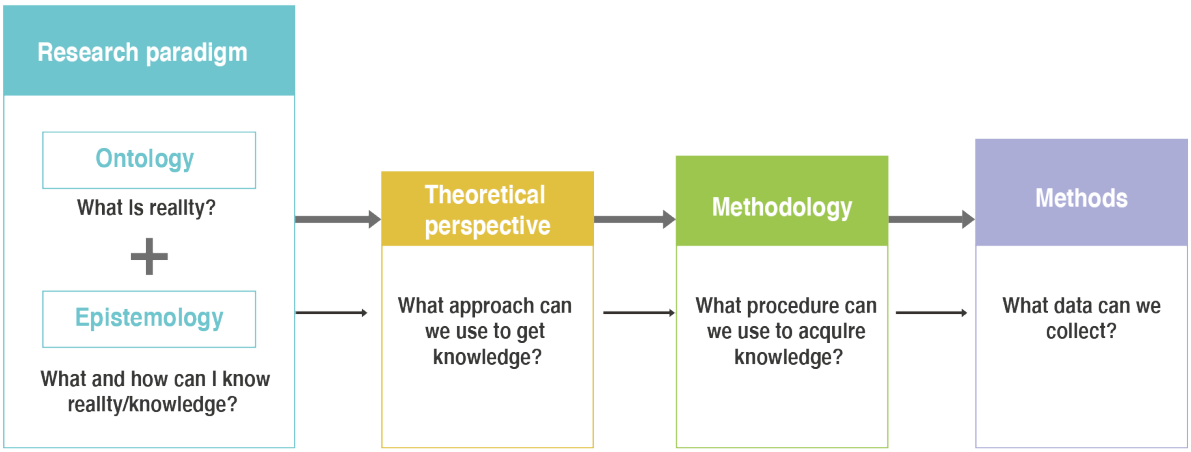


Figure 6 Relationship between the epistemology, the theoretical perspective, the methodology and methods (adapted from Crotty, 1998, p.4-5, p.10)

A large number of paradigms have been proposed by researchers, and it is found that Crotty's framework (as shown in Figure 6) is often used to explain or compare them (e.g. S. Patel, 2015; Gray, 2018, p.21-30). Particularly, within this framework, S. Patel (2015) loosely divides paradigms into five categories, containing positivism, constructivists/interpretive paradigms, pragmatism, subjectivism, and critical paradigms. It is noticeable that, among these paradigms, positivism is often considered in contradistinction to constructivism (Gray, 2018, p.22). **Constructivism** believes there is no single reality or truth, but the interpretation of meanings enables such reality to become relevant (Schütz, cited in Flick, 2004, p.89). In contrast, **positivism** argues that reality exists external to the researcher, consisting of "what is available to the senses – that is, what can be seen, smelt, touched, etc." (Gray, 2018, p.22). From a constructivist view, meaningful reality is constructed by human beings through interactions with the world, and advanced and spread within a social context (Crotty, 1998, p.42-43). In terms of epistemology, it is closely related to **interpretivism**, which looks for "culturally derived and historically situated interpretations of the social life-world" (Crotty, 1998, p.67), and qualitative methods are often used to discover underlying meaning of human practices, events, and activities (S. Patel, 2015; Gray, 2018, p.22). While positivists claim that inquiry should be operated within a strict set of scientific laws (based on scientific observations or experiments, as opposed to philosophical speculation), and thus empirical experience is required to produce theoretical explanations (Gray, 2018, p.22-23). The Table 9 below developed by S. Patel (2015) lists four main research paradigms and the relationship of them to ontology, epistemology, and theoretical perspective.

Table 9 Five main research paradigms (S. Patel, 2015)

Paradigm	**Ontology** ***What is reality?***	**Epistemology** ***How can I know reality?***	**Theoretical perspective** ***Which approach do you use to know something?***
Positivism	There is a single reality or truth (more realist)	Reality can be measured and hence the focus is on reliable and valid tools to obtain that	• Positivism • Post-positivism
Constructivist / Interpretive	There is no single reality or truth. Reality is created by individuals in groups (less realist)	Therefore, reality needs to be interpreted. It is used to discover the underlying meaning of events and activities	• Interpretivism (reality needs to be interpreted) a. Phenomenology b. Symbolic interactionism c. Hermeneutics • Critical inquiry • Feminism
Pragmatism	Reality is constantly renegotiated, debated, interpreted in light of its usefulness in new unpredictable situation	The best method is one that solves problems. Finding out is the means, change is the underlying aim	• Deweyan pragmatism • *Research through design*
Subjectivism	Reality is what we perceive to be real	All knowledge is purely a matter of perspective.	• Postmodernism; • Structuralism; • Post-structuralism •
Critical	Realities are socially constructed entities that are under constant internal influence	Reality and knowledge is both socially constructed and influenced by power relations from within society	• Marxism; • Queer theory; • Feminism

5.1.2 Approaches to theory development

As we saw earlier, it is wise to begin by considering research paradigm through ontology along with epistemology, because this influence our theoretical stance and the methodology and methods used to develop "generalised" theory (Gray, 2018, p.6). But in this process, do we begin with theory, or theory itself can be generated from the research? Dewey (1910, p.155-156) suggests a systematic way of thinking, comprising inductive discovery (induction) and deductive proof and inductive discovery. Similarly, according to Saunders et al. (2019), three approaches to theory development, including induction, deduction, and abduction, are proposed to consider after first-round choice of research paradigm.

In the inductive process, without the formulation of hypotheses, research questions lead to plans of data collection, and this was followed by data analysis to see if any patterns/themes

appear that form the building blocks of generalisations, relationships and even theories (Gray, 2018, p.19). A comparison between the deductive process and inductive process has been shown in Figure 7 in a visualised way. However, it is worth noting that inductive and deductive processes can be compatible with each other. In some projects that address modern social problems, both inductive and deductive methods have been effectively combined (e.g. using both two to investigate staff absenteeism) (Gray, 2018, p.20).

The deductive approach "tests the validity of assumptions (or theories/hypotheses) in hand", whereas the inductive approach "contributes to the emergence of new theories and generalisations" (Dudovskiy, 2018, p.65). One important point to distinguish them is the relationship of hypotheses to the research. In the deductive process, a set of principles, or allied ideas/concepts are elaborated, which offers the foundation of hypotheses and theories; They are then tested through empirical observation or experimentation, and evidence arising from this process indicates if the hypothesis is confirmed, refuted or modified (Gray, 2018, p.18-19).

In addition, another type of logical reference is abductive reasoning, developed by American philosopher Charles Sanders Peirce in the 19th century (Staat, 1993). Both deductive and inductive approaches have been criticised due to their shortcomings. For deductive reasoning, it is criticised because the lack of clear guidance on how to choose theory to be tested by constructing hypotheses; While for inductive reasoning, its critical voices centre on one opinion: "no amount of empirical data will necessarily enable theory-building" (Dudovskiy, 2018, p.75). As a third choice, abductive reasoning is developed to overcomes such weaknesses within a pragmatist worldview. Figure 8 shows the difference between abductive reasoning and alternative approaches.

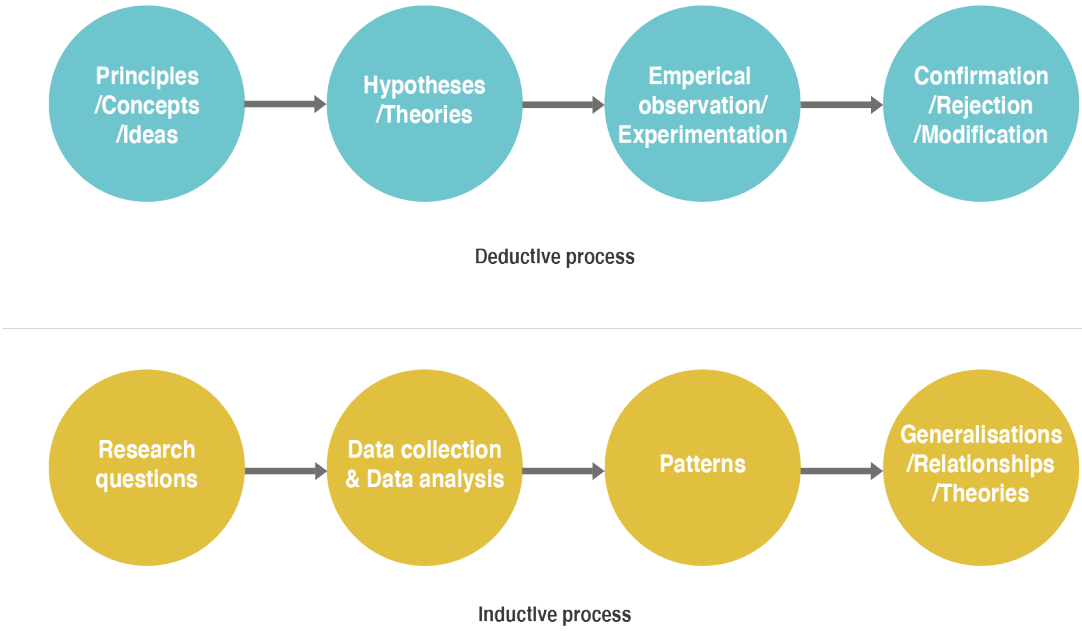


Figure 7 A comparison between deductive process and inductive process (adapted from Gray, 2018, p.18-19)

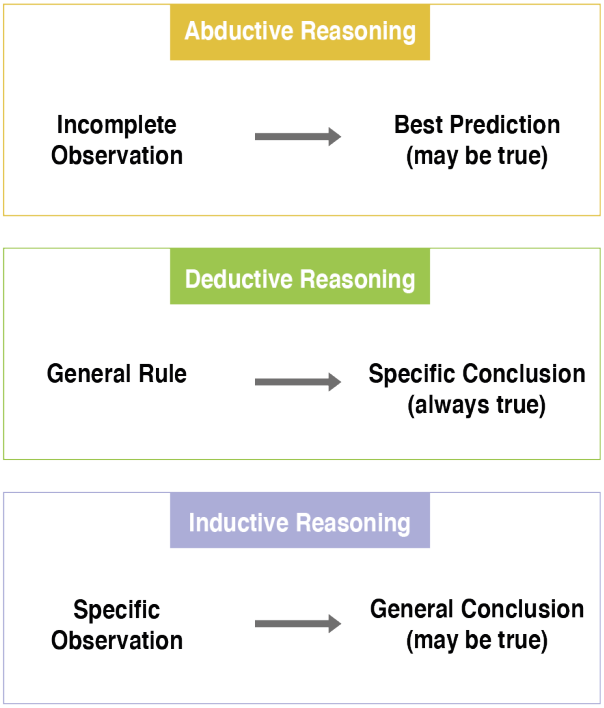


Figure 8 Difference between abductive reasoning, deductive reasoning, and inductive reasoning (Dudovskiy, 2018, p.76)

5.1.3 Methodological choice

Regarding methodological choice, it is vital for researchers to consider the distinction between qualitative and quantitative research. Inspired by the progress of the nature sciences, early social scientists, especially in the areas of psychology and sociology, imitated scientific methods in building knowledge, which forms the basis of empirical social science research as we know it today (Punch, 2005, p.65). Until the 1960s, a more qualitative, naturalistic and subjective view has been separated from this traditional scientific pattern where quantitative methods are employed to establish a set of general principles or laws (Burns, 2000, p.3). Regarding their difference, the following provides detailed explanations (Creswell, 2014):

> *"Qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem…Those who engage in this form of inquiry support a way of looking at research that honours an inductive style, a focus on individual meaning, and the importance of rendering the complexity of a situation." (Creswell, 2014, p.4)*
>
> *"Qualitative research is an approach for testing objective theories by examining the relationship among variables… Those who engage in this form of inquiry have assumptions about testing theories deductively, building in protections against bias, controlling for alternative explanations, and being able to generalise and replicate the findings." (Creswell, 2014, p.4)*

In quantitative research, there are various forms of research design, but one common point behind these designs is to "control, minimise or exclude the influence of the research or the researcher on the data-collecting situation"; In contrast, little importance to this aspect is stressed in qualitative areas (Flick, 2004, p.146), As described by Dudovskiy (2018, p.77), a choice between a qualitative and quantitative research design can be understood as two different directions, going in an exploratory or a conclusive way. For exploratory types, its design centres on problems that has not yet been clearly defined and intends to get insights and deepen/broaden understanding; while conclusive research design aims to test hypothesis/relationships and provide satisfactory and conclusive solutions to existing problems (Dudovskiy, 2018, p.82).

To distinguish qualitative and quantitative research, Creswell (2014, p.4) proposes three main aspects, including "the basic philosophical assumptions researchers bring to the study, the types of strategies used in the research, and the specific methods employed in conducting

these strategies". To be more specific, they can be further detailed in terms of question, method, data collection, outcome, the form of data, sample size, context and analysis (Dudovskiy, 2018, p.97). For example, qualitative research often starts with open-ended questions (qualitative interview questions), whereas quantitative research tends to set closed-ended questions (quantitative hypotheses) (Creswell, 2014, p.4). Moreover, quantitative research is often framed in the form of numbers, whereas qualitative research adopts a textual way (Punch, 2016, p.3). The following Table 10 shows the difference between quantitative and qualitative research methodology.

Table 10 Main differences between quantitative and qualitative research methodology (Dudovskiy, 2018, p.97)

Description		**Quantitative**	**Qualitative**
Requirement	Question	Hypothesis	Interest
	Method	Control and randomisation	Curiosity and reflexivity
	Data collection	Response	Viewpoint
	Outcome	Dependent variable	Accounts
Ideal	Data	Numerical	Textual
	Sample size	Large (power)	Small (saturation)
	Context	Eliminated	Highlighted
	Analysis	Rejection on null	Synthesis

However, qualitative and quantitative research should not be seen as two opposite sides. Instead, they are complementary, and both of them have merits and limitations (Silverman, 2013, p.9). This provide the basis of mixed methods research, which is in a middle position between qualitative and quantitative research. Using both kinds of approaches provides a more holistic way to collect and analyse data, and therefore it is seen as much better than either qualitative or quantitative research (Creswell, 2014, p.4). To mix two different datasets, except for directly bringing them together, the researcher is encouraged to build connections between both or embed one dataset within the other (Creswell and Clark, 2017, p.7). Noticeably, as stated by Silverman (2013, p.11), mixed methods are never intrinsically superior to another two; Selecting methods is largely dependent on the researcher objectives/questions and deciding what works best (Silverman, 2013, p.11).

5.1.4 Research strategies of inquiry

Preliminary steps in designing a research, as discussed in previous sections, including the consideration of general research paradigm, research approaches to theory development, and the research design towards a more qualitative or a more quantitative direction for procedures. And then, it is to consider the strategy of inquiry and specific methods that will be adopted (Creswell, 2003, p.5). The strategies of inquiry are discussed here around three areas associated with: 1) the quantitative research, 2) the qualitative research, and the mixed methods research, and representative methods are selected for detailed descriptions.

In quantitative studies, **experimental design** is one typical form of scientific inquiry, and there are many different types, such as the quasi-experiments and correlational studies, specific single-subject experiments, and complex experiments (e.g. factorial design and repeated measure designs) (Creswell, 2003, p.13-14). But in social science research, a common idea of designing an experiment is the artificial manipulation of some treatment variables for research purposes (Punch, 2005, p.65). A basis way is to set up two comparison groups, and the objective is to have these two groups "alike in all respects, expect that they receive different treatments, or differential exposure to the independent variable"; Through this way, differences between them in the outcome (dependent) variable can be tested (Punch, 2005, p.68). However, also pointed out by Punch (2005, p.70-71), it is still challenging to widely apply this strategy of inquiry in social research because of its limited practicability for investigating various questions with ethical reasons.

Another typical strategy associated with quantitative research is the **survey research**. The essence of survey research is described as "questioning individuals on a topic or topics and then describing their responses" (Jackson, 2011, p.17). In keeping with core principles of positivism, it is based on the assumption that social reality can be generalised from a sample to a population and inferences can be drawn about some characteristic, attitude, or behaviour of this population (Babbie; cited in Creswell, 2003, p.14, p.154). Four forms are often employed, containing **mail questionnaires, web survey, telephone interviews, and face-to-face interview** (Neuman, 2012, p.194-197). However, as a popular data-gathering technique used in social science, the survey method is widely criticised because its data is limited to what a person or organisation says. But the fact is that a person says may differ from what he or she truly does or thinks, and therefore the findings resulted from such data may not be accurate (Neuman, 2012, p.172-173).

In qualitative research, a more interactive and humanistic strategy is adopted by the researcher for the procedures for data collection and analysis (Creswell, 2003, p.183).

Typical examples include **narrative, phenomenology, ethnography, case study, and grounded theory**. However, in the literature, qualitative research is often described in different ways, occurring with a confusing array of different categories and descriptive headings. One confused condition is exemplified by Gray (2018, p.164) as he found grounded theory can be regarded as both a 'school of thought' but also a particular research design or strategy. To make it clear, let us look back to Crotty's framework for research process (1998), which indicates any research is influenced by the kind of research paradigm adopted by the researcher. Similarly, the choice of qualitative strategies and methods is also dependent on qualitative paradigms and theoretical perspectives adopted. In keeping with this direction, qualitative paradigms, and their relevance to strategies of inquiry and methods, are listed in Table 11 below. Noticeably, in a qualitative study, the selection of strategies and data collection methods tends to be highly flexible, and it is often to see a combination of several strategies and methods used in one research (Gray, 2018, p.164).

As discussed in section 5.1.2, both qualitative and quantitative research has their own strength and weakness, and a means for seeking a combination of both were born, called the mixed methods. This has led authors from around the world to develop procedures for mixed methods strategies of inquiry. For example, Creswell (2003, p.16) sum up three procedures, i.e. sequential procedures, concurrent procedures, and transformative procedures. Following a **sequential procedure**, the researcher seeks to expand the findings of one method with another method, while for **concurrent procedures**, in which the researcher combines both quantitative and qualitative data at the same time in order to develop a full understanding of the research topic (Ibid). In **transformative procedures**, a theoretical lens is used, and this provides a general framework containing detailed procedures for data collection, analysis, and writing; But for data collection methods employed in this procedure, a sequential or a concurrent approach can be involved (Creswell, 2003, p.16).

Table 11 An overview of qualitative strategies of inquiry (adapted from Crotty, 1998; and Gray, 2018, p.165)

Paradigms and perspectives	Strategies of inquiry	Description	Data collection methods
NATURALISTIC **Postpositivism** **Realism** -Reality is 'out there'. Deeper social reality needs qualitative enquiry. -Truth is supported by extensive recording in real settings. -Researchers must remain detached from real setting. **PROGRESSIVE** **Critical theory** **Constructivism** **Postmodernism** **Feminism** -Reality and science are socially constructed. -Researchers are part of the research setting. -Research must engage in reflexive and self-critical dialogue. -Purpose of research is to problematize, reveal hidden realities.	Case study	Investigating a contemporary phenomenon (the 'case') in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident (Yin, 2014, p.16)	Interviewing Observation Focus groups Documents Video and photographs Unobtrusive measures Research diary
	Ethnography	Directly observing and participating in small-scale social settings in the present time or in your home culture, in order to exploring the nature of a specific social phenomenon, also called field research or participant-observation research (Neuman, 2012, p.290)	
	Ethnomethodology	Investigating everyday commonsense knowledge and interactions of people (Neuman, 2012, p.292)	
	Phenomenology	Identifying the essence of human experience concerning a phenomenon, as described by participants in a study (Creswell, 2003, p.15)	
	Grounded theory	Generating theory through the interplay between analysis and data collection (Punch, 2005, p.155)	
	Participatory action research	Implying an effort on the part of people to understand the role of knowledge as a significant instrument of power and control (Reason, cited in Gray, 2018, p.165)	
	Narrative analysis	Analysis of a chronologically told story, exploring how various elements are sequenced (Gray, 2018, p.168)	
	Cultural studies	Study of a complex web of social customs, values and expectations that affect our ways of working (Frow and Morris, cited in Gray, 2018, p.165)	
	Gender studies	Exploring the process of constructing and differentiating gender and particularly gender inequalities (Cranny-Francis et al., cited in Gray, 2018, p.165)	

5.1.6 Research design for this study

As discussed in previous sections, four aspects, including research philosophy, approaches to theoretical development (deduction, induction, or abduction), methodological choice (qualitative, quantitative, or mixed methods), and strategies of inquiry, underpin the research design. But also informed by Punch (2005, p.39), a good research design relies on organising research around research aims and research questions.

Referring to the beginning of this chapter, ***the aim of this PhD research is to understand the Chinese context in which craft making practices operate, and to identify areas in which design can contribute to the long-term continuation of traditional craft practices that accords with sustainable principles.*** Due to limited English literature on this area, this research is exploratory in nature and concerned with gaining insights and understanding on underlying reasons and motivations (Dudovskiy, 2018, p.82, p.106). Therefore, this research is framed as **a qualitative form**, with an aim of generating "precise and 'thick' descriptions" (Flick, Kardorff, and Steinke, 2004, p.3). To do so, **a constructivist methodology** is employed to interpret knowledge, values, and priorities valued by local craft community (Crotty, 1998, p.42). This helps ensure the outcome of research, i.e. design recommendations developed for the region of central China, are cultural-appropriate, context-sensitive, in accordance with social realities and insiders' perceptions (Flick, Kardorff, and Steinke, 2004, p.3).

A combination of deductive and inductive strategies is adopted by the researcher. An expansive literature review on key theoretical concepts and a secondary research on Chinese craft revitalisation activities provide deductive perspectives on craft and design for sustainability, and empirical research via ethnographic field studies in central China offers an induction approach to expand and strengthen the understandings, especially in regard to particular contexts and practices. 32 semi-structure interviews were conducted with craft makers, enterprise owners and craft-related people, and they were supplemented with direct observation of their making practices in their places of work. A visualised overview of this research design is shown in Figure 9, and details are summarised in Table 12.

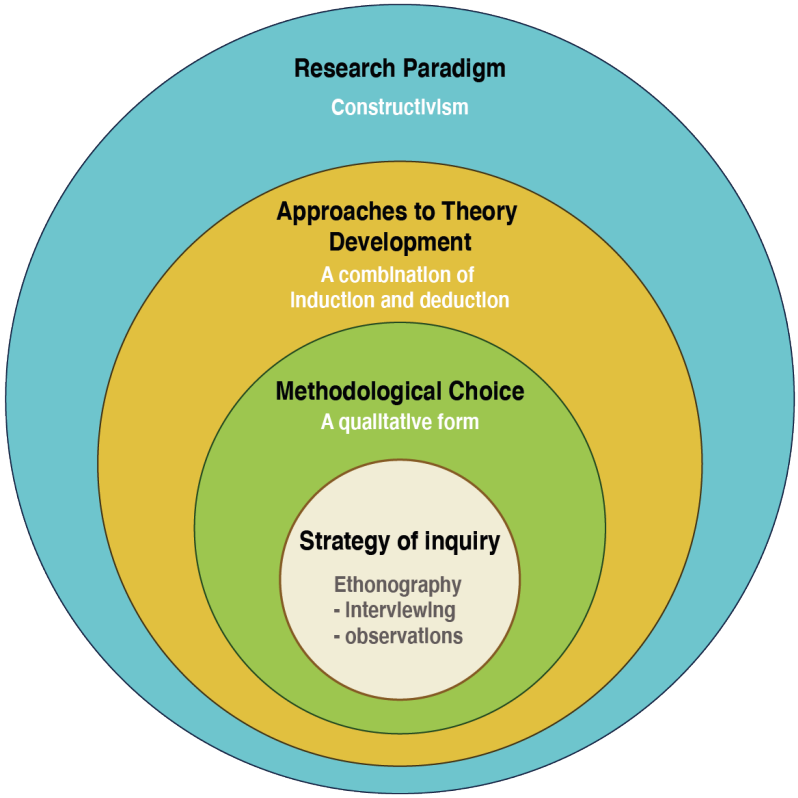


Figure 9 Research design for this study

Table 12 Details of this research design

Paradigm	Approaches to theory development	Methodological Choice	Strategy of inquiry	Methods for data collection and analysis	Description
Constructivism: Reality and truth are socially constructed, and reality only become relevant through their meanings and interpretations.	A combination of deductive and inductive strategies: Theoretical research provides deductive perspectives, and empirical research offers induction.	Qualitative research: This research aims to understand the Chinese context in which craft making practices operate, and to identify areas in which design can contribute to the long-term continuation of traditional craft practices that accords with sustainable principles	Theoretical base: Relevant craft theory and sustainability theory/approaches are critically reviewed. Strong connections between them are build and the concept of "crafting sustainability" is developed. Empirical Ethnographic field studies: Fieldwork in central China expand and strengthen the understandings, especially in regard to particular contexts and craft practices.	Literature review: Review of contemporary literature – examining key theoretical concepts about craft, design for sustainability and their relationships.	Review of craft-relevant theory
					Review of foundational sustainability and DfS (Design for Sustainability) theory
					Literature review of craft in the context of sustainability
					Preliminary investigation of craft-related design projects in China
				Interviews: Understanding the nature of craft work and its relationship to place, community, personal value, and economic development; investigating and delineating the role of design in enabling the continuation of traditional craft practices in ways that comply with the core principles of sustainability.	In-depth key informant interviews with 32 craft-related people (craft/design-makers, enterprise owners, academics researchers of craft, and government officials).
					12 examples selected from different craft categories for in-depth analysis - identifying the potential role of design in different craft fields
					Photographs of tools, workshops, artefacts, raw materials, and making process.
					Note-taking: written record of field work visits, interviewee information, interviewing, events, reflections, etc.
				Observational studies: Observation of the working environment, making processes, craft expertise	Field-based observations when visiting craft-makers' studios and craft enterprises

5.2 Data collection

For data collection, relevant methods can be loosely divided into two categories: secondary data collection methods and primary data collection methods (Hox and Boeije, 2005). Secondary data means a type of data that has been collected by and readily available for other sources). Within this study, secondary data collected from both international and local sources provides theoretical foundation of this research and also helps make sense of Chinese context, and relevant details are explained in section 5.2.1. Also, primary data is collected by the researcher from main sources through field studies, interviews and observations. Before collecting data, Institutional Ethics Approval was obtained by the researcher in July 2019, and the following sections 5.2.2 and 5.2.3 give detailed descriptions of methods employed for data collection.

5.2.1 The literature review

Data collection from the literature review went through different stages of this research, from framing initial research problem to final systematic thinking and structural thesis writing. Throughout this process, three key words - craft, sustainability, and design, were used to keep searching materials from academic journals, books, conference proceedings, government documents, policy reports, news reports, magazines, and websites. To ensure the validity and reliability of the research, as suggested by Dudovskiy (2018, p.88), a set of criteria was applied to select appropriate sources for in-depth analysis, including the date of publication, author's credentials, the reliability of the source, the quality of discussions, depth of analyses, and the practicability of research. The review of selected literature was shown in three chapters, including:

- Craft in general and in the Chinese context (Chapter 2);
- Sustainability and design (Chapter 3);
- Craft in relation to sustainability (Chapter 4).

As presented in each chapter, three review techniques were carried out to produce the analysis. The first one is the historical review, used in Chapter 2 (section 2.1.4) and Chapter 3 (section 3.1), to trace the development of craft and sustainability over time. Another technique used for literature review is theoretical comparison, and different understandings on craft and sustainability, as well as different design approaches to sustainability were compared to summarise their characteristics (shown in section 2.1.3, section 3.2, and section 3.3). In addition, context reviews, containing craft-related design practices in Chinese context

(section 2.2) and traditional crafts in the context of sustainability (section 4.1), place this research in the big picture.

Key findings are drawn from the literature review: 1) craft practices and their relevance to sustainability in four terms, i.e. four research propositions, 2) the identification of sustainability-related problems in current craft practices in Chinese context, 3) the adaption of QBL framework for meaningful design interventions in traditional crafts. Aspects of such findings were validated through research papers with peer reviewers that were published in conference proceedings, scholarly journals, project reports, and presented at international design conferences in China (2018) and UK (2019) (for more details, see section 5.3.3). These findings led to the refinement of main research question and the development of three research objectives as guideline for field research:

- **RQ**: *How can design make a meaningful contribution to the continuation of traditional craft practices in the Chinese context, in relation to the core principles of design for sustainability, as described in Walker's QBL?*
- **OB1**: *determine the relationship of traditional craft practices to sustainability in the Chinese context.*
- **OB2**: *investigate and delineate the role of design in relation to Chinese craft revival activities and identify sustainability-related issues;*
- **OB3**: *on a case by case basis, identify areas in which design can contribute to the long-term continuation of traditional craft practices.*

Note: To answer the main research question, central China, is further identified as the scope for empirical ethnographic research and field studies. Regarding the criteria for this field selection, details are explained in next section.

5.2.2 Ethnographic fieldwork

5.2.2.1 Definitions of ethnographic research

Ethnography, also called field research or participant-observation research, *Ethno* means "people or folk", and *graphy* refers to "write or describe"; Thus, it can be simply understood as a type of research describing/writing people (Neuman, 2012, p.290). Its origination often dates back to the pioneering fieldwork of Polish anthropologist Bronislaw Malinowski (Gray, 2018, p.433). His seminal work published in 1922, entitled *The Argonauts of the Western Pacific*, is a typical example, showing the process of gathering data through meticulously documented observations and interviews in order to understand a different culture. Not only in the field of anthropology, ethnography was also taken up by sociologists in early 20th century, represented by the Chicago School of sociology for the study of urban, social

phenomena in the 1920s and 1930s (Gray, 2018, p.434). In recent years, there has been an increasing interest in ethnography with different approaches being employed in different areas, such as communication studies, criminology, economics, education, and geography, and it has become the most popular strategy of inquiry in qualitative study (Neuman, 2012, p.290; Zaharlick, 1992).

Ethnographic studies tend to show findings in a descriptive and interpretive way. This is because a high level of details can be provided through narrative descriptions, and the significance of what researcher gain from the field can be determined through interpretations (Gray, 2018, p.432-433). With the purpose of exploring the nature of a specific social phenomenon, the ethnographers immerse themselves in real 'field' to "learn from insiders, to gain the native point of view, and to understand deeply the culture or community" (Atkinson and Hammersley, 2013; Neuman, 2012, p.290). To do so, researcher can tell the true story, using an insider's perspective on what is happening (Hammersley, 1990). However, ethnography remains a highly complex and challenging field, and ethnographers are required to have great ability to process a detailed knowledge grasped through the immediate situational context and the broader social-cultural context; In many cases, insiders might have different understandings of an event or situation, and this makes the interpretation more difficult (Neuman, 2012, p.291).

5.2.2.2 Selecting the field

As described by Fetterman (2010), the most defining characteristic of ethnographic research is the fieldwork. Doing fieldwork involves a number of stages, and an important one is to decide what field or context in which to conduct the research. The region selected as a case study for the development of this research include the provinces of Henan, Hubei and Hunan in central China (as shown in Figure 10). This region is selected because it has a long and rich craft history with fifty-seven local traditional crafts identified as having national significance under UNESCO's ICH Convention (ICH China, 2020a). Also, as a multi-cultural region where many ethnic groups are located, there are various unique ethnic crafts rooted in their ethnic cultures. Moreover, this region is also supported by the "Rise of Central China" Plan, which is a policy that has been adopted by the central government to accelerate the development of its central area (CGSS, 2012). As a consequence, this region has experienced rapid urbanisation, modernisation and economic growth in recent years (P. Wang, 2019). Against this background, both challenges and opportunities co-exist in relation to the continuation and development of local crafts.

In addition, classic ethnography often requires long-term engagement in research sites. For example, an ideal fieldwork for researching annual cycle of the growing season in rural areas is expected to be 12 months (Jeffrey and Troman, 2004). In this research, field studies were conducted in July–September 2019. The length of time looks like not long enough as suggested in ethnography-related literature, such as six months to two years or more (Gray, 2018, p.435). This is because I used to be involved in several craft projects conducted in this region, and I am familiar with local craft-related networks, which helps me easily access to the field and quickly build trust with potential interviewees. Therefore, during this two-month period, a lot of time was saved in terms of "gaining access" (Gray, 2018, p.436) and more emphasis was given to collect current, reliable data to reach the research objective. In total, twelve cities in three provinces of central China were visited. As shown in Figure 10 and Figure 11, seven of them lie at the Yellow River Valley and Yangtze River Valley, two important sites for Chinese civilisation with the origins of the Erlitou culture dating to the Bronze Age, the Central Plain culture, and the Chu culture (S. Wang et al., 2020; China Daily, 2017b), and local culture-specific crafts are identified as important research subjects. Similarly, rest of visits relate to ethnic crafts rooted in three main ethnic groups of this region, including Dong, Tujia and Huyao people.

Figure 10 The central China research location

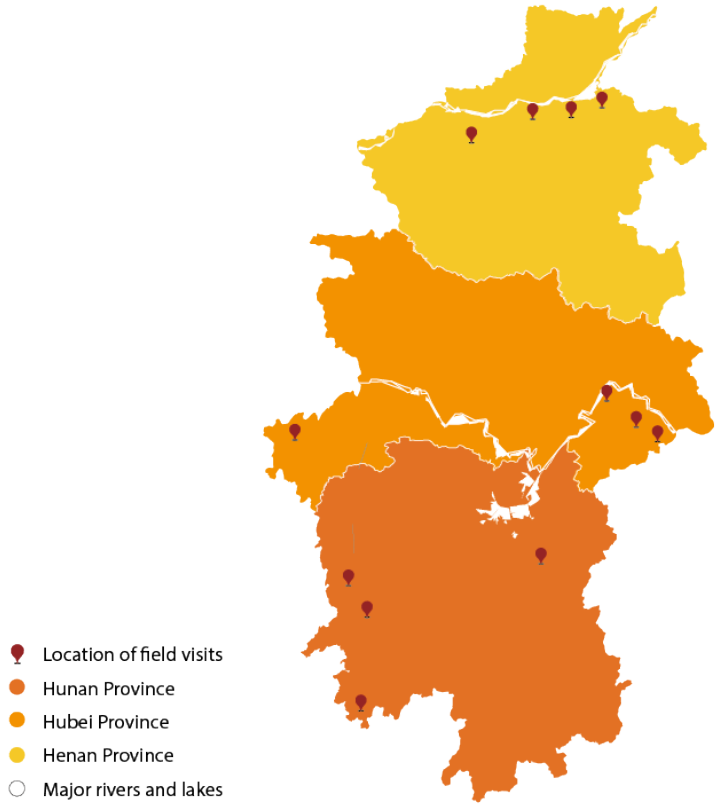


Figure 11 Locations of cultural heritage making practices visited in central China

5.2.3 Interviews

Three methods are often employed in an ethnographic study: observation, interviews and secondary sources, and these in turn generate three types of data, i.e. quotations, descriptions and excerpts of documents (Gray, 2018, p.433). For this study, **interviewing associated with observations** is used as main method for data collection, and following sub-sections provide detailed descriptions of this method used in this study.

5.2.3.1 Different types of interviews

Interviewing is a very good way of accessing people's ideas, meanings, definitions of situations and constructions of reality, and also a powerful way of understanding their values, knowledge, and priorities (Punch, 2005, p.168). Specifically, if the research objective is largely exploratory, such as examining people's attitudes or feelings, it is always seen as the most appropriate approach (Gray, 2018, p.378). As a main tool used for data collection in qualitative research, there is a fundamental assumption in qualitative interviewing that the perspective of others is significant, meaningful, and knowable, and the researcher is

encouraged to gather their stories and make their knowledge explicit (Patton, 2002, p.340). There are different types of interviews, mainly dependent on the form adopted and the multiplicity of users involved. Individual, face-to-face verbal interchange is the most common form, but more broadly, other forms, including face-to-face group interviewing, telephone surveys, and mail/self-administered questionnaires are also taken in interviewing (Fontana and Frey, 2018, p.361).

A loose perspective is adopted by Patton (2002, p.342) to distinguish three types of interview: the informal conversational interview, the general interview guide approach and the standardised open-ended interview. The **informal conversational interview,** which is often combined with ongoing participant observation fieldwork, is characterised by the spontaneous generation of questions through natural interactions with interviewees (Patton, 2002, p.342). As an open-ended form of interview technique, it is also classified into **unstructured interviews**, along with the non-directive and focused interviews (Gray, 2018, p.382). Regarding the **general interview guide approach,** a guide with a set of questions or issues is prepared to ensure that all relevant topics are covered for interviewing (Patton, 2002, p.342). In contrast, the **standardised open-minded interview** requires carefully wording questions before interviewing, and each respondent will be asked the same questions with essentially the same words through the same sequence (Ibid). Due to the difference in the degree of structure involved, these two forms are also representatively characterised as **semi-structured and structured interviews** (Gray, 2018, p.382).

Noticeably, as mentioned before, the informal conversations or chats happening in natural field settings constitute a vital starting stage of the ethnographic process (Gray, 2018, p.443). But after being familiar with the field and gaining the trust of local community, formal interviews will be conducted with a number of central community members, often defined as key informants (O'Reilly, 2008, p.134). In keeping with this, all of the 32 interviewees, representative of typical craft fields of central China were selected for **key informant interviews.** Initially, forty-six place-specific making practices from official ICH Inheritors lists of this region were identified as the potential interviewees, and their contact information were collected via multiple approaches (e.g. literature, local ICH institutions, friends and colleagues, social media). Finally, thirty-two of them were willing to be interviewed (see the interviewees' details in Table 13). Moreover, **semi-structured** interviews were extensively used, as they are open-ended with greater flexibility and therefore suitable for gaining in-depth understandings from which particular and generalizable findings can be determined (Burns, 2000, p.424-425).

5.2.3.2 Sampling and identification of interviewees

Sampling design deeply influence the ultimate quality of the research, and therefore it is seen as a key component of any research study (Gray, 2018, p.208). It primarily involves the selection of people to be interviewed or situations to be observed, in order to generate robust, rich, and deep understandings of the phenomenon being studied (Mays and Pope, cited in Gray, 2018, p.208). Different from the use of probability sampling techniques through a formal (e.g. random) selection of a part of an existing or assumed population, more emphasis is given to the concept of purpose in qualitative sampling (Flick, 2007, p.27). Given this perspective, the interviewees were carefully selected from the region of central China, focusing on different craft fields within China's ICH programme. This purposive sampling aims to "manage the diversity" so that "the variation and variety" of craft practices in this region can be captured (Flick, 2007, p.27).

According to official ICH lists of this region at national and provincial levels, local heritage-based making practices can be loosely categorised as textiles, musical instruments, paper artefacts, metal work, carved artefacts, porcelain and purposeful crafts made from natural materials (e.g. straw and bamboo) (ICH China, 2020a.; CTD Henan, 2020; Hubei ICHN, n.d.; Hunan ICH ab, n.d.). Within these seven fields, craft-makers who have been officially designated as ICH Inheritors were identified as potential interviewees. While awaiting ethical approval for the research, a further list of potential craft-related participants was also assembled from craft events, art and craft centres, academic institutions, news reports, and related websites. Contact information about key informants were collected from official ICH Inheritor lists, literature (e.g. books, reports, magazines and websites), work acquaintances, colleagues, friends and family members, and social media (e.g. Weibo - a microblogging application and website). Also, during the fieldwork, the researcher was introduced by some informants to other craft makers, and from this ensured an evolving snowball sampling procedure. This method was also used as a means for identifying suitable participants, enriching sampling clusters, and accessing new participants and social groups (Noy, 2008).

Prior to the interviews, potential interviewees were contacted by phone or WeChat (a Chinese mobile application, equivalent to WhatsApp) with brief introductions of the research, enquires for the willingness to be involved in research, and arrangements and timing for interviews. In total thirty-two key informant interviews were conducted in central China (denoted as A1-A32), including eighteen craft-makers who have been also officially

designated as ICH Inheritors (a Chinese version of the Living Human Treasure), and fourteen craft-related people. Of the eighteen inheritors, six run small or medium-sized craft businesses. Of the fourteen craft-related interviewees, two were design-makers, two businessmen, six hobby craftspeople, one governmental official, one craft retailer, one design director and one manager. A full list of interviewees is provided in Table 13, a taxonomy of participant interviewed under seven craft categories within this research study is also shown in Figure 12. Particularly, of the thirty-two interviews, nineteen were further selected for a second-round in-depth analysis, and its selection criterion is explained in section 5.3.2.

5.2.2.3 Preparing the interview guide and conducting interviews

Key informants identified in this research fall into three expert clusters: 1) highly accomplished craft-makers who have inherited their particular expertise from their family and have been officially designated ICH inheritors; 2) design-makers who explore innovation within traditional crafts and focus on branding and marketing; and 3) craft-related people who can provide important perceptions from different angles, including craft retailers, enterprise managers, governmental officials, amateur craftspeople, and academics researchers. An interview guide was designed ahead of the interviews, and different emphasis was given to three different clusters of experts in the development of questions. This helps organising interviewing in a more systematic and comprehensive way (Patton, 2002, p.343).

When designing the interview guide, it aimed to make sense of current situation on local craft sector, probe the relationship of craft to sustainability framed through the Literature Review, and identify opportunities for craft-design collaborations. Interviews included questions within five themes: 1) general description of their work; 2) details of making practices; 3) the priorities and perceived value of their work; 4) problems and constraint; 5) design opportunities. Participant interviewees were all asked about their background, motivations, details of their work, the perceived values of their work, and the challenges they faced in their work (i.e. questions included in topic 1, 3, and 4). The second topic – details of craft practices, was designed for craftspeople to understand their craft work. Similarly, questions under the fifth topic were developed to investigate design's role and its current/potential contributions. The interview guide with listed questions is included at Appendix 1.

With this interview guide, prior to the field, two pilot interviews were conducted online with my previous colleagues who also carry out research into traditional crafts. The purpose of this pilot study was to "identify potential difficulties and so reduce the danger that flawed

data is collected" (Harding, 2013, p.48). According to the feedback, the interview guide was reduced to a more appropriate length, and several questions were rephrased to be better understood and answered.

The researcher visited the participants at their place of work in person, and each interview lasted approximately 60-90 minutes. Before starting interviewing, a Participant Informant sheet was given (included at Appendix 2) to the interviewee with a brief oral introduction of the research. Another Consent Form (included at Appendix 3) was also shown to participants, and they were reminded to read and tick each box. Specifically, they were explained the option of anonymous reference to them and in the research outcome their identity will remain anonymous, as well as the option to film their faces and to reveal their identity if the videos and photos are published or publically presented (denoted as 4 and 7 in the Consent Form). After collecting Consent Forms in person, the researcher started interviewing. Interviews were audio-recorded using an iPhone. During or directly after the interviews, observations were recorded of the working environment, making processes and craft expertise. The researcher also photographed the workshops, tools and artefacts, and employed note-taking during the interviews.

Table 13 Interviewees and their roles

ID	Sex	Age	Interviewee	Interviewee designated as ICH inheritor	Working Years	Date	Location	Data used in meta-analysis	Used in detailed analysis
A1	M	71	5th generation of kite maker	Yes, provincial ICH inheritor	40+	30/08/2019 23/09/2019	Kaifeng city, Henan province	Yes	Yes
A2	F	44	6th generation of kite maker, teacher	Yes, provincial ICH inheritor	20+	30/08/2019	Kaifeng city, Henan province	Yes	Yes
A3	M	46	4th generation of Guqin (Chinese Zither) maker, teacher, lacquerware maker	Yes, city-level ICH inheritor	20+	24/09/2019	Zhengzhou city, Henan province	Yes	Yes
A4	M	50	4th generation of leatherware maker	Yes, city-level ICH inheritor	20+	24/09/2019	Zhengzhou city, Henan province	Yes	No
A5	M	48	Ruan (Chinese plucked string instrument) maker	Yes, provincial ICH inheritor	27	31/08/2019 24/09/2019	Lankao county, Henan province	Yes	Yes
A6	M	40+	Instrument company owner	No	22	24/09/2019	Lankao county, Henan province	Yes	Yes
A7	F	53	5th generation of river clay carver	Yes, provincial ICH inheritor	30+	25/09/2019	Zhengzhou city, Henan province	Yes	No
A8	M	54	18th generation of drum maker	Yes, provincial ICH inheritor	40+	29/08/2019 27/09/2019	Luoyang city, Henan province	Yes	Yes
A9	M	53	5th generation of New Year prints woodblock maker, historic old brand owner	Yes, provincial ICH inheritor	27	29/08/2019	Kaifeng city, Henan province	Yes	No
A10	M	48	7th generation of lantern maker, lantern museum curator	Yes, national ICH inheritor	20+	31/08/2019	Kaifeng city, Henan province	Yes	No
A11	M	34	5th generation of ironware maker	Yes, county-level ICH inheritor	14	08/09/2019	Zhongmu county, Henan province	Yes	No
A12	F	30+	Government official	No	5+	04/09/2019	Luoyang city, Henan province	Yes	No
A13	F	35+	Hobby craftspeople of indigo dyeing	No	5+	18/07/2019	Longhui county, Shaoyang city, Hunan province	Yes	No
A14	F	45+	Embroider within Huyao ethnic group, employed by a contemporary craft brand to produce hand-knitted fabrics	No	30+	19/07/2019	Shaoyang city, Hunan province	Yes	No

A15	F	35+	Craft enterprise manager	No	6	22/07/2019	Changsha city, Hunan province	Yes	Yes
A16	F	30+	Design director of craft enterprise, PhD researcher on traditional textiles	No	7+	23/07/2019	Changsha city, Hunan province	Yes	Yes
A17	F	50+	Weaver within Dong ethnic group, employed by a contemporary craft brand to produce hand-woven scarves	No	40+	24/07/2019	Tongdao county, Huaihua city, Hunan province	Yes	Yes
A18	M	78	Hobby craftspeople of bamboo weaving and wood craft making	No	40+	24/07/2019	Tongdao county, Huaihua city, Hunan province	Yes	Yes
A19	M	55+	Hobby craftspeople of bamboo weaving	No	20+	25/07/2019	Tongdao county, Huaihua city, Hunan province	Yes	Yes
A20	F	45+	Weaver within Dong ethnic group, employed by a contemporary craft brand to produce hand-woven scarves	No	30+	25/07/2019	Tongdao county, Huaihua city, Hunan province	Yes	Yes
A21	M	57	Retailer of straw flip flops and sandal	No	2+	25/07/2019	Tongdao county, Huaihua city, Hunan province	Yes	Yes
A22	M	35+	Craft enterprise owner, running a craft shop in local tourist attraction	No	6+	26/07/2019	Tongdao county, Huaihua city, Hunan province	Yes	No
A23	M	67	Lusheng (Chinese reed-pipe wind instrument) maker	Yes, national ICH inheritor	47	26/07/2019	Tongdao county, Huaihua city, Hunan province	Yes	No
A24	M	74	4th generation of silver maker	Yes, city-level ICH inheritor	66	28/07/2019	Fenghuang county, Hunan province	Yes	No
A25	M	55+	4th generation of Chinese paper dragon/lion head making	Yes, provincial ICH inheritor	40+	29/07/2019	Fenghuang county, Hunan province	Yes	Yes
A26	M	55+	Wooden Buddha statues/sculptures carver, enterprise owner	Yes, provincial ICH inheritor	40+	01/08/2019	Daye city, Hubei province	Yes	Yes
A27	M	30+	Design maker, contemporary craft brand owner, running online Taobao store (the largest Chinese e-commerce website) to	Yes, city-level ICH inheritor	10+	05/08/2019	Daye city, Hubei province	Yes	Yes

			sell hand-carved wooden art objects, wooden utensils and products						
A28	F	30	Embroidery enterprise owner, running online Taobao store to sell DIY embroidery kits and contemporary embroidery products	Yes, city-level ICH inheritor	7	01/08/2019	Daye city, Hubei province	Yes	Yes
A29	F	47	6th generation of cotton fabric sewing, director of local craft training institution, teacher	Yes, city-level ICH inheritor	25	02/08/2019	Yangxin county, Hubei province	Yes	No
A30	M	40+	Design maker, sculptor, running a craft brand to sell hand-made brassware and iron products (e.g. incense holders, tea sets, plates, bud vases)	None	20+	06/08/2019	Wuhan city, Hubei province	Yes	Yes
A31	M	46	5th generation of oil-paper umbrella making, historic old brand owner	Yes, city-level ICH inheritor	10+	07/08/2019	Wuhan city, Hubei province	Yes	No
A32	M	30+	Craft enterprise owner, running a craft brand to sell hand-made cooking pots and pans	None	7	09/08/2019	Lichuan city, Hubei province	Yes	Yes

Figure 12 A succinct taxonomy of participants interviewed within this research study

5.3 Data analysis

5.3.1 Preparing the data for analysis

All audio recordings of interviews were saved on the researcher's computer with password protected, and they were labelled with number, date, and craft category. As all interviews were conducted in Chinese, they were all firstly transcribed by myself and written up in Microsoft Word in Chinese. Key parts (without repeated information, verbal elements, and parts not related to research topic) were later developed into summary notes and then were translated into English. Selected photos of craft practices, products and materials taken in the filed were also inserted in a Microsoft Word. All interview transcripts, photo word document, summary notes were printed out for data analysis, along with manual field notes, as shown in Figure 13.

During the process of data preparation, the researcher read and re-read all transcripts thoroughly; This technique helps enhance validity, and ensure the researcher does not omit any details or sections of the transcripts (Harding, 2013, p.57). Colour pens were also used to highlight key words and descriptions when reading printouts of interviews, and a part of long transcripts were reduced to shorter forms of summary, which helps the researcher to catch

key points and make comparisons (Miles and Huberman, 1994, p.51-52; Harding, 2013, p.57). An example of data preparation is shown in Figure 13.

In addition, as five topics were clearly identified in the interview guide: 1) general description of craft work; 2) details of making practices; 3) the priorities and perceived value of craftspeople; 4) problems and constraint; 5) design opportunities, an initial analytical framework based on these components is provided for the interpretation of data (Patton, 2002, p.440). Following this direction, another round of data preparation was conducted. According to different themes, relevant quotes were extracted from the full transcripts and then were written up on sticky notes (see Figure 14). These prepared sticky notes were later assigned to corresponding key themes, which is convenient and time-saving for further analysis.

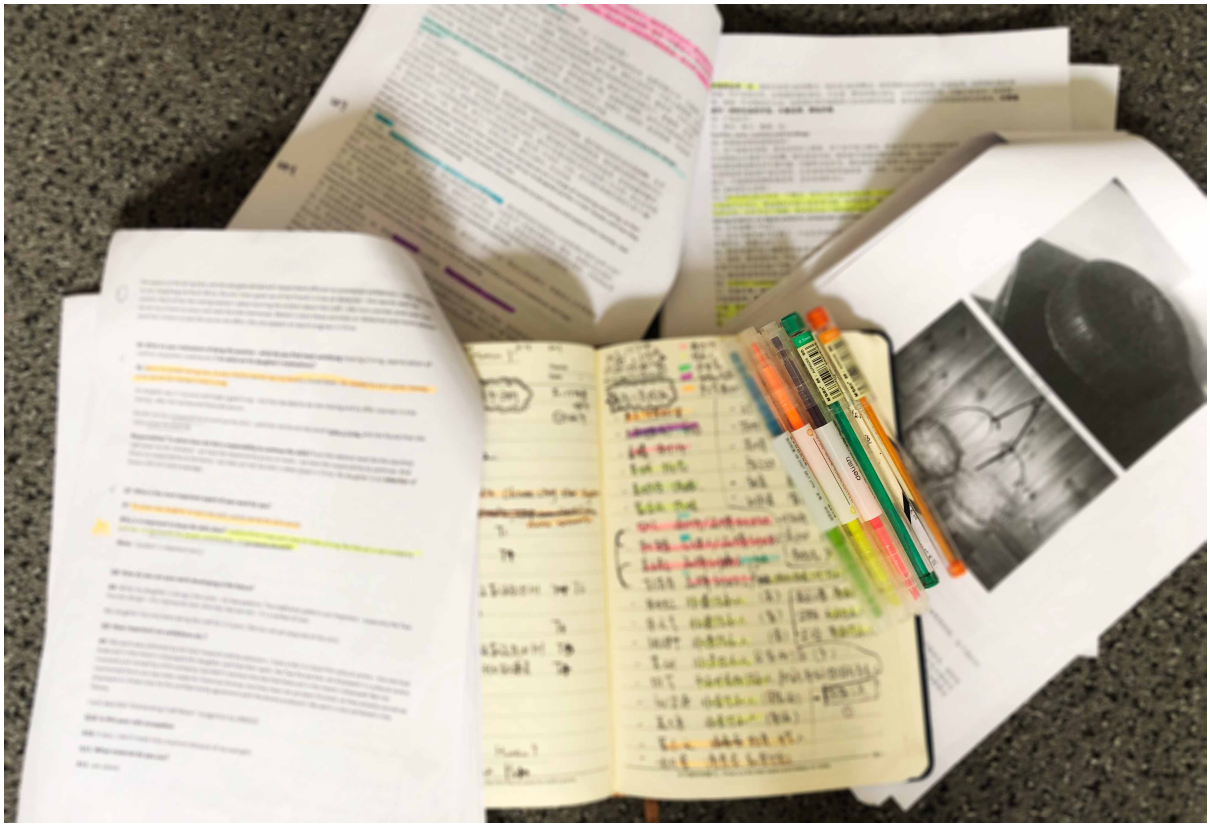


Figure 13 Interview transcripts, photos, summary notes, and field notes were prepared for data analysis

Figure 14 Quotes were extracted from the interview transcripts and manual post-it notes were assigned to corresponding themes as identified in the interview guide

5.3.2 Analysing the data

Different from quantitative data analysis where the statistical tools are well developed, there are no widely accepted rules for how qualitative data should be analysed in order to understand the meaning behind them (Gray, 2018, p.684). It is easy to get overwhelmed and it is difficult to deal with when data is rapidly accumulated. Facing this challenge, different data analytical methods have been developed to give directions and detailed instructions. For example, inductive approaches are often used in **thematic analysis,** and different themes are identified to interpret data; **Comparativ**e analysis rests on the comparison of data so as to arise problems or identify new patterns; **Content analysis** gives a systematic view through carefully working on each transcripts or documents; **Discourse analysis** focuses on patterns of speech and the way of that language is used to convey meaning (Harding, 2013, p.4). Noticeably, these different analytic methods are related to each other, and they can be used within the same research project (Dawson, 2009, p.120).

According to general procedures in qualitative data analysis, coding is a central phase which get the analysis going (Creswell, 2014, p.197). Similarly, Punch (2005, p.199) also highlights coding associated with memoing together, provide the basis of data analysis (Punch, 2005, p.199). As an important tool, coding is "a process of labelling and categorising data" (Flick, 2014, p.373). Codes cover tags, names or labels, and coding aims to putting tags, names or labels against pieces of the data; In the early stage, low-inference descriptive codes are often generated, and this is then followed by a second-level coding which tends to be more interpretive (Punch, 2005, p.199-201). This process is also described as "peeling back the layers of an onion", which aims to reduce the data without significant loss of information (Creswell, 2014, p.195). Consequently, key themes, clusters, and patterns can be generated, providing the foundation for drawing conclusions (Miles and Huberman, 1994, p.12).

Within this study, a thematic analysis was firstly employed to closely examine collected data to make summaries, and grounded theory coding was utilised to break down, conceptualise, and put back data together in new ways (Flick, 2014, p.403-404). As mentioned in previous section, an early attempt was made to make sense of the mass of data through careful reading of the transcripts, and key word or phrases were written alongside the interview transcripts. These early codes were later written on post-it notes, and similar ones were grouped together. This is then followed by another step - repeated and iterative clustering and refining of related codes. This process is seen as the core of coding, because it enables the researcher to identify a series of cognate concepts in relation to the focus of the research (Harding, 2013, p.92; Punch, 2005, p.200). Finally, five key themes were identified: 1) Craft-related Policies in the Chinese Context, 2) Motivations of Craft-makers and Design-makers, 3) Craft Practices, 4) Craft Business, and 5) Design Practices. Findings based on these five themes are presented in Chapter 6. Noticeably, in the development of themes, five topics in the interview guide were considered as important "creative-speculative codes", because they were framed from literature review and therefore closely related to induction and research propositions testing (Punch, 2005, p.202).

In addition, typical examples were selected from twenty-six craft practices to conduct in-depth analysis. For example, five craft brands investigated in central China, listed in Table 14 (section 6.5), were selected for another round of example study, in order to make sense of how designers and design researchers have been involved in these cases to explore ways of unlocking the potential of traditional material cultures, helping ensure they are appreciated while also being relevant and meaningful to contemporary needs. Also, to explore the

relationship between maker and place, and to understand their values and relate them to sustainability, four in-depth case studies were conducted, as shown in section 7.2. Comparative analysis was mainly conducted to identify similarities and differences between different cases in a dataset (Harding, 2013, p.66). For example, A4 is a master leather craftsman who creates prototypical designs, trains apprentices and runs two leather products retail outlets. His products are designed to suit the contemporary market and fashion trends. A8 is a traditional maker of large ceremonial lanterns (used in Chinese New Year festivals). By comparison A8 with A4, their differences are clearly shown in terms of values, craft production, business mode, and future development, as shown in Figure 48.

Specifically, memoing was used as a main tool to record reflective notes about what was learnt from the data (Punch, 2005, p.201). Here, memos refer to written ideas, records and visualisations about individual example study and comparative example studies, and they are mainly reflective of design's role in enabling the continuation of traditional craft practices in ways that comply with the core principles of sustainability. An example of the memoing used in the data analysis is shown in Figure 15. Findings from this second-round analysis are included as a part of Chapter 6, under the theme of Design Practices.

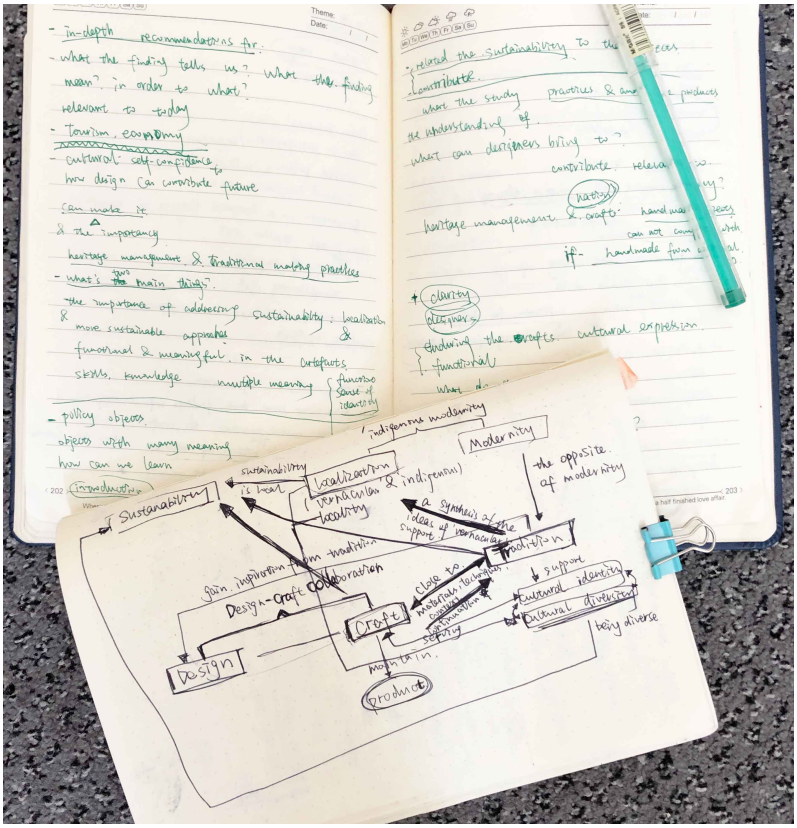


Figure 15 An example of the memoing used in data analysis within this study

5.3.3 Validating the data

Patton (2002, p.457) argues the analytical process enables data "to tell their own story". But it is also noted that decisions made by qualitative researcher are often subjective, and the validity of findings are deeply influenced by such decisions (Harding, 2013, p.171). Therefore, checking the accuracy of the data and results is an important step of all good research (Creswell, 2014, p.201).

Validity strategies are incorporated in different stages of this research. For key findings drawn from Literature Review, including the relationship between craft and sustainability, and the potential of craft-design collaborations, they were validated through peer reviewing, and three conference papers were developed. They were presented in three international design conferences in China (2018) and UK (2019, 2021), and recommendations and feedback were provided by academic researchers in the fields of craft and design. Also, to ensure the accuracy of secondary data on Chinese characteristics of craft activities, during the fieldwork, questions were designed to confirm with interviewees. For example, one government official who works in local cultural bureau was asked about their work contents so as to verify policy support on traditional craft practices in Chinese context.

During the data analysis, multiple techniques were used to determine the accuracy of the results. Firstly, interview transcripts and codes were carefully read for several times, and some of them were also sent to interviewees for confirmation. Such checking is affirmed as a good simple method to ensure that the storytelling in findings accurately reflects what was said by the respondents (Harding, 2013, p.171). Secondly, detailed quotes from different craft/design-markers and stakeholders are largely used to convey the findings. Such "rich, thick descriptions" can add to the validity of the findings (Creswell, 2014, p.203). Finally, as recommended by Miles and Huberman (1994, p.275-277), a further step was taken to ask respondents' advice on findings. A journal article was developed after fieldwork, and initial findings based on first-round data analysis was presented. With its publication, the full paper was later shared with several interviewees, and three of them offered positive feedback on researcher's work. Moreover, because my research contributes to *Located Making* project, which is a collaborative three-year project funded by the UK Arts and Humanities Research Council (AHRC) Newton Fund, part of my findings was also assessed by academics in design, fashion and ethnology with businesses and policy makers.

5.4 Summary

This chapter has set out the research design for this study, and presented the research methodology for data collection. With findings drawn from literature review of craft, design and sustainability, empirical ethnographic field studies are used to examine the research problem, aim and questions through different lenses. This research is rooted in the constructivist paradigm, whereby the local knowledge, situations, and the priorities and values of local craft community were interpreted from qualitative data collected during thirty-two in-depth interviews with highly accomplished craft makers, talented design makers, and key stakeholders. These interviews are supplemented with direct observation of their making practices in their places of work. An inductive approach is adopted to see what themes emerge from the data itself, and a comparative technique is further used to explore in the data pool. The following chapter presents the findings from the research outlined in this chapter collected through a series of key informant interviews.

CHAPTER 06

Thematic Analysis

CHAPTER 6: Thematic Analysis

Within this study, inductive approaches are used to make the data speak (Patton, 2002, p.457). **A thematic analysis** is firstly employed to closely examine collected data to make summaries, and **grounded theory coding** is utilised to break down, conceptualise, and put back data together in new ways (Flick, 2014, p.403-404). This is followed by **another analytical process - repeated and iterative clustering and refining of keywords and themes**. Specifically, in this process, initial topics in the interview guide provide key directions for the early interpretation of data. In addition, typical examples are selected to conduct **in-depth analysis**. For example, five craft brands investigated in central China, listed in Table 14, are selected for another round of example study, in order to make sense the role of designers and design researchers in craft revival activities. **Comparative analysis** is also conducted to identify similarities and differences between different cases. For example, by comparison A8 (a traditional maker of ceremonial lanterns) with A4 (a master leather craftsman), their differences are clearly shown in terms of values, craft production, business mode, and future development, as shown in Figure 48.

6.0 Introduction

This chapter provides a thematic analysis that extracts key findings from the primary data. It contains analysis of the research data collected through thirty-two semi-structured interviews. These were conducted with three expert clusters:

- **highly accomplished craft-makers** who have been officially recognised as ICH inheritors;
- **design-makers** who run their own contemporary craft brands; and
- **craft-related stakeholders**, such as craft retailers, enterprise managers.

After repeated and iterative coding and clustering, five key themes were identified,

- craft-related policies in the Chinese context,
- motivations of craft-makers and design-makers,
- craft practices,
- craft business, and
- relevant design practices.

The chapter is organised as follows. Section 6.1 describes the socio-cultural context and its impact on the craft sector, including a range of top-down mechanisms by the Chinese government aimed to sustain traditional crafts are introduced. Section 6.2 presents

interviewees' motivations for working in the craft field, and the core values that drive the nature of their practices or business. Section 6.3 provides detailed descriptions of the craft practices investigated in terms of purpose, materials, and production. Section 6.4 shows the priorities of their craft business in terms of marketing, selling, and customised products/services. Sections 6.3 and 6.4 reveal the significance of 'place' to craft enterprises, and helps understand the relationship of craft practices to sustainability. Section 6.5 presents the analysis of selected examples in which designers have been found to make important contributions. Key findings from this chapter are summarised in section 6.6.

6.1 Chinese context: two approaches to supporting traditional crafts

Understanding the Chinese context in which the various craft practices are rooted is the first step of this research. Through the analysis of primary data and relevant craft-related policies, this session revealed two main approaches adopted by the Chinese government in supporting traditional crafts. The first one is to safeguard traditional craft heritage within the policy framework of culture, which emphasises on the transmission, documentation and education of ICH. Another important policy is based on the country's focus on the development of creative industries, as promoted by the slogan "from Made in China to Created to China". Therefore, craft-makers and enterprises are encouraged to adapt and evolve their traditional designs and products to suit a consumer niche in the commercial market (Francis, 2019; Moon, 2018). Detailed description of these two approaches is presented in the following two sections.

6.1.1 Relating traditional crafts to Chinese cultural heritage preservation

Through its enthusiastic participation in UNESCO's ICH programme, China has implemented a mechanism characterised as a combination of central initiative and local participation. Since 2004, it has created ICH and ICH Inheritors lists at multiple levels (national, regional, municipal) (Kuah and Liu, 2016). According to a government official (A12) who works in a local culture bureau, her daily work is to identify, record, document and disseminate information about ICH projects. For heritage-based craft practices, their making processes, techniques and details are video-recorded or photographed (interview with government official, 2019).

This research revealed that there are various support initiatives provided by the government within the ICH Programme. Government departments organise annual meetings

that enable craft inheritors to attend talks and workshops, to learn about cultural heritage from researchers, to meet with other craftspeople and discuss techniques, pricing, customers and routes to market. The government also organises craft exhibitions in China and abroad, offering the craftspeople funded opportunities to travel and meet craftspeople from elsewhere. For example, A2 shared her experience of attending workshops sponsored by the China National Arts Fund. Also, through a government-funded programme, A7 has visited Malaysia, Korea, America and Australia to exhibit her river clay sculpture work. Both her and A9's craftworks are also used by their local government as gifts during their international visits. As a consequence, these craft activities have received a great deal of media attention. All of the ICH inheritors we interviewed have had their craftwork and stories widely reported in newspapers, websites, TV programmes or on social media.

In addition, traditional craft heritage is closely related to a national agenda of 'cultural self-confidence'. As discussed in section 2.2.2, following the continuous defeats by the western powers in the nineteenth century, China suffered a crisis of identify and self-confidence for a long time (Meissner, 2006). From the mid-nineteenth century to the mid-twentieth century some attempts had been made for cultural reconstructions by China's intellectual elites, but one common problem in these attempts was the self-denial of the traditional Chinese culture (J. Zhang, 2017). In 2004, China signed up to the UNESCO Convention for the Safeguarding of ICH; one year later, the State Council announced every second Saturday of June as China's Cultural Heritage Day, and the Intangible Cultural Heritage Law was later passed in 2011 (Gao, J. Zhang, and Long, 2017). Entering the 21st century, cultural revitalisation and particularly ICH protection has been given a high priority at the political level, contributing to the reinforcement of cultural and national identity (J. Zhang, 2017).

Within this study, many inheritors believe their practices contribute to a sense of cultural self-confidence. "*Our president and other policymakers repeatedly refer to 'cultural confidence*', *so I am following this trend*" (interview with A7, 2019); "*In response to the country's promotion of 'cultural confidence' and 'the great renaissance of the nation', we should recognise the importance of our own culture and traditional crafts…They are full of meaning in the contemporary world*" (interview with A25). Also, A9 shared his support for this cultural confidence agenda, stating *"Since Chinese Economic Reform and Opening-up, we have witnessed rapid economic development, and more and more people get rich and live better lives…But in this process, the preservation of traditional culture has not been given as high a status as economic development. As a result, people today prefer western pop culture,*

such as celebrating Saint Valentine's Day… Our government has realised this issue, and has introduced a series of laws and rules to safeguard ICH to raise its profile and call for a return of traditional heritage to our daily life" (interview with A9, 2019).

6.1.2 Remaking of traditional crafts in China's creative economy

Confirmed by government official A12, reviving traditional crafts is not only integrated into local long-term development programmes related to cultural heritage preservation, but is also seen by the government as a way to develop the local creative industry and tourism industry, generating commerce and profits for the local economy (Maags, 2018, p.124). In our visits to the Longmen Grottoes and Luoyang Museum in this region, we saw many souvenir shops selling porcelain, embroidery and other local crafts as well as books and other items, promoted as "creative products" by sellers. However, the government official pointed out some of the cheaper craft-like souvenirs and so-called creative products do not accurately represent the cultural values of traditional crafts. She also told us that crafts differ from art objects – more consideration should be given to their functional use (interview with A12, 2019). This was also highlighted by A9 and A10, who said cultural and spiritual needs as well as functional needs are the key for craft product designs.

Noticeably, two strategies – 'creative transformation' and 'innovative development' – have been implemented to facilitate collaborations and generate new opportunities (China Daily, 2017c). Most interviewed craft/design-makers and enterprise owners are found to keep with such suggestions to develop their business. For example, in the case of woodblock making for New Year prints, A9 collaborates with research institutions and local universities. New designs have been developed to woodblock print on (non-traditional) red papers (Figure 16). Compared with traditional New Year prints, which have a white background, these new types of red prints are an example of 'innovation within traditional crafts, enabling them to remain both relevant and vibrant' (Walker and Evans, 2018, p.273). They symbolise luck, joy and happiness in Chinese culture and, consequently, they have become very popular; even more popular than the traditional prints. In addition, an animation about traditional wood-carving skills has been collaboratively developed, which is played in his shop for customers. Another inheritor (A10) is also exploring collaborative opportunities with research institutions or corporations.

"I have collected more than 60,000 examples of old, wood-carved craftwork that have traditional patterns on them and are of great cultural value. I would like to build a digital

library of these traditional patterns, which could provide a resource for creative developments and transformations in the future." (interview with A10, 2019)

Figure 16 Door God Woodblock prints (author's photo, 2019)

6.2 Motivations for interviewees' dedication to craft

The analysis of the interviews with craft-makers and design-makers identified four important motivations: (1) a pure love of hand making, (2) a sense of responsibility to continue the tradition, (3) self-fulfilment, and (4) marketable opportunities for contemporary craft products.

6.2.1 A pure love of hand making

Most of interviewed craft-makers learned their skills from family members with some showing great interest in these heritage practices from an early age. Especially for old craftspeople who have been designated as inheritors, this is identified as an important motivation for starting their careers in craft. A9 is the fifth generation of New Year prints woodblock maker, and he has also been recognised as ICH inheritor at provincial level. When the researcher asked his motivation for starting craft career, he said:

"My family began making traditional Chinese New Year woodblock prints since late Ming and early Qing dynasty (1600-1644), and a historic old brand called 'Wan Tong' has been inherited for several generations within my family. Influenced by this, a craft 'seed' has been sowed into my heart since an early age. After learning fine arts, especially Chinese folk arts, my interest in it steadily grew. With great interest, I committed to this field and until now it has been almost 30 years." (Interview with A9, 2019)

For young design-makers we interviewed, most of them expressed an interest in specific materials or craft techniques, and this is often the starting point for them in their craft career. For example, A32 holds a bachelor degree on interior design, but after graduation, he left his hometown and changed career to be an estate agent in Beijing, where he could earn a decent salary. On weekends, he loved to visit the 798 Art District, which is a Beijing landmark and a gathering place for young people who love art and design. Some exhibited contemporary metalware attracted his interest and he researched metal forging and design. After returning to his hometown and talking with several blacksmiths, he decided to establish his own brand and explore the aesthetics of metalwork through his design. Another brand owner A30 recounted a similar story. After graduating from the most prestigious university in China – the Department of Sculpture and the Academy of Arts and Design, Tsinghua University, he worked as a teacher for an art institute. He made use of free time to create designs in metalwork. As his work became appreciated by more and more people, he quit his job and put all energy into running his own craft brand.

There other six craftspeople, A13, A14, A17, A18, A19, and A20, were also motivated by a pure love of making to develop their knowledge and skills. A13 experienced natural indigo dyeing for the first time through a workshop organised by a doctoral researcher. This aroused her interest, following which she spent a lot of time learning about relevant dyeing knowledge and techniques. To hone her craft skills, she visits the ethnic Miao and Dong peoples in the southern Chinese province of Guizhou province twice a year where local weaving and dyeing of indigo textiles are well-known. In her house, she has specifically designed a small dyeing studio and she has an indigo dye vat to experiment with colours (Figure 17). Another two hobbyists, A18 and A19 are of interest in making bamboo basketry. They make different sizes of baskets for daily use in their leisure time, such as fishing baskets, chicken coops, and storage baskets. Similarly, A14, A17, A20 are employed by two contemporary craft brands to produce hand-woven/knitted fabrics. Within their ethnic groups, women often learn weaving and embroidery from an early age. For example, influenced by her mother, A14 was started learning embroidery from around 10 years of age.

Figure 17 A13's dyeing studio, Longhui county, Shaoyang, China (author's photo, 2019)

6.2.2 A sense of responsibility to continue the tradition

When inheritors were asked about their motivations for continuing these practices, the concept of responsibility was frequently mentioned; that is, a strong sense of responsibility to continue the tradition. This was especially the case when they had been designated as an ICH Inheritor at the national, provincial and/or municipal level. For example, A29 used to be a teacher at a preschool affiliated to local cultural centre. Because she is good at making superb pieces of traditional folk craftsmanship, 'Cloth Paste' (also known as applique, a form of embroidery, Tu and He, 2019), in 1996, she was invited by the local government to make traditional embroidery designs for a craft exhibition. As this craftsmanship was inscribed in the national list of ICH in 2008, she was then identified as an ICH inheritor and appointed to the government-affiliated Heritage Craft Research Centre for teaching and management. Since then, she has devoted herself to the inheritance of local traditional craftsmanship. Also, A10 described a significant change when their family's ceremonial lantern making business was included in the list of China's national ICH:

> *"Since the time of my grandfather, we produced lanterns to make a living. Our craftsmanship was inscribed in the national list of ICH in 2008, and since then there has been a shift in focus from making profits to spreading knowledge, understanding and skills. Because this making practice represents the nation, we shoulder a responsibility to enable more people to know about it … To spread the skills, we gave more than fifty free*

courses to students at primary schools, senior schools, high schools and universities last year. We also refurbished our ancestral house as a lantern museum (see Figure 18). It has been open to the public since June 2011 and about 20,000 people visit our museum each year." (interview with A10, 2019)

In some cases, such responsibility can be explained as a commitment to the family and community. For example, A8 told us his family began making ceremonial drums in the Ming dynasty (1368-1644), and he is the 18th generation in this family practicing this craft. He mentioned that his son did not really want to do this job as it is difficult and dirty. His son became a truck driver instead, but in his early thirties he took up the craft because 'he also felt a sense of responsibility to continue this family-based drum making tradition' (interview with A8, 2019). Consequently, his son is now the 19th generation in his family to be a drum maker. Similarly, the 5th generation woodblock maker of New Year prints (A9) told us his responsibility "*is to inherit this making practice and also develop the historic old brand as a successful enterprise*". He said, "*I hope our enterprise will finally bring both economic and social benefits to the local community and local people*" (interview with A8, 2019). And again, oil-paper umbrella maker A31 said "*inheriting craft practices is a matter of family honour*". He explained, "*there are so many career opportunities, but few of them can give a sense of honour. I pursue this as my career because I am proud of my family tradition and craft skills*" (interview with A31, 2019).

Figure 18 Traditional lanterns are exhibited in a museum which was refurbished from inheritor Juntao Zhang's ancestral house, Kaifeng, China (author's photo, 2019)

6.2.3 Personal fulfilment

Craft makers repeatedly mentioned the sense of personal fulfilment they gained from their work. For example, A5 said he had "*a sense of achievement in making musical instruments that can produce beautiful music*" (interview with A5, 2019). The Yellow River clay sculptor shared her ambition with us, "*to let more people know about this craft and art*" (interview with A7, 2019). As more and more people today re-appreciate her culture-specific practice, she feels a great deal of personal fulfilment. Similarly, A8 mentioned a sense of personal fulfilment when his work was used in important ceremonial activities. This was especially the case when a 3m diameter drum he had made was used for the celebration of the Hong Kong handover in 1997; he said he had "*a sense of honour*" (interview with A8, 2019). Also, a piece of embroidery named as "The Dream of the Nebula" created by A28' mother was used for interior decoration of the Tiangong-2 space laboratory (PACC, 2019), and she told us this gives her family a strong sense of honour.

We found craft teaching activities are closely associated with personal self-actualisation. A2, A3 and A4 have been invited to teach in schools, colleges and universities. They share their knowledge with the students and teach them skills.

> *"For me, as an inheritor of kite making, heritance means ensuring more people know about this practice, raising their interest in learning about it and teaching them the necessary skills. To do so, I developed this experiential course and designed kite kits … I am happy to teach students, it is very fulfilling." (interview with A2, 2019)*

These teaching activities are consistent with craft people's intrinsic values and goals, and so are associated with positive emotions, such are satisfaction and happiness as indicated by A4 who stated "*I am very satisfied. My students respect me. I love this work*" (interview with A4, 2019). Therefore, within this study, many inheritors we interviewed expressed their strong willingness for teaching, and some of their teaching activities are for non-commercial reasons. For example, in the cases of A3 and A7, they teach craft skills to disabled students, in order to help them become self-employed. Also, for A29, craft teaching has been an important part of her daily work, and free courses or experience workshops are often organised in her craft training institute to attract people's interest in local applique craftsmanship.

6.2.4 Marketable opportunities for contemporary craft products

Some decades ago, being a craft-maker was a good way of making a living, and this was confirmed by many old craft-makers we interviewed as their initial motivation for starting a career in craft, including A1, A5, A8, A9, A11, A25's grandfather, and A26. However, as handmade objects have now been largely replaced by mass-produced alternatives, there is a need to re-examine and reassess the contemporary value and contribution of traditional making practices, and many interviewees told us that they pay close attention to new opportunities related to the craft market. Regarding this focus, A10's explains its importance:

> *"Craft-makers could make a decent living by only making craft objects in the past, because there was a main market for handmade crafts. Due to a big social change, previous craft markets that underpin traditional craft sector has lost, and consequently, many of them are in danger of dying out today… To sustain traditional crafts, we should not only preserve them as ICH, but also think how to return [them]to contemporary market and our daily life, enabling them to re-connect with the common people." (interview with A10, 2019)*

Within this study, the analysis of data concerning personal motivations for craft/design makers show they are also driven by a pure love of making, a strong responsibility to continue the tradition, and a sense of fulfilment, as discussed in sections 6.1.1-6.1.3. However, grasping marketable opportunities is found to be a decisive factor for the success of their business. As discussed before, both A32 and A30 were initially driven by a strong interest in metal materials and then started practising forging techniques. But they finally decided to establish their metalwork brands because they identified there is a main market for hand-forged ironware after investigation. Similarly, craft brand owners A27 and A28 witness their family members working as craftspeople from an early age. After graduation from university, they were involved in family craft business and started explorations into advancing innovation within traditional boundaries. When they were asked about their motivations to be involved in craft, they all mentioned a sense of responsibility to family craft. But more importantly, A28 highlighted "*embroidery as a niche market, there is full of new opportunities*", and A27's brand is also developed to sell wooden utensils and products that "*suit contemporary needs and modern lifestyle*" (interview with A27 and A28, 2019).

However, there are also some opposite voices which disagree with an over-emphasis on contemporary market. Two typical examples are found in the case of oil-paper umbrella

making and paper dragon/lion head making. A31 was contacted by some businessmen and retailers for commercial collaborations, but he was asked by them to cost reduction in making cheaper umbrellas to replace time-consuming hand-made ones. He described this direction as "meaningless" because it may "*mislead customers into believing that cheaper alternatives they bought are the traditional ones*" (interview with A31, 2019). Similarly, A25 also express his concerns on a profit-oriented, market-driven approach to revive traditional crafts:

> *"Government officials who work in ICH Research Institution suggested me to suit contemporary market. But to do so, I need to cater for customers' needs, to cater for public aesthetic preference. This means there will be necessary changes in current forms of design or materials used for craft making. Such changes may destroy important cultural meanings rooted in traditional making practices. Therefore, I do not want to do that." (interview with A25, 2019)*

6.3 Craft practices

6.3.1 Purpose

Most craftspeople we interviewed create their work for daily needs and practical use. Handmade objects such as river-clay inkstone; leatherware like rucksacks, bags and belts; ironware for household or agricultural use, such as knives, axes and sickles; textiles for clothing and interior fabrics; metalware used for cooking, such as woks, pans and pots; bamboo baskets for storage; silver accessories, such as bracelets, earrings, and necklaces. Additionally, primarily decorative or artistic objects rather than utilitarian crafts are also found in some cases. In the cases of A1, A10, and A31, as traditional paper kites, lanterns, and umbrellas, have been largely replaced by cheap mass-manufacture alternatives, they now focus on specific customised orders and make collectable items. For example, A1 and A2 make miniature kites that are framed as art pieces for collection. Also, for some craft brands investigated in this research, a range of contemporary products are created with high aesthetic qualities and a well-branded presence. As stated by A30, "*In our designs, we do not only consider functions, but also ornamental values...For many products, their aesthetics or decorative meanings even largely exceed their functional purpose. We do hope our products convey both practical and aesthetics/decorative values to our consumers.*"

Specifically, for the craft category of musical instruments investigated in this study, it is found that they are not only used for performance and entertainment, but also have significant symbolism, which relate to traditional/ethnic festivals or fairs, ceremonial use, blessing or praying. For example, the function of drums had changed over their long history. A8 stated they were originally invented to drive away wild beasts from the farms and villages. Later they were used to accompany the army while it marched, and were also used in the royal palace for entertainment. Today, these types of drums are predominately used in folk activities and ceremonies at regional and national levels. Also, the traditional stringed instrument known as the Guqin (Figure 19) has a symbolic significance, as it connects with the ancient Chinese philosophy of Yin and Yang. The curved top of the Guqin represents the sky, which is Yang, and the flat base represents the earth, which is Yin. Yin and Yang exist as inseparable and contradictory opposite, just like sky and earth, but at the same time, these two contrary poles are complementary, which represents balance and harmony (Cartwright 2018). Similarly, a wind instrument with multiple bamboo pipes called Lusheng (Figure 20), is the soul instrument of several ethnic minority groups in southwestern China (e.g. Dong, Miao, Hmong, Miao, Yao). This instrument is played to celebrate harvests or to worship their

ancestors; It is also vital in the culture of these ethnic communities associated with Lusheng fairs/festivals, which are organised regularly on an informal and formal basis (MAAS, 2007).

In addition, cultural and symbolic significance is found in another three typical examples, i.e. New Year woodblock prints, oil-paper umbrellas, and paper dragon/lion heads (Figure 21). In the case of New Year woodblock prints, the prints themselves are relatively inexpensive. However, the craft skill, in the form of woodblock carving, is highly skilled, meticulous and time consuming. The resulting prints have an important symbolic meaning while also be decorative. At New Year, they are pasted onto the doors of houses to bid farewell to the past year and welcome in the New Year. Similarly, traditional paper dragon and lion heads made by A25 and his family are used to perform dragon/lion dances during Chinese New Years and other festivals or big occasions, which means to bring good fortune and happiness, as well as chase away evil spirits. In the case of oil-paper making, A31 introduced that the making of oil-paper umbrellas is closely connected with three ancient Chinese philosophies, including *Tianren Heyi* (the harmony between nature and human beings), *Bagua* (eight symbols used in Taoist cosmology to represent the fundamental principles of reality), and *Wuxing* (five phases, i.e. Metal, Wood, Water, Fire, and Earth, used to explain a wide array of phenomena). It is notable that, in such cases, symbolism is at the heart of the artefact; this is more significant than their decorative qualities or even their utilitarian purpose.

Figure 19 The Guqin musical instrument (author's photo, 2019)

Figure 20 The Lusheng musical instrument (author's photo, 2019)

Figure 21 New Year woodblock prints (left), oil-paper umbrellas (middle), and paper dragon head (right) (author's photo, 2019)

6.3.2 Materials

Several interviewed craftspeople mentioned they were motivated to start their career because of their interests in specific raw materials. Examples of this include A30 and A32, who were initially interested in metallic materials and then started learning relevant knowledge. To better understand the characteristics and properties of metals, it requires a long accumulative process through repetitive training and continuing learning. As stated by A30, "*It normally takes ten years or even longer to be a master blacksmith, and it is difficult to obtain certain properties of steel through specific making processes, such as the quenching and annealing*". It is critical to choose suitable materials with good qualities for making, therefore, craft-makers are normally materials experts and have a deep understanding of their properties. This is especially evident in the cases of stringed instruments. Craft-makers apply strict criteria in choosing woods, considering their durability, strength and acoustic properties. Following selection, there is a long period dedicated to wood treatment. For

example, in the case of A5, high quality Tung wood (a deciduous tree often grown for its oil) is an important material in the making of the Ruan, however, before it can be used in instrument making it has to be dried over a long period.

> *"We firstly soak Tung woods in liquor for almost one month, and then leave them to be air-dried for a while. A purpose-built dryer is later used for a second round of drying. After these steps, wood planks are air dried for about three years. By using this slow drying process, deformation or cracks in the future can be largely avoided." (interview with A5, 2019)*

Typically, many craft objects are handmade from locally available natural materials. For example, A1 uses local flowers and plants for dyeing. A7 collects clay-like mud from the banks of the Yellow River (Figure 22). A9 uses traditional ways of transforming plants into pigments noting that "*we do them as we were taugh*t". In the cases of A23 and A18, locally grown bamboos are used to make the reed-pipe wind instrument Lusheng and basketry. Straws used for making sandals and flip flops (Figure 23) in the case of A21 are dry stakes of local cereal plants after removing the grains and chaff; Also, Camphor wood and Tung wood used for Buddha statues and traditional musical instruments (Guqin and Ruan) making are specific locally-sourced tree species. Recyclable materials are also found in the category of metal crafts. A30 uses recyclable old cast iron or coopers with rust texturing to create primarily decorative objects, such as vases and vessels. But for cookware and kitchen utensils, raw materials are bought from qualified suppliers to meet specific regulation requirements.

However, in some cases, local materials are no longer used; to improve the product, they have been replaced by alternatives. Leatherware maker A4 uses leather from Japan, Italy and America because these imported leathers are of higher quality than local leathers (Figure 24). A27 also uses imported woods from Europe and north America, and he explained "*timber drying technology used by them is more professional, which ensures the quality of wood, and prevent wood deformation*". Similarly, synthetic glue has largely replaced traditional animal glue (traditionally made from boiled off-cuts from pigs) in the making of the Chinese stringed instrument known as the Ruan because modern synthetic glues have stronger adhesive properties. Specifically, in the case of drum making, A8 was forced to change from using local leathers to leather imported from the south of China. This was because changes in local farming practices in the 1990s meant that the local water buffalo are killed for meat

when they are still young animals. At this young age, the leather is not yet strong or thick enough for use as drum skins.

Figure 22 The large wall relief sculpture made from Yellow River mud (author's photo, 2019)

Figure 23 Straws sandals and flip flops sold in A21's shop for selling (author's photo, 2019)

Figure 24 Leather hand bag with intricate carving (author's photo, 2019)

6.3.3 Production

The craft practices we studied usually had a small-scale of production (less than 10 people). Nine of our interviewees were sole makers, (A1, A2, A3, A10, A13, A18, A19, A25, and A31), and they design and make the goods on their own, normally by hand without the aid of machinery. For A1, A2, A10, and A25, they choose specific customised orders for producing, such as the old-style kites that appear in Chinese historical dramas or movies, and the small-sized paper dragon heads or traditional paper lanterns that are collected by museums or ordered by collectors as art pieces. Also, for hobby craftspeople A13, A18 and A19, because they have their own jobs, limited orders are received and they make use of free time to produce the goods. In the case of A3, due to complicated and time-consuming hand-making process, he makes less than 10 Guqin instruments in a year.

In the case of A7, A8 and A11, a family-based production model is adopted. A11 works with his father to make iron farm tools and knives in busy periods. His mother and his wife are in charge of order processing and selling. Similar to this small-scale craft business based on family, A4 and his students work together to produce enough stock for his two shops. He develops the new designs, which he prototypes himself. After this, he teaches his students, then these students make leather products at their homes or their own studios. Another popular business model found in this region is the win-win-cooperation between the designer and the cooperative. Examples of this include four contemporary craft brands established by A27, A28, A30, and A32, and a fabric-based enterprise where designer A15, manager A16, and weavers A14, A17, and A20 currently work for. In these cases, the owner as designer or

as the design manager leads a small team to develop new designs and combines hand-making with machine production. A group of makers collaborate with them to produce goods, and they are paid by a fixed piece rate for each product.

In a larger craft business, we also found that collaborative approaches are used to support production. In A6's musical instrument company (where A5 works), there are about sixty employees, forty of whom are craftspeople. The making process has been divided into many steps, with division of labour. The early steps require lower levels of skill and less precision; the majority of craftspeople can make these components. A highly skilled craftsperson, like A5, does the more skilled, intricate tasks and puts the instrument together (Figure 25). In A9's business of woodblock making for Chinese New Year prints, about 15 craft-makers work in his enterprise. Apart from these permanent employees, he also collaborates with other small local studios and sole makers, in order to fulfil his orders during busy periods.

Notably, local craftspeople pay attention to environmental considerations in their production. Even in the case of ironware, where there is a need for firing and casting and is therefore energy intensive, consideration is given to the type of energy source. To reduce air pollution caused by traditional coal burning, blacksmiths (A11 and his father) now strive to improve their techniques and use the cleaner energy source of natural gas. Additionally, in A4's business, he insists on using natural leather instead of synthetic leather, because synthetic leather is mainly made from synthetic fibres coated with a plastic polymer, which means that their sustainability and eco friendliness come into question. He also focuses on product quality and long cycle of use, and mending and repair services are provided by his team for customers.

Figure 25 Ruan musical instruments co-made by several craftspeople (author's photo, 2019)

6.4 Craft business

6.4.1 Marketing and promotion

The marketing and promotion of craft products is mainly via word-of-mouth among collectors and other buyers. For example, A11's father started off by selling his work at the local market. As he had gained a reputation for making quality ironware, he no longer needed to worry so much about finding customers, they came to him. For other sole makers, they do not advertise because their production is limited. One interviewee said, "*If we had too many customers it could be a problem, because we cannot make so many bags*" (interview with A4, 2019). Similarly, Guqin maker A3 also said, "*all the instruments [I made and sold] are luxury items and special, so I do not need to promote my work*" (interview with A3, 2019).

For enterprise/brand owners, although most of them expressed a wish to expand their business, but one important precondition is to ensure product quality. As stated by A27, "*I do not want to grow my business at this stage. Although we have updated to a mix of hand-made and machine-made production, to ensure product quality, we still cannot create many products… Now our business can generate sufficient income to make a living and to pay for employees, so it is not necessary to do more advertisements*" (interview with A27, 2019).

For sole makers and craft enterprises, social media also contribute to the promotion of their craft business through 'virtual word-of-mouth'. As highlighted by A9, "*it is necessary to take advantage of the internet and social media today, as they are closely connected with our life*". Government ICH advisers also supplement word-of mouth marketing through their networks and by providing access to initiatives to promote inheritors' work. A2, A7, A9, A27, A28, A30, and A32 all noted the benefits of this support. It is worth noting that the widely used social media application WeChat is found to play a pivotal role in most craft business. Through its social-networking function known as Friends Circle, craftspeople post pictures or videos of their craft work, craft activities and making process. The lantern maker A10 described the reputation established via Friends Circle as, "*the most reliable and stable*". Additionally, social networking services, including Weibo (a microblogging application and website) and TikTok (a video-sharing application), are also widely used to enhance the reputation of makers and their artefacts. A32 compared these social media platforms, and commented about their characteristics:

> *"Wechat is a really good platform, but it creates an intimate and private communication circle [within the user's choice of close friends]. Therefore, the product information shared by customers via their Friends Circle can only get access to limited*

people… For Weibo, its promotion relies on text descriptions and product photos. Compared with a more direct form of advertising through diverse short-form videos via TikTok today, Weibo will gradually lose its competition in terms of online promotion" (interview with A32, 2019).

Enterprise owners and craft-makers also recognise the importance of craft events and shows in boosting their business and telling the story of their products. All interviewed inheritors exhibited their work domestically or internationally. Most opportunities are offered by local governments, institutions, or relevant cultural organisations for cultural exchange, transmission, and education. Major exhibitions for business and influential trade shows in specific fields also help business owners make connections with potential consumers, such as the annual DOD (Design of Designers) Furniture Exhibition mentioned by A27. In the cases of A16, A27, A30, and A32, to generate deeper engagements with targeted young customers, they prefer attend craft and arts fairs, festivals and markets organised in creative and cultural hubs in urban metropolises, such as Shanghai, Hangzhou, and Suzhou. For example, they all mentioned they were invited to attend the *Taobao Maker Festival,* an annual offline activity organised by Alibaba's Group for young consumers, to showcase creative business and unique products from Alibaba's Taobao digital marketplace (Chou, 2021).

6.4.2 Selling and 'route-to-market'

With marketing via word-of mouth and social media, those who wish to purchase can add craftspeople as 'friends' and contact them on WeChat; its mobile payment service also enables purchasers to transfer money. Many craftspeople use this to directly sell to their customers. However, most do not use specific e-commerce sites to sell their work. A8 used to sell his drums via Ali Baba (the largest Chinese e-commerce website), but this was not successful due to price competition. He explained "*Other factories also make similar looking drums and sell online. But we make drums using very good materials. This is why ours are more expensive*" (interview with A8, 2019). On these platforms, mass-produced products with cheaper prices sell well. Customers tend to pay more attention to price than quality when they shop on these e-commerce sites (interview with A5, 2019). In contrast to online selling, it is better to sell traditional, handmade artefacts through face-to-face interactions and maker reputation. In A4's shop, we observed that he always patiently introduces information to customers, such as the techniques of leather making and the details of his design concepts.

This way, buyers can appreciate the skill, time and quality of workmanship that has gone into the product and hence its value.

Working differently from traditional ways of craft selling in shops, some interviewees take advantage of social media and online platforms to convey their aesthetic values and brand concepts, and then use multiple ways to push sales. For example, A28 witness her mother working as embroiderer from an early age, and then her family embroidery was inscribed into provincial ICH list. After graduation from university, she started to help her mother to expand business, and now she is in charge of running an online Taobao store as well as an embroidery gallery for exhibitions and ICH education. In this case, she used TikTok to produce short-form videos of embroidery stitches. After gaining a vast amount of fans, she then successfully promoted her DIY embroidery kits via this platform. Moreover, as China's livestreaming e-commerce is experiencing explosive growth (Greenwald, 2020), she has also taken this opportunity to promote her products. For example, her products were recently promoted by a hugely popular live-streamer Viya, and this helped her online Taobao store achieve 20 million viewer visits and also doubled product sales (The Paper, 2020). In these cases, a collaborative approach is often adopted to support production, and designers collaborate with craftspeople to develop new opportunities related to their local crafts, often aspiring to develop innovation with tradition.

Craft makers are also found to collaborate with sales team or retailers for selling. For A29 and her team, with financial support from local government, they devote to ICH education, craft training and teaching, and new design development. In terms of sales, they work with a sales company in which the business owner is a disabled people, and a percentage profits is returned to local craft developmrnt and job opportunities are provided to support local disabled community. Also, due to a recent dramatic increase in the number of independent multi-brand stores across China, unique craft products have been also reached by these shoppers. According to the brand owner A30, he was contacted by several buyer stores for collaborations, and a special discount on products was negotiated to offer. Among these collaborated retailers, he specifically mentioned the Chengpin Bookstore, one of the largest retail bookstore chains in China. With a focus on space and visiting experience, its bookstores sell creative goods and serve great coffee and food. A30's branded designs were appreciated by the team, and a specific area is provided in the stores for exhibition and sales.

6.4.3 Customisation

Of the thirty-two interviewees, seventeen mentioned they created crafts or designed craft products specifically for the customer according to their requirements (including A2-A4, A7-A11, A15, A16, A24, A26-A28, A30-32). As described by A9, "*customisation is one good service that a craft enterprise can provide*" (interview with A9, 2019). It is not uncommon to customise handmade items, such as handbags or shoes for specific requests, but it's surprising to know customisation services also play an important role in different craft fields. For example, when A26 initially started his craft business, the first order was really challenging - to make five hundred 1m high wooden statues of Buddist Arhats (similar to saints, apostles or early disciples and leaders of the faith) for one temple (Sohu, 2019). To ensure carved statues meet temple's needs, craftspeople lived together with temple monks for timely communications. It totally costed four years to finish all carvings, and four or five craftspeople worked in turn for twelve hours each day (Ibid). Because they offered good customisation, A26 have gained good reputation since then. Until now, he has been contacted by many temples all around the country to make different sizes and different types of Buddha statues/sculptures (Figure 26). Also, according to A31, most of his customers request specific colours or painted patterns with specific meanings, and these custom oil-paper umbrellas are ordered for collections or given to friends as gifts.

In some cases, big companies and local government are major customers for craft customisation. A9 told the researcher, they have collaborated with several big companies and this accounts for roughly 30% of his annual business. For example, Figure 27 shows a specific woodblock print customised for Coca Cola. Another typical example is a contemporary textile brand called Sushuo (where A15 and A16 work). Weavers within Dong and Huayao ethnic minorities, including A14, A17, and A20, are hired to produce brand scarves with local traditional patterns. To boost sales, A15 told the researcher that an integrated online and offline strategy was adopted, but offline orders from big companies and governments are still the pillar of their business, making up 90% of the total annual sales; Although big efforts have been put to promote their ecommerce stores, their online sales are still not good (interview with A15, 2019).

However, there are also big challenges to offering craft customisation services. When an idea/concept is put forward by customers, more time is needed to develop design, test and then create. This time-consuming process is described by a craft enterprise manager A15 (2019) as "full of uncertainty". As explained by her, to customise a scarf with specific patterns, the designer need to spend long time communicating with customers, and then

optimising designs over back and forth, especially according to the feedback on technical feasibility from the weaver. Before weaving, there is another long period for the preparation of the warp and the filling yarns. Due to such reasons, they now only provide customisation service in terms of packaging and labelling, which are "*much easily to achieve and quickly to operate*" (interview with A15, 2019). Another major challenge raising from customisation is to manage customer expectations. For example, A30 shared an impressive experience with the researcher. He was asked to make a cooper pot with intricately carved patterns. Due to its complicated making process, he refused at the beginning and told the customer it was hard for him to achieve such a high level of craftsmanship. At the customer's insistence, he finally tried but as expected, the finished craft did not meet the requirement. Despite these big challenges of product customisation discussed before, this is still believed as a promising direction of craft business development, as described by A27:

> *"I will keep providing customised services for my customers because I think this opens up a window to understand their real needs... I am quite willing to meet their different daily needs, especially for some interesting requirements [for craft product], even though this is a costly process which means I can hardly make money." (interview with A27)*

Figure 26 Finished Buddha statues/sculptures, waiting for further polishing (author's photo, 2019)

Figure 27 The woodblock print customised for Coca Cola (Photo courtesy Jizhong Zhang)

6.5 Design practices

6.5.1 General perspective on the role of design in supporting traditional crafts

When asked about what a designer might do to help in their business, twelve interviewees, including A9, A10, A13, A14, A15, A16, A22, A27, A28, A29, A30, A32, had a really positive attitude to the application of design expertise in their business. These supporters have design/art bachelor degree, or received design training or courses before, or used to collaborate with designers to explore new opportunities. Specifically, through analysis of craft brands established by A22, A27, A28, A30, A32, and craft enterprises where A15, A16, and A23 work, design was found to play a significant role. Specifically, five areas, including 1) branding and storytelling, 2) the development of new products, designs and patterns, 3) packaging and labelling, 4) design for ICH education, and 5) relevant craft mementos, souvenirs, and gifts, were identified where design has made contributions to enabling the continuation of traditional designs, craft practices and products. In sections 6.5.2-6.5.6, detailed descriptions of these five areas are presented.

In contrast, for interviewees who have not yet collaborated with designers, when asked about the potential role of design in their small/micro-sized craft enterprises, no one suggested input into the design of the products they produce. Instead, they raised problems they faced which relate to marketing, branding and selling. For example, leather carver A4

who run two physical stores stated "*I have not yet collaborated with designer, so I do not know what a designer could help…But I do need a team to work in branding and marketing. With such help, I could put all my efforts to improving my craft skills and developing new products*". In these cases, design tends to be understood as a supporting or minor role rather than a major role, and design supports are expected to provide in terms of marketing, branding and sales.

6.5.2 Branding and storytelling

Branding and storytelling are found to be key contributions of design within this study, and typical examples include five craft brands shown in Table 14. Suoshuo is a fashion brand of cotton/linen scarves, accessories, and other homewares hand-woven by weavers within Dong ethnic group in south central China in picturesque rural mountainous areas. Its business model was defined by the manager A15 as "University + Cooperative + The Local + Enterprise". A research team led by A16 from School of Design, Hunan University, work in the design, and a group of Dong weavers (e.g. A14, A17, and A20) are hired to work together to produce goods under the brand; An enterprise (where A15 works as the manager) work for the sales and marketing, and some local people are paid by the enterprise to sell their products to tourists.

In the cases of A27 and A28, they are all influenced by their parents' dedication to craft as provincial ICH inheritors, two brands - Xiaohong Embroidery and Senser, are established by them to sell goods made by a mix of hand- and machine-made way. Another two brand owners, A30 and A32, they are all interested in metalsmithing, but there is a big difference in their brand focus and product development. For A30, a concept, similar to "functional art" (Allenchey, 2013) is used to develop the brand identity, and his design is more about interior product design which serves a purpose but also emphasis on aesthetic values, ranging from incense holders and tea sets to plates and bud vases. Compared with A30, A32's design is more concerned with function and user experience, and his products are mainly functional kitchenware, including woks, pots and pans in different sizes and types.

Through the analysis of five examples mentioned before, significant values that these brands share to their customers are found to place on the craft itself, but with an emphasis on different aspects. For example, the core of A28's brand is to promote embroidery as a way of **self-expression and the conveyance of love**. As explained by her, "*The most important motivation for embroidery is to express love, feelings and emotions. For example, some old*

pieces of embroidery I collected from the folk, such as baby bibs, bellybands, clothing and shoes, they were hand-sewn to convey specific meanings - a mother's love for her children, and best wishes to the future.…I do believe such self-expression, embedded in every single needle or a piece of thread, is the most important part of embroidery." Different from a focus on self-expression through craft, according to A32, his branding emphasis is given to **a revival of craft-related lifestyles**. As explained by him, "*Rural areas and traditional lifestyles provide the basic context for many crafts…The product I designed, like woks, pots and pans, is a small touchpoint of people's daily life, and I want to use this touchpoint to facilitate more interactions between people and their environment. I want to design an experience-based restaurant in the future*." In the cases of A16, A27 and A30, three brands in textile, metalware, and wooden products, they have different branding focus, i.e. **traditional patterns, carving techniques, and specific properties of metal materials**.

Although different craft values are conveyed through their brand beliefs, a similar visualised storytelling approach is adopted via their websites, online ecommerce platforms, social media, brochures, and craft fairs/exhibitions etc. Fascinating and compelling stories are shared, which relate to the cultural roots, history and heritage of craft products, and/or materials/craft techniques they used, and/or their connections to the place. For example, Figure 28 (left) shows how textile brand Suoshuo convey brand values via its online store: nine making/design steps are visualised and stories about the weaver are shared with consumers. Also, unique material properties, traditional craft techniques, time-consuming making process, and specific cultural heritage are also introduced via photos and texts (e.g. middle and right examples shown in Figure 28). Particularly, in the case of Suoshuo, its story-telling describes how this brand benefits society. When the enterprise was set up, a charitable fund was also created by the company. On its Taobao online store, it shows "*For every product sold, a percentage of its profits, i.e. 30 Yuan (about £3), is donated to supporting local rural communities and art education*" (As shown in the left of Figure 28).

Table 14 Craft brands and their information

Craft Brand and its website	Product	Craft making	Relevant interviewees
Suoshuo https://shop114373420.taobao.com/	Hand- and machine-woven scarves and accessories (e.g. socks and ties) with Dong ethnic patterns, homewares	Cotton/linen weaving	A14, A15, A16, A17, A20
Chuzao https://chuzao.jiyoujia.com/	Branding, hand-made brassware and iron products (e.g. incense holders, tea sets, plates, bud vases)	Metalsmithing	A30
Xiaohong Embroidery https://shop596271642.taobao.com/	Traditional and contemporary embroidery kit products with free online instructional videos	Embroidery	A28
Senser https://shop114918171.taobao.com/	Branding, hand-carved wooden art objects, branded wooden utensils and products	Wood carving	A27
Tiewa Gongshe https://shop243468166.taobao.com/	Branding, hand-made cooking woks, pots and pans	Blacksmithing	A32

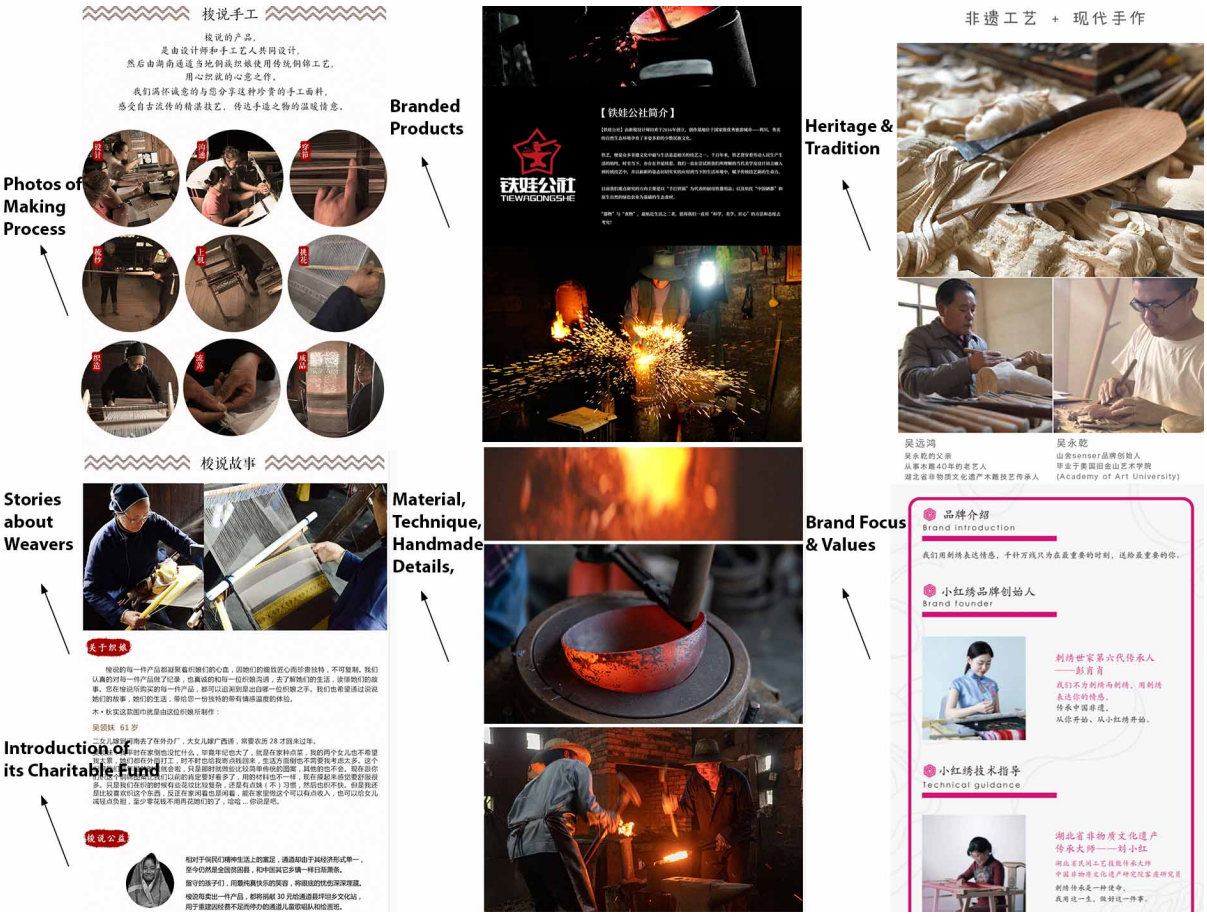


Figure 28 Left: Making process, weaver's stories and its charitable fund introduced via Sushuo website; Middle: Photos of raw materials and techniques used for products taken by A32; Right: Brand stories about A30, A28 and their family heritage of craft making

6.5.3 Product and pattern design

Our findings indicate that many craft-makers and enterprise owners (A4, A7, A9, A10, A13, A15, A16, A22, A24, A27, A28, A29, A30, A31, A32) have attached the importance to the exploration and development of new designs, especially in terms of product design and pattern design within this study. In general, three directions are identified where designers have made appropriate and desirable contributions: 1) the adaption of designs to contemporary needs and development, 2) the exploration of new market, and 3) the representation of traditional patterns.

To explore innovation within tradition, many interviewees continue to use local materials and traditional techniques, but try to create new contemporary products or services. For example, as a hobbyist in indigo dyeing, A13 explores new patterns and products using traditional indigo dyeing for a long period and want to develop her own craft business. In her house, she introduced some pieces of fabric used for interior decoration, such as the curtains and cushion covers sets, which are designed and then made by herself (see examples a-d in Figure 29). She also explores different patterns through dying on white T-shirts, skirts, and trousers (see examples e-g in Figure 29). Recently, several workshops were organised by her, and she guided participants to experience traditional indigo dying with a small piece of cotton fabric. Additionally, in some cases, there is a new combination with other materials and modern new techniques. Typical examples include A9's development of new techniques to create a woodblock print on red papers (Figure 16), A7's experiments with new techniques and colours in river clay carving, and A4's use of imported leather and leather carving techniques from the USA and Japan for new leather products, as discussed in previous sections before.

For contemporary brands listed in Table 14, new products that are attuned to contemporary needs and lifestyles are developed, and new design opportunities are explored to expand the market. For example, A30 adapts traditional metalsmithing to design branded iron/brass products, and multiple product lines are developed to capture more consumers, as shown in Figure 30. Also, in the case of A28, embroidery kit products with different themes are developed, and associated instructional videos are freely provided to costumers. Specifically, as Chinese-style wedding ceremonies are growing in popularity in recent decades, A28 and her design team develop a series of embroidery products for wedding ceremony and wear. Popular products include embroidery kits for the marriage certificate and the red head cover (a veil put on the head of the bride in traditional Chinese wedding ceremony) shown in Figure 31, consisting of red satin, metallic gold threads, and/or colourful

silk threads, and basic tools (e.g. needles, ruler). In another case of Suoshuo, where A16 works as the design director, two different product lines under the same brand are developed: one is high-end hand-woven product line and another one is mass-produced product line.

Specifically, the detailed analysis of textile designs shows that an emphasis is given to the representation of traditional patterns. According to A16, a research team led by her spent long time learning traditional patterns and weaving skills from Dong people - an ethnic group in south central China in picturesque rural mountainous areas where is famous for its weaving. An online digital museum is specifically developed, and traditional/redesigned patterns are created with Adobe Illustrator and then relevant vector files are uploaded to this platform for team leaning and sharing (see Figure 32). During the design process, designers communicate with local weavers for their feedback, and then make further improvements in design. As stated by A16, a long-term study into these traditional patterns is an important process of "*cultural immersion and knowledge exchange*". For example, A16 showed the researcher a new scarf design they developed recently (Figure 33). She said, in comparison with other concepts, this design was finally chosen because the use of traditional patterns conveys significant cultural meaning. This is highlighted by A16 as "*the identifiability of traditional patterns*", contributing to "*unique genes of brand*". Similarly, A28 also argued it is crucial for textile designer to have a detailed knowledge of traditional patterns and basic embroidery stiches. According to her experience gained from previous craft-design collaborations, she explained:

> *"We used to collaborate with design research teams at university, but the output [of new pattern designs]was problematic. For some beautiful patterns illustrated by them, they cannot be produced by embroider. Even though some design ideas could be realised, the final presentation was not good. This is because, for the designer and the embroider, they have different understandings on patterns. For embroiders, when outlining a new design, different embroidery stitches are given the first priority by helping ensure they are technically feasible; while the designer [collaborated with us] obviously lack such considerations…Therefore, now we highlight our design team should closely work with the embroider. Our head of design has learnt embroidery for eight years." (interview with A28, 2019)*

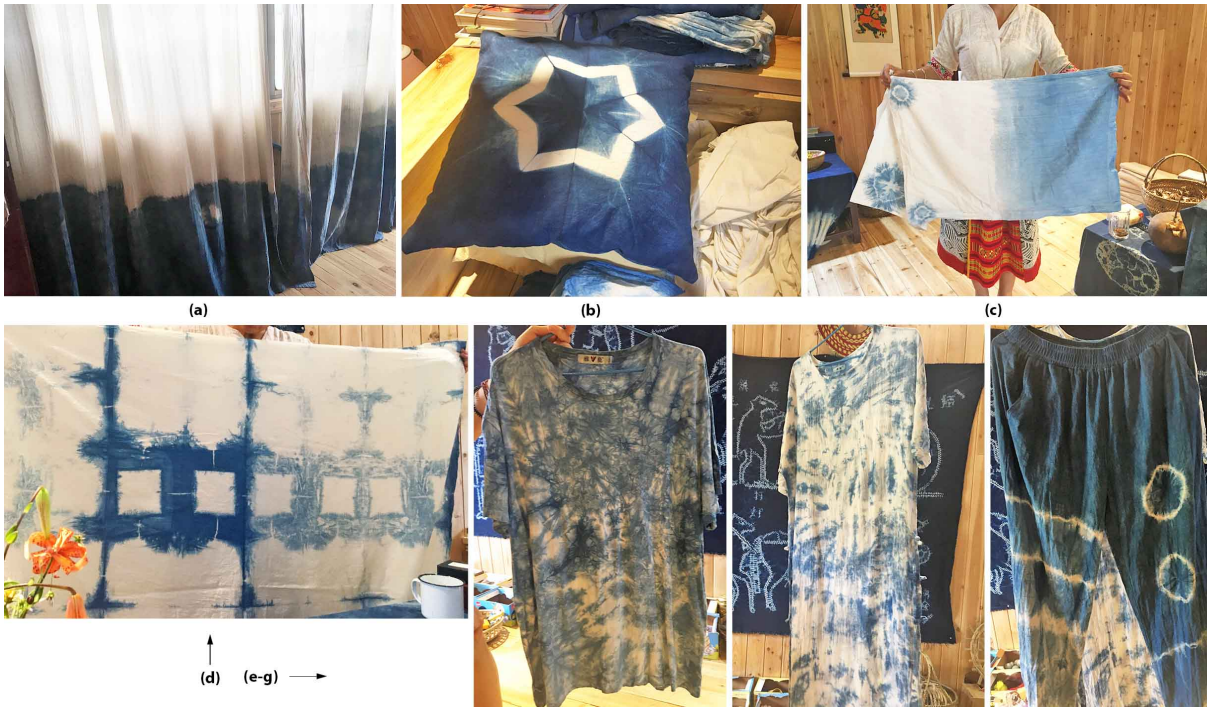


Figure 29 Hand-dyed fabrics by A13: curtains (a), cushion/pillow covers (b-c), tablecloth (d), hand-dyed patterns on white clothes/trousers (e-g) (author's photo, 2019)

Figure 30 New products designed by A9: Tea tray, boat-shaped deep plate, brass celling hooks and accessories, brass celling light, iron bud vase, and corkscrew (Order: from left to right, from top to bottom) (Photo courtesy Dongyi Du)

Figure 31 Embroidery products for Chinese-style wedding ceremony: the marriage certificate (top), and the red head cover (bottom) (Photo courtesy Xiaoxiao Peng)

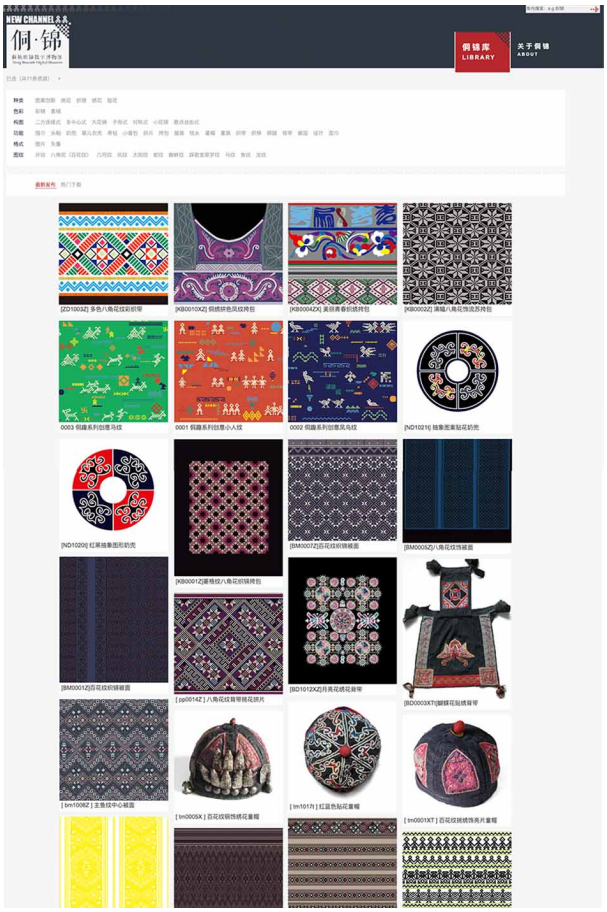


Figure 32 A digital museum with Dong traditional patterns developed by a research team led by A16 (website link: http://121.40.16.252/djk/)

Figure 33 Traditional patterns within Dong ethnic group used for a new scarf design (left) versus non-selected design concepts with geometric patterns (right) (author's photo, 2019)

6.5.4 Packaging and labelling

Because online selling is an important part of craft business, for protection and transportation, packaging and labelling are important part of design. Corrugated cardboard boxes, with low cost and the perfect blend of minimal weight and maximum strength, are the most popular packaging materials. Also, linen or cotton bags are also found to be used as simple packaging, such as drawstring cloth bags provided in the cases of A30 and A32 (Figure 34). To ensure brand identity, logos are printed on package, and representative colours and visual elements are used. For example, according to A28, packaging graphics of her brand "Xiaohong Embroidery" was finished by a professional design company. As bright colours and contrasting colour pairs (e.g. red and green, blue and yellow) are widely used in Chinese traditional embroidery, three typical ones, i.e. green, magenta and yellow, are identified as main colours and used in its packaging in order to show its brand's identity (see Figure 35). Additionally, in the case of Suoshuo brand, for its high-end hand-woven scarves, a specific wooden product package was designed, and product labels with the weaver's photo and brief introduction are attached (Figure 36). Its brand manager A15 also highlighted they provide customised service for packages and labels, such as a specific design for the latest line in its collaboration with a well-known Chinese sock brand (also shown in Figure 36-b).

However, it is surprising to know seldom sole makers we interviewed mentioned the need for packaging design within this study, and inheritors A25 and A31 even adamantly refused when asked about potential opportunities for packaging design. Three main reasons are identified. First, as stated by A25, packaging is understood as a way to decorate products in order to improving pricing, and he feels "*such decoration is meaningless for purposeful craft*

objects produced for daily life". Second, as pointed out by A31, adding packages means an increase in production cost. But for sole makers like him who produce limited craftwork each year or micro craft business that produce a small profit, such extra investment is risky and need to be seriously considered. Third, according to customers' feedback, A22 stated "*needs for packaging do exist in luxury crafts; but in my case, for craft products bought by tourists, they do not need extra packaging*". In such cases, packaging design is not necessary. But for specific craft category, such as delicate lacquerware and music instruments, more securing packaging or a custom packaging solution is required.

Figure 34 Drawstring cloth bags used for packaging in the cases of A30 (left) and A32 (right) (Photo courtesy Dongyi Du and Huan Tian)

Figure 35 Xiaohong Embroidery: its branding colours and the application to product packages (Photo courtesy Xiaoxiao Peng)

Figure 36 Product package and associated labels design in the case of Suoshuo (Photo courtesy A15 - a, b; author's photo, 2019 - c)

6.5.5 Design for ICH education

Due in large part to central government's initiative to ICH protection and the status as ICH inheritors, the craftspeople we interviewed felt a strong responsibility to continue the craft and devote energy to cultural transmission. Reflected in their craft business, there is an emphasis on cultural transmission and heritage education, as discussed before, examples of this include a public lantern museum run by A10, and craft courses regularly taught by some inheritors (e.g. A3, A4). Impressively, within this study, there are three examples in which new products or game designs are found to be developed for craft education.

The first one was the creation of a two-hour practical course, taught by inheritor A2. As a precursor to the practical part, a 15-minute introductory session informed participants about the history of her family's kite-making, the various designs, and the exhibitions where their kites have been displayed. Students then use kite kits to engage in a simplified version of kite making. The kit designed by A2 comprises a black and white, printed, two-headed parrot kite pattern; two ribbons; three shaped bamboo sticks; a plastic needle; white glue; a kite handle with line'; a paint brush; and a set of gouache paints with six colours (Figure 37). She has streamlined the processes and reduced the number of steps. The time-consuming element of hand-carving the bamboo sticks into lightweight careful profiled rods has been replaced by mass-produced bamboo sticks of uniform profile. Silk and paper for traditional kites have been replaced by waterproof plastic sheet, which is more robust and prevents the kites being damaged when taken out in the rain. In last two years, she has taught about 15,000 students this simplified version of traditional kite making (Figure 38).

Similarly, the second example, wooden cross stich kits were developed in the cases of both A28 and A16. As shown in Figure 40, the left is the product kits developed by A28 and her team. Each kit contains several pre-punched wooden boards attached to embroidery thread and plastic needles. An instruction leaflet is provided for parents to teach children to feed the thread through the pre-punched holes, and patterns about cars and trucks (e.g. fire engine truck, bus) are revealed when finishing. As this product has been successfully applied into teaching in several primary schools, A28 feels quite confident about its future selling, stating "*This is a fun way to introduce children to sewing and cross stitch… This is also a good way to improve their abilities of concentration and endurance, and we found this product is also helpful for kids to practice using the chopsticks*" (interview with her, 2019). Also, the right photo shown in Figure 39 is another product developed by A16's team for embroidery beginners. Different from A28's design, its instructions introduce more

traditional patterns used in Chinese tradition, especially some ethnic patterns with specific meanings.

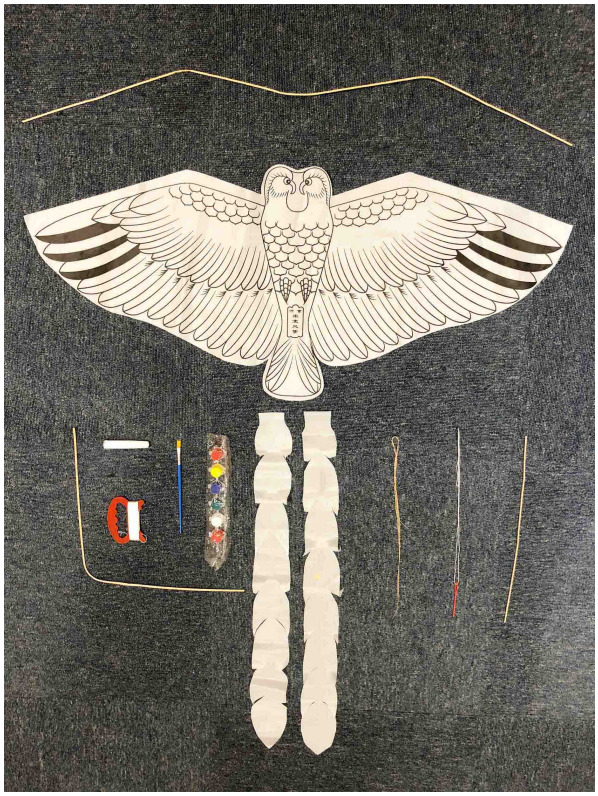


Figure 37 Kite kits used for teaching (author's photo, 2019)

Figure 38 Inheritor Song gave a kite making course at a primary school, Kaifeng, China. (Photo courtesy Changhong Song)

In addition, when the researcher conducted fieldwork in Huyao ethnic group in the mountainous terrain of central China, some designs exhibited in A14's house attracted the researcher's attention. Introduced by A14, these designs were finished by a team from Hunan University (different from A16's team). As shown in Figure 40, two picture books named *The Adventure in Huyao*, and a board game called *Huyao Explorer* were designed for young

children to learn local customs, traditions and culture; Several plastic building-block toys were also developed, which can be assembled to construct figures with local special costumes. In recent five years, this research team has turned to exploring how to use digital technology for supporting and enhancing ICH education, and “serious games” and “experiential learning” are seen as two main directions to conduct relevant design practices (Y. Yang et al., 2018; D. Zhang et al., 2018).

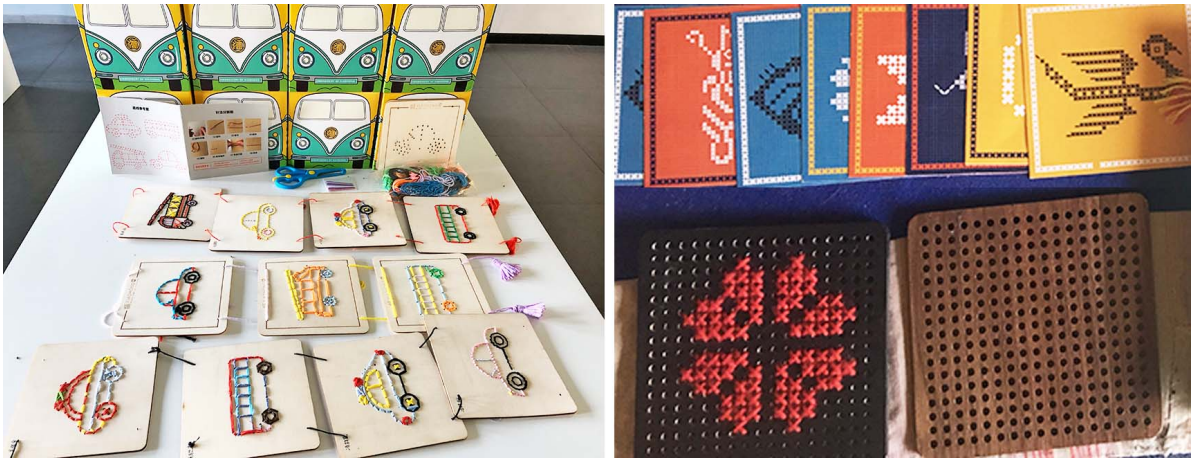


Figure 39 Wooden cross stich kits (author’s photo, 2019)

Figure 40 Picture books, board games, and building-block toys based on Huyao tradition and culture, designed by a research team from Hunan University (author’s photo, 2019)

6.5.6 Craft mementos, souvenirs, and gifts

Chinese academia pursued the concepts of "cultural heritage tourism" associated with UNESCO world heritage sites in the early 20th century; and since 2006, with an "ICH fever" sweeping over the Chinese society, an emphasis has been changed to the development of "intangible cultural heritage tourism" (Maags and Holbig, 2016). Within this study, as confirmed by government official A12, local intangible cultural heritage is seen by the government as a resource to develop the local tourism industry. Meanwhile, local governments also act as an important role in supporting craft enterprises to grasp marketable opportunities related to "ICH tourism" and "cultural tourism". Typical examples of this are A21 and A22 and their craft shops, in which they are granted by local governments to sell products in popular tourist-magnet pedestrian zones. As introduced by A22, his enterprise is "*government-backed*", and his three-floor shop is located in "*the best location of an iconic tourist attraction*". Hand-woven fabrics made by local female weavers are bought by his company and then repacked and sold for visitors. Also, A23's craftwork, who is a national ICH inheritor for Lusheng making (reed-pipe wind instrument within Dong ethnic group), is also exhibited in this shop for sale. As confirmed by some interviewees, the integration of heritage craft resources into contemporary development, especially tourism development, is seen as the basis for their craft business, as shown in the following two quotes extracted from interview transcripts:

> *"In response to government's call for the integration of ICH into tourism, my enterprise aims to better promote local heritage crafts, sell tradition crafts, and then absorb traditional elements/patterns to develop tourist products." (interview with A23, 2019)*
>
> *"It is crucial to think how to make use of intangible cultural heritage sources. In my case, I concentrate on how to create, transform, develop new forms of New Year prints that are suitable for contemporary markets and customer needs." (interview with A9, 2019)*

In the case of A22, several mascots with Dong wearing and accessories were designed as fictional, representative spokespeople for the brand. They are used in relevant souvenir products, such as silk scarves, round fans, cushions, and T-shirts, as shown in Figure 41. Also, a specific gift set for tourists was developed by A22 and his team, and five local specialties and traditional food are included, i.e. Dong embroidery handwoven by local

people, organic tea seed oil, dried fruit selection, picked chillies, and loose herbal tea (Figure 42). Because local pillar industries are associated with these five products, therefore the promotion and advertising of this design is strongly supported by local government. Great economic and social values of the design were stated by A22: "*This business, including five products, contributes to 300 million yuan (about £ 33 million) to local economy each year, and has provided employment opportunities for 6,000 local households, of them, about 2,0000 people with low income*".

A15 and her team also run a physical shop in a local Dong village in Tongdao Dong Autonomous County in Hunan province, where it has been placed on a tentative list of World Heritage Site in China (UNESCO, n.d.). When the researcher visited this store, their branded scarves and handbags were well exhibited and some tourists asked sales staff for product details. Local bamboo with traditional weaving were also used as materials for the packaging of local specialties and food (see the left of Figure 43). Other souvenirs include greeting cards and picture postcards of local landscape and people, bookmarks, ball pens, and framed laser-cutting paper art inspired by local architecture (e.g. the drum tower and wind-rain bridge) (see the right of Figure 43).

Figure 41 Iconic mascots of Sa Sui brand (top) and its souvenirs, gifts (bottom) sold in a shop located in tourist-magnet pedestrian zones (Photo courtesy Fangxu Wu)

Figure 42 Gift sets including five specialty products designed by A21 and his team (Photo courtesy Fangxu Wu)

Figure 43 Packaging designs for specialities and traditional food (Left); Souvenirs and gifts designed by A16's team (Right) (author's photo, 2019)

6.6 Summary

This chapter has revealed the characteristics of traditional crafts within the Chinese context, and two parallel directions are led by the Chinese government for craft development. Firstly, craft activities are situated within the policy framework of culture, connecting with heritage preservation programme and contributing to national and cultural identity. Various kinds of supports are provided by the government to safeguard traditional craft heritage. Specially, its recognition and financial support of craft making practices helps raise the profile of place-based culturally relevant practices, designs and products, and serves to sustain them by bringing them to the attention of the general public and creating interest in them among younger people. Meanwhile, with the grow of China's *Wenchuang* (cultural creative industries) economy, heritage is given new forms and meaning at economic levels, and craft makers and enterprises are encouraged to suit contemporary markets and consumer needs.

Our findings on personal motivations highlighted craftspeople are predominately driven by (1) a pure love of hand making, (2) a sense of responsibility to continue the tradition, (3) self-fulfilment, (4) marketable opportunities for place-based, culture-specific craft products. In our research, craftspeople generally report a high level of personal well-being, specifically, such well-being reflects in a feeling of satisfaction from the completion of an artefact, a sense of achievement from external recognition and a sense of fulfilment from craft making. It is worth noting that many craft-makers we interviewed spend a lot of time on teaching activities for non-commercial reasons. Particularly, two inheritors (A3 and A7) teach craft skills to disabled students, in order to help them become self-employed; six enterprise owners and managers (A9, A15, A28, A29, A30, and A32) attach the importance and significance of the place and give back a percentage incomes to support local craft makers and/or local community.

All of the traditional making practices we investigated in this region were developed to serve local needs, and some of them also have significant symbolism, including ceremonial use, blessing and praying. Renewable and natural materials are mainly used in the making, processes, such as Tong wood for musical instruments and bamboo and paper/silk for kites and lanterns. Local, small-scale craft production is typical of this region. In larger businesses, collaborative arrangements are made with other makers and small craft businesses to produce enough stock. In addition, we found local craftspeople also pay attention to environmental considerations. Even in the case of ironware, where there is a need for firing and casting and

so energy intensive, consideration is given to the energy source. To reduce air pollution caused by traditional coal burning, blacksmiths (A11 and his father) have improved the technique and now use the cleaner energy source of natural gas.

Due to limited production and a responsible making philosophy, craftspeople seldom advertise. The marketing and promotion of their work is mainly based in reputation and virtual word-of-mouth via social media like WeChat. For these reasons, it is understandable why most of them do not use e-commerce websites or e-marketplaces; on such sites, there is fierce price competition and little opportunity to convey the heritage, skills, and quality materials that go into these artefacts. Instead, they prefer to sell their products in the market or in shops, and especially venues where these are opportunities for face-to-face interactions with their customers, such as craft fairs, festivals, and exhibitions; this allows them to better convey invisible craft values. However, in the cases of contemporary brands investigated in this study, we found an integration of online and offline marketing strategies is being explored to boost sales. For example, A28 sold her branded embroidery products through livestreaming shopping, and A30 collaborated with multi-brand retailers and bookstores to reach broader audiences. Also, it is worth noting that personalised and customised products or services are found in many craft business. Enterprise owners attach great importance to such customised orders, because they help gain a better and more in-depth understanding of current and potential customer base, which in turn leads to repeat business, loyalty, and word-of-mouth recommendations.

With a re-appreciation of traditional crafts and a surge interest of creative craft products in China, it is found that Chinese designers and design researchers have been involved in some projects to explore ways of unlocking the potential of traditional material cultures, helping ensure they are appreciated while also being relevant and meaningful to contemporary needs. Branding and storytelling are found to be key contributions of design within this study, and relevant marketing and brand stories focus on different craft values, such as self-expression via craft objects, meaningful practices, and connection with place and heritage. Designers are also found to make appropriate and desirable contributions to developing new designs, mainly in three terms, including 1) the adaption of products to contemporary needs and development, 2) the exploration of new market, and 3) the representation of traditional patterns. Noticeably, although there are different opinions on packaging for craft objects, in some cases, package design and associated labelling are found to enhancing brand identity. In addition, in keeping with government's policy on the preservation of traditional craft

heritage, there are also design practices specifically for craft education and ICH tourism, contributing to local cultural transmission and economic development.

CHAPTER 07

Discussion of Findings

CHAPTER 7: Discussion of Findings

7.0 Introduction

Based on the findings from the secondary source (literature) and primary source (field) research, the purpose of this chapter is to develop a considered response to the main research question of this study: *How can design make a meaningful contribution to the continuation of traditional craft practices, in relation to the core principles of design for sustainability?* This chapter offers a substantive discussion about main findings and interprets them in the context of this research questions and its associated objectives.

The discussion is structured according to the three research objectives of this investigation. First, craft practices and enterprises are examined within the *Quadruple Bottom Line of Design for Sustainability,* and some problems related to sustainability are identified. Second, it addresses the relevance of place to maker enterprises and the spectrum of human values. With such understandings, third, feasible strategies, appropriate craft-design collaborations, and potential design contributions are then discussed.

7.1 Relationship of craft practices to sustainability within the Chinese context

This research has explored how design can contribute to the effective implementation of sustainable principles at the local level in small and micro craft business. In accord with Walker's *Quadruple Bottom Line of Design for Sustainability* (Walker, 2011, p.187-190; 2014, p.92-93), the following four levels are discussed in following sections to understand the relationship between the enterprise and sustainability:

- **Practical meaning and environmental implications** – utilitarian benefits plus together with their environmental repercussions in terms of resource or materials acquisition, processes, making, packaging, marketing etc., including energy use and the production of waste.
- **Social meaning** – contribution to social equity, justice, community and culture.
- **Personal meaning** – ensuring enterprise activities are in accord with personal flourishing and non-selfish or 'beyond self' values.
- **Economic means** – ensuring economic viability of the enterprise in ways that accord with customer needs as well as one's own values, social responsibility, and environmental care.

7.1.1 Practical meaning and environmental implications

This study has identified that craft practices investigated in central China embody sustainable principles through consideration of the product's functionality and use of renewable materials. The findings offer clear examples of how craft makers give first priority to locally available natural materials and locally suitable small-scale production whilst assessing the practical aspects of craft work, as with the use of clay-like mud from the banks of the Yellow River for carving, and the family/community-based production mode found in the case of New Year woodblock paintings. All of the crafts investigated in this region have been developed for local needs, and employ traditional hand making processes, which make use of hand tools and use less-polluting forms of energy.

Makers are aware of the environmental impact of their practices. In the case of ironware, there is a need for firing and casting, so it is an energy-intensive process, but it's adherence to sustainability principles depends on what energy source is used. To reduce air pollution caused by traditional coal burning, blacksmiths we interviewed now strive to improve the technique by using the less polluting energy source of natural gas. Also, in A4's business, he insists on using natural leather instead of synthetic leather, because synthetic leather is mainly made from artificial fibres, mainly plastic polymer, which means that their sustainability and eco friendliness are questionable.

In addition, the findings on customisation reveal artisans are open to adapting aspects of the product specifically to meet customer's needs. Unique qualities, great satisfaction, and/or emotional bonds that the consumer experiences with customised handcrafted products help extend the product life. For example, in the case of leatherware, customers can have their own logo on the customised pieces. Also, makers consider the product's longevity, and mending and repair services are provided by almost all craft makers. All respondents attach great importance to product quality. Especially for heritage crafts, makers employ traditional materials, design and techniques which has been practiced for two or more successive generations, and high levels of manual dexterity and skill are involved. Such connections to heritage, history and tradition also enable handcrafted products to become meaningful and valuable goods.

However, some problems were also identified in relation to the environmental aspect of sustainability. For example, in some cases, local materials are replaced by imported materials, which is often less environmentally sustainable because of the long-distance shipment. Also, in the cases of ironware making, burning coal releases toxic elements and particulates that increase air pollution. In such specific craft areas, the concept of

‘environmental impact’ has not yet been embedded and there is further room for improvement via relevant training and education. Similarly, in the case of kite making, silk and paper in traditional kites have been replaced by waterproof plastic sheeting, which makes them more robust and longer lasting but also contributes to the problems associated with plastic waste. By working with a designer who is well versed both in materials use and sustainability, the selection of alternative materials can result in choices that are both functional improvements and adhere to sustainable principles.

7.1.2 Social meaning

Craft practices and objects examined in this study were distinctive to the local community and culture, which contributes to a sense of belonging and cultural identity. All these practices have a long heritage of intergenerational cultural transmission – the skills, knowledge and making practices are inherited. Not only craft skills, but also socio-cultural traditions, beliefs and meanings have been passed on from one generation to the next. One typical example is the woodblock carving visited in this region, which dates back to late Ming dynasty and early Qing dynasty (1600s-1700s). Patterns of woodblock prints are often based on folk tales, legends or narratives, and they have significant cultural meaning related to the Chinese New Year – especially with respect to blessing and praying. Similar cultural symbolism can be also seen in traditional lanterns and musical instruments in this region, as they are all widely used in cultural activities, ceremonies, rituals, and performances.

In China, its ICH programme and Cultural Self-confidence programme intrinsically motivates craftspeople and positively influences culture-specific making practices and the design of the resulting artefacts. In general, individuals’ values and beliefs, including one’s sense of belonging to a group and social relationships, are strongly influenced by culture (Wan and Chew, 2013). However, in many situations, individuals are not consciously aware of such influences (Lu and Wan, 2018). This can be seen in our research into inheritors’ motivations for craft making. A majority started their craft career as a way of making a living, but they did not realise how these traditional making practices had shaped them in this period. There tends to be a significant change after being recognised as an Inheritor at the national, provincial and/or municipal level. Since receiving this recognition, they have become motivated by a strong sense of responsibility towards their cultural inheritance, and this provides a sense of fulfilment and reward and also inspires them to continue their making practices.

This research also reveals that collaborative approaches are often adopted by larger craft enterprises. To develop new designs and to ensure enough stock, in many cases, sole makers and small craft businesses are asked by these larger business ventures for collaborations, and this helps strength local craft community. For example, enterprise owners/managers A15, A22, A30 and A32 supported craftspeople in remote rural regions and allow them to work from home, so they are able to care for family and achieve work-life balance. Specifically, A32 helped blacksmiths refurbish their studios, and he also helped local farmers promote their agricultural products via social media and websites. A15 and A22 support makers in the area who create fabrics with local traditional patterns, which they sell via their shops and websites. According to the feedback from collaborating craft-makers A14, A17, and A20, there is an increase in their income and the re-appreciation of their work, as well as higher levels of job satisfaction and a sense of well-being.

This study also identified that inclusive and locally-led approaches are used by some craft enterprises to support vulnerable groups and to empower crafts women in rural regions, which reflects corporate social responsibility and contributes to social inclusion. One example of this is A29's case. Through collaborating with a sales firm that hires people of disability, a percentage of company profits is used to support a disabled community and to offer them job opportunities. Similarly, craft makers A3 and A7 teach craft skills to disabled students in order to help them become self-employed. Another example is the fabric enterprise where A15 and A16 work, and this enterprise is financially supported by a social design project, which aims to achieve poverty alleviation through the revival of local traditional crafts.

7.1.3 Personal meaning

The analysis of the interviews with craft makers identified two important motivations related to intrinsic values (Conservation and self-transcending values): (1) a pure love of making, (2) a sense of responsibility to continue the tradition, and (3) self-fulfilment. Many of the craft-makers interviewed mentioned an interest in hand-making, and using specific materials or craft techniques often provides an important starting point in their craft career. This motivates them to continue learning knowledge, honing skills, and then developing new designs. Meanwhile, the notion of *responsibility* was frequently mentioned by craft makers or enterprise owners. This was especially the case when they had been designated as an ICH Inheritor at the national, provincial and/or municipal level. In some cases, such responsibility

can be explained as a commitment to the family and community. For example, makers - A9 and A31, representing the fifth generation of their family craft heritage, shoulder the responsibility to inherit traditional making practices and also to devote their energies to developing the historic old brands. They are also motivated to support their communities through job creations, collaboration with local suppliers, and donation to good causes.

In this research, craftspeople generally report a high level of personal satisfaction and well-being. This arises especially from the completion of an artefact, a sense of achievement from external recognition and a sense of fulfilment from craft making. For example, the Guqin maker gains a great sense of achievement in making musical instruments that can produce beautiful music. The Yellow River clay sculptor attains considerable personal fulfilment because more and more people today are appreciating – or re-appreciating – this culture-specific practice. Similarly, the drum maker mentioned a sense of honour when his work was part of national ceremonies and celebrations in China. Noticeably, many craft-makers we interviewed spend a lot of time on teaching activities in schools, colleges, and universities, and some courses are free to the public. These teaching activities are consistent with craft people's intrinsic values and goals, and so are associated with positive emotions, such are satisfaction and happiness.

The findings on personal motivations for young craftmakers with design educationa backgrounds also show they are driven by a pure love of making, a strong responsibility to continue the tradition, and a sense of fulfilment. However, they were also found to be highly influenced by extrinsic values (the innovation and self-advancement cluster of values): (1) marketable opportunities for place-based, culture-specific craft products, and (2) an exploration into how traditional crafts can be re-valued in the contemporary. Some of these craft makers witness their family members working as craft makers from an early age while some show great interest in one specific practice in the learning process. Working differently from traditional ways of craft selling in shops, they take advantage of social media and online platforms to convey their aesthetic values and brand concepts, and then use multiple ways to increase sales. For example, one enterprise owner uses TikTok to produce short-form videos of embroidery stitches. After gaining a large number of followers, she then successfully promoted her DIY embroidery kits via this platform. In addition, as China's livestreaming e-commerce is experiencing explosive growth (Greenwald, 2020), she has taken this opportunity to promote her products. Her products were recently promoted by a very popular live-streamer Viya, and this helped her online Tabao store (the largest Chinese e-commerce website) achieve 20 million viewer visits and also doubled her product sales (The Paper,

2020). In these cases, designers collaborate with craftspeople to develop new opportunities related to their local crafts, often aspiring to develop innovation with tradition.

As contemporary craft enterprises and brands investigated in this study is becoming influenced by modern markets and is re-shaped by modern manufacturing technologies, there is a trend that craft objects turn to luxury and fashionable goods, which caters to consumers' externally-oriented goals and extrinsic values, including personal aspiration and financial success, social status and recognition, and self-image (Kasser and Ryan, 1996). In contrast, the primarily intrinsic values represented by traditional crafts, as appreciated by inheritors, seems to be largely neglected. However, research on external materialistic values has shown that they are negatively associated with ecological attitudes and behaviours, personal well-being, and socially responsible behaviours, such as helping others and volunteering (Kasser, 2016). Therefore, a design direction that constantly contributes to expanding the market, economic growth, consumption and innovation is highly problematic in terms of sustainability; not least because these are invariably accompanied by excessive energy use, resource use and waste production caused by rapid obsolescence and replacement of 'positional' and fashion-oriented goods.

7.1.4 Economic means

These findings from the Chinese context indicate that craft activities in China are situated within *WenChuang ChanYe* (i.e. *culture-related creative industries*). As one of the fastest growing sectors in the world, cultural and creative industries (CCIs) bring together economic and cultural dimensions of development within holistic policy framework, contributing to economic growth (J. Yang and Černevičiūtė, 2017; Palanivel, 2019). Due to different meanings understood in various international contexts, there is a lack of consensus about its definition and the subsectors included. But in many regions, including Europe, the UK, the Nordic countries, and Australia, crafts are considered part of the *creative industries*, which is driven by the economic growth agenda (European Commission, 2018, p.21; Department for Digital, Culture, Media and Sport, 1998; Kong, 2014; Masalin, 2015, p.40-51; Bennett, 2019). Different from this direction, in China, its top-down support mechanisms appear to help sustain the continuity of crafts for cultural rather than primarily commercial reasons.

The craft businesses investigated in central China fall into one of three categories: 1) sole maker; 2) micro enterprises (fewer than 10 employees), and 3) small-sized enterprises (fewer than 50 employees), i.e. small and medium enterprises (SMEs). The relationship of SMEs to

sustainable economic development has been discussed in the literature (e.g. Makhitha, 2017). This connection to economic sustainability is validated in this study, as craft enterprises are found to play a vital role in job creation, skills development, and poverty alleviation.

This study also reveals the relationship of the craft economy to tourism development within the Chinese context. Confirmed by government official A12, reviving traditional crafts is seen by the government as a way to develop the local tourism industry in the different regions, and new economic opportunities are explored through innovative designs and the latest ecommerce trends. Craft mementos, souvenirs, and gifts are designed for tourists, and examples of this are provided in section 6.5.5. of Ch.6. Also, as livestreaming e-commerce in China is highly developed, consumer goods are promoted and sold through influencer streams on their own social media channels. Enterprise owners also take advantage of such new ways to sell their craft products. However, compared with traditional face-to-face interactions with customers, the need to better convey craft values via online platforms needs to be considered and developed further.

7.2 Connections to 'place' and 'people'

7.2.1 Relevance of craft practices to place

Craft activities are often associated with concepts of 'localisation' and 'place' in the literature (as discussed in Chapter 2), and this relationship is examined within this study. To do so, important location factors are considered here that affect craft enterprises, from theories and empirical studies, including resources, professional development, cultural events, cultural support organisations, policy, infrastructure, attractions, profile (Walker, Evans, and Mullagh, 2019b). These factors are described as follows:

- **Resources:** availability and access to local materials, availability of other materials, suppliers and service providers.
- **Professional Development:** availability of learning resources and training, in formats that are suited to small enterprise owners.
- **Cultural Events:** can provide opportunities for sales, dissemination, demonstrations, workshops, profile raising and increasing public awareness about heritage crafts and so on, e.g. festivals, fairs and dedicated markets, folk activities, ceremonies and rituals.
- **Cultural Support Organisations:** in the area – non-profit organisations, large companies and the media can often provide direct benefits to craft makers and their work, such as opportunities for exhibitions, the sale of goods, and an increased visibility and profile for craft practices and products.

- **Policy:** regional policies that help sustain heritage making practices, such as those related to education and training, fundraising, taxation, and intellectual property.
- **Infrastructure:** appropriate infrastructure, such as transport links, an airport, hotels, and restaurants, can indirectly support the viability of maker enterprises.
- **Attractions:** these comprise a variety of elements such as tourist sites, regional cuisine, the natural beauty of the region, and public galleries and museums – all these can significantly enhance business opportunities for small maker enterprises.
- **Profile:** a region's national or international profile is a significant factor in attracting visitors and stimulating the local economy and opportunities for small maker enterprises, such as gaining UNESCO World Heritage Site status.

(Walker, Evans, and Mullagh, 2019b, p.94)

In general, the craft enterprises investigated in central China create products that are associated with local provenance or have regional cultural characteristics. However, this study reveals *resource availability* and *professional development* are two important location-specific factors, which affect local craft enterprises in developing their business. In addition, the past decade has seen the big improvements on *infrastructure* in central China, and a comprehensive transportation network of airports, high-speed trains, highways, subways, and waterways has been built across this region, as well as other fundamental facilities and communication systems. All these infrastructure improvements are vital to the success of craft business and therefore the *infrastructure* as locative factor is important here.

By comparison, the rest of five factors are rather less important, because the revival and re-appreciation of traditional crafts are strongly supported by the Chinese government. These range from offering opportunities for profile-raising via different cultural events (e.g. festivals, ceremonies) to financial support (e.g. training and education, exhibitions). In response to this government's initiative, large companies, organisations, the media, museums and galleries, and academic institutions also provide various forms of support, such as creative collaborations, opportunities for sales, and knowledge exchange.

Two in-depth studies, on the drum-maker A8 and inkstone carver A7, were presented here to show how place-related factors influence craft businesses in this region, and big differences of their rating (as presented in Figures 45 and 46) are mainly reflected in raw materials and professional development factors. In terms of the resources they use in the making and production, locally available materials are given priority, including wood, leather and the clay-like mud from the banks of the Yellow River. However, the drum maker was forced to change from using local leathers to leathers imported from the south of China because changes in local farming practices during the 1990s meant that local water buffalo

were being killed for meat while still young. At this young age, the leather is not yet strong or thick enough for use as drum skins. In addition, regarding professional development, further room for improvement in specific areas have been identified. Referring to the diagrams below, we see that relevant business or training courses would be helpful for the drum maker to better run his website and to do online promotion – Figure 44 shows the drum maker is currently not taking much advantage of the business opportunities offered by the Internet. In contrast, the inkstone carver, who has a highly successful operation, is making good use of all the opportunities offered by 'place', shown in Figure 45. In these two examples, because local government, institutions, media companies and relevant cultural organisations directly benefit craftspeople and their craft practices, their ratings related to three factors, including policy, cultural events and cultural support organisations are high. Also, Luoyang and Zhengzhou are famous for their rich cultural heritage and historic sites, with the ratings of two heritage-based practices in related sectors, including attractions and national/international profile, being especially high.

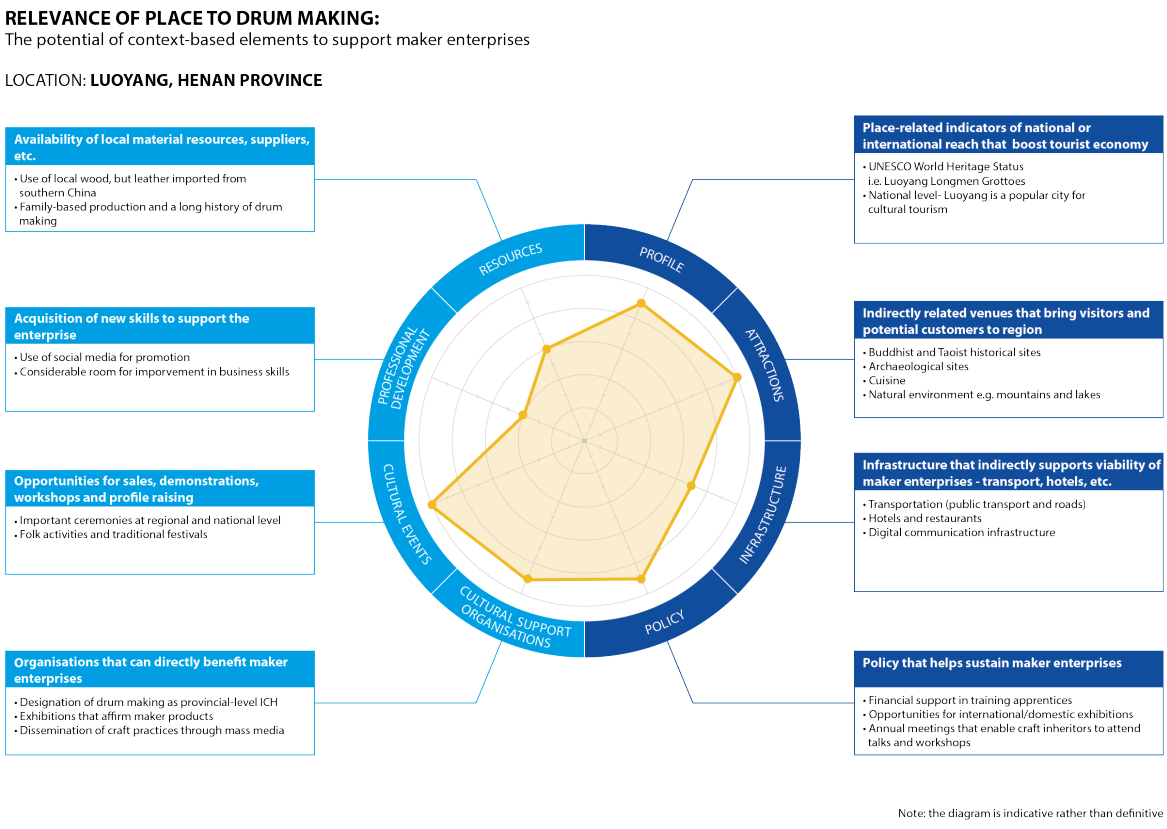


Figure 44 The relevance of place to drum making

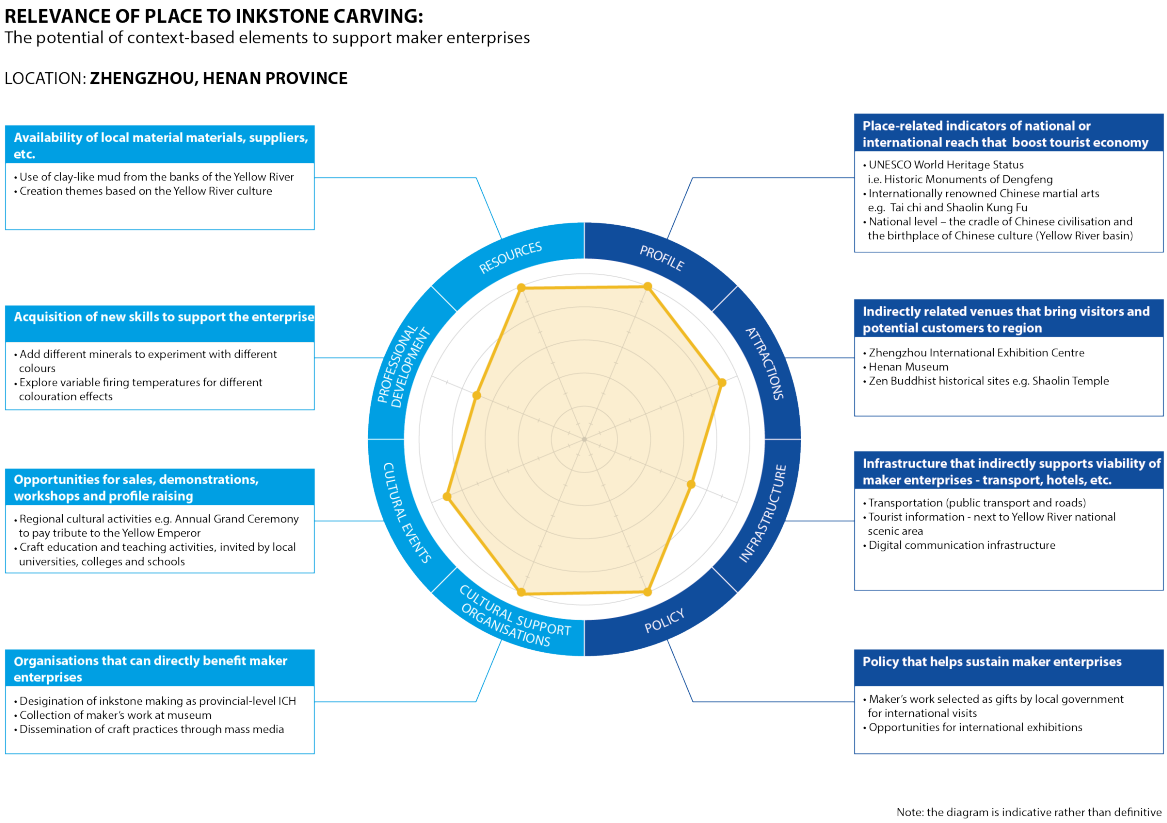


Figure 45 The relevance of place to inkstone carving

7.2.2 Significant personal values that motivate makers' craft business

Craft making practices, particularly traditional ones, are vital to human culture as they are the expression of human values, as discussed in Chapter 2. To understand significant values that motive Chinese makers' craft business, relevant data have been analysed through the lens of Schwartz's Values Circumplex (2012). Accordingly, the values that drive the nature of craft can be understood under four categories, as described below:

- **Innovation:** Openness to the introduction of new techniques and technologies, and novelty and change (e.g. continuous de**velopment of new product types, patterns, product lines and designs).**
- **Conservation:** Continuity and stability of working methods (i.e. a sense of responsibility to place, family- and/or community-based knowledge and skills, and a commitment to their conservation and continuation).
- **Concern for Others – adherence to self-transcending or 'beyond-self' values:** Welfare of people and planet (e.g. care for other people and nature beyond one's own immediate environment), and commitment to community (care for and contribution to those with whom one is in frequent contact, e.g. individual craft makers, neighbours).
- **Self-Advancement – adherence to self-enhancing or 'self-oriented' values:** Recognition by others (e.g. affirmation by peers and organisations through competitions, awards and prizes, selection for exhibitions, gallery representation), and

personal ambition and prosperity (e.g. opportunities for individual development and income generation).

Two craft examples were selected from the central China region to assist in understanding the different values and priorities of makers.

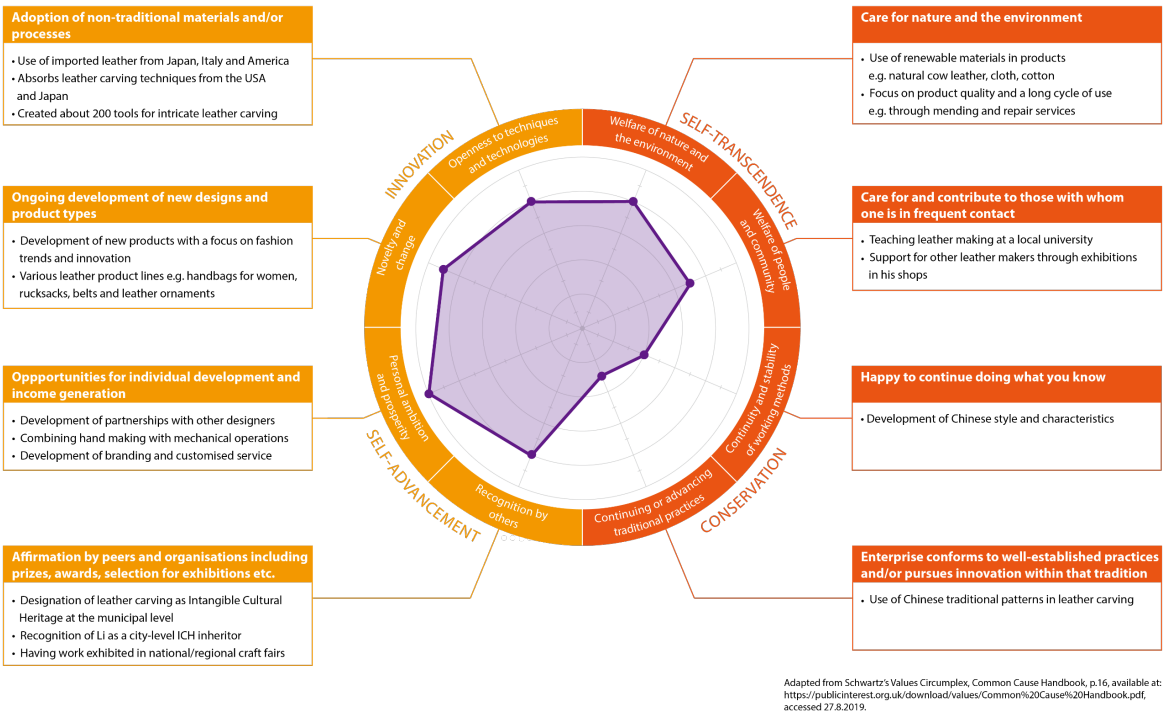
The first is a master leather craftsman A4 who creates prototypical designs, trains apprentices and runs two leather products retail outlets. His products are designed to suit the contemporary market and fashion trends and he focuses on the values of innovation, consumerism and self-expression.

In contrast, the second, a traditional maker of large ceremonial lanterns A8 (used in Chinese New Year festivals) feels a strong responsibility to disseminate knowledge and understanding of the traditions and to continue the skills of traditional lantern making. He feels a sense of responsibility, especially as his family's lantern-making business was included in the list of China's national ICH in 2008. To achieve his goals, he provides many free courses and arranges activities for students at primary, junior and high schools, and universities each year. He has also converted his ancestral home into a lantern museum, which offers free admission (see details in Figures 46 and 47).

It is clear that these two makers are driven by very different values and priorities, which affect how they develop their craft businesses. In the lantern making, there is an emphasis on cultural transmission and heritage education, while the leather maker devotes himself to designing new leather products, and responding to contemporary fashions and customer needs. A comparison between these two craft makers and their businesses is shown in Figure 48, which is a powerful visual indication of their very contrasting values.

VALUES MAP: CRAFT PRACTICES
Characterising the values that underpin the priorities and actions of economic development

NAME: **LEATHER CARVER LI**

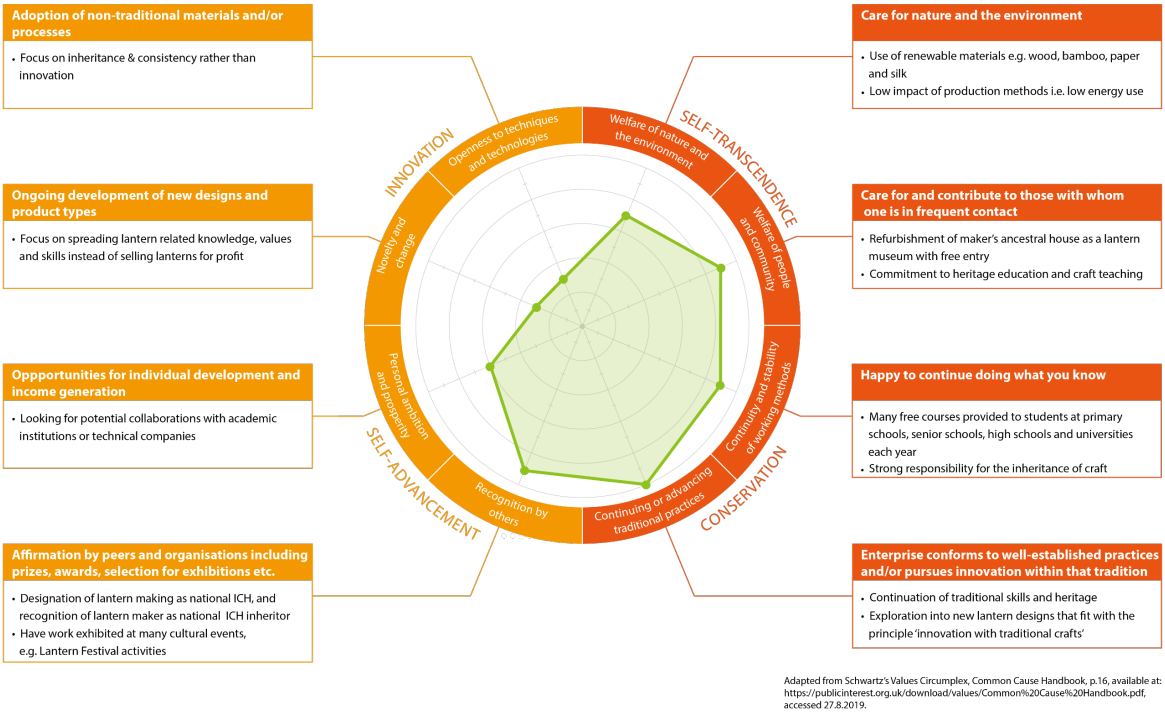


Adapted from Schwartz's Values Circumplex, Common Cause Handbook, p.16, available at: https://publicinterest.org.uk/download/values/Common%20Cause%20Handbook.pdf, accessed 27.8.2019.

Figure 46 Value map – leather carver Li

VALUES MAP: CRAFT PRACTICES
Characterising the values that underpin the priorities and actions of regional enterprises

NAME: **LANTERN MAKER ZHANG**



Adapted from Schwartz's Values Circumplex, Common Cause Handbook, p.16, available at: https://publicinterest.org.uk/download/values/Common%20Cause%20Handbook.pdf, accessed 27.8.2019.

Figure 47 Value map – lantern maker Zhang

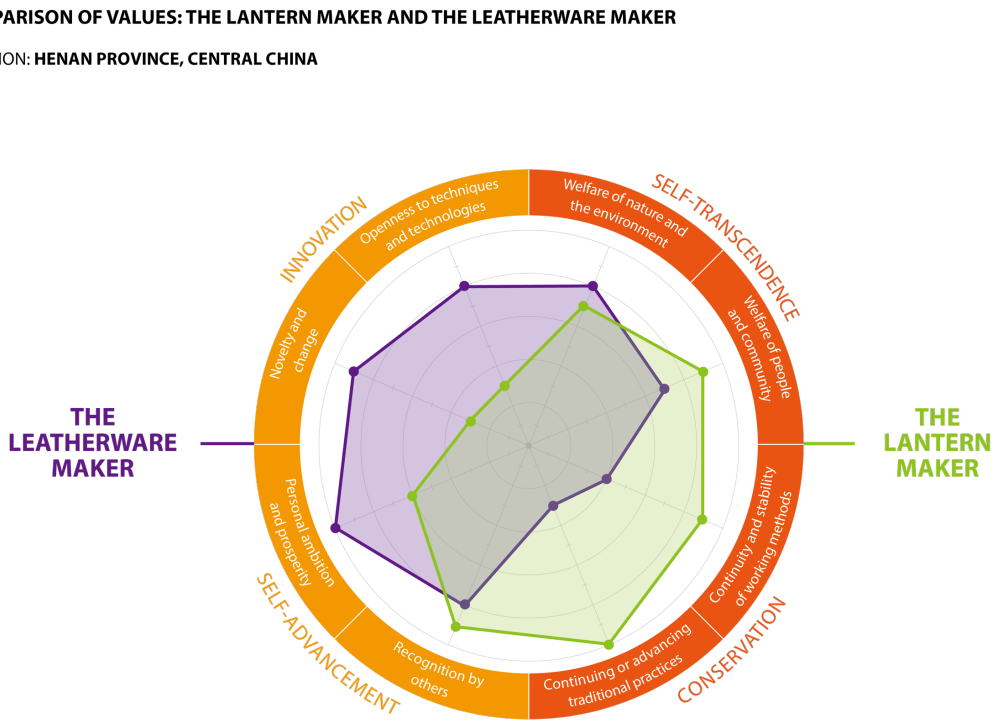


Figure 48 Comparison of values between the lantern maker and the leatherware maker

7.3 Design opportunities

7.3.1 Role of designer in craft development

When asked about what a designer might do to help in craft business, twelve interviewees, including A9, A10, A13, A14, A15, A16, A22, A27, A28, A29, A30, A32, had a very positive attitude to the application of design expertise in their business. These supporters have design/art bachelor degree, or received design training or courses before, or used to collaborate with designers to explore new opportunities.

Specifically, through analysis of craft brands established by A22, A27, A28, A30, A32, and craft enterprises where A15, A16, and A23 work, design was found to play a significant role in their development. Specifically, five areas were identified where design has been involved in the re-examination and re-appreciation of the values embedded in enduring making practices, including:

1) branding and storytelling,
2) the development of new products, designs and patterns,
3) packaging and labelling,
4) heritage teaching and craft education,
5) the creation of cultural and creative hubs.

Examples of these five areas were included in section 6.5. in the previous chapter.

In contrast, for interviewees who have not yet collaborated with designers, when asked about the potential role of design in their small/micro-sized craft enterprises, no one suggested input into the design of the products they produce. Instead, they talked of the problems they faced, which relate to marketing, branding and selling. For example, leather carver A4 who runs two physical stores stated "*I have not yet collaborated with a designer, so I do not know how a designer could help…But I do need a team to work in branding and marketing. With such help, I could put all my efforts into improving my craft skills and developing new products*". In this example, design tends to be understood as a supporting or minor role rather than a major role, and design expertise is expected to provide support in terms of marketing, branding and sales.

When the researcher put forward the concept of 'design for sustainability' and asked interviewees for their opinions, most of them used interchangeable terms such as, "inheritance", "continuity", "longevity", to describe their understandings of "sustainability" within the craft sector. For craft-makers who have been designated as ICH inheritors, they care for the communities in which they live in and work and also attach the importance of cultural transmission of their activities. While for young design-makers, their focus is more on the development of new designs and the exploration of new economic opportunities that ensures the sustainment of enterprises.

Noticeably, within the Chinese context, as many enterprise owners are also acting as ICH inheritors, heritage teaching and craft education are closely related to their craft businesses. In some cases, they are exploring how to convey tradition and culture in craft branding and marketing, and new craft products used for craft education. One typical example includes kite kits designed for teaching kite making, and DIY embroidery kits associated with free online instructional videos for selling. Another direction emerging from this research is how to take advantage of specific technology in the transmission, documentation and education of ICH. For example, a paper lantern maker who has also been designated as a national inheritor of lantern making said he is looking for collaborative opportunities with research institutions or corporations to build a digital library of traditional patterns. There is potential for such ideas to be explored further. Existing literature indicates specific digital technologies have contributed to ICH preservation. For example, the use of serious games (Dagnino et al., 2015), livestreaming (Lu et al., 2019), augmented and virtual reality (Huang,

Xiang, and Li, 2019) have been explored in the transmission, documentation and education of ICH.

7.3.2 Craft-design collaborations

A call for collaboration was repeatedly mentioned by some inheritors in this study. In recent years, many designers have collaborated with craftspeople in order to re-examine and reassess the contemporary value and contribution of heritage-based making practices and are regarded as 'indispensable intermediaries' (Vencatachellum, 2019, p.32). Designers collaborate with craftspeople to develop new opportunities related to their local crafts, often aspiring to develop innovation with tradition.

According to Tung (2012), a co-creation approach was adopted to explore opportunities from design interventions in rush weaving in Taiwan. Six steps were included, 1) getting to know local resources, 2) identifying, 3) sketching, 4) discussing, 5) prototyping and 6) presenting. A similar approach is adopted by design-makers in this study, but the design process simplified to three steps within this study: 1) sketching, 2) prototyping and 3) presenting. Because these designers are also highly skilled craft-makers, the early stages – investigation into local resources, knowledge, and craft skills, are often not necessary. Instead, they prefer to begin with sketching. As an effective visual method, sketching enables designers to quickly generate ideas, and it also opens doors for better communication between designers and potential clients. Followed by this, product testing is seen as an important phrase for prototyping, and feedback is gathered from targeted users for further improvements. For example, A16 runs a chat group that comprises loyal consumers of his brand, when new products are developed, product information is sent to that group, and a specific discount is given in order to invite them for product testing.

According to Sanders and Stappers (2008), for craft-design collaborations, the designer is suggested to serve 'the role of a facilitator', assisting craftspeople in the preservation, development and marketing of their crafts. Regarding this suggestion, enterprise owners A15 and A27 gave their different opinions. In their cases, their collaborated craftspeople live in remote villages, and they lack understandings of mainstream markets and proper marketing strategies. Therefore, their designs cannot get access to contemporary consumers. Through knowledge change with designers, they can be further empowered and then develop new products to meet modern market needs.

However, some design interventions have been criticised by researchers because local artisans' voices have been neglected. When this occurs, craftspeople become mere producers of products that have become severed from their original cultural context and roots (Bissett-Johnson and Moorhead, 2018; Murray, 2010; Vencatachellum, 2019, p.32). This problem was confirmed by the enterprise owner A27, stating "*many design studios hand over their drawings to craftspeople for production*" (interview with him, 2019). Impressively, the interviewed brand owners within this study have realised this problem and adopted different strategies to avoid being treated as mere producers. The most common strategy is to ask craftspeople for their opinions on new designs, and then make improvements according to their feedback on craft technique. Also, to protect the maker's creativity, enough room has to be given for their creative ideas, input and skills, especially for their knowledge about local traditions and culture (e.g. traditional designs, patterns, etc.). A good example of this is A16 and her design team. When developing new fabrics for local tourism, the pattern layouts are designed by the research team, but the choice of traditional patterns is decided by the makers themselves (interview with A16, 2019).

7.3.3 Potential design contributions for sustainability and viability

To better identify potential design contributions for sustainability in different craft fields, all the enterprises and making practices visited were classified based on craft value and production cost. Specifically, two factors - value types and ICH value designation - were considered for the examination of product value. Value types are loosely categorised as practical value for daily use, symbolic value (e.g. ceremonial, spiritual, religious, or cultural meanings), and aesthetic value, for art work. Compared with utilitarian products, crafts which bear symbolic meanings or aesthetic meanings are normally perceived as high-value products. Similarly, because strong support is provided by central/local governments to protect, disseminate, and raise the profile of ICH crafts, their socio-cultural values are better known by the public. In addition, material price and skill level, as two main components, are used to identify the production costs of twenty-six craft practices. Based on such value/production cost profiles, craft practices investigated in the region of central China can be classified under four categories,

- **Lucrative products** (high perceived value but associated with moderate or even low production cost)
- **Exclusive products** (high perceived value and high production cost)

- **Everyday products** (low perceived value, made from low-cost materials using low-level skills)
- **Unviable products** (high production cost but with low perceived value, primarily handmade objects which have been largely replaced by mass-produced alternatives)

Lucrative products have a high perceived value even though they may be made from relatively low-cost materials, employ low or moderate skills in their manufacture, or be relatively quick and easy to complete. Eleven of twenty-six craft practices investigated in central China are classified under this category. Examples include textiles, leatherware, kitchenware and the New Year woodblock prints, see details in Table 15. Noticeably, five contemporary craft brands discussed in last chapter are all included in this category. For example, Shanshe is an online brand and supplier of wooden kitchen utensils, and its owner trained as a designer. Under the strong influence of his father, who is also a provincial-level ICH inheritor of wood carving, he is devoted to integrating traditional craftsmanship into the brand. He develops the new designs, which he prototypes himself. After this, he communicates with the craftspeople, and they then produce enough stock for online selling. Similar collaboration modes can be seen in other craft businesses, brands and enterprises. For this category of lucrative products, design can contribute by:

- Helping to ensure the perceived value is maintained through effective, contemporary branding and packaging; effective communication of the product's provenance, connection to place, cultural and/or historical significance; and by ensuring its contemporary usefulness, cultural relevance or aesthetic qualities.
- Identifying and developing appropriate processes and product design variations to ensure the product's continued relevance and viability.

Exclusive products – in this case, the materials used for making are relatively expensive, and the hand making process is time-consuming and requires high-level skills. Typical examples of this include four musical instruments we examined within this study, including stringed instruments Ruan and Qin, the bamboo wind instrument Ruan, and the ceremonial drum. Musical instrument makers all have a high level of professional expertise, accuracy and attention to detail, and they work for the instrument manufacturing company or run their own shop. In addition, jewellery, and large carved crafts, such as Buddhist sculptures or wall reliefs, are also included in this category. Within this group of exclusive products, design can contribute by:

- Helping to ensure the perceived value is maintained, as in the previous example, through effective branding and packaging; effective communication of the product's

provenance, connection to place, cultural significance and/or historical significance; and by ensuring its contemporary usefulness, cultural relevance or aesthetic qualities.

- Exploration and development of new product opportunities – adaptation of designs to contemporary needs and tastes, development of new markets, and representation of the product to new audiences.
- Ensuring production processes are efficient and effective in order to reduce production costs where possible, without eroding the product's associated traditions and legacy.

Everyday products include bamboo basketry, straw sandals and iron farm tools and knives. These are made from low-cost materials using relatively low level skills. For this category, design can contribute by:

- Helping to increase the perceived value of such products through effective branding, packaging and storytelling in order to be able to command a more viable price point.
- Developing a range of complementary products to create a product range with a similar aesthetic and a well-branded presence.

Unviable products include paper oil umbrellas, paper lanterns and paper kites. These all employ high-level skills and are relatively difficult and time-consuming to make. Consequently, they have been largely replaced by mass-produced alternatives. In addition, objets d'art such as decorative lacquer objects, are regarded as unviable products, because these generally appeal to niche markets and are frequently not traditional. This last object category needs to be further explored. In the case of unviable products, design could be used to:

- Develop new products that employ traditional skills, techniques and materials but reinvent the product to suit a contemporary market.
- Help increase the appreciation and perceived value of the product(s) through branding, packaging and storytelling in order to be able to command a more viable price point.
- Ensure production processes are efficient and effective, employ mechanical techniques where appropriate and ensure hand skills are used for the intricate finishing work only, thereby reducing production costs wherever possible.
- Catalogue and archive the practices, techniques and tools (including by video) so that if the craft does decline and disappear it could, potentially, be revived in the future.

Figure 49 shows these four categories of product types. In each of the quadrants, opportunities are identified where design might make a useful contribution to a particular product category.

DESIGN OPPORTUNITIES:
Potential for Designers to Contribute to Maker Enterprises Based on Value/Cost Profile

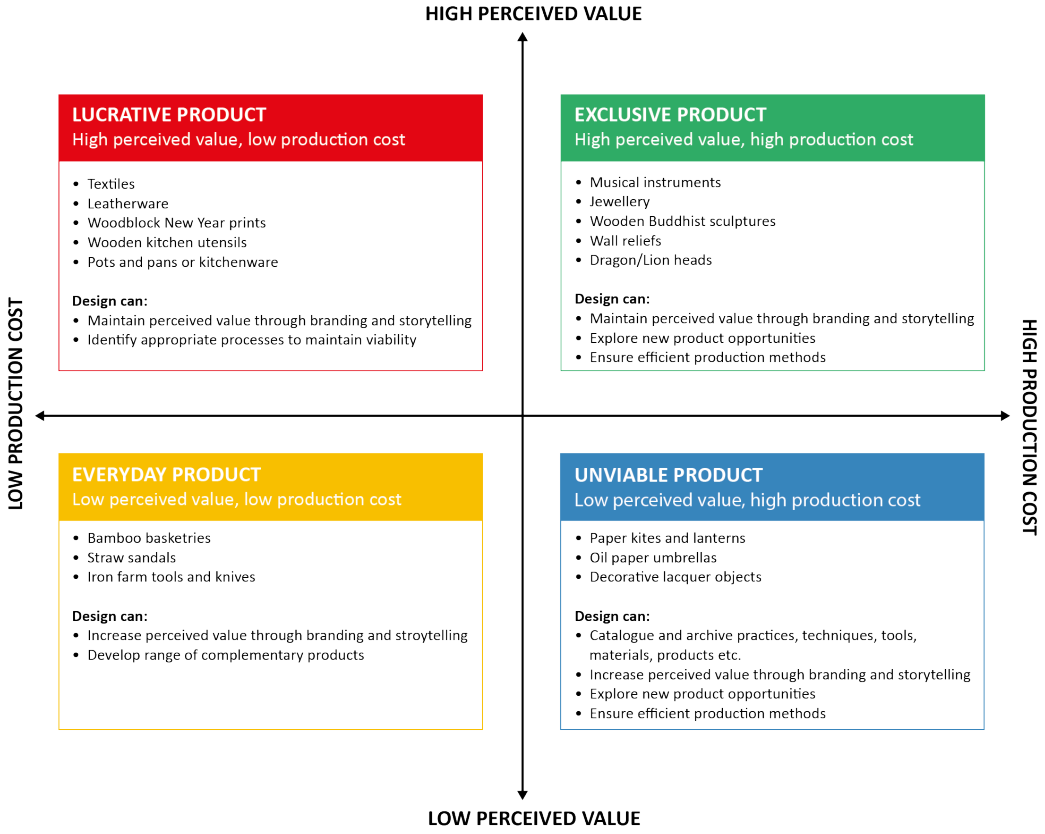


Figure 49 Potential for designers to contribute to maker enterprises in central China

Table 15 Craft product category based on product value and production cost

Product category	Craft category	Craft Making	Product	Product value	Production cost
Lucrative product - High perceived value - Low/moderate production cost	Textiles	Indigo dyeing	Hand-dyed products, e.g. curtains, duvet cover sets, cushion cover sets	High perceived value - Primarily utilitarian products; - Without ICH designation, but the maker's products have been well promoted through word of mouth via the social media WeChat.	Moderate-cost production - Use of plants/flowers for dyeing and cotton fabrics from the local area; - Moderate-level skill. - Numerous exploratory experiments on patterns
		Cotton/linen weaving	Branding, Hand- and machine-woven scarves and socks with local ethnic patterns	High perceived value - Fabric design for daily use with traditional patterns of minority group; - National-level ICH designation; - As a typical craft business supported by local government and a design team from a local university.	Moderate-cost production - Use of low-cost raw materials - cotton thread - Two product lines: high-end hand-woven products and mass-produced fabrics with traditional patterns Collaboration with local weavers
		Embroidery	Traditional and contemporary embroidery kit products with free online instructional videos	High perceived value - Primarily practical use; - Few artistic works; - Provincial-level ICH designation.	Moderate-cost production - Cotton thread as low-cost material Moderate-level skill - Limited unique embroidery art works - time-consuming; - DIY kits for amateur embroidery are mass-produced, but its associated teaching video production is time-consuming; - Collaboration with local craftspeople.
		Cotton fabric sewing	Traditional hand-sewn products e.g. lion-head shoes, baby bibs	High perceived value - Primarily practical value; - National-level ICH designation; - Locally famous folk art.	Moderate-cost production - Use of low-cost raw materials - cotton thread; - Moderate-level skill.
		Knitting	Traditional hand-knitted fabrics	High perceived value - Fabric design for daily use with traditional patterns of minority group; - National-level ICH designation; - With design support from a local university.	Moderate-cost production - Use of low-cost raw materials - cotton thread; - Moderate-level skill; - Collaboration with local craftspeople.

	Carved artefacts	Wood carving	Hand-carved wooden art objects, Branded wooden utensils	High perceived value - Primarily utilitarian products with limited art objects; - Collaboration with carvers who acquire craft skills designated as provincial-level ICH; - Creative craft brand; - Over 170,000 followers on Taobao.	Moderate-cost production - Use of imported wood; - Combination of mechanical operations and simple hand carving; - Collaboration with local craftspeople
		Intricate leather carving	Leatherware, e.g. rucksacks, bags and belts	High perceived value - Primarily practical value; - City-level ICH designation; - Good reputation through word of mouth.	Moderate-cost production - Imported leather with moderate price; - Moderate-level skill; - Combination of mechanical operations and hand carving.
		Wood carving	Traditional woodblock New Year prints	High perceived value - Primarily symbolic value related to Spring Festival; - Provincial-level ICH designation; - Well-known historic brand.	Moderate-cost production - Wood, rice paper and natural pigments which are not expensive; - Moderate-level skill; - Batch production with a set of carved woodblocks.
	Metal Crafts	Metalsmithing	Branding, hand-made brassware and iron products (e.g. incense holders, tea sets, plates, bud vases)	High perceived value - Primarily utilitarian products and few art objects; - Without ICH designation, but craft brand has been recommended and promoted by several famous craft markets/festivals/online platforms.	Moderate-cost production - Use of some recycled materials; - Moderate-level skill; - Use of hand tools and mechanical operations; - Collaboration with local craftspeople.
		Blacksmithing	Branding, hand-made cooking pots and pans	High perceived value - Primarily utilitarian products; - City-level ICH; - Creative craft brand.	Moderate-cost production - Use of recycled cast iron; - Moderate-level skill; - Use of hand tools and mechanical operations; - Collaboration with local craftspeople.
	Lacquer crafts	Lacquer painting	Lacquerware	High perceived value - Primarily practical value; - City-level ICH designation; - Long traditions of lacquer work.	Moderate-cost production - Lacquer as moderate-cost material; - Moderate-level skill; - Time-consuming making process.
		River clay carving	Sculpture and inkstone from	High perceived value - Primarily symbolic value; - Provincial-level ICH;	High-cost production - Specific clay-like mud from the banks of the Yellow River;

Exclusive product - High perceived value - High production cost	Carved artefacts		local clay-like mud	- Culture-specific work: Yellow River culture.	- High-level skills: River clay firing and carving Difficult and time-consuming process; - Experiments with new techniques and colours.
		Wood carving	Wooden Buddha statues/sculptures	High perceived value - Primarily symbolic value – Buddhist religious meaning; - Provincial-level ICH designation; - Good brand reputation.	High-cost production - Use of local camphor wood; - High-level skill; - Time-consuming intricate wood carving; - Use of electric tools
	Musical instruments	Drum making	Drums for folk activities and ceremonies	High perceived value - Primarily practical value; - Provincial-level ICH designation; - Good reputation through word of mouth.	High-cost production - Use of leather imported from southern areas and local wood; - High-level specific skill; - Complicated and time-consuming making process
		Lusheng making (Chinese reed-pipe wind instrument)	Lusheng played within local Kam ethnic group	High perceived value - Primarily practical value; - National-level ICH designation; - Unique musical instrument within Kam ethnic minority.	High-cost production - Use of local bamboo; - Time-consuming making process; - High-level specific skill.
Exclusive product - High perceived value - High production cost		Ruan (Chinese plucked string instrument) making	Musical instrument: Ruan	High perceived value - Primarily practical value; - Provincial-level ICH designation; - Typical traditional Chinese musical instrument; - Well-known brand with good reputation	High-cost production - Use of Tung tree from the local area; - Time-consuming production; - Collaboration between several craft makers to finish a Ruan; - High-level specific skill.
		Guqin (Chinese Zither) making	Musical instrument: Guqin	High perceived value - Primarily practical value; - City-level ICH designation; - Expression of ancient Chinese philosophy, e.g. Yin and Yang.	High-cost production - Use of Tung tree from the local area and lacquer; - The maker makes less than ten Qin in a year; - High-level specific skill; - Complicated making process.
	Metal crafts	Silversmithing	Traditional and contemporary silver accessories/silverware	High perceived value - Primarily aesthetic value; - National-level ICH designation; - Use of unique patterns of Miao minority.	High-cost production - High-cost silver as material; - High-level skill - intricate silver carving.

	Paper crafts	Chinese Dragon/lion head making	Hand-made dragon/lion heads for Chinese New Year or folk activities	High perceived value - Culturally symbolic meaning; - National-level ICH designation; - Used for traditional festivals and important ceremonies.	High-cost production - Use of bamboo and a specific type of rice paper - High-level skill; - More than 10 complicated making steps.
Everyday product - Low perceived value - Low/moderate production cost	Metal crafts	Blacksmithing	Iron products for household/ agricultural use (e.g. knives, axes and sickles)	Low perceived value - Utilitarian product for everyday use; - County-level ICH designation.	Moderate-cost production - Use of recycled cast iron; - Moderate-level skill; - Family-based small-scale production.
	Bamboo/ Straw crafts	Bamboo carving/ weaving	Hand-woven bamboo basketry	Low perceived value - Utilitarian product; - Largely replaced by cheap plastic bags.	Low-cost production - Use of local bamboo; - Relatively quick to make
		Straw weaving	Hand-woven straw sandals and flip-flops	Low perceived value - Utilitarian product; - Outdated design.	Low-cost production - Use of cheap natural straw; - Easy and quick to make.
Unviable product - High production cost - Low perceived value - Old-fashioned product or their traditional use has been replaced by alternatives	Paper crafts	Kite making	Old-style kites and miniature kites framed by collectors as art pieces	Mass-produced plastic kites have been largely replaced traditional paper kites	High-cost production - Numerous making steps; - Time-consuming hand production.
		Lantern making	Traditional paper lanterns	Mass-produced lanterns have largely replaced traditional paper lanterns	High-cost production - Numerous making steps; - Time-consuming hand production.
		Oil-paper umbrella making	Traditional oil-paper umbrellas, branding	Mass-produced plastic umbrellas have largely replaced traditional oil paper umbrellas	High-cost production - Numerous making steps; - Time-consuming hand production.
		Lacquer painting	Decorative panels	Lacquer painting is often used for small containers, tableware, and larger objects such as furniture. Decorative lacquer panels, as a new niche market, need to be further explored	High-cost production - Time-consuming production.

7.4 Summary

This chapter has discussed the research findings from this study in the context of the research question and objectives, in order to reveal what these findings mean to sustainability, place and values, and design.

The craft practices, businesses, and activities investigated in this study were examined through the four interrelated elements of Walker's *Quadruple Bottom Line of Design for Sustainability* (7.1), in order to accomplish the research objectives set in Chapter 5, namely – *to determine the relationship of traditional craft practices to sustainability within the Chinese context*. Four domains were identified that revealed strong connections between the practices investigated and sustainability, specifically

- place-based practices that taken into account their environmental implications;
- the embodiment of intrinsic human values, in the form of fulfilling, creative work that contributes to community, tradition and cultural heritage;
- socio-cultural continuance, through local-scale, culturally significant practices; and
- economic viability of the maker enterprise.

These four areas help validate the four research propositions developed from the literature (see detailed description in Table 16).

Table 16 Findings that support the four research propositions

Aspect of sustainability	Description of the findings	Chapter Sections
RP1: Traditional crafts are place-based and serve utilitarian needs while minimising negative environmental impact.		
Practical meaning and environmental implications	• Craft practices investigated in China embody sustainable principles through consideration of the product's functionality, use of renewable materials, and adoption of small-scale production.	6.3 7.1.1
	• Craft makers are aware of the environmental impact of their practice. Efforts are made to improve environmental performance by using less polluting energy source and natural materials.	6.2.3 7.1.1
	• Craft makers consider the product's longevity, and mending/repair and customised services are provided by many interviewed craft makers.	6.2.3; 6.3.1 6.4.3; 7.1.1
RP2: Important context-related social and ethical knowledge and practices, which are vital to cultural continuance, are rooted in traditional craft practices.		
	• Craft practices and objects examined in this study were distinctive to the local community and culture, which contributes to a sense of belonging and cultural identity.	6.1.2 7.1.2
	• Formal and informal supports are provided by enterprise owners to collaborated craft makers, and such supports are important to craftspeople's personal wellbeing and social life.	6.1.2 7.1.2

Social meaning	• Many craft enterprises also shoulder social responsibility and promote social inclusion through their projects or activities. For example, some of them support local vulnerable groups and help empower crafts women in rural regions.	6.3.2 7.1.2 7.2.1
RP3: Traditional crafts convey important human values, including moral rectitude and conscience, a sense of contribution to community, and personal wellbeing rooted in inner values and/or spiritual fulfilment.		
Personal meaning	• The values and priorities of those engaged in traditional making practice tend to fall mainly within the cluster of intrinsic values and relate to self-transcendence values of benevolence (in relation to family and community), universalism (broader concerns for people and environment), and conservation (tradition and continuity).	6.2.1; 6.2.2 6.2.3;7.1.3 7.2.2
	• In this research, craftspeople generally report a high level of personal satisfaction and well-being. This arises especially from the completion of an artefact, a sense of achievement from external recognition and a sense of fulfilment from craft making and teaching activities.	6.1.3 7.1.3 7.2.2
RP4: Traditional hand-made crafts are economically beneficial to contemporary society, and their focus on high quality and product life cycle are compatible with contemporary understandings of sustainable consumption and production.		
Economic viability	• In China, craft activities are situated within WenChuang ChanYe (i.e. culture-related creative industries). This direction attaches the importance of cultural aspects of craft practices, but also integrates craft sector into creative industries, contributing to economic growth.	6.1.2 7.1.4
	• Various kinds of supports are provided by the government to boost craft development, especially through the revival and the safeguard of traditional craft heritage within China's ICH Programme.	6.1.1 7.1.4
	• Craft economy is also closely connected with tourism development within the Chinese context, and new economic opportunities are explored through innovative designs and the use of ecommerce trends (e.g. livestreaming).	6.1.2 6.5.6 7.1.

As shown in section 7.2, discussions on connections to 'place' and 'people' revealed the essence of craft practices, and this helps answer the main research question – How design can contribute to the long-term continuation of traditional craft practices? The motivations of makers for developing their craft business indicate two different directions: 1) the transmission, documentation and education of ICH, 2) innovation within traditional boundaries.

For craft makers who have been designated as ICH inheritors, their focus can be identified in four key areas:

1. the devotion to cultural transmission driven by intrinsic values;
2. the making practices in China's Intangible Cultural Heritage;

3. the craft objects that have emerged from making practices, which are part of China's Intangible Cultural Heritage; and
4. in those cultural activities, ceremonies, rituals and performances enabled by these craft products.

For craft makers without ICH recognition but with design/art backgrounds, they put greater emphasis on the development of new product types, patterns, product lines and designs that suit contemporary needs, tastes and preferences; marketable opportunities brought by new techniques (e.g. social media platforms, livestreaming, etc.); and conveyance of craft values through branding and storytelling. These areas are of particular relevance to both policy and practice as well as advancing scholarly thought in the fields of ICH, craft and design.

Section 7.3 discussed two design-related research aims – *to investigate and delineate the role of design in relation to Chinese craft revival activities,* and *to identify areas where design might improve the viability of the enterprise and to ensure the effective implementation of sustainability principles*.

Noticeably, many interviewees expressed a need for craft-design collaborations. Design supports are expected to mainly provide in terms of branding and storytelling, product design, and marketing. According to product value and production cost profile, all craft objects investigated in this study are further classified as four types. For craft enterprises that are grouped into the categories of *lucrative* and *exclusive products*, a common point is how to better convey to potential customers the product's provenance, connection to place, and its specific symbolic significance. This raises the potential for design visualisation of the making process, materials and skills in craft branding and marketing. For crafts that are categorised as *everyday products*, it is vital to increase their perceived value through effective branding, packaging, and storytelling in order to be able to command a more viable price point. Potential craft-design collaborations could focus on the development of complementary product types in order to create a product range with a coherent aesthetic and a well-branded presence. For the remaining category of *unviable products* that have a low perceived value but high production costs, the question of how to position such products in today's market is the key to future development. But this also requires both craft makers and designers to be very careful when introducing changes and innovations if they are to uphold the values and priorities of cultural traditions. As interviewees A10 and A12 stated, when collaborating with designers, they are encouraged to satisfy contemporary needs while remaining true to tradition.

Specifically, in the Chinese context, this chapter has highlighted several specific areas where the designer may collaborate with Inheritors in the development and sustainment of cultural aspects of traditional heritage crafts as they continue to evolve. These include design opportunities for advancing innovation within traditional boundaries, heritage teaching and craft courses, the conveyance of tradition and culture in craft branding and marketing, and the use of specific technology in the transmission, documentation and education of ICH.

The next chapter presents the conclusions of this study. First, it attempts to answer the research question of this study. Second, it describes the contribution to knowledge. Third, it discusses the limitation of this study. Fourth, it suggests future research directions; and finally, it provides a final summary of this thesis.

CHAPTER 08

Conclusions
Original Contribution to Knowledge
Limitations & Recommendations

CHAPTER 8: Conclusions, Original Contributions to Knowledge, Limitations and Recommendations

8.0 Introduction

This chapter provides general conclusions to the body of research covered in the thesis; it is structured as follows:

- An overview of the research aim and findings and answers to the main research question and also discusses the findings in relation to three research objects.
- The original contribution to knowledge of this research project.
- The limitations of the study, particularly in terms a) the validity of the findings and b) their generalisability.
- Recommendations for future work on this topic.
- A final summary of this thesis.

8.1 Overview of the research findings

This study is centred on the main research question:

- **RQ**: *How can design make a meaningful contribution to the continuation of traditional craft practices in the Chinese context, in relation to the core principles of design for sustainability, as described in Walker's QBL?*

Three research objectives were set to drive the research project, and outlined the specific steps to answer the main research question, namely:

- **OB1**: *determine the relationship of traditional craft practices to sustainability in the Chinese context.*
- **OB2**: *investigate and delineate the role of design in relation to Chinese craft revival activities and identify sustainability-related issues;*
- **OB3**: *on a case by case basis, identify areas in which design can contribute to the long-term continuation of traditional craft practices.*

This section individually considers research findings in respect of three research objectives, and then provides the answers to the research question.

8.1.1 Relationship of craft practices to sustainability in the Chinese context

This section summarises the findings related to the first research objective – *to examine the relationship of traditional craft practices to sustainability in the Chinese context.* A review of the literature (Chapter 2 and 3) resulted in understandings of craft practices and sustainability. This enabled the development of a key concept within this study – 'crafting sustainability', i.e. traditional making practices as a way addressing the contemporary understanding of sustainability. Four research propositions were further formulated to

provide a theoretical base. The findings from the empirical fieldwork demonstrate that traditional craft practices investigated in central China embody *Walker's Quadruple Bottom Line of Design for Sustainability* in the following four respects:

1. Craft businesses and practices investigated in central China are normally place-based, context-related and serve practical purposes while taking into account environmental impacts.
2. Important context-related social and ethical knowledge and practices, which are vital to cultural continuance and community development, are rooted in craft enterprises and craft practices in central China.
3. Important human values are conveyed through traditional crafts investigated in China, including a sense of responsibility to place, family- and/or community-based knowledge and skills, and a commitment to their conservation and continuation, and personal wellbeing rooted in inner values and/or spiritual fulfilment.
4. Handmade crafts are economically beneficial to local development, which make up the culture-related creative industries and contribute to economic development. Traditional craft heritage is also seen as a resource to develop the local tourism industry.

The findings from both theoretical and empirical research demonstrate the important links between traditional craft practices and sustainability. Craft practices and craft enterprises investigated in central China, in many respects, embody the principles of Walker's *Quadruple Bottom Line of Design for Sustainability*, as listed in Table 17. Informed by such connections at four levels, some sustainability-related problems were also identified, as presented in Table 18.

Table 17 Relationship of craft practices to sustainability in the Chinese context

Aspect of sustainability	Description of the key findings from the literature review	Description of the key findings from the empirical fieldwork
Finding 1: Most craft practices investigated in central China embody core principles of sustainability in terms of 1) practical meaning and environment implications, 2) social meaning, 3) personal meaning, and 4) economic viability, as described in Walker's QBL.		
Practical meaning and environmental implications	Environmental considerations are inherent in craft practices, mainly reflecting in "the application of skills and material-based knowledge to relatively small-scale production" (Adamson, 2010, p.3). Locally natural materials selected for making traditional crafts are often renewable; Handmade process and locally appropriate small production are also often adopted, which generates less energy consumption. Such context-based considerations are supported by the relationship between sustainability and the particularities of place (Van der Ryn and Cowan, 2007, p.57-81).	• Craft practices investigated in China embody sustainable principles through consideration of the product's functionality, use of renewable materials, and adoption of small-scale production. • Craft makers are aware of the environmental impact of their practice. Efforts are made to improve environmental performance by using less polluting energy source and natural materials. • Craft makers consider the product's longevity, and mending/repair and customised services are provided by many interviewed craft makers.
Social meaning	Traditional craft practices are normally distinctive to the local community and culture, which contributes to community belonging and cultural identity. Some crafts take on important symbolic significance as they are used in traditional celebrations, social ceremonies and cultural festivals. Many practices also have a long heritage of intergenerational cultural transmission. Not only craft skills, but also socio-cultural traditions, beliefs and meanings have been passed on from one generation to the next.	• Craft practices and objects examined in this study were distinctive to the local community and culture, which contributes to a sense of belonging and cultural identity. • Formal and informal supports are provided by enterprise owners to collaborated craft makers, and such supports are important to their wellbeing and social life. • Many craft enterprises also shoulder social responsibility and promote social inclusion through supporting vulnerable groups and empowering crafts women in rural regions.
Personal meaning	Making good is much important than making quick. This making philosophy convey makers' belief and virtue, such as responsibility, persistence and love. With reference to Schwartz's research on human values (2012), the values and priorities of those engaged in traditional making practices tend to fall mainly within the cluster of intrinsic values, and intrinsic values are positively associated with sustainable purchasing and behaviour. Positive aspects	• The values and priorities of those engaged in traditional making practice tend to fall mainly within the cluster of intrinsic values and relate to self-transcendence values of benevolence (in relation to family and community), universalism (broader concerns for people and environment), and conservation (tradition and continuity). • In this research, craftspeople generally report a high level of personal satisfaction and well-

	associated with creative processes, such as self-actualisation, fulfilment and happiness, show strong associations between these practices and personal well-being.	being. This arises especially from the completion of an artefact, a sense of achievement from external recognition and a sense of fulfilment from craft making and teaching activities.
Economic viability	As consumers value the perceived authenticity, uniqueness and originality of craft objects, there is a growing market for both traditional crafts and contemporary crafts. Various supports are also provided by governments, institutions, companies and universities to develop craft sector as important parts of cultural and creative industry.	• In China, craft activities are situated within WenChuang ChanYe (i.e. culture-related creative industries). This direction attaches the importance of cultural aspects of craft practices, but also integrates craft sector into creative industries, contributing to economic growth.
		• Various kinds of supports are provided by the government to boost craft development, especially through the revival and the safeguard of traditional craft heritage within China's ICH Programme.
		• Craft economy is also closely connected with tourism development within the Chinese context, and new economic opportunities are explored through innovative designs and the use of ecommerce trends (e.g. livestreaming).

Table 18 Sustainability-related problems identified in current craft practices

Problem	Description
Finding 2: Some concerns have been also identified in relation to sustainability, which reveals the potential of design for sustainability for further improvements.	
Environmental aspect of sustainability	• In some cases, local materials are replaced by imported materials, which is often less environmentally sustainable because of the long-distance shipment.
	• In specific craft fields in which the production is energy intensive, the performance of 'environmental sustainability' is not good. For example, in the cases of ironware making, there is a need for firing and casting, and burning coal releases toxic elements and particulates, leading to air pollution.
	• In the case of kite making, silk and paper in traditional kites have been replaced by waterproof plastic sheeting, which makes them more robust and longer lasting but also contributes to the problems associated with plastic waste.
Personal and social aspects of sustainability	• Contemporary craft enterprises and brands investigated in this study is becoming influenced by modern markets and is re-shaped by modern manufacturing technologies, there is a trend that craft objects turn to luxury and fashionable goods, which caters to consumers' externally-oriented goals and extrinsic values. Substantial evidence has shown that these extrinsic values are negatively associated with personal well-being and socially responsible behaviours.
Economic aspect of sustainability	• Technological improvements can be a double-edged sword for craft development. This brings new opportunities for growth, such as selling through e-commerce platform and livestreaming. But how to better convey traditional values connected with place and heritage via such online platforms needs to be considered and developed further.

8.1.2 Role of design in Chinese traditional crafts revival activities

The following section discusses the second research objective – *to investigate the role of design in relation to Chinese crafts revival activities.* Based on the findings from section 4.1.2, with a recent, dramatic 'crafts fever', Chinese society is witnessing an increasing number of traditional craft revival activities, and design has been involved in the re-examination and re-appreciation of the values embedded in enduring making practices, mainly in three areas: 1) digital communication (e.g. craft-related selling website/mobile application, social media); 2) product and packaging design; and 3) branding. Combining with findings from empirical fieldwork, several areas in which design has made or can make contributions are identified, as shown in Table 19.

Table 19 Role of design in relation to Chinese crafts revival

Design directions	Description
Finding 3: This research has identified several areas in which design has helped in supporting traditional crafts, knowledge, and craftsmanship, including: 1) branding and storytelling, 2) the development of new products, designs and patterns; 3) packaging and labelling, 4) heritage teaching and craft education, 5) the creation of cultural and creative hubs.	
Branding and storytelling	• This is a key contribution of design, in ways similar to the approach of many examples presented in this study, which can be achieved through building distinctive brand identity for the enterprise and the products, telling buyers stories about the relevance of crafts to heritage, place, and people via websites, brochures, photography, and social media.
Product/Pattern design	• Design is used to make appropriate and desirable contributions to developing new designs, mainly in three terms, including 1) the adaption of products to contemporary needs and development, 2) the exploration of new market, and 3) the representation of traditional patterns.
Packaging and labelling	• Although there are different opinions on packaging for craft objects, in some cases, package design and associated labelling are found to enhancing brand identity.
Heritage teaching and craft education	• Within the Chinese context, as many enterprise owners are also acting as ICH inheritors, heritage teaching and craft education are closely related to their craft businesses. In some cases, they are exploring how to convey tradition and culture in craft branding and marketing, and new craft products used for craft education.
Creation of cultural and creative hubs	• In keeping with government's policy on the development of cultural and creative tourism, design expertise has been used to turn crafts into memories and mementos, souvenirs and gifts that can be offered to tourists for participating in local tourism, in order to satisfy their needs for original, unique and exclusive objects. This also contributes to local economic growth and tourism development.

8.1.3 Potential for designers to contribute to the continuation of traditional craft practices

This section discusses the third research objective and provides the answer to the main research question of this study: *How can design make a meaningful contribution to the continuation of traditional craft practices, in relation to the core principles of design for sustainability?*

This study reveals two main design directions existing in local craft development: 1) the documentation, education, and transmission of craft knowledge/skills, beliefs, and traditions; 2) the exploration of new economic opportunities that ensures the sustainment of enterprises. For craft-makers who are also recognised as ICH inheritors, heritage teaching and craft education are closely related to their craft business. Specially, a direction emerging from this study is how to take advantage of digital technologies in protecting and regenerating

traditional craft heritage. For young enterprise owners, a co-creation approach is currently adopted by them to explore opportunities for the development of new designs.

The total number of craft practices investigated in this study were twenty-six, covering seven craft categories. To better identify potential design contributions in different fields, two important factors, i.e. product value and production cost, are used here to further group all craft practices into four categories (lucrative product, exclusive product, everyday product, and unviable product). Table 20 gives a detailed description of how design can contribute to the long-term continuation of traditional craft examined under four categories.

Table 20 Potential for designers to contribute to the long-term continuation of traditional craft practices

Product category	Craft examples	Potential for designers to contribute
Finding 4: Design opportunities for different crafts of central China are provided in the following descriptions.		
Lucrative products high perceived value but associated with moderate or even low production cost	- Textiles - Leatherware - Woodblock New Year prints - Wooden kitchen utensils - Pot and pans or kitchenware	• Helping to ensure the perceived value is maintained, as presented in some cases (e.g. brands Suoshuo and Chuzao listed in Table 14), through effective, contemporary branding and packaging; effective communication of the product's provenance, connection to place, cultural and/or historical significance; and by ensuring its contemporary usefulness, cultural relevance or aesthetic qualities. • Identifying and developing appropriate processes and product design variations to ensure the product's continued relevance and viability.
Exclusive products high perceived value and high production cost	- Musical instruments - Jewellery - Wooden Buddhist sculptures - Wall reliefs - Dragon/Lion heads	• Helping to ensure the perceived value is maintained, as discussed in section 6.5, through effective branding and packaging; effective communication of the product's provenance, connection to place, cultural significance and/or historical significance; and by ensuring its contemporary usefulness, cultural relevance or aesthetic qualities; as well as by heritage teaching and craft courses. • Exploration and development of new product opportunities – adaptation of designs to contemporary needs and tastes, development of new markets, and representation of the product or patterns to new audiences. • Ensuring production processes are efficient and effective in order to reduce production costs where possible, without eroding the product's associated traditions and legacy.
Everyday products low perceived value, made from	- Bamboo basketry, - Straw sandals,	• Helping to increase the perceived value of such products through effective branding, packaging and storytelling in order to be able to command a more viable price point.

low-cost materials using low-level skills	- Iron farm tools and knives	• Developing a range of complementary products to create a product range with a similar aesthetic and a well-branded presence.
Unviable products high production cost but with low perceived value, primarily handmade objects which have been largely replaced by mass-produced alternatives	- Paper kites - Paper lanterns - Oil paper umbrellas - Decorative lacquer objectives	• Developing new products that employ traditional skills, techniques and materials but reinvent the product to suit a contemporary market. • Helping increase the appreciation and perceived value of the product(s) through branding, packaging and storytelling in order to be able to command a more viable price point. • Ensuring production processes are efficient and effective, employ mechanical techniques where appropriate and ensure hand skills are used for the intricate finishing work only, thereby reducing production costs wherever possible. • In keeping with UNESCO's Convention for the safeguarding of ICH, cataloguing and archiving the practices, techniques and tools (including by video) so that if the craft does decline and disappear it could, potentially, be revived in the future.

8.2 Conclusions from the research

Key findings that relate directly to the research question and three research objectives were presented in section 8.1. From these findings, we are able to conclude the following:

1. Craft making practices investigated in central China accord with the four interdependent elements of Walker's *Quadruple Bottom Line of Design for Sustainability*, through:
    - the product's functionality, use of renewable materials, and adoption of small-scale production;
    - a sense of cultural identity and belonging as well as contribution to community and cultural transmission;
    - a sense of personal meaning, satisfaction, well-being and fulfillment;
    - creative and economic contribution to the development of local cultural creative industries and tourism.
2. Some concerns have been also identified in relation to sustainability, and three aspects in particular have been identified for further improvement:
    - the careful selection of materials (e.g. local, renewable and recycled materials);
    - a need for improved efficiency and use of renewable energy resources; and
    - better incorporate of values in the practices, e.g. values related to place, family and community, heritage and cultural significance.
3. Chinese society is witnessing an increasing number of traditional craft revival activities, and design has been involved in the re-examination and re-appreciation of the values embedded in enduring making practices, mainly in five domains:

- branding and storytelling;
- the development of new products, designs and patterns;
- packaging and labelling;
- heritage teaching and craft education;
- the creation of cultural and creative hubs.

Additional insights and conclusions from this research would be useful for other researchers to know.

The research has revealed a specific Chinese approach to helping sustain the continuity of crafts for cultural reasons, especially through China's enthusiastic participation in UNESCO's ICH programme.

- New, evidence-based arguments for the contribution of traditional heritage crafts towards enhanced cultural self-confidence are provided.
- Impressively, the Chinese government provides various kinds of support at the individual, socio-cultural and economic levels. Particularly, its recognition and financial support of craft making practices helps raise the profile of place-based culturally relevant practices, designs and products, and serves to sustain them by bringing them to the attention of the general public and creating interest in them among younger people. This top-down approach appears to contribute positively to the continuity of cultural significance and understanding of such programmes may well be useful in policy contexts in the seventeen countries that are not yet signatories to the UNESCO Convention on Intangible Cultural Heritage.
- ICH Inheritors play an important role in raising cultural awareness and enhancing cultural confidence through their creative activities and making practices, craft businesses and transfer of expertise. Based on detailed analysis of in-depth interviews and field-based observations, their contributions can be identified as being in four key areas:
    a. their devotion to cultural transmission driven by intrinsic values,
    b. the making practices in China's Intangible Cultural Heritage,
    c. the craft objects emerging from making practices, which is part of China's Intangible Cultural Heritage, and
    d. in those cultural activities, ceremonies, rituals and performances enabled by these craft products.

  All these areas are of particular relevance to both policy and practice as well as advancing scholarly thought in the fields of ICH, craft and design.

In addition, previous studies have considered culture as the fourth pillar of sustainability (UCLG, 2010; Hawkes, 2001). However, for a long time, the main emphasis was given to heritage preservation and education through exhibiting tangible artefacts in galleries,

museums, libraries, and archives; Recent years have seen a growing trend towards maintaining and promoting intangible aspects of cultural heritage, cultural identity, and cultural vitality (Loach and Rowley, 2021). As stated by UNESCO, traditional making practices are important elements of cultural heritage, contributing to humanity's rich cultural diversity (UNESCO, 2001). Craft practices and objects examined in this study were distinctive to the local community and culture, and all these practices have a long heritage of intergenerational cultural transmission – the skills, knowledge and making practices are inherited. Not only craft skills, but also socio-cultural traditions, beliefs and meanings have been passed on from one generation to the next. Interviewed inheritors' values and beliefs, including their sense of belonging to a group and social relationships, are strongly influenced by craft-related cultural activities; Meanwhile, their practices contribute to shaping cultural diversity and cultural vitality (Wan and Chew, 2013). Such insights gained in this study help understand the significance of traditional craft artefacts as 'culturally significant products' in the contemporary and their relationship to tradition and sustainability (Walker, 2018b).

From these research findings, to ensure the long-term viability of traditional making practices of central China, it is strongly recommended that designers:

- Open up new communications and collaborate with craft-makers and enterprise owners in three areas, including
    a. the adaption of products to contemporary needs and development,
    b. the exploration of new market, and
    c. the representation of traditional craft heritage (e.g. traditional designs and patterns).
- Explore three directions that are specifically valued by craft makers who are recognised as ICH Inheritors, including
    a. product design for craft teaching, e.g. picture books, board games, and DIY kits for craft courses,
    b. cultural transmission through branding, storytelling and marketing, e.g. branded mementos, souvenirs, and gifts for cultural tourism, and
    c. the application of digital technology into the documentation and transmission of ICH, e.g. digital museums of traditional patterns.
- Examine a specific craft field and identify design opportunities in relation to the four categories of 1. lucrative product, 2. exclusive product, 3. everyday product, and 4. unviable product.

8.3 Contribution to knowledge

This section discusses the contribution of this study to knowledge.

8.3.1 Contribution to craft, design for sustainability and cultural heritage studies

This study provides wider understanding of heritage making practices in the Chinese context and examines their relationship to sustainability. Through the analysis of primary data collected from three provinces of central China, this research has identified:

- a variety of heritage making practices within the Chinese context;
- a range of top-down support mechanisms provided by the Chinese government;
- the relationships of craft makers and their practices/businesses to sustainability;
- significant values that influence craft makers' practices and their business; and
- design opportunities for sustainability and viability.

Within the time of a four-year research, aspects of the findings have beeen disseminated through two journal articles and three refereed conference papers. The researcher also contributed to the AHRC funded *Located Making* project, and its report is in press. These publications listed demonstrate that this research has already contributed to improving understandings of craft, design for sustainability, and cultural heritage in central China.

8.3.2 Contribution to the theoretical framework development

The in-depth studies of craft makers and businesses of central China also contributed to the iteration of the *Located Making* framework, which is the output of the AHRC funded *Located Making* project (Principle Investigator: Professor Stuart Walker) in which the research was involved. This framework has been developed to better understand traditional making practices, their relevance to place, their underlying values, their relationship to sustainability, and their future potential. Four phrases are included in this framework:

- Context-related factors are considered to examine the relevance of place to the enterprises so as to make sense of what opportunities are offered by a particular locale that support – or could support – the business.
- The values and priorities of craft makers and enterprise owners are examined using a modified version of Schwartz's Values Circumplex (2012) to understand what drives the nature of their craft, the economic success of their business, and the relationship of their operation to sustainability.
- Walker's *Quadruple Bottom Line of Design for Sustainability's* four categories are used to examine the sustainable performance of maker-enterprises, comprising practical meaning with environmental implications, social meaning, personal meaning, and economic means.

- By combining product value and cost profiles, the research identifies where design might contribute effectively to improve the viability of the enterprise and to ensure the effective implementation of sustainability principles.

Figure 50 shows the analytical framework resulting from the research, and each phase of which has been explained in detail associated with case studies in Chapter 7.

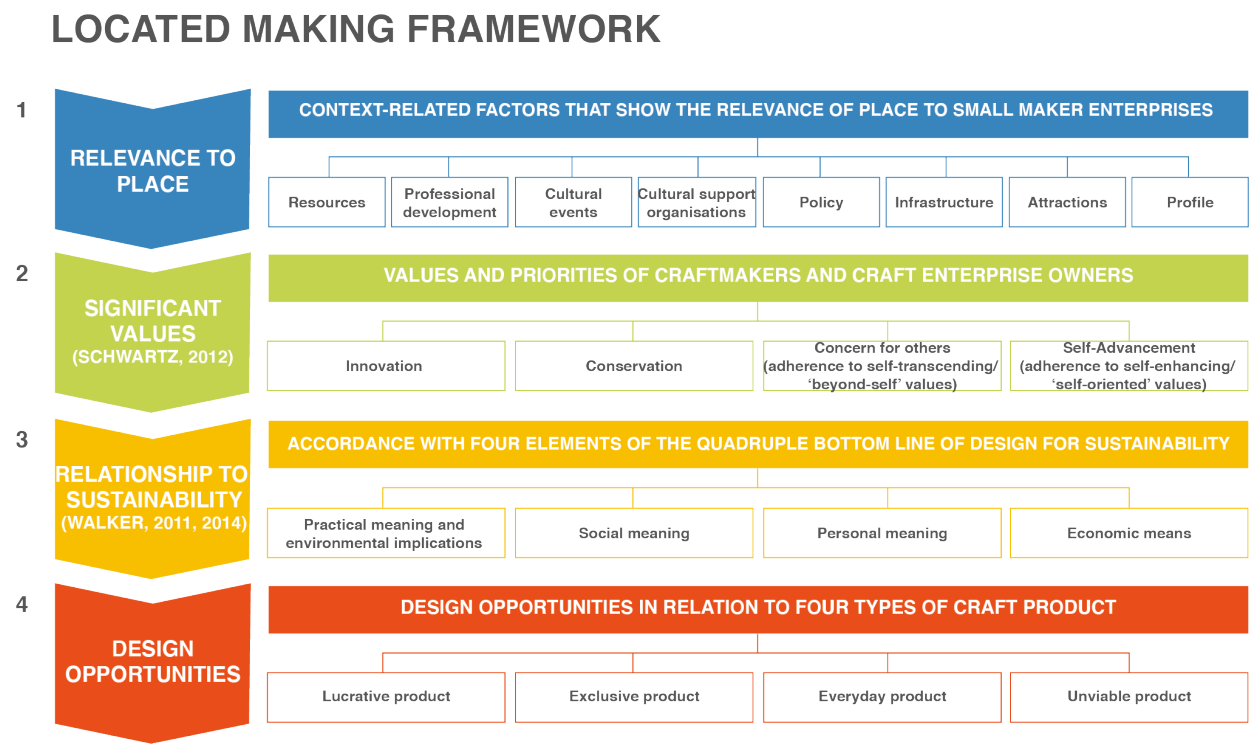


Figure 50 Located Making Framework

8.4 Limitations of the study

8.4.1 Limited research scope and sample

This research was based on the examination of craft making practices in China, and the region of central China (mainly the Yellow River Valley) was selected for field work due to its rich cultural heritage and long craft tradition. Hence, the study was geographically limited to three provinces of central China, mainly covering seven categories of craft practices in this region, and as such the results of this study cannot be generalizable and may not be representative of the situation in other parts of the world and China.

Another limitation lies in the fact that the researcher conducted this project in her home country from a UK university by working alone in four-year period of study. Although the

researcher is part of the culture under study and had research experience in local craft practices before, it is still challenging, especially when the researcher is expected to gather data with her eyes open as an outsider to a keep a neutral stance (Dwyer and Buckle, 2009). Also, it was difficult to get access to participants for the interviews. For well-known craft-makers who have been officially recognised as ICH inheritors, they are quite busy and some refused to be involved in research activities when they were initially in contact by phone. In total, the number of the interviews undertaken was 32, a sample that is relatively small.

8.4.2 Limitation of research design and validation

The Methodology Chapter, section 5.1.3 discussed the merits and limitations of the qualitative and quantitative approaches, and considers them as complementary. Because this research is exploratory in nature, it was finally framed as a qualitative form. However, the interpretative nature of the qualitative data is, to some extent, inevitably subjective. Due to this limitation, it would be possible to integrate quantitative methods and thus conduct a mixed-method approach. For example, survey research could be considered in order to collect larger scale feedback for validating and/or extending the findings from this study.

In addition, according to the UNESCO's Convention for the Safeguarding of the Intangible Cultural Heritage (2018, p.3), a more holistic approach, concerning with intangible aspects of physical artefacts and objects, is considered to support the overall significance of cultural heritage. Given this, another limitation of this study can be identified, namely, there was relatively little focus on intangible forms of traditional crafts such as cultural activities and ceremonies in which craft objects are used. In future studies these areas could receive more attention.

Another limitation of this study is that only part of the findings has been validated, mainly through research papers with peer reviewers that were published in conference proceedings, scholarly journals, project reports, and presented at international design conferences. If time permitted and no more restrictions on international travel, it would have been desirable to conduct another round of validation interviews with craft makers, experts and relevant stakeholders in the field.

8.5 Areas for further research

This section considers how the research findings could be developed further. There are areas for further research that go beyond the scope of the current study, including:

- **Increasing diversity**: Three domains are identified to increase diversity in future research: 1) participants, 2) craft fields, 3) research region. This research reveals specific Chinese mechanisms for supporting traditional craft practices, but only one governmental official was approached to understand the details of government policy. It would improve to the research veracity to interview more policy makers at different levels and also expand the research to include other craft-related stakeholders, such as gallery curators, craft buyers to have a more comprehensive understanding of craft industry and its future development. In addition, this study investigates twenty-six craft practices in seven fields, but there are still many other craft heritages which have not yet been investigated. Finally, this study was geographically limited to three provinces of central China. Due to these limitations, a further study could expand the investigations into other parts of China or other parts of the world in order to help assess the generalisability of the research findings identified here.
- **Validating research findings**: The anticipated beneficiaries of the research include small maker enterprises, policymakers, heritage sector organisations and academics. However, up to now, only part of my findings has been validated – by academic experts through peer-reviewed refereed journals, international conferences, and research reports. Further validation of the findings could be conducted through follow-up interviews and/or surveys with other clusters of experts. These could increase input from targeted beneficiaries and also increase the reach of the research.
- **In-depth case studies**: As discussed in section 8.4.2, this study did not look into craft heritage in a holistic way of thinking, it focussed primarily on the tangible aspects of them, e.g. objects, functions and materials. For example, ceremonial drum making investigated in the Yellow River Valley is a typical craft example, showing a long tradition of craft making handed down for eighteen generations in this region. But this example study did not look much into the life cycle of drum making, especially its invisible ceremonial aspects, i.e. the ceremony for the use of drums and the meaning of these ceremonies. Therefore, further case study on this craft making or a more in-depth investigation on all aspects of one craft heritage would be worthwhile.
- **Practice-based design research:** Three core areas where designers may collaborate with craft inheritors were specifically identified in the Chinese context, including 1) heritage teaching and craft courses; 2) branding and marketing for the conveyance of tradition and culture, and 3) the use of digital technology for supporting the transmission and documentation of craft heritage. Based on one specific craft case, collaborative research could be conducted to explore the application of core principles of sustainability in practice. For example, for the kite courses developed by A2, silk and paper used for traditional kite making have been replaced by waterproof plastic sheet; But such changes in materials are not in line with environmental sustainability. A designer who has expert knowledge on design for sustainability can help select alternatives that are both environmentally friendly and functionally improved. Another specific need was underlined by A9 – to design a digital museum of traditional patterns. There is potential for this idea to be explored further through co-creation approaches.

- **Craft innovation and technological development:** In the 4th industrial revolution era, with the development of technological development, new opportunities have been emerged in craft community. Specifically, in the Chinese context, relevant digital and communication technology has been applied to the transmission and documentation of craft heritage. However, innovations in other four areas as discussed in section 2.1.4.4, including biotechnology, manufacturing, engineering, and material, have not yet been investigated and discussed, and innovations in these four areas could be further explored. For example, 3D manufacturing processes, such as 3D printing and 3D weaving, could be applied to quickly realise and test maker's creative concepts (Yair, 2014). Also, biomaterials from the nature could be used to develop new forms of "sustainable craft" (Väänänen and Pöllänen, 2020).

This section has discussed future research direction in five potential areas. The concluding remarks to the body of research included within this thesis will be presented in next section.

8.6 Concluding remarks

This study was started because the researcher had identified sustainability-related problems existing in the traditional craft sector. In China, although much traditional craft heritage has been officially recognised as ICH, this does not necessarily mean that they are well-developed. For example, there is still a sharp decrease in the number of craft-makers (Cao, 2018). Meanwhile, due to the impact of mass-production, traditional handcrafted products, especially for those made by village artisans, are being marginalised in modern markets (Li and Shu, 2013).

From this investigation into the potential of design for sustainability in supporting traditional making practices of central China, it is apparent that they are compatible with socio-cultural continuation, environmental care, personal fulfilment, and economic viability, as addressed in Walker's *Quadruple Bottom Line of Design for Sustainability* (Walker, 2011, p.187-190; 2014, p.92-93). Also, due to a common emphasis on local knowledge and place, crafts are essentially consistent with principles of sustainability. Most importantly, the motivations of craft makers interviewed in this study are often more aligned with intrinsic values – doing a job well for its own sake, hand-making endeavors, a sense of duty to continue the tradition, and running one's own business. And in literature, these self-transcendence values and conservation values have been proved to have a positive relationship with ecological attitudes and behaviors, personal well-being and social responsibility.

Strong connections between traditional crafts and sustainability were revealed in this research. Given by this, an important reflection of this study is to re-discover their value and re-think their meaning in the contemporary. As designers, learning from significant values

embedded in enduring traditional practices can help develop a holistic way of thinking that incorporates both traditionalism and modernism, and thus help facilitate sustainable design transformation.

In China, one significant aspect of traditional crafts is that it is part of the country's ICH programme and the construction of Cultural Self-confidence and national identity, contributing to social cohesion and economic advancement. To ensure the long-term viability of traditional making practices in China in ways that are in accordance with sustainability, it is strongly recommended that designers:

Continue collaborations or open up new communications with craft-makers and enterprise owners in three aspects, including 1) the adaption of products to contemporary needs and development, 2) the exploration of new market, and 3) the representation of traditional craft heritage;

Explore three directions that are specifically valued by craft makers who are recognised as ICH Inheritors, including 1) product design for craft teaching, e.g. picture books, board games, and DIY kits for craft courses, 2) cultural transmission through branding, storytelling and marketing, e.g. branded mementos, souvenirs, and gifts for cultural tourism, 3) the application of digital technology into the documentation and transmission of ICH, e.g. digital museums of traditional patterns. Also, it is worthwhile to look into a specific craft field and identify design opportunities in relation to four categories (lucrative product, exclusive product, everyday product, and unviable product).

Finally, the following paragraph cited from my supervisor Walker's book *Design Realities* (2018) is used here at the end of this thesis, this perhaps precisely describe the spirit of this research:

> *"Many traditional ways of thinking and behaving differ markedly from the modern sensibility. They tend to embody a sense of duty and responsibility not just to others in their community but also to the teachings, knowledge, wisdom and practices of their cultural predecessors…we can learn from such practices and the enduring values they hold dear in order to see our current approaches within a large frame of reference and to help us develop a different, hopefully more balanced outlook." (p.273-274)*

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APPENDICES

Appendix 1

Lancaster University

Participant information sheet

Name of Researcher: Wanlin Zhang (PhD candidate)

Supervisor: Professor Stuart Walker

Title of Project: The Potential of Design in Revitalising Traditional Heritage Crafts in Central China

Sponsor: China Scholarship Council (CSC)

I am a PhD student at Lancaster Institute for the Contemporary Arts (LICA), Lancaster University, United Kingdom. I would like to invite you to take part in my PhD research. This research will explore how the economic viability of crafts can be improved and how design can make a contribution to the sustainment of traditional heritage crafts in central China, in order to achieve a better price for craft products so that local craftmakers can have a better standard of living.

Please take time to read the following information carefully before you decide whether or not you wish to take part.

What is the study about?

The aim of this research is to investigate traditional heritage craft practices in central China and explore the areas in which design could make constructive contributions in ways that accord with the principles of sustainability. The region of interest for this present research has a long history of craft practices. Today, however, due to the influence of modernization and globalization, some traditional heritage-based making practices have been marginalized. Therefore, to situate place-based crafts in a national and even international context, recommendations for craft-design

collaborations will be developed so that local people and communities can benefit economically and socio-culturally.

Why have I been invited?

You have been invited because you are an expert in the craft sector in this study region. We believe you can provide important insights into the field and your opinions will be of value to the development of this research.

We would be very grateful if you would agree to take part in this study.

What will I be asked to do if I take part?

You will be invited to have an interview that explores the nature of local making practices or a focus group discussion that identify design’s contributions. We anticipate that the interview will take 45 minutes. This will take the form of a semi-structured interview, and we will ask a series of set questions and follow-up questions related to your responses. For a focus group, you will discuss with ca. 5-10 participants, including craft makers, designers, enterprise managers and academics, in order to identify design’s role and its potential contributions in the sustainment of local crafts. This will take approximately 60mins. As part of this process we will ask your permission to audio-record the interview solely for the purpose of this research (see Participant Consent Form).

What are the possible benefits from taking part?

Taking part in this research will allow you to share your experiences, knowledge and expertise in craft sector and your insights and opinions will contribute to our understanding of the nature of local crafts and maker-enterprises. I am willing to share our research with you and keep you informed as the research develops.

Do I have to take part?

No. It’s completely up to you to decide whether or not you take part. Your participation is voluntary.

What if I change my mind?

If you change your mind, you are free to withdraw at any time during your participation in this study. If you want to withdraw, please let me know, and I will extract any data you contributed to the study and destroy it. Data means the information, views, ideas, etc. that you have shared with me. However, it is difficult and often impossible to take out data from one specific participant when this has already been anonymised or pooled together with other people's data. Therefore, you can only withdraw up to 2 weeks after interviewing or before the focus group begins.

What are the possible disadvantages and risks of taking part?

It is unlikely that there will be any major disadvantages to taking part. It is only 45 minutes of your time for an interview or 60 minutes of your time for a focus group workshop.

Will my data be identifiable?

After the interview / focus group, only I and my supervisor conducting this study will have access to the data you share with me. The only other person who will have access to the data is a professional transcriber who will listen to the recordings and produce a written record of what you and others have said. The transcriber will sign a confidentiality agreement. The person accompanying me at the interview and/or focus group will sign a confidentiality agreement.

I would like to quote you in this study and address your name and profession (see Point 4 of Consent Form), and I will also get your permission to film your face and reveal your identity if the videos and photos are published or publically presented (see Point 7 of Consent Form). However, at your request, I will keep all personal information about you (e.g. your name and other information about you that can identify you) confidential, that is I will not share it with others. I will anonymise any audio recordings and hard copies of any data. This means that we remove any personal information. Each participant's interview will be labelled with date and number, so if any interviewees want to withdraw, the research team will recognise and remove it.

Participants in the focus group will be asked not to disclose information outside of the focus group and with anyone not involved in the focus group without the relevant person's express permission.

How my data will be stored?

Your data will be stored in encrypted files and on password-protected computers.

Access to this data is restricted to the researcher (I) and my supervisor. The data will be transferred to the University's BOX drive with password protected as soon as possible, and any identifiable data (e.g. the voice recording of interviewees) will be deleted from the recorder. This recorder will be then stored securely in a locked cupboard at the university. In addition to this, my thesis with data analysis will be placed on University's BOX system with password protection as well, in case that my laptop is damaged or stolen.

In accordance with University guidelines, the data will be kept securely for a minimum of ten years. The data will be securely destroyed by the researcher's supervisor at the end of the 10-year retention period.

How will we use the information you have shared with us and what will happen to the results of the research study?

I will use the information you have shared with us for research purposes only. This will include my PhD thesis and other publications, for example journal articles. I may also present the results of this study at academic conferences or inform policy-makers about my study.

When writing up the findings from this study, I would like to reproduce some of the views and ideas you shared with me. However, at your request, I will only use anonymised quotes (e.g. from my interview with you, focus group discussion), so that although I will use your exact words, you cannot be identified in our publications (See Option in point 3 of Consent Form).

For further information about how Lancaster University processes personal data for research purposes and your data rights please visit our webpage:www.lancaster.ac.uk/research/data-protection

Who has reviewed the project?

This study has been reviewed and approved by the Faculty of Arts and Social Sciences Research Ethics Committee.

What if I have a question or concern?

If you have any queries or if you are unhappy with anything that happens concerning your participation in the study, please contact:

Wanlin Zhang (PhD candidate)
ImaginationLancaster, LICA Building, Lancaster University, LA1 4YW
E: w.zhang12@lancaster.ac.uk

Professor Stuart Walker (my supervisor)
ImaginationLancaster, LICA Building, Lancaster University, LA1 4YW
E: s.walker@lancaster.ac.uk

If you have any concerns or complaints that you wish to discuss with a person who is not directly involved in the research, you can also contact:

Professor Judith Mottram (Head of Department)
ImaginationLancaster, LICA Building, Lancaster University, LA1 4YW
E: judith.mottram@lancaster.ac.uk

Thank you for considering your participation in this project.

Appendix 2

CONSENT FORM

Project Title: The Potential of Design in Revitalising Traditional Heritage Crafts in Central China

Name of Researchers: Wanlin Zhang

Email: w.zhang12@lancaster.ac.uk

Please tick each box

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
2. If I am involved in an interview, I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. If I withdraw within 2 weeks after my interview then my data will be removed. Or If I am involved in a focus group, I understand that my participation is voluntary and my data is part of the ongoing conversation and cannot be destroyed. I understand that the researcher will try to disregard my views when analysing the focus group data, but I am aware that this will not always be possible.	☐ ☐
3. If I am participating in the focus group I understand that any information disclosed within the focus group remains confidential to the group, and I will not discuss the focus group with or in front of anyone who was not involved unless I have the relevant person's express permission.	☐
4. I understand that any information given by me may be used in the PhD thesis, academic articles, publications or presentations by the researcher and her supervisor. Option 1: I am happy for my remarks to be attributed to me and my name to appear in any further publications and presentations. Or Option 2: I prefer my remarks to remain anonymous and that my name or any personal information not be included so that I may not be identifiable.	☐ ☐
5. I understand that any interviews or focus groups will be audio-recorded and transcribed and that data will be protected on encrypted devices and kept secure.	☐

6. I understand that my practice and my products might be video-recorded or photographed and may be used in the PhD thesis, academic articles, publications or presentations.	☐
7. I understand that my face may be video-recorded or photographed, and these materials may be used in the PhD thesis, and academic articles, publications or presentations by the researcher and her supervisor. Option 1: I give my permission for my face to appear in photos or videos for publications or presentations. Or Option 2: I prefer my face to be cropped, blanked or blurred in any photos or videos for publications or presentations so that I may not be identifiable.	☐ ☐
8. I understand that data will be kept according to University guidelines for a minimum of 10 years after the end of the study.	☐
9. I agree to take part in the above study.	☐

_____ _____ _____

Name of Participant Date Signature

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Signature of Researcher /person taking the consent_____ **Date** _____ Day/month/year

One copy of this form will be given to the participant and the original kept in the files of the researcher at Lancaster University

Appendix 3

Semi-Structured Interview Guidelines and Questions

Samples of Informants

This semi-structured interview will involve 25-30 craft related stakeholders in three areas, including handmade products made from ceramics, textiles and natural materials (e.g. bamboo and wooden utilitarian crafts). These craft-related stakeholders fall into the following expert clusters: 1) craftspeople and design-makers who make and design crafts; 2) retailers, enterprise managers and gallery/exhibition curators who sell and promote craft products; 3) academics researchers of crafts; 4) customers and users who buy crafts.

Interview Guidelines

Introduction:

Thank you for agreeing to be interviewed – I would like to ask you several set of questions about your work related to traditional artefacts. This interview session will probably take up to 45 minutes and our conversation will be recorded for my further reference. All the information given will be kept confidential and will never be disclosed.

In order to comply with the standard University Ethics requirements, before we begin I must ask you to read and sign a letter that confirms you have agreed to be interviewed and provide us with your insights and perspectives.

Provide participants the Information Sheet and Sign Consent Form

Questions (Primarily for craftspeople / design makers – to be adapted for another three expert clusters)

(the questionnaire will be tested and refined prior to conducting the full interview suite)

1. **General description of their work**
    - Could you please briefly introduce yourself? (Prompts: your education background, expertise and experience, skills, employment history, etc)
    - How would you describe your work in general terms? (Prompts: How would you define your work in simple terms? e.g. stone carving maker; ironware designer)
    - Could you please introduce your work? (Prompts: type of products, e.g. for tourism, utility, traditional custom; materials, e.g. bamboo, wood; technique)
    - How long have you been doing this and why?
    - Why are you involved in this work (making these crafts)?
    - What are your motivations? (making a living; appreciation of tradition, sense of duty to continue the tradition, enjoyment, creativity etc.)
    - Do you make a living only by making crafts or you have another job?

2. **Details of making practices**
    - Could you please describe detailed steps of your making process? (Prompts, Idea/concept generation, design, production)

- What materials do you use and why? How and where they are sourced? What distinctive characteristics are related to the materials, e.g. flexibility, meanings?
- Are there any particular skills, methods or techniques that you employ in your work?
  Are these traditional, or do they have traditional aspects or are they recent? How did you learn these (skills, methods or techniques)?
- Do you collaborate with others? If so, who are involved and what they do? What does working with others mean to you?
- How do you communicate (promote) your work? Who is this promotion aimed at (customer, buyers, curators, etc)? How do you interact with these people and what are points of interaction?

3. **Perceived values of crafts related to sustainability at environmental, personal and social levels**
   - How do you value your work? What do you value most in your work?
   - What the most important aspect of your work?
   - Do you think your work is traditional? If so, in what ways and are they related to the place and your family, community, religion, nationality, etc.
   - How do you think your work is perceived by people in your community and people outside your community?
   - Are there any changes about craft activities in your community? If so, in what ways?
   - What is your contribution in developing social and community engagement in small-scale enterprises?
   -
4. **Problems and constraint**
   - How do you think the current situation in local craft sector?
     - Markets and customers, e.g. domestic, international, tourist. export
     - Customer preference and styles, e.g. traditional, contemporary, modern, fashionable
     - Young generation and their involvement in local craft sector
     - Production, e.g. scale, the use of machine and tools
     - Technology, e.g. update of technique influenced by technology

5. **Design opportunities**
   - Could you please describe detailed steps of your craft design? (For design-makers)
   - What’s the role of design in your case? (e.g. product development, branding, packaging)
   - Do you collaborate with craftspeople for production? If so, could you share more details about such collaborations? (e.g. collaborative mode, communication, salary payment)
   - What positive or negative impacts caused by the intervention of design in traditional crafts (Prompts: for local community, people, economic)?
   - What other experiences you would like to share about effective craft-design collaborations?
   - What advice would you give to designers who are involved in unearthing new opportunities for crafts revival?