

**REVITALISING BRASSWARE HANDICRAFTS IN TERENGGANU,  
MALAYSIA THROUGH SUSTAINABLE DESIGN**

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**THIS THESIS IS SUBMITTED IN FULFILMENT OF THE REQUIREMENTS  
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## **ABSTRACT**

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#### **Abstract**

The state of Terengganu has been long recognised as Malaysia's national capital of brassware handicrafts. Here, traditional knowledge and wisdom are made manifest by skilled artisans who use local materials to create culturally distinctive products. These products and practices have strong historical connections to the people of the region, to the notion of place and to the sense of community. However, in recent decades, this handicraft industry, like many others around the world, has been in decline. The effects of globalisation and modernisation have affected the viability of craft practices as well as the way local societies perceive and value craft products. The research consisted of extensive qualitative studies that included semi-structured interviews involving 37 informants and followed by exploratory case studies comprising direct observation, photographic documentation and document analysis that were carried out through investigation of the brassware craft sector and its associated practices in Kuala Terengganu region. This research set out to determine the value of significance of brassware handicraft and to identify design opportunities in order to develop design-oriented strategies to revitalise culturally significant design, products and practices of brassware handicraft in Terengganu, Malaysia. This research looks at how can brassware handicraft, as a culturally significant craft practice, be revitalised in Malaysia through effective design contribution that is in accord with principles of sustainability. Findings suggest that collaborative design practice involving various organisations in the community is needed to better convey and promote the value of the cultural, philosophical, historical significance of these crafts and their relationship to place, culture, community and identity. In doing so, collaborative design has the potential to stimulate a greater appreciation and sense of belonging towards Malaysia's traditional material culture and potentially raise the profile, and prospects for these important craft practices.

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Thank you so much.

## **DECLARATION**

I declare that this thesis is my own work and has not been submitted in substantially the same form for the award of a higher degree elsewhere. To the best of my knowledge it does not contain any materials previously published or written by another person except where due reference is made in the best.

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**Sharih Ahmad bin Mohamad**

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## GLOSSARY OF TERMS

MHDC	Malaysia Handicraft Development Corporation
YDSM	<i>Yayasan Diraja Sultan Mizan</i> (Sultan Mizan Royal Foundation)
TST	Terengganu State Museum
TIDE	Terengganu International Design Excellence
Unisza	Universiti Sultan Zainal Abidin
SIRIM	Standard and Industrial Research Institute of Malaysia
IKMAS	Institute of Malaysian and International Studies
UNESCO	United Nations Educational, Scientific and Cultural Organization
MATRADE	Malaysia External Trade Development Corporation
JKKN	<i>Jabatan Kebudayaan dan Kesenian Negara</i> (National Department for Cultural and Arts)
GI	Geographical Indication
IP	Intellectual Property
MyIPO	Intellectual Property Corporation of Malaysia
SMEs	Small and mid-size enterprises
UIS	UNESCO Institute for Statistic
GDP	Gross Domestic Product
SDSI	<i>Satu Daerah Satu Industri</i>
CAD	Computer Aided Design



# CHAPTER 1: INTRODUCTION

## 1.1 Introduction

This chapter introduces the context, background and significance of the research topic as well as explaining the value of the study. It also provides an overview of the thesis structure and explains the reasons for the researcher's interest in the topic prioritised in this research journey.

## 1.2 Research Background and Motivation

"Malaysia, Truly Asia" (Tourism Malaysia, 2014) is a beautiful country located in Southeast Asia. The country's diversity is characterised by its 29-million, multilingual population consisting of Malays (49%), Chinese (23%), Indians (7%), other '*Bumiputera*' (literally 'son of the soil', '*Bumiputera*' is a government-designated race category to indicate the native population) (11%) and other races (10%) (UNESCO, 2014, p. 10). Malaysia is listed in the upper-middle-income economies in the World Bank Classification by Income Group (UNESCO Institute for Statistics [UIS], 2016, p. 98).

Terengganu is a land where beauty is found in its stunning panoramic views, beaches of the whitest, finest sand, and in a diversity and richness of natural resources, surrounded by the abundant greenery of its tropical rainforest. In addition, Terengganu is rich with artistic craft, traditional heritage and traditional food, symbolising Terengganu's identity and culture. The appreciation of this culture is seen through the continued support from the state in sustaining traditional heritage crafts, which are regarded as authentic and of high aesthetic value especially by the cultural experts, artisans as well as collectors.

Hence, Terengganu is a highly respected and civilised nation due to the uniqueness and richness of its cultural and historic heritage.

There is a wide range of traditional heritage industry companies where production is not restricted to craftsmanship but also includes architecture and shipbuilding. This can be seen in the production of artworks, and traditional home architecture and boats, which employ excellent craftsmanship skills in carpentry without the help of advanced technological machinery. The creation of this material culture produced by local art and craft experts also contributes to the economic growth of the country.

Brassware craft, like other Malaysian crafts, represents cultural identity and heritage. However, in Terengganu, the number of brassware artisans is rapidly decreasing due to the impact of globalisation and modernisation. Knowledge of this stimulated the researcher's interest to study and investigate the issues.

### **1.2.1 Motivation for this research**

When the researcher was a child, he watched his late grandfather practising craft-making activities, and this also inspired this research. His grandfather's enthusiasm and concentration defined him as a true artisan specialising in woodwork. Every single step, action and movement were manifestations of his artistic work. The researcher saw how his grandfather started with a massive block of solid wood and with the use of traditional tools transformed it into a beautiful masterpiece of Malay traditional weaponry, called a dagger or *kris*.

The beginning of this thesis can be traced back to 2012-14, when the researcher was studying for a Master's degree in Design Technology in the Institute of Design and Innovation (INDI), Universiti Malaysia Sarawak (UNIMAS) Malaysia. He first became interested in brassware handicrafts while working for the Terengganu Institute of Design Excellence (TIDE) in 2009 as a Design Executive. His role was to serve the local micro-, small- and medium-sized craft enterprises in Terengganu through consultation and monitoring in the context of design and production. The benefits of the collaboration process, knowledge transfer and knowledge-sharing activities led him to witness a number of successful practices in the field of art, design, tradition, culture and heritage. Subsequently, his interest in this area increased when working closely with local artisans with diverse backgrounds, expertise, stories, insights, and a vision and mission that were not limited solely to the brassware craft but that also applied to other Malaysian crafts.

Having a background in Engineering Technology complemented the interest in, and appreciation of, local material culture in general, and brassware craftsmanship specifically. Brassware craft is unlike other crafts where their distinct artistry is combined with the skill of the maker. Brassware is much more than artistry and the manifestation of art. The art is also closely associated with technical uniqueness, applied science and technology. The researcher regards brassware artisans as uncertified craft engineers, who have an understanding of metallurgy, strength of the material, and material engineering in an informal way. They learn from experience, and this knowledge develops over time. Being certified as a graduate technologist meant that the researcher could become involved in helping brassware craft community in Terengganu and indirectly led to this research.

### 1.3 Research Aims and Objectives

The research areas comprise brassware craft, design, and sustainability, which are discussed in both local and global contexts. The main focus is an in-depth investigation of the relationship between brassware craft, design and sustainability as well identifying the potential design strategies in relation to sustainability of the cultural significance of brassware craft products, design and practice in Terengganu, Malaysia.

The research question to be addressed is therefore: ***How can brassware handicraft, as a culturally significant craft practice, be revitalised in Malaysia through effective design contribution that is in accord with principles of sustainability?***

1. *What is the value of revitalising brassware as a culturally significant craft practice?*
2. *What is the opportunity for design to contribute to revitalising the brassware handicraft industry in Terengganu, Malaysia?*
3. *How can design contribute to revitalising culturally significant design, products and practices of the brassware craft industry in Terengganu, Malaysia?*

In order to answer the research question, the objectives of the research that need to be fulfilled are:

- 1. To determine the value of significance of brassware handicraft in Terengganu, Malaysia.*
- 2. To identify design opportunities that could make a contribution to revitalising brassware handicraft in Malaysia that is in accord with the principles of sustainability.*
- 3. To propose design-oriented strategies to revitalise culturally significant design, products and practices of brassware handicraft in Terengganu, Malaysia.*

#### **1.4 Structure of the Thesis**

The thesis comprises seven chapters, with each chapter divided into several distinct sections.

**Chapter 1 (Introduction)** presents the research background and motivation as it explains why this area of study was chosen, as well as the elements of research comprising research objectives and questions proposed. It also introduces an outline of the structure of the thesis with a brief description and summaries of the contents of each chapter.

**Chapter 2 (Literature Review)** constitutes a literature review done at the beginning of the project. It discusses three main areas: general review of craft (Section 2.2); brassware as one of Malaysia's craft sectors (Section 2.3); sustainability and design (Section 2.4). These are examined in both local and international contexts and sources,

and followed by a discussion (Section 2.6). The discussion section discusses the initial key findings from the literature review and presents them as three themes; (1) the value of Terengganu brassware handicraft as material culture and its relationship to design and sustainability; (2) the identification of issues and gaps in brassware handicraft, design and sustainability; and (3) the potential and opportunities for design (design for sustainability) in revitalising culturally significant design, products and practices of brassware handicraft. All these discussions have led into the research question that informed the significant need to conduct field research into brassware handicraft production in Terengganu, Malaysia.

**Chapter 3 (Research Methodology)** introduces the research approach and strategies selected to carry out the project (Section 3.3); the methods used to collect and analyse the data (Sections 3.4 – 3.8); and the procedures undertaken to ensure the reliability of the research (Section 3.9). In this chapter, the methodology is presented as a chain of elements that together justify and give shape to a series of studies, analyses and discussions across the project.

**Chapter 4 (Fieldwork and Data Analysis)** - this primary field study collected both primary and secondary data in order to answer the research questions as well as to achieve the research objectives. The primary data was collected using multiple qualitative methods, such as semi-structured interviews involving 37 informants from various backgrounds and with diverse levels and lengths of expertise related to the brassware craft sector (Section 4.3). This was followed by exploratory case studies comprising direct observation, photographic documentation and document analysis

(Section 4.4). Research tools included field notes, a camera for video recording and photography, audio recorders, diagrams and sample pictures. All collected data were then analysed using a combination of data analysis tools and techniques, both manually and with computer-based tools. The results obtained from the data analysis stage were in the form of a group of codes, themes and quotations, and some were structured into photographic information, frameworks, charts and tables.

**Chapter 5 (Findings of Semi-Structured Interviews and Case Studies)** discussed the findings obtained from the analysis of the primary field research data and presented it in two sections: 1) findings from the semi-structured interview (Section 5.2); and 2) findings from the case studies (Section 5.3). These were followed by a summary of the key findings (Section 5.4), in three sections: ten main interrelated issues and factors contributing to the decline of brassware sector; values and their association with the brassware community in Terengganu; potential design strategies that discussed the relationship between brassware handicraft, design and sustainability.

**Chapter 6 (Discussion of Findings)** discusses and brings together the findings from the literature review and fieldwork, leading to the key insights: brassware craft values and meaning (Section 6.2); brassware craft knowledge and education (Section 6.3); call for change towards design and sustainability; and design for marketing and sales (Section 6.4).

**Chapter 7 (Conclusion and Original Contribution to Knowledge)** Conclusions reached during the research are presented and contextualised in terms of the achievement of the aim and objectives proposed at the beginning of the project. The chapter discusses

the contribution to knowledge and interpretations of the findings, the limitations of the adopted research design, and presents an agenda for further research. The chapter ends with concluding remarks regarding the body of research contained within this thesis.

## **1.5 Conclusion**

This chapter has set out the foundations for the exploration contained within this thesis. It clarifies the aspirations and motivations for conducting this study, and the component of exploration involves a research problem that it plans to answer as well as research objectives that needs to be achieved. A brief review of the content of the thesis is presented as a synopsis of each chapter to assist the reader in exploring the material presented.



## CHAPTER 2: LITERATURE REVIEW

### 2.1 Introduction

This chapter is subdivided into four sections to review the current knowledge in the field: the first section deals with craft/handicraft which is followed by an extensive review of the main subject of research which is brassware craft in Malaysia; and design and sustainability. The final section discusses the key findings of literature and leads to the research question.

### 2.2 General Review of Craft/Handicraft

#### 2.2.1 Definitions and conceptions of craft

The Malaysian Handicraft Development Corporation (MHDC), (2014) through 222 Acts *Perbadanan Kemajuan Kraftangan Malaysia* 1979 has defined a “Handicraft Product” as any product that has artistic or traditional cultural attractions, which the making process depends solely or partly on the hand skills. A similar definition according to the Government of India in India-Craft (2011) states that ‘handicrafts’ are made by hand, encompass particular artistic values, and they may or may not have functional utility.

Definition adopted by the UNESCO/ITC Symposium "Crafts and the international market: trade and customs codification", Manila, 6-8 October 1997 – *“Craft or artisanal products are those produced by artisans, either completely by hand or with the help of hand-tools or even mechanical means, as long as the direct manual contribution of the artisan remains the most substantial component of the finished product. These are produced without restriction in terms of quantity and using raw materials from sustainable resources. The special nature of artisanal products derives from their distinctive features,*

*which can be utilitarian, aesthetic, artistic, creative, culturally attached, decorative, functional, traditional, religiously and socially symbolic and significant”* (UNESCO-UIS, 2009 and ITC, 1997) in (UNESCO Institute for Statistics (UIS), 2016, p. 95).

Craft has numerous definitions depending on personal interpretation. They vary over time, geographical context (Basole, 2014) and philosophy (Fillis, 2012, p. 24; Pöllänen, 2013, p. 219). The word “craft” can be used to refer to a product that is a tangible thing and also a process of making (Adamson, 2007, p. 3; Dodd & Morgan, 2013, p. 13). Hence, the word “craft” is recognised as both a noun and a verb. It shares some perceived attributed understandings of authenticity (Jones & Yarrow, 2013) and quality (Basole, 2014, p. 6) associated with the words “handmade”, “workmanship” and “genuine” (McIntyre, 2010, p. 5). In addition, it is a word that is associated with the terms “personal” and “for everyone” (McIntyre, 2010). In Allen's review of Risatti's *A Theory of Craft: Function and Aesthetic Expression*, he remarked that modern thinking on the creation of craft is about beauty and arts. Because of its beauty, craft goes beyond functionality (Allen, 2009, p. 517) because it indicates a relationship with the hands that make and use the work, ensuring human well-being (Pöllänen, 2013) and personal meaning (Walker, 2012). Branzi said that craft is concerned with creating one-off objects that exhibit refined skills and which may or may not be functional (Walker, 2011, p. 191).

Furthermore, Pöllänen (2013, p. 219) stated that the premise of craft is that it is a making-based activity. It is also a very intimate human process (Arja Klamer, 1996; Niedderer & Townsend, 2014) that imparts emotional, intellectual and physical attributes in the sensory act of making, manipulating, articulating and experiencing

materials and self-made products (Pöllänen, 2013, p. 219). Similarly, Elliot (2016, pp. 19-20) interpreted craft as a process of self-expression and transformation which has both power and secret knowledge (Greenhalgh cited in Dormer, 1997, p. 5). Since the term "craft" is hard to define specifically due to its broadness (Dodd & Morgan, 2013, p. 14), it tends to be influenced by changes across a very wide range of intangible skills, practices and product types (Cultural Industries Growth Strategy [CIGS], 1998, p. 8).

Craftworks are a source of collective and individual memory and a means toward creative development (Margetts, 2010, p. 375). Pöllänen (2013, p. 221) describes the significant value of craftsmanship as an occupation in terms of three themes: "the meaning and value of crafts"; "the feelings experienced during craft activity"; and the "holistic and intentionality of craft-making".

## 2.2.2 Handicraft categories

Qattan (2009, p. 5) referred to a 2006 report by USAID<sup>1</sup> on the “Global Market Assessment for Handicrafts” that clustered handicrafts into three types: “handcrafted”, “semi-handcrafted”, and “machine-made goods” (Frost & Sullivan, 2005, p. 10). In the same paper, Qattan (2009, p. 6) divided handicrafts into four main categories, along with each category’s price segmentation, as follows:

Categories	Price segmentation	Details
<b>Functional wares</b>	<b>Low-end market</b> Sold through big-box stores	Items usually made in a small or factory-based workshop. Mass-produced handmade goods such as pottery, tiles, or furniture for national or export markets
<b>Traditional art</b>	<b>Mid-to-high-end markets</b> Sold by small and independent retail stores	Ethnic crafts have usually been marketed locally by creating interest in the local culture and by maintaining high aesthetic quality
<b>Designer Goods</b>	<b>High-end market</b> Sold by specialty stores	Occasionally based on local crafts but always redesigned by foreigners to suit fashion trends in the export market.
<b>Souvenirs</b>	<b>Low-end market</b> Sold by gift and souvenir shops in resorts, tourist areas and vacation places.	Low-cost and inexpensive items. Universal ornaments or simplified traditional crafts made for local retail. Sometimes sold through international development agencies.

Table 2-1: Four main categories of craft and the price segmentation (Qattan, 2009)

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<sup>1</sup> USAID - United State Agency International Development

Holroyd (2018, p. 26) characterised three types of culturally significant craft products: tangible (rather than intangible such as dance and music); durable (rather than food and drink); and portable (rather than permanent structures such as buildings). Frost & Sullivan (2005, p. 10) added that textile clothing, accessories, soft furnishings, stationery and houseware/household items are among the traditional craft categories that mostly penetrate the exports market, where they have taken India as an example.

### **2.2.3 How are craft and culture related?**

Craft is a part of the culture of a nation or ethnic group (Mohlman, 1999, p. 114) and it represents a significant component for socio-economic development (Richard, 2007, p. 5). The role of culture as a foundation for socio-economic development can be seen through localised micro-, small- and medium-enterprise (MSME) industries producing goods including craft products to fulfil consumer needs (Santagata cited in Moreno et al., 2004, p. 3; Richard, 2007, p. 5). In addition, craft is one of the important components for representing the social identity of a region (Mohlman, 1999; McCarty, 2012; Tung, 2012) as the aesthetic quality and culture touch of craft product shows the identity of the place (Moreno et al., 2004). Besides that, Costin (1998) added that craft as a domestic utility item represents wealth and power based on its aesthetic quality of the design. Making craft establishes and expresses social interactions among craft producers, customers, and society (Costin, 1998). Moreno et al., (2004) added that making crafts is a sign of civilisation as there is a significant relationship between craftsmanship and social identity. Furthermore, the making of craft is an identity-shaping process linked to the level of status, social class distinctions, as well as gender. Mohlman (1999) argues that *people make crafts, but crafts also make people*. Making

crafts is fundamental for our spiritual well-being – it provides us with a sense of who we are and a sense of belonging (Walker, 2012, pp. 158-159). Hence, there is an intrinsic value to material culture that emerges from a context of cultural expression, which may be identified in a variety of forms, such as aesthetics, and social or spiritual meanings (UNESCO, 2015, p. 158).

#### **2.2.4 The significant issues facing craft**

A decline in traditional handicraft has occurred due to several factors, which include the following:

##### **2.2.4.1 The effects of globalisation, urbanisation and modernisation**

The effects of globalisation, urbanisation (James, 2015a; Kapur & Mittar, 2014, p. 3) and modernisation (Margetts, 2010) have changed the nature of craft ecology and community and have caused significant challenges to the survival of the traditional knowledge of craftsmanship, local natural resources and creative industries (UNESCO Institute for Statistics [UIS], 2016, p. 12; Hosagrahar et al., 2016, p. 7; James, 2015, p. 24). In this post-industrial era, Margetts (2010, p.373) states that the virtue of slowness in traditional craft must be reconsidered as modernisation destroys the traditional craft industry in so many ways (see Section 2.3.5). Moreover, according to Rogerson (2000, p. 211) and Singh & Singh (2015), several challenges and crises also existed regarding gaps in technology, skill, infrastructure, the increasing price of raw material (Sah, 2011, p. 21), and competition from low-cost Chinese products and market (Mandal et al., 2014, p. 41).

The arrival of industrialization and expanding urbanisation, has inevitably rendered artisans' knowledge and skill which were gathered over generations virtually useless, making craft being seen as an unsustainable source of income (Kapur & Mittar, 2014). Furthermore, Kapur and Mittar added that, the ancient artisan-consumer relationship has broken down, and retailers have generally taken over as the primary source of supply. Skilled labour in the age of globalisation is not something that can be easily replaced or recreated. As far as modernity is concerned, there is no easy way to revert to a primordial instinct of quality craftsmanship (Betjemann, 2008, p. 188).

According to Fillis (2012, p. 24), it is sometimes difficult to differentiate handmade craft products from mass-produced machine-made products. Modern industry, through global-scale corporations, produces mass production factory-based "craft" products that imitate traditional crafts and threaten the livelihoods of many local craftspeople (Walker, 2013, p. 105; Basole, 2014, p. 1). Similarly, in the context of the world craft market, Frost & Sullivan (2005, p. 10) state that the handicrafts market is in a state of transition. They argue that Asian countries like China, Hong Kong and Taiwan are responsible for a massive influx of low-cost, imitation, and fully and partly mass-produced 'craft', which has detrimentally affected the traditional handicraft market.

#### **2.2.4.2 Knowledge transfer**

While modernisation has provided many people with new possibilities, it has also caused considerable damage to the environment and old patterns of connections between societies and their physical surroundings (UNESCO, 1996, p. 38). Modernisation destroys traditional industry (Mohlman, 1999) especially in producing the traditional craft (Silah

et al., 2013) as well as it has also caused a decline in inter-generational knowledge transfer of craft knowledge (Wan Isa et al., 2019; Mohamad & Walker, 2019). Furthermore, modernisation has changed the way of life among the current generation. However, for some creative people, they see modernisation as a positive change (Craft Revival Trust, 2005) where nowadays, most are using electrical machines and modern tools to increase productivity (Haron, Yusof, Taha, & Mutalib, 2014, p. 171). This, in turn, leads to the extinction of the traditional knowledge of craftsmanship and the industry as a whole (Senevirathne et al., 2010, p. 6; Lah et al., 2015, p. 3).

The revitalisation of local knowledge held within craftsmanship is worthy of investigation because it can still be significant, even in this era of globalisation (Parts et al., 2011; Teijgeler, 2015, p. 43). The 2003 UNESCO Convention shifted the focus of preservation from craft products to *the essence of skills and local knowledge in craftsmanship* (www.unesco.org, n.d.; Kurin, 2007). The convention encouraged artisans to develop more craft and to focus on skills and knowledge transfer to others. Many craft traditions involve 'trade secrets' that by tradition should remain strictly within the family (www.unesco.org, n.d.). Worryingly, a lack of interest among younger people could lead to a total extinction of a craft practice along with all the knowledge that has been passed down over generations (Osman & Zin, 2010). However, Holroyd et al. (2015) argues that design and innovation could provide new methods of knowledge transfer from one generation to another.



### **2.2.4.3 Lack of appreciation and understanding**

Traditional crafts have the potential to be recognised livelihoods in this modern world (Tung, 2012). However, the aesthetic understanding of traditional designs, products and practices is less understood by society as a whole (Fillis, 2012), due to lack of knowledge (Chatterjee, 2015) and information regarding craft values and their significance (Howe & Dillon, 2001), and therefore the role and status of artisans and skilled craft labour are overlooked (Banks, 2010, p. 317) and left unappreciated (Twarog & Kapoor, 2004; Howe & Dillon, 2015, p. 50). The reason is that modernisation (see section 2.2.4.1) has resulted in the obsolescence of craft products, design and practice, as well as at the same time, it has also led to new opportunities for the survival of craft in the practical world (Takuya, 2010).

Consumer behaviour is greatly influenced by people's beliefs and values (Howe & Dillon, 2001). For traditional craft to be preserved in this modern era, its values and meanings have to be promoted, understood, recognised and appreciated by the wider society (Risatti, 2008, p. 258; McIntyre, 2010, p. 48; Fillis, 2012). Appreciation potentially could help develop respect and sets a value on others' expressions (Richard, 2007). Therefore, it is important to find ways of enabling society to understand and appreciate the cultural values of craft and craftsmanship, and why things made in this way have greater significance (British Museum, 2011). This can be done through education and knowledge transfer where silah, Basaree, Isa, & Redzuan, (2013) suggested that practical and theoretical knowledge in regards to culture, tradition and heritage should be introduced in schools.

According to Ferraro et al. (2011, p. 20) and McIntyre, (2010, p. 48), a growing appreciation and understanding of traditional craft values would increase the demand for craft products. While Fillis (2012) added that, understanding the craft and its values can lead to a greater appreciation of the potential contribution to social and financial development (Fillis, 2012). In order to involve with the sustainability agenda, skills, knowledge and understanding of craft and its material need to be connected (Kamarudin, Latip, Mansor, Salleh, & Hakim, 2013). The aesthetic elements of crafts and its beauty such as patterns as well as motifs should be seen as a basic element that reflects the artisan's appreciation and understanding. For instance, the traditional motifs and patterns must not be perceived simply as surface decoration. This decoration must be seen as a fundamental element in the overall composition that reflects the artisan's appreciation and understanding of the natural elements and their beauty (Kamarudin et al., 2013).

#### **2.2.4.4 Lack of statistical data and scholarly research**

There is a significant lack of empirical data, literature and statistics (UNESCO Institute for Statistics [UIS], 2016, p. 12; Ferraro et al., 2011, p. 7) about cultural heritage and craft, and both developed and developing countries are facing similar difficulties in collecting accurate data (Richard, 2007). Comparable issues are faced by the brassware craft industry, not only in the study area of Terengganu in Malaysia (see later), but worldwide, as there is a lack of research compared to other crafts (Roy, 1996, p. 358; Prasad et al., 2015, p. 284). Statistics are one of the key components in assessing the vitality of crafts as cultural goods and services globally. Hence, in order to form a better

cultural policy and design-oriented strategy, collecting pertinent data should become a top priority in local, national, and international global agendas (Kabanda, 2015, p. 25).

### **2.2.5 The significant values and potential of craft and craftsmanship**

Values are one of the essential elements in preservation work, as the understanding of the values of heritage assets that matter in preservation could motivate the individual and societies to change towards a better lifestyle (Blackmore et al., 2013, p. 34; Sood & Tulchin, 2014). Values also represent our guiding principles and broadest motivation, as well as influencing our attitudes and the way we act (Public Interest Research Center, 2011).

#### **2.2.5.1 The ‘tacit’ knowledge of traditional craftsmanship**

Traditional knowledge of craftsmanship and local knowledge refer to the sum of age-old information, wisdom, traditions and practices of certain indigenous peoples or local communities (Vecco, 2010, p. 321; Walker, 2013, p. 106; Watene & Yap, 2015). This knowledge is principally passed down through the generations via oral traditions and is expressed through stories, legends, folklore, rituals, songs, arts, and even laws (Kothari, 2007, p. 4).

Craftsmanship is described by Pöllänen (2013, p. 226) as a three-way communication of intimate understanding between material, maker and process; these three being derived from use needs within the local context. Traditional craftsmanship is also a manifestation of tacit knowledge, which Dormer refers to as craft “connoisseurship” (Cheah, 2013, p. 167). According to Walker (2011, p. 164), it is possible to perceive, feel

and recognise tacit ways of knowing internally. However, it is difficult to transcribe the concept into words (Walker, 2011, p. 164).

The tacit knowledge inherent to Malay traditional craftsmanship is also a form of knowledge that the British colonial officer and Malay cultural scholar, Richard Winstedt struggled to acquire (Cheah, 2013). Winstedt acknowledged: *“It is hard to select a good sarong, and to be infallible in the variety of Malay silver-work requires a special knowledge or such happy intuition as few own”* (Winstedt, 1925: v., cited in Cheah, 2013, p. 167). The tacit skills and the traditional knowledge of craftsmanship are priceless, worthy of being sustained (British Museum, 2011) and are regarded as one of the local assets that has an excellent opportunity to be promoted as one of our national identities (Filho, 2015, p. 468).

#### **2.2.5.2 Symbolic and artistic value of craft and craftsmanship**

The meaning and value of handicraft and craftsmanship lie in their symbolic value (Rees, 1997, p. 128; Murray, 2011, p. 1), aesthetic quality (Walker, 2011a, p. 165) and artistic value outside the mainstream (Walker, 2011, p. 9). Handicraft can be understood as a functional product of inspiration which symbolises history, cultural identity and human empathy (Walker, 2011, p. 9; Cheah, 2013, p. 171; Basole, 2014, p. 1), values which can be perceived after the handicraft has been used (OECD, 2008 in UNESCO Institute for Statistics [UIS], 2016, p. 13). Meanwhile, Bauham (Rees, 1997, p. 128) added that handicraft should be understood in terms of the relationship between ‘styling’, ‘symbolism’ and ‘the consumer’. Traditional craftsmanship provides deep insight into the techniques of experience that can shape our contact with others (Sennett, 2009

cited in Yair & Schwarz, 2011, p. 89). The word "craft" itself emphasises the art of expertness (R. Clark & Estes, 1998) or the kind of technical knowledge and skill involved – more than merely creativity – in a field of creating a tangible object that comes into being and where art is applied (Hossouri, 2004; Risatti, 2008). According to Dormer (1997, p. 6), handicraft products are most valued by consumers who can perceive their 'status' and believe that the skills and ability of artistic creations are such 'a gift' (Hickey, 1997, p. 86).

#### **2.2.5.3 Economic value of craft as part of creative industries**

According to various sources, the development of the handicraft industry should be regarded as a priority in order to boost the national income for every developed and developing country around the globe (Banks, 2010, p. 300; Brown, 2014; Mutua et al., 2016). During the early years of the 21<sup>st</sup> century, China, Italy, Germany, France, Turkey, USA, India, Hong Kong, Spain and Mexico were among the top exporters of craft and decorative products (Frost & Sullivan, 2005, p. 18). China is the leading country for its ability to supply low-cost and wide-ranging mass-produced products in volume. Santagata adds in Tung (2012) that developing cultural products based on local resources (UNESCO, 2014, p. 38) could contribute to the dynamism of local economic development (UNESCO Institute for Statistics [UIS], 2016, p. 12). Moreover, this industry could provide adequate opportunities for employment (Cultural Industries Growth Strategy [CIGS], 1998; Basole, 2014, p. 1), even with low capital investment, and has the potential to become a prominent medium for foreign earnings (India-Craft, 2011).

As mentioned earlier, craft is also linked to other areas such as tourism (Richard, 2007, p. 15), as well as other creative industries (Banks, 2010), which are categorised as key national strategies for development (UNESCO, 2014, p. 18).

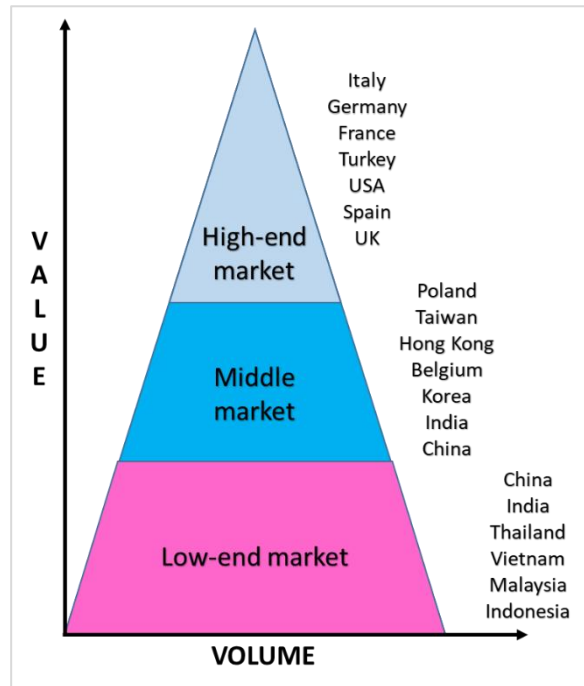


Figure 2.1: Craft categories and its market volume and value (Frost & Sullivan, 2005)

Frost & Sullivan (2005, p. 19) reported and categorised the craft market and volume for exportation as three segments; high-end, middle and low-end. The exporting countries classify these different groups based on the market value of products, which include crafts and decorative items. Countries like Italy, Germany, France, Turkey, USA, Spain and UK tend to dominate the high-end market segment, supplying high-value crafts products.

Eastern European countries like Poland, Belgium, Czech Republic, Hungary and Romania, and Asian countries like Hong Kong, Taiwan and Korea are major players in the medium value products (Frost & Sullivan, 2005, p. 19). China and India are among the biggest competitors within the Asian continent that dominate the low and medium value craft sectors. However, these two countries have their very own distinctive identity in terms of craft production, as can be seen through the level of mechanisation applied to the products. About 90% of craft products originated from China are produced completely or partly by machine, whereas Indian products are mostly handcrafted and demonstrate a high degree of craftsmanship (Frost & Sullivan, 2005, p. 19). Within the Southeast Asian countries, Thailand, Malaysia, Vietnam, Indonesia and the Philippines are among the leading craft exporters that supply low to medium value craft products, which are usually handmade.

#### **2.2.5.4 Local relevance**

For every country, the potential value of handicrafts as representative of local material culture and traditions is surprising. According to Ferraro et al. (2011), numerous scholars and organisations have reported the potential relevance of preserving handicrafts in the era of globalisation. This potential lies in local relevance and cultural heritage values (Cheah, 2013; Yusof et al., 2013; Lah et al., 2015; Hosagrahar et al., 2016). The production of traditional handicrafts manifests as an engagement between the maker, local materials, and the product, which is strongly connected and emotionally related to history and meaning, as well as connected to place and a sense of community (Drake, 2003, pp. 519-521; Walker, 2014, p. 92; Brown, 2014, p. 6; Hosagrahar et al., 2016, p. 17).

Moreover, Walker (2014, p. 92) and Brown (2014, p. 7) link locality to the concept of sustainability in the context of *trade and economic scale*, the historical value of place (environment), the sense of community (social) and a sense of belonging (cultural). All these elements could be closely integrated to create a better understanding of local material culture within societies in order to achieve a more meaningful and sustainable lifestyle (UCLG, 2009, p. 30). It is apparent that localisation is being increasingly recognised as one of the fundamental elements in building resilient societies, which is why 'localism' (i.e. decision making at the local level) has recently become part of political discourse all around the globe (Ferraro et al., 2011, p. 17; McPeake, 2013; Brown, 2014, p. 24; James, 2015).

#### **2.2.6 Conclusion**

Craft and handicraft have been distinctively defined and interpreted by scholars in a wide variety of ways. The terms can refer to a tangible product or object, and to a process that requires skill, creativity and imagination that portrays uniqueness, authenticity, quality and so forth. In a broader perspective, craft and handicraft are usually seen as areas of human endeavour that contribute significantly towards socio-economic growth for all countries, including Malaysia. The production of crafts and associated components have benefited almost everyone, from a sole maker to a large manufacturer (mass production, mass customisation, mass commercialisation). Malaysia's handicrafts hold a special place in traditional Malay culture and custom or *adat*. However, in this modern age, the industry and its associate practice are facing critical issues due to the impact of globalisation, which has contributed significantly to its decline; a decline that reflects and lack of appreciation and understanding by



contemporary society, a cessation of intergenerational knowledge transfer, and disappearance of skills and context-related knowledge, and other inter-related issues. Growth in the production processes of mechanisation in the modern age slowly reduced or suppressed the role of the craft practitioner. Today, some part of the crafts traditionally practised in the past are now considered as a kind of hobby. On the other hand, the interest shown towards original, handmade unique objects is increasing, which creates new opportunities for businesses and holds considerable potential, especially in tourist regions. Obviously, the craft industry and its practitioners urgently need changes through innovation as well as fresh ideas in all respects to ensure sustainability of their craft and to make a living. Improvement of the quality of products, production capacity and market viability, are elements that potentially could be among the factors for the craft industry to move towards a better future.

## **2.3 Brassware as One of Malaysia's Handicrafts**

### **2.3.1 Malaysia handicrafts**

Up to the late 1960s, the traditional handicraft sector in Malaysia was an unorganised sector that was referred to as the “backyard” of Malaysia’s economy. The sector consisted of only household production units (Frost & Sullivan, 2005, p. 333). However, in 2003, Malaysia was ranked 23<sup>rd</sup> on the world’s overall export value of craft with the value of \$2.56 billion and the 6<sup>th</sup> largest handicraft exporter in Asia (Frost & Sullivan, 2005, p. 332). It has more recently been highlighted as one of the leading exporters of cultural goods over the last ten years (UNESCO Institute for Statistics [UIS], 2016, p.11). The richness of artistic beauty and the uniqueness of Malaysian handicraft products that express local identity are fundamental to the production of these cultural heritage products.

The handicraft industry is recognised as part of the Cultural and Art Creative Industry section of the Malaysia Creative Industry Framework (Mohamad et al., 2013). The handicraft industry in Malaysia contributes significantly towards national economic development and growth (Isa, Isa & Ali, 2011; Flew, 2014); it also contributes to the prestige of national cultural heritage. This is supported by the fact that Malaysia is a signatory of the 1972 UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage (UNESCO, 2014, p.18). The message of the Minister of Tourism and Culture Malaysia, Dato’ Seri Mohamed Nazri bin Tan Sri Abdul Aziz in MHDC (2014, p.7), is that the handicraft industry is becoming more significant as it has a very close connection with the tourism industry; both industries are under the purview of the Ministry of Tourism and Culture (Tourism Malaysia, 2018).

Malaysian handicrafts are classified into five categories according to their predominant material types: earthenware, forest-based, metals, textiles, and various (MHDC, 2014).

Malaysian Craft Categories				
Earthenware-based craft	Forest-based craft	Metal-based craft	Textile	Various craft
Iban pottery Sayong pottery	Weaving Rattan Coconut shell craft	Brassware Silver craft Black-smith Filigree	Batik Songket Kain sulaman Sulaman nyonya Seni telepok Tenunan pua Tenunan dastar	Fine carving Aboriginal craft Kompang Serunai Sumpit sarawak

Table 2-2: Malaysia craft category (MHDC, 2014)

In 2015, the sales value of handicrafts totalled RM505.4 million recorded from these five categories. Textiles (RM213.5 million) were responsible for the highest sales, followed by forest-based (wood) crafts (RM116.4 million), earthenware-based (ceramic) crafts (RM74.1 million), metals-based (mainly brassware) crafts (RM54.5 million), and miscellaneous others (RM46.7 million) (MHDC) in Data.gov.my (2016). Between 2011 and 2015, handicraft sales volumes generated by Malaysia's handicraft entrepreneurs under the Tenth Malaysia Plan (2011-2015) totalled RM1.865 billion (Data.gov.my, 2016).



Figure 2.2: Craft sales value under Tenth Malaysia Plan (2011-2015)

In 2015, there was a total of 5,130 handicraft entrepreneurs registered with the Malaysia Handicraft Development Corporation (MHDC). Of these, 12.7% (651) were producing metals-based handicrafts, but only 2% (13) were involved with brassware handicrafts (Mohamad et al., 2013; Data.gov.my, 2016).

Malaysian handicrafts hold a significant cultural place in Malay court protocol (Haron et al., 2014, p.170). The use of luxury handicrafts as ceremonial items, including metalwork and woodwork products, together with a person's clothing style, often helps determine and affirm a person's position and reputation within the hierarchy of the Malay court and society (Cheah, 2013, pp. 166-167; Norkhalbi & Wahsalfelah, 2014, p. 35). Artefacts required for special ceremonies are regulated by custom (*adat*), as demonstrated in the instructions set out in the *Adat Raja-Raja Melayu* of 1779 (Sudjiman cited in Cheah, 2013, p. 166). Ivor Evans, in Cheah (2013, p. 167), states that Malaysian handicrafts are primitive yet artistic, pleasing, and possess a high standard of excellence. Malaysia's history indicates that a large number of handicraft products in the country can be

attributed, at least in part, to migratory patterns in ancient times due to wars and instability, in addition to active trading activities (Ismail, 2009).

Today, many craftmakers in Malaysia are still operating micro- and small enterprises as determined by number of employees and annual sales turnover. According to Wan Hashim Wan Teh in Muda and Halim (2011), most of the local craft enterprises are still producing and exhibiting uncompetitive craft products and are unable to compete with foreign craft products. According to SME Corp. Malaysia in MHDC (2011), the term ‘craft entrepreneur’ is divided into three categories: Micro Enterprise, Small Enterprise and Medium Enterprise. **Micro Enterprise** - Full-time workforce of less than 5 people or sales less than RM250 thousand a year. **Small Enterprise** - Full-time workforce of between 5-50 people or sales between RM250 thousand and less than RM10.0 million a year. **Medium Enterprise** - Full-time workforce of between 51-150 people or sales between RM10.0 million to RM25.0 million a year.

<b>Annual Sales Turnover:</b>	
Size	Manufacturing (Including agro-based) & Manufacturing related services
Micro	Less than RM250,000
Small	Between RM250,000 and less than RM10 million
Medium	Between RM10million and RM25million
<b>Number of Full-Time Employees:</b>	
Micro	Less than 5 employees
Small	Between 5 and 50 employees
Medium	Between 51 and 150 employees

Source: SMECORP Annual Report 2008

Figure 2.3: Enterprise categories and its indicator

SMEs contribute RM1.01b to GDP and create 8655 new job opportunities by 2020 while 20927 new SMEs will be formed in 2025. Across Malaysia, SMEs make up the vast majority of registered companies. Terengganu is home to approximately 22,514 SMEs, of which more than 88.3% are in the service sector (craft is included in this sector) (UTEN-T, 2015, p. 19).

### **2.3.2 TEREANGGANU: "Beautiful state with wonderful culture"**

*"Negeri Cantik Budaya Menarik"* (Terengganu [SUK], 1999), which literally means "Beautiful State with Wonderful Culture", is one of the many tourism campaign slogans associated with the state of Terengganu. The state is approximately 12,956 square kilometres in size and borders the states of Kelantan to the north-west, Pahang to the south-west and the remainder with an international maritime border (Terengganu [SUK], 1999). In pioneering days, the state of Terengganu was referred to by many names such as 'taring anu', 'terang ganunya' dan 'terengan nu' (JPBD, 2009, p. 7). There is a historical record that there were Chinese traders who had previously named Terengganu as Ting Chia Hsia Lu, Teng Ka Ha Lo in Hokkien (M. S. Awang, Abdullah, Abu Bakar, & Ali, 1992). According to Embong (2012), many historians from the West, China, and other regions referred to Terengganu as "The Favoured Coast".

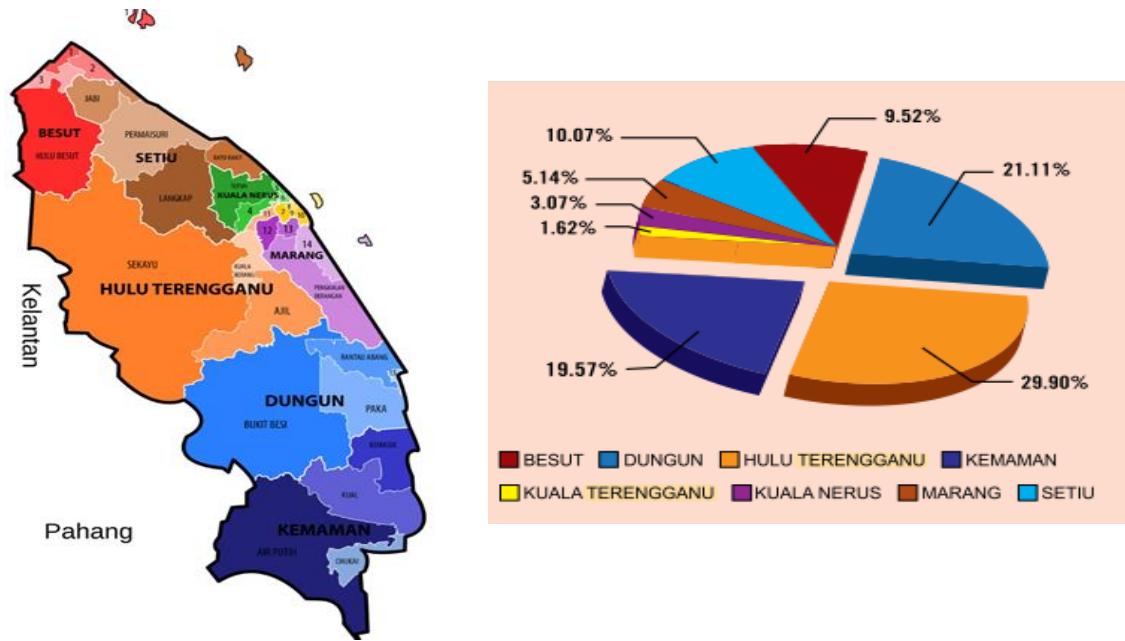


Figure 2.4: The map of Terengganu and its district

Ptolemy, a renowned Greek astronomer who lived in the second century BCE and was born in Egypt, produced a map of the Malay Peninsula. This map is believed to have been created in Alexandria where there are two ports on the East Coast called "Kole" and "Perimula". The port of "Perimula" is believed to be "Kuala Sungai Terengganu", and "Kole" port is "Kemaman" (M. S. Awang et al., 1992). The arrival of traders mainly from China, Arabia and Gujerat in Terengganu also helped urban growth and development through trade, religious, cultural and other activities during the Pre-colonial Age (before the 19th century), before the British occupation dominated Terengganu State.

In the 18<sup>th</sup> century, Kuala Terengganu emerged as the preferred trading centre for Europeans with economic interests in the Far East (Terengganu [SUK], 1999). This has been validated by the fact that several Europeans visited in the period 1719-1720; among them, Capt. Alexander Hamilton, an eminent English trader (Terengganu [SUK],

1999), who was among the earliest English traders and visited Kuala Terengganu before the monarchy was founded. Hamilton probably stopped in Kuala Terengganu in late 1719 (JPBD, 2009, p. 12), either on his way to or from Siam and he recorded that:

*“Trangano stands pleasantly near the sea, on the side of a river that has a shallow bar, and many rocks scattered near and again within the river, but room enough in many places to moor small ships very securely, to keep them safe from the dangers of the winds or floods. There may be about one thousand houses in it, not built in regular streets, but scattered in tens or twenties in a place a little way from another's Villa of the same magnitude. The town is above half-populated with Chinese, who have a good trade for three of four junks yearly, besides some that trade to Siam, Cambodia, Tunqueen and Sambas.”*

During the 19th century most of the people in Terengganu were farmers, fishermen and traders (Wahab, 2013). In addition, there was so much craft manufacture in the region that Westerners named Terengganu the “Birmingham of the Peninsular” (Embong, 2012, p. 32). The demand for ceremonial objects in Terengganu was satisfied by the traditional craft industries. Hugh Clifford in 1895 and William Skeat in 1899 reported that Terengganu Malays were notable for their excellent craftsmanship in constructing vessels in addition to being skilful in fabricating fine metalwork and wood carvings (Embong, 2012, p. 33). They also produced silk, textiles, traditional weapons and many more artefacts (Terengganu [SUK], 1999); Cheah, 2013, p. 168). Throughout history, Terengganu has been a renowned trading centre and a proud state with a rich cultural heritage. Therefore, it is relatively easy to find highly skilled artisans in various craft



ventures, as well as craft production facilities throughout the state. It is worth mentioning that, since the 18<sup>th</sup> and 19<sup>th</sup> centuries (Wahab, 2013) until now, the state of Terengganu was one of the largest handicraft producers in Malaysia (Data.gov.my, 2016).

In the 19<sup>th</sup> and 20<sup>th</sup> centuries Terengganu underwent a very important craft economic development process (JPBD, 2009). During this period changes began to take place that transforming the economy from a traditional economy (serving local needs, use of barter, etc.) to a commercial economy (based on monetary exchange and trade) (Wahab, 2013). Terengganu can be proud of its local produce as a traditional material culture that has been exported and sold locally and globally. Since the reign of Sultan Zainal Abidin Shah I (1708-1733), the Sultan of Terengganu has been the driving force of development in the context of trade, industrial, craftsmanship, currency production and infrastructure.

### **2.3.3 Material element of brassware craft**

Copper is a valuable, abundantly available metal that is versatile, ductile and easily formed. It can be formed into numerous, affordable products. Consequently, copper is a significant component in metal-craft production and is widely employed in manufacturing sectors such as electronics, structural engineering, biomedical, household items, craft and many others (European Copper Institute, 2018). Alloying processes have been developed over centuries to produce tubes, roof panels and building insulation, as well as wires for electrical appliances and jewellery. Over the centuries, copper has been moulded to form pipes and valves, bells, statues and

sculptures (Copper Development Association, 2013). According to Ken Kempson in *Brass in Focus Magazine* (Mohamad et al., 2013), copper is highly versatile and very cost-effective, thus making it an ideal choice for components of complex and durable design. Copper's versatility is due mainly to its ability to be used as a constituent of various metal alloys. To date, the 'American Society for Testing and Materials International' has recognised 570 copper-based alloys (Copper Development Association Inc., 2017).

In the brassware handicraft sector, brass is an alloy of copper and zinc (Prasad et al., 2015, p. 271). Brass is also used in precision manufacturing in areas such as clock and watch making (European Copper Institute, 2018). Colour variations of brass depend on the ratio of zinc and copper in the mix. A higher percentage of zinc will result in a slightly more durable silverish copper alloy (Mohamad, Abd Rahman, & Abdullah, 2013a). Brass is more durable than copper in its natural state.

#### **2.3.4 The origin of the brassware handicraft industry in Terengganu**

The art of handicraft is said to have reached Terengganu via trading activities throughout the Malacca Straits. Shariff (2011) suggested that the art of brassware was brought to Terengganu by Chinese immigrants from Funan during the Dong Son period<sup>2</sup> (Ahmad, 2000). Among those who migrated were skilled miners, artisans and fishermen who were well known for their fine craftsmanship, particularly metalwork (Wahab, 2013, p. 144). Their migration centred primarily around Cambodia, Singapore and the Malay Archipelago (R. Awang, 1984). Mohd Noor (1978) suggested that the brassware craft

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<sup>2</sup> The Don Son period refers to a Bronze Age culture in the northern Vietnam region, dated from 1000 BCE to the first century CE.

industry in Malaysia originated from India. This theory was established after considering several factors, such as raw copper being acquired from India via Singapore. About 180 years ago, Singapore was famous for its brassware crafted by Malay artisans in Gelam; the Malay artisans there learned their skills from artisans who came from India (Mohd Noor, 1978). However, in 1964, two large bronze drums (Dong Son drums)<sup>3</sup> dating from the Dong Son period (approximately 300 years BC) were discovered by Ali bin Abdullah in Batu Burok, Kuala Terengganu (Abdullah, 1993). This discovery suggests that the Bronze Age in Malaysia began over 2500 years ago; it also indicated ancient links between local Malay communities and mainland Southeast Asia. Through this discovery, scholars began to realign their theory of the origins of brassware craft with the idea that Terengganu was once the centres of the ancient brassware industry, attracting traders from as far as Indochina (Awang et al., 1992).

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<sup>3</sup> Dong Son Drum originates from an area in Vietnam known as the Dong Son. The drum is made of bronze and is a luxury item that symbolises the status of the owner and is therefore only owned by wealthy and prominent individuals (Abdullah, 1993).

### 2.3.5 Brassware handicraft is in decline

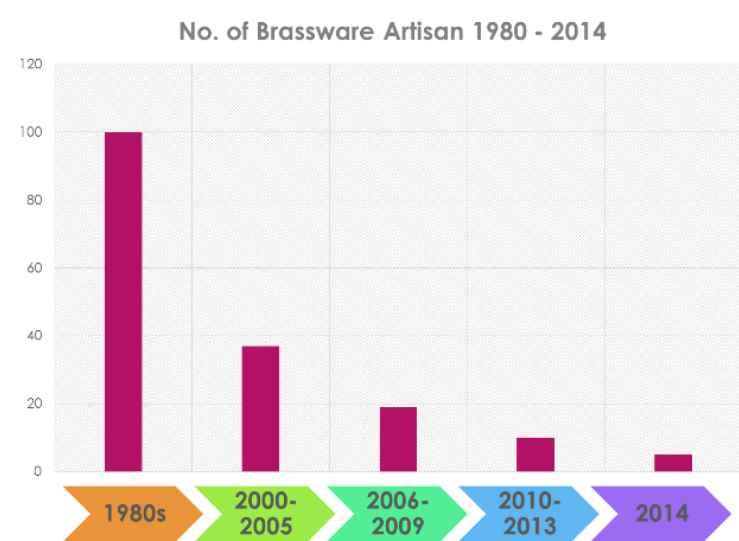


Figure 2.5: Declining number of brassware entrepreneurs (1980-2014)(Mohamad, 2014).

In recent decades, the brassware handicraft industry in Malaysia has been in decline. The decreasing number of skilled artisans has caused the industry in the primary brassware region of Terengganu to stagnate (Ismail, 2012). In the 1980s, approximately 150 artisans actively produced brassware and this decade is regarded as the high point of this handicraft in Terengganu (Ismail, 2013 cited in Mohamad, 2014). Nowadays, however, brassware handicrafts are no longer a primary source of income for the region (Data.gov.my, 2016). The effects of commercial development in the city of Kuala Terengganu have resulted in the demolition of houses and brassware workshops in several villages, especially in Kampung Ladang and Kampung Tanjung. As a consequence, most entrepreneurs and artisans have moved away from Kampung Ladang and no longer produce brassware handicrafts (Mohamad, 2014). Previous research by Mohamad (2014) reveals that, as of 2014, only ten businesses-entrepreneurs were still

producing brassware handicrafts. In addition, the effects of globalisation and a slow-moving economy have gradually eroded inter-generational knowledge transfer and traditional knowledge of brassware craftsmanship and have led to the near extinction of the industry (Senevirathne et al., 2010, p. 6; Lah et al., 2015, p. 3).

### **2.3.6 The high point of brassware handicraft industry in Terengganu**

Kuala Terengganu has always been known as the capital of the traditional brassware handicraft industry, especially Kampung Ladang with a sizeable population of highly skilled artisans (Ahmad, 2000; Ismail, 2009). Kampung Ladang is located close to the palace, the administrative centre and the main trading activities (Payang central market) in Kuala Terengganu (Wahab, 2013). Therefore the brassware crafting activities have received palace court patronage since the 18<sup>th</sup> century (Parlan, 2016). The royal court patronage emphasises and prioritises the aesthetic beauty and artistic value of a craft product as it represents the status of a person. The royal patron determines a desired pattern of art. Siti Zainon Ismail in Parlan (2016) further states that the king is regarded as the "influence" that "hires" or "orders" the craftsmen who have been appointed as capable of making the creation. It was a common sight in Kuala Terengganu to see brassware handicraft production workshops operate close to living quarters and this legacy has been passed down for generations spanning a few hundred years (Ismail, 2009). The existence of these family-run workshops is largely a result of development of earlier civilisations in Terengganu, which flourished over time (Wahab, 2013).

Brassware making has been practised for more than 300 years, mainly due to royal house patronage and support for the arts (Muhamad, 2008). During his reign, from 1839

to 1876 (Shariff, 2010), Sultan Omar introduced a policy to promote handicraft industries in the state capital. He encouraged skilled brassmakers (*Orang Pandai Tembaga*) and skilled ironsmiths (*Orang Pandai Besi*) to develop the industry. “*Pandai Tembaga*” and “*Pandai Besi*” are two terms bestowed upon the highly skilled artisans who could turn their respective metals into highly prized works of art (Shariff, 2010). According to Mohd Noor (1978), Sultan Omar also imported skilled artisans from countries like India to settle in Terengganu provinces and train local craftspeople.

The sultans who succeeded Sultan Omar also supported such policies, especially Sultan Zainal Abidin III. He encouraged locals, especially fishermen in Kampung Ladang and Kampung Tanjung, to continue their forefathers’ legacy in preserving their family heritage of brassware craft. According to Awang (1984), metalwork artisans resided within the royal court compound with an allowance and tools provided by the royal house. In return, the royal court regulated every aspect of production and technique. Therefore, the skills were passed down to a selected few with the consent of the royal court, hence the legacy was continued by the family and these skills were passed on from one generation to another.

As we shall see in the sustainability and design section (Section 2.4), in the context of brassware craft making practice in Terengganu, there is historic evidence regarding craft-design creative collaboration practice between artisans, designers and royal court patrons during the 18<sup>th</sup> century in Kuala Terengganu (Abd Wahab, 2016; Parlan, 2016).

### 2.3.7 The traditional brassware handicraft making process

Brassware craft-making is a risky job like other crafts with an uncertain outcome (Walker, 2013, p. 101). However, as with other artistic metalworking, it gives the pleasure of the element of surprise in the outcome (Fillis, 2012, p. 27). In Terengganu, brassware handicraft-making is classified as a cottage industry<sup>4</sup> where this activity takes place within the house<sup>5</sup>, either under the house or in a workshop close to the house (Mohd Noor, 1978; Cheah, 2013, p. 178). The traditional manufactured and crafted brassware in Terengganu are made using the old methods that involve *cire perdue* or the lost-wax casting technique (Hunt, 1980; Ismail, 2009; Backman, 2016). A master pattern is made by shaping a block of wood using a traditional lathe called *bindu* with hand tools, such as a knife called a *baja*. This pattern is then dipped into hot molten paraffin wax until it is covered with a few layers to make the wax pattern. The wax that takes the shape of the pattern is then removed from the master pattern for the moulding process. A mixture of clay, sand, paddy husk and water is then applied to the model using three layers<sup>6</sup> and allowed to rest until it hardens and dries. After drying, the clay mould is heated in the ground furnace (*dapur*) for the de-waxing process, where the mould is placed upside down and the wax melts and escapes from the clay mould. Molten brass is then poured into the clay mould to replace the 'lost wax'. The brass is

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<sup>4</sup> A cottage industry is a small household industry, informally organised by individuals or family-oriented with private resources and pursued full-time or part-time (Fening, 2015, p. 101).

<sup>5</sup> The main characteristic of a typical Malay kampung house in Terengganu is it is on stilts. This was to keep safe from wild animals and floods, to deter thieves, and for added ventilation, as well to do other activities such as making crafts.

<sup>6</sup> First layer is a mixture of fine sand with clay, second layer is a mixture of grain sand with clay, third layer is a mixture of clay and paddy husk.

then allowed to cool, the clay mould is broken away and the brass article is removed and finished by filing and polishing (Ismail, 2009; Backman, 2016).

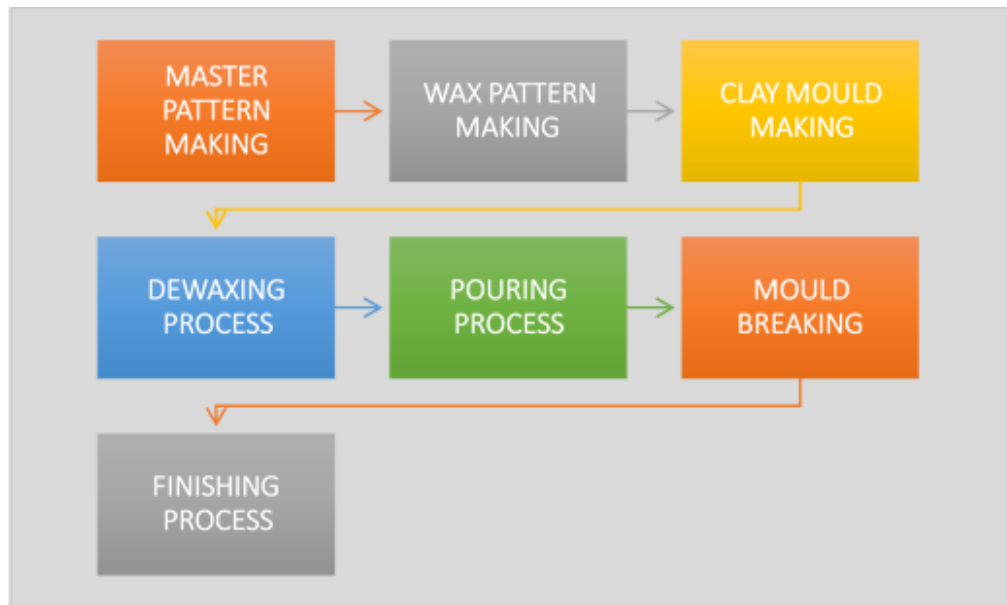


Figure 2.6: Brassware craft making process flow



### 2.3.8 Development of brassware handicraft in the context of usage

#### *The “use” of brassware as a “way of living”*

Brassware has been widely used throughout the world since the Bronze Age (Davey, 2011, p. 152). In the 21<sup>st</sup> century, this metal still plays an important role - it is also one of the world’s most reusable resources, with many diverse functions (European Copper Institute, 2018). In the context of production, China and India are noted among the major copper-based craft producers in the world with a distinctive level of the market segment (Frost & Sullivan, 2005).

Terengganu brassware handicrafts are categorised into two types: yellow brass (*tembaga kuning*) and white brass (*tembaga putih*) (Leigh, 2000), with three distinct classes according to usage: utility and household; jewellery and souvenirs; and traditional ceremonial objects (Ahmad, 2000). Historic writings about the identity of brassware craft in Terengganu refers to the white brass for which Terengganu was famous (Leigh, 2000). (p.23). Household items are mostly made of yellow brass (*tembaga kuning*), whereas jewellery and ceremonial apparatus often use a more refined white brass<sup>7</sup> (*tembaga putih*) (Ahmad, 2000; Muhamad, 2008). Brass kitchenware technically is made to a certain thickness and is generally well-built to withstand heat and pressure during cooking, whereas jewellery is more refined (Mohamad, 2014).

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<sup>7</sup> This special *tembaga* is iconic for its whitish sheen and luxurious silver-like shine – the result of a tried-and-trusted formula of copper, zinc, tin and nickel.

Category of Terengganu brassware craft product	
Yellow brass ( <i>Tembaga kuning</i> )	White brass ( <i>Tembaga putih</i> )
<ul style="list-style-type: none"> <li>• Pot</li> <li>• Pan</li> <li>• <i>Sarang kuih bahu</i></li> <li>• <i>Sarang penganan</i></li> <li>• <i>Kebak laksa</i></li> <li>• <i>Sarang nekbat</i></li> <li>• <i>Kipas bot nelayan</i></li> <li>• <i>Gandar</i> (shaft)</li> <li>• <i>Pendakap</i> (bracket)</li> <li>• Gasket</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Dulang bertudung</i></li> <li>• <i>Pahar</i> (<i>por, semberik, anak kangsa, kalai batil</i>)</li> <li>• <i>Sanggam</i></li> <li>• <i>Baki</i></li> <li>• <i>Bokor</i></li> <li>• <i>Talam</i></li> <li>• <i>Terenang</i></li> <li>• <i>Celup tangan</i></li> <li>• <i>Cepu</i></li> <li>• <i>Cembur</i></li> <li>• <i>Bekas sirih</i></li> <li>• <i>Tapak sirih</i></li> <li>• <i>Bekas inai</i></li> <li>• <i>Kaki lilin</i></li> <li>• <i>Kendi</i></li> <li>• <i>Ketur</i></li> <li>• <i>Bekas air mawar</i></li> </ul>

Table 2-3: Category of Terengganu brassware craft product

Brassware holds a special position in traditional Malay custom (*adat*) (Leigh, 2000, p. 22) and culture as a sign of wealth and a symbol of status (Cheah, 2013, p.166; Norkhalbi & Wahsalfelah, 2014, p.35; Backman, 2016; Parlan, 2016). Traditional brassware handicrafts are generally employed during Malay traditional ceremonies such as marriage proposal (*merisik*), engagement (*bertunang*), wedding (*berkahwin*), shaving of a new-born's head(*bercukur*), circumcision, post-natal cleansing ceremony (*melenggang perut*) and many others (Leigh, 2000, p. 22; Ahmad, 2000; Muhamad, 2008).

Leigh (2000) stated in her publication about the use of *bekas por*, a large tray with a stand where a mountain of yellow sticky rice (*nasi kunyit*) rises up to greet wedding couple, a person who returned from Mecca, or the parents of a new-born baby. This is

part of the essential accoutrements of a Malay household and is brought out and lovingly polished for use during times of ceremony and celebration. In earlier times, the highest quality brassware was reserved for royalty and nobility and only used in special ceremonies (Ahmad, 2000).

### **2.3.9 The values of traditional brassware craft design and craftsmanship**

Generally in Malay society traditional handicrafts are valued for possessing their own beauty, which extends beyond just their visual appeal but also includes the philosophy behind them (Leigh, 2000; Muhamad, 2008; Backman, 2016). Traditional Malay brassware handicraft pattern designs are very distinctive. These patterns often portray aspects of local history (Backman, 2016). In its formative years, the brassware handicraft industry in Terengganu focused on producing materials for personal use. Brassware then was normally devoid of heavy carvings or it was simply plain, which accords with Islamic tradition (Shariff, 2010).

Muhamad (2008) and Parlan (2014) explain that the design identity of Malay brassware craft in Terengganu has been influenced by the assimilation and absorption of several cultures and beliefs. The transition of eras and other factors related to the socio-economic activities such as diplomatic relations, trading networks locally and globally lead into this (Ahmad, 2000). The impact of these activities has characterised a transition of new identity in the brassware craft design and its craftsmanship up to today.

In addition to the valuable characteristics of craft in general, discussed in section 2.2, in the case of brassware in Malaysia, this craft includes the creation of motifs and decoration that is not only locally relevant and meaningful but also conforms to Islamic

traditions, particularly the absence of any human or animal forms. Brassware handicraft products are often regarded as a hallmark of quality workmanship (Ahmad, 2000; Ismail, 2009), and are based on a material culture that has evolved into sustainable and context-based growth influenced by local cultural industries (Moreno et al., 2004, p. 4). This valuable material heritage has great potential for growth and, with a proper management strategy, could generate considerable income for the country; Singh & Singh (2015, p. 12) explained the importance of strategic changes and the need for exploration as to how brassware clusters can remain competitive in a global marketplace and succeed in the future.

#### **2.3.10 Brassware in an international context**

The potential of copper to accommodate societal needs resulted in increased innovation with evidence of various attempts from several professionals worldwide such as Richard (2007), Wolfe Wilson (2010) Bhattacharya (2011), Sachan et al. (2013), Basole (2014), Mandal et al. (2014), Prasad et al. (2015) and Jayawickrama, et al. (2016) in the context of brassware and its relation to design and sustainability. The demand for brassware has led to the rise of inventive research and design innovation in many aspects associated with brassware craft such as developing new services, applications and production (European Copper Institute, 2018).

For instance, appropriate technologies have been introduced by implementing permanent mould casting and die pressing technology as well as developing a portable furnace in the Sri Lankan brassware community. Similar attempts to enhance the manufacturing value of brassware have also been developed by Mohd Nor (2012) in

Malaysia by introducing new moulding material for investment casting of brassware, in which she used local silica sand taken from nearby beaches mixed with Plaster of Paris or gypsum and other ingredients to shorten the production time of brassware making.

Formerly, Korea has always been well known for the quality of its copper alloys product. Korean bronzeware was often imported by the Chinese, world leaders in bronze craftsmanship themselves. In the 10th century, Korean craftsmen were the first to combine bronze with zinc, an alloy not previously achieved due to zinc's low boiling point. This pioneering spirit paved the way for later and greater innovations in metalwork (KSCPP, 2008, p. 41).

### **2.3.11 Conclusion**

Copper plays a crucial role in today's global society –in the home as well as in business and industry. Its versatility contributes to a broader range of applications and usage (European Copper Institute, 2018). Copper is beneficial not only for home-use (both utility and decorative, such as cookware, furniture and accessories), but the role is widening to support solar technology in solar thermal heating; air conditioning technology; turbines and in supporting renewal energy.

Brassware craft is not like other traditional material cultures. Knowing how it is made and what it is made of, it is evident why brassware craft can still be seen today. The durability of this craft is astounding, and the versatility of the material is wide-ranging. The creation of brassware craft is closely connected to the highly skilled artisan with technical uniqueness, knowledge and wisdom. That is why these traditional artefacts, as well as the related knowledge, are passed down from one generation to the next.

However, in this modern age, the practice of brassware making is declining due to the impact of globalisation. This means that the related traditional knowledge and wisdom are threatened. The declining factors and the threat of cultural significance of the brassware industry in Terengganu in the context of design, product and practices come from inside and outside of the community itself. Brassware artefacts embody knowledge, practices and modes of living that, for various reasons, are regarded as meaningful and culturally significant.

The increasing demand for Malaysian handicrafts affects the development of the local craft entrepreneur in terms of their willingness to innovate, their commitment and their enthusiasm to succeed in their business. Demand is related to a sense of appreciation of the hard work of local artisans. This issue strengthens our appreciation of craft and design as critical in reforming relationships with the environment. Innovation and commitment in the creative craft business should be among the essential elements found in every artisan in order to develop craft products that have contemporary relevance while also retaining the ethical and aesthetic values of Malay culture.

## 2.4 Sustainability and Design

### 2.4.1 The concept of sustainability

Sustainability is a concept that originates from the combination of the words 'sustain' and 'ability' (Dictionary.com, 2017). The contemporary meaning and implications of the terms 'sustainability' and 'sustainable' developed into common usage during the second half of the 20<sup>th</sup> century (Du Pisani, 2006, p. 85). In the 21<sup>st</sup> century the topic of sustainability appears to be at the frontline of corporate discourse (Sloan, Klingenberg & Rider, 2013, p. 19) as *"businesses have changed their perspective towards sustainable practices from rejection to embracing it as a strategic organisational goal"* (Sloan et al., 2013, p. 27).

Djalali and Vollaard (2008, p. 33) state that the concept of sustainability is difficult to define clearly. However, they add that sustainability is also known for its holistic approach, which can be applied and explored in many ways (Dessein et al., 2015, p. 24), in every field and at all levels of work (Sood & Tulchin, 2014). It can be used as a guiding principle, a goal, and a standard to fulfil human needs, either at the local level or the national level (Adams, 2006, p. 2; Farley & Smith, 2012, p. 85). Elkington (2018) states that since the 1990s, the sustainability sector has grown rapidly until today with around \$1 billion in annual revenues globally.

- **The progress of sustainability**

Bhamra & Lofthouse (2007, pp. 1–2) describe the progress of sustainability via three waves. **The first wave** of sustainability during the 1960s and 1970s stimulated the Green movement or the wave of Environmentalism (Elkington cited in Chudasri, 2015, p. 10).

During this period the concerns about environmental and social issues were prioritised especially in Europe and North America through the action of extensive protests, campaigns and publications (Walker cited in Chudasri, 2015, p. 10). On the other hand, the rise of non-profit and non-governmental organisations has shown significant efforts in their focus for change, and it was driven through government policy and regulation (Bhamra & Lofthouse, 2007).

**The second wave** occurred during the late 1980s and early 1990s and was started by a series of economic and ecological degradation crises which stimulated a range of legislation and environmental, health and safety guidelines (Bhamra & Lofthouse, 2007, p. 2; Harris, 2000, p. 16). In the 1997 report<sup>8</sup>, a section on “Resisting New Forces of Poverty” discusses factors such as environmental degradation which cause worsening conditions for the world’s poor - where many of the people in rural areas are poor and struggle to survive (Harris, 2000, p. 16).

**The third wave** of sustainability occurred during the new millennium era with the rise of anti-globalisation (Hopwood, Mellor, & O’Brien, 2005, p. 46) and the transformation of sustainable business and value creators (Dunphy cited in Sloan et al., 2013, p. 25). This crises brought together activists and NGOs as well as top business organisations worldwide to collaboratively discuss issues such as trade, justice, debt, water scarcity, exploitation and so forth (Du Pisani, 2006, p. 85; Djalali & Vollaard, 2008, p. 82). In addition, the nature of business corporations has been re-interpreted in order to

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<sup>8</sup> UNDP Human Development Report 1997, Chapter 3.



integrate the self-renewing element of the whole socio-ecological context (Dunphy cited in Sloan et al., 2013, p. 25).

#### **2.4.1.1 Triple Bottom Line (TBL)**

The sustainability framework was initially described by the three interconnected elements known as Triple Bottom Line (TBL). TBL is a typical approach for businesses to understand their sustainability efforts (Miller, 2020) as well as to address the issue of sustainability (Elkington in Tseng et al., 2020). Noticeably, this TBL model represents sustainability as "social", "environmental", and "economic" (Hopwood et al., 2005, p. 48; Klewitz & Hansen, 2014, p. 58); and similarly, Filho (2015, p. 468) and Elkington in Tseng et al., (2020) referred to "people", "planet", and "profit". Economist (2009) in Chudasri (2015) added that, these three aspects (planet, people, and profit) reflect distinct types of value by nature. Profit is typically addressed in terms of money, whilst planet as well as people are described in different ways. Therefore, analysing these elements together seems challenging (Chudasri, 2015). In a society that prioritises profit above meaning, adopting a TBL approach may appear idealistic to some (Miller, 2020).

The TBL approach is problematic, according to Sridhar & Jones (2013) based on their empirical study of the sustainability reports in companies based in the Asia-Pacific region. Furthermore, they also said that TBL's conceptual foundations are rooted in a quantitative, economic perspective. As a result, the TBL must evolve along truly trans-disciplinary lines that combine social and natural sciences with economics in order to successfully address environmental and social concerns (Sridhar & Jones, 2013).

#### **2.4.1.1.1 “Criticism of the Triple Bottom Line”**

Currently, the most widely recognised definition of sustainability or interpretation of sustainable development is specified by the TBL of economic profitability, environment stewardship, and social responsibility (Elkington, 1997 in Gmelin & Seuring, 2014). However, TBL model has been criticised as simple or hard to operationalise (Norman and MacDonald in Owens, 2017). Furthermore, the TBL concept is still controversial in many respects (Chudasri, 2015). Wu et al. (2016) and Tseng et al. (2020) present strong evidence that balancing the economic, environmental, and social components of sustainability is no longer enough to address the full notion of sustainability. It is necessary to get assistance from operations, technology, and engineering.

The sustainability industry has expanded significantly during the 1990s, with yearly earnings of about \$1 billion worldwide. By 2030, the United Nations Sustainable Development Goals are expected to produce over \$12 trillion in commercial possibilities (Elkington, 2018). Indeed, Elkington (2004) demonstrated in Chudasri (2015) posited that pushing corporate enterprises towards sustainability using the TBL strategy was challenging and uncomfortable. The reason for this is because it can sometimes be counterproductive and fail to result in real integration. This is considered an "initiative" approach to sustainability, and in the twenty-first century, a far more "comprehensive" strategy involving a wide variety of stakeholders will be required (Elkington, 2004 in Chudasri, 2015). Despite the fact that the road ahead is paved with so many uncertainties, it is important not to be dispirited (Miller, 2020). Miller (2020) added that, *"The first steps toward sustainability start with the individual"*.

#### **2.4.1.2 Fourth Bottom Line (FBL)**

Recent discussions by Nurse (2006), Soini & Birkeland, (2014) and Filho, (2015, p. 468) have included a fourth, “culture”, in sustainability and its role has been recognised by various organisations globally. Surprisingly, however, most attempts and former notions of progress addressing sustainability are reactive (Walker, 2011b, p. 85), often abused and develop into problematic concepts (James, 2015a). This is because these attempts regularly follow the typical behaviour of common sustainability discourse rooted in government agendas such as environmental and economic perspectives (Du Pisani, 2006, p. 94; Adams, 2006, p. 3; Dessein et al., 2015, p. 8). In addition, according to Walker (2011), “culture” can be included under social considerations, depending on the roles of particular groups.

Inayatullah (2009) proposed including spirituality as the Fourth Bottom Line (FBL); however, this term may be problematic for some due to its close association with the soul, the sacred and religion. Therefore, Walker (2011, 2014) suggested a Quadruple Bottom Line of Design for Sustainability (QBL) to inform his creative design endeavours comprising of: Practical Meaning (including environmental impacts and responsibilities); Social Meaning (social justice, equity, ethics and compassion); Personal Meaning (conscience, inner values, spirituality and questions of ultimate concern); and Economic Means (financial viability). This additional “spiritual” or “personal” element was introduced to provide opportunities and clearer purpose to improve the well-being of the individual without compromising core values, as well as to achieve sustainability (Walker, 2011; Sood & Tulchin, 2014).

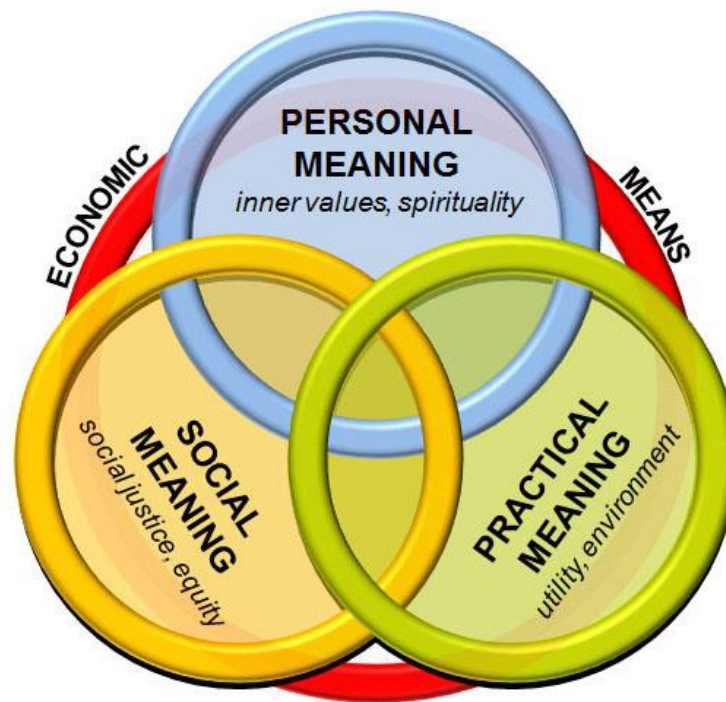


Figure 2.7: The Quadruple Bottom Line of Sustainability (Walker, 2014)

#### 2.4.2 Sustainable development

The term “sustainable development” is a recent concept that emerged from environmental and social concerns that had been mounting since the 1960s (Bhamra & Lofthouse, 2007, p. 9). The United Nation's Brundtland Report defined sustainable development as “*development that fulfils the needs of the present without compromising future generations’ ability to meet their needs*” (WCED, 1987, p. 8 cited in Ferraro et al., 2011, p. 4). The idea of “Sustainable Development” was formally adopted and presented to a broad global audience in 1987 by the Brundtland publication “Our

Common Future” (Dessein et al., 2015, p. 14). The issues of environmental impact (global warming, deforestation, species loss, toxic waste, etc.) and social concerns (poverty, the gap between the rich and the poor) were part of the opening discussion as this issue is closely related to economic growth (Hopwood et al., 2005, p. 39; Adams, 2006, p. 2; Jenkins, 2009, p. 380). Knowing the potential, the United Nation Sustainable Development Goals have estimated to generate market opportunities of over \$12 trillion a year by 2030 and Elkington (2018) believes that this is a conservative estimate.

Business writer John Elkington, a pioneer in the field of sustainable development and corporate social sustainability, initiated it in 1994 (Sood & Tulchin, 2014) to examine a company’s social, environmental and economic impacts (Elkington, 2018) as well as an approach to drive market-based sustainable development practice (James, 2015a). TBL was articulated more fully by John Elkington in his 1997 book *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*.

Sustainable development acts to aim for the longevity of all forms of life (Ferraro et al., 2011). It has significant potential to address fundamental challenges for societies for today and the future (Hopwood et al., 2005). To achieve this aim, major change and reorientation of ways of thinking by societies will be needed (Hopwood et al., 2005, pp. 47-48) as well as lifestyles and values (Ferraro et al., 2011, p. 1; Walker, 2012). Since the Brundtland report in 1987, a broad discussion has emerged around topics such as eco-innovation (e.g. eco-design, cleaner production) and sustainability-oriented innovations (SOIs) (Klewitz & Hansen, 2014).

The popularity of the concept of sustainability, as well as sustainable development, has made local governments, practitioners and the educational sector give their attention to this idea (UCLG, 2009, p. 16; Dessein et al., 2015, pp. 14-15). Nevertheless, these conceptualisations did not take "individual" or "personal" elements into account (Walker, 2013). However, Elkington (2018) has stated in the Harvard Business Review webpage that profit and loss is not the only indicator in measuring the success or failure in sustainability goals. He includes the well-being of people as well as the health of our planet as among the vital aspects to be taken care of to achieve sustainable living (Elkington, 2018).

#### **2.4.3 Personal meaning in relation to sustainability**

The sustainability approach which is the TBL could be extended more to include the attitude of the individual over the other practices (Walker, 2011b, p. 85). Walker (2011b, p. 127) added that this additional element must be included to ensure the relevance of the activities and practices of both individuals and societies towards sustainability. So, Walker (2011b, p. 127) has proposed "personal meaning", which refers to inner values and ethics, as one of the elements in his Quadruple Bottom Line of Design for Sustainability (QBL). The notion of personal meaning is valued in preference to that of spirituality because the connection with religion is becoming looser and being neglected by people, particularly in the West (Walker, 2011b, p. 187). According to Kumaris (2014), "*spirituality is the heart of sustainability*". It is important to note that the inclusion of spirituality and personal ethics could change individual understandings of sustainability (Walker, 2011; Nunez, 2011, p. 79). It adds a critical perspective of personal meaning (Walker, 2012) which affects and steers us in a direction that is more substantial because

it is founded in values related to the core of human purpose and fulfilment, and the plight of people, planet, and profit (Walker, 2013, p. 90; Sood & Tulchin, 2014). Elliot (2016, p. 23) suggested a need for further research on artisans' perspectives on the influence of spirituality during the process of craftsmanship in a trans-modern era.

#### **2.4.4 Sustainability in relation to design and revitalisation**

Design could potentially play a significant role in ensuring the revitalisation of culturally significant products and the practice of traditional craft (Craft Revival Trust, 2005; Barnwell, 2011; Clark et al., 2009; Ferraro et al., 2011; Filho, 2015; Niedderer & Townsend, 2014; Evans et al., 2018, p. 359; Chudasri et al., 2020). Numerous strategies have been suggested by scholars and organisations to adhere to sustainable design (Dessein et al., 2015, pp. 14–15; Evans et al., 2017). For example, in the 1990s, concepts such as eco-design and green product design were introduced through several case studies as strategies to reduce the environmental impact associated with production processes (Bhamra & Lofthouse, 2007, p. 103; Clark et al., 2009, p. 409). However, Tung (2012, p. 75) argued that technological innovation renders traditional craft unsustainable due to the availability of various alternatives of technological applications to produce a wide range of products, designs and styles at a lower price (Tung, 2012, p. 75). Clark et al. (2009, p. 410) added that sustainable design and innovation are not necessarily about new technologies, but about rethinking how to meet the need for growth while at the same time reducing negative environmental and social impacts.

#### **2.4.4.1 Revitalisation by design**

Holroyd (2018, p. 30) uses the word *revitalisation* which comprises actions that initiate, develop, and sustain domestic practice, that aims to protect or even enhance the values connected with a culturally significant design, product, or practice. Nugraha (2018, p. 145) stated that revitalisation is focused on restoring long-forgotten customs and traditions that are no longer in practice and guaranteeing their future in modern society. Furthermore, Chudasri et al., (2012) and Arimbawa in Muchtar et al., (2020) added that the revitalisation of cultural products and processes is a method of re-examining traditional items, patterns, and processes associated with certain cultures by infusing new energy into them in order to modernise and/or utilise them in new ways.

Walker et al., (2018) have gathered a varied set of contributions from a global field of authors and academics that describe numerous methods to assist positive development and long-term change in material culture as well as to highlight the significance and value of culturally meaningful products, design and practices that are relevant to modern culture. This collection offers in-depth design approaches rooted in community and place, influenced by local materials, methods, and traditions. Evans et al., (2018, pp. 341–359) present five clusters of strategies that highlight how the effective application of contemporary design can support successful revitalisation, as well as three enabling factors that support how design can sustainably reconnect traditions, values, and beliefs with modern ways of living.



CLUSTER OF STRATEGIES	ENABLING FACTORS
<ul style="list-style-type: none"> <li>▪ <b>Sustain Through Design</b> – combine traditional making or use practice with new or reimagined design.</li> <li>▪ <b>Transpose Tradition</b> – take traditional design or making practice into a new context.</li> <li>▪ <b>Value of Place</b> – foreground the value of place and provenance.</li> <li>▪ <b>Production Process</b> – employ appropriate and effective methods of making.</li> <li>▪ <b>Skills</b> – employ targeted approaches to embed and enhance skills.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Promotion</b> – spread awareness and appreciation via effective promotion.</li> <li>▪ <b>Enterprise</b> – employ effective business, organisations and finance models.</li> <li>▪ <b>Research and Education</b> – learn about traditions, meanings, and contemporary relevance.</li> </ul>

Table 2-4: Cluster of strategies and enabling factors to support revitalisation

Crafts have made a seamless transition from domestic to commercial practice. As a result, Holroyd et al. (2015) proposed domestication as one viable method to revitalisation. They identified six domestication strategies (see table 2.5) each requiring a unique set of design activities that would need to be tailored accordingly depending on the specific requirements of any revitalisation project.

Knowledge exchange	Degree of experimentation	
	Fixed	Experimental
<b>Documented</b>	Kit providing materials and instruction to create a functional object using traditional techniques	Book facilitating experimentation within a knitting tradition
<b>Interactive</b>	Online ‘knitalong’ which connects knitters following the same set hat pattern	Online course promoting the creative use of a traditional embroidery technique
<b>Live</b>	A drop-in workshop at which participants can have a go at letterpress printing	A holiday where participants can work alongside local artisans to design and make a traditional rug

Table 2-5: Six domestication strategies by Holroyd et al. (2015)

Few researchers in Asia investigate the role of design in the revitalisation of traditional crafts. Chudasri et al., (2020) presents the findings of a comprehensive investigation on the weaving and textile industry in northern Thailand. They take into account how creative design may help to ensure the survival of weaving communities and the manufacturing of textile goods in ways that are consistent with sustainability principles. Meanwhile, Wan Isa et al. (2019) developed a knowledge base of craft for digital preservation of cultural heritage in Malaysia. They stated that by keeping craft knowledge in digital form, future generations will have easier access to it, and therefore ensuring the continuation of the traditional knowledge and legacy. In more than one ways, the digital world has enabled e-commerce through a well-designed e-marketplace solution (Martins, Brandão, Alvelos, & Silva, 2020) as well as new types of digital manufacturing making it a powerful instrument for craft sustainability (Tung, 2012). Machines, according to Cox (2018), are tools that require the same level of expertise and cognitive process as any hand tool, regardless of how autonomous they are (Cox, 2018, p. 186). For instance, CNC manufacturing and 3D printing may be regarded as crafts and should be viewed as designer-maker tools (KPMG LLP, 2016; Cox, 2018, p. 186). In Scotland, Halbert (2019) examines the revitalisation of knitting as a viable and profitable business activity. Three elements have aided the craft revitalisation in Scotland: new generations, appreciation, and understanding of values. In the context of design and innovation, the new generation is particularly ambitious these days. Apart from that, their appreciation for artisan knowledge, skills, heritage, and tradition has increased along with a better understanding towards the values (economic, social, and cultural) (Halbert, 2019).

#### **2.4.4.2 Design for sustainability**

Design for sustainability is a strategic approach within the development process for achieving sustainability (Bhamra & Lofthouse, 2007, p. 1). This concept first emerged during the 1960s and early 1970s where a few leading scholars such as Packard, Papanek, Bonsiepe and Schumacher started to raise awareness and criticise modern and unsustainable development as well as to suggest alternatives (Bhamra & Lofthouse, 2007, p. 3). According to Bhamra & Lofthouse (2007), design for sustainability is an important part of the bigger picture of sustainable development as it has so much potential to be of help. Design for sustainability is applied to outline and assess the methods, tools and techniques available for designers both for design innovation and design improvement (Bhamra & Lofthouse, 2007). Design for Sustainability is considered a specialist approach that conveys a set of innovative strategies where the design process can be simplified, and takes into consideration product endurance, materials and energy reduction and optimisation (Chapman & Gant, 2007, p. 4).

The interrelated elements of design and creativity unleash human expression and have great potential in creating things through the use of imagination and intuition (Walker, 2011b, p. 83). Creativity as part of the design process is one of the mental attributes (Dormer, 1997, p. 18) that could enhance human development (Kabanda, 2015) as well as being a contributor to human meaning (Walker, 2011b, p. 119). The manifestation of the creative design process has always been seen as part of the ritual celebration of a cultural tradition (Murray, 2011, p. 3) since it involves a level of originality and uniqueness (Kabanda, 2015, p. 4).

Industrial design as part of the design discipline has become a significant element in encouraging consumerism, which has both a positive and negative impact (Walker, 2011b, p. 190). It contributes to stimulating more sales with mass-production through the application of technological advancement. However, these goods are normally not long lasting in terms of use, or, as Walker described them, short-lived products with a lack of values. According to Monique Barbut in Crul and Diehl (2005) and Walker (2014), current patterns of consumption and production of goods within modern industrialisation are unsustainable. The use of technological products could widen the gap between the users and their interactions with the natural environment (Herzfeld in Walker, 2014, p. 127). This unsustainable practice and obsession with high-technology items has changed people's lifestyles (James, 2015b) and behaviours as well as making people feel helpless (Walker, 2014, p. 4).

#### **2.4.5 Collaboration as sustainable practice**

There is a growing body of literature – including Sanders & Stappers (2008), Daskon & Binns (2009), Tung (2012), Busch et al. (2014), Kapur & Mittar (2014) and Dessein et al. (2015) – that has begun to recognise the significance of craft-design collaboration for the sustainability of culturally significant products, designs and practices. It highlights the value of collaboration in craft-design work as one of the sustainable practices, and there is potential for artisans, designers and policymakers to create through synergy (Tung, 2012; Kapur & Mittar, 2014). The purpose of collaborative design is to build a new spirit of societal values (Daskon & Binns, 2009, p. 503) through *cross- and interdisciplinary collaboration* in balancing the well-being of humankind during the craft practice process in the circle of the creative ecology (Dessein et al., 2015, p. 9). The value

of alliances is that they could provide wider opportunities to all parties to engage in learning and exchange tacit knowledge, perspectives and insights (Tung, 2012, p. 82; Busch et al., 2014, p. 387).

Craft relies on design to reintroduce itself to the wider audiences (Cox, 2018, p. 186). Design may help bring ideas to life, but it must collaborate with other disciplines and comprehend the connection between both the past and the future. Before any design-led intervention can be implemented successfully, it is necessary to have a thorough grasp of the culture in which the design, product, or practices are established (Evans et al., 2018). Chudasri et al., (2012) argue that 'designers' and 'craft-makers' must be integrated into practice. Furthermore, in order to effectively address sustainability objectives, the link between design for sustainability and localisation is essential and should be highlighted in the area of commercial craft-product design.

#### **2.4.6 The potential role of MSMEs in handicraft and its sustainability**

Micro, small and medium enterprises (MSMEs) play a vital role in the overall industrial economy (Sloan et al., 2013, p. 27) for handicrafts in general (Prasad et al., 2015, p. 272; Muchtar et al., 2020) and brassware enterprises in particular (Jayawickrama et al., 2016; Malaysian Handicraft Development Corporation (MHDC), 2016). MSMEs are also recognised as giving a central contribution to sustainable development (Klewitz & Hansen, 2014, p. 57; Owens, 2017) of the craft products and their associated practices (Rossi, 2015) through innovation and technology (Tonis (Bucea-Manea), 2015). However, it should be led by innovative MSMEs to come out with solution. For instance, through technological advancements that lessen environmental impact while

also regenerating natural resources, as well as frequently using locally sourced, eco-friendly and re-used materials wherever possible (Brown, 2014, p. 21). Furthermore, access to markets, boosting technical capabilities, enhancing ICT adoption, and increasing access to finance are just a few of the concerns related to MSMEs that have been addressed in recent developments (MITI, 1996 in Chin & Lim, 2018).

Chin & Lim (2018) added that craft enterprises was to be transformed into strong knowledge-intensive and value-creating entities as part of the plan. However, these enterprises crucially need to improve and develop, especially with respect to managerial resources (production and operation management), supply chain (Sloan et al., 2013, p. 27), social conditions and technological applications to ensure their survival in this competitive era of globalisation (Sekar, 2007, p. 192; Mandal et al., 2014, p. 41; Filho, 2015, p. 467; Jayawickrama et al., 2016). Besides, regardless of many concepts and valuable frameworks that have been developed, there are some issues regarding applicability and understanding as to how it works for craft enterprise (Sloan et al., 2013, p. 19). Suitable methods need to be strategised productively for a better change so that its positive impact could potentially increase the market-oriented products to satisfy the demand (Filho, 2015, p. 467). Sloan et al., (2013, p. 27) encourage the significant need for conducting empirical research focusing on MSMEs as part of an effort in the process of achieving a positive change toward sustainability in the future.

#### **2.4.7 The relationship between brassware handicraft as Malaysia's material culture and sustainability**

The particular role of traditional craft in sustainability is more far-reaching than a series of discrete energy-saving acts (Murray, 2011, p. 1). Traditional handicraft as part of material culture and of design are two essential contributions towards sustainability and have considerable potential to generate social development (UNESCO - UNDP, 2013 cited in UNESCO, 2015, p. 22), as well as empowerment, through innovation and entrepreneurship (Busch et al., 2014, p. 379). They are connected intricately with the way people *"live life; with culture and social relations; with use of natural material; and with livelihood and broader economic opportunities"* (Ferraro et al., 2011, p. 4). Therefore, integrating traditional knowledge of handicrafts into the sustainable development framework is relevant today, as one of the goals of achieving the new 2030 Agenda. According to Silvia Montoya in the UNESCO Institute for Statistics [UIS] (2016, p. 5), *"the 2030 agenda seeks to redefine and measure cultural contribution more accurately"*. In addition, the sustainable development of the cultural sector should be reflected in a range of economic, social, cultural, and environmental outcomes (UNESCO, 2015, p. 162). Obviously, as a representative of material culture, craft matters for sustainable development (Dessein et al., 2015, p. 8). However, due to its diversity of meanings (Adams, 2006, p. 3), which imply different solutions and interests (Soini & Birkeland, 2014, p. 221), the complex relationship between material culture and sustainable development remains unclear (UCLG, 2009, p. 6; Soini & Birkeland, 2014, p. 213).

Walker (2011b, p. 120) has suggested that design practice in the context of sustaining material culture must be changed towards the understanding of meanings that represent important cultural values, including traditional values and traditional practices such as handicrafts. In the context of brassware craft in Terengganu, Parlan (2016) discussed the historical and religious values of brassware craft products and its extrinsic meanings as an attempt to create awareness about its cultural significance. Aspects of this are in line with Walker's QBL that discussed traditional handicrafts and its connections with deep meanings, functional and aesthetic values as well as in the context of economic perspective. Therefore, it is possible to imbue functional brassware craft artefacts with clearly portrayed symbolic references that have connections with the daily activities of the user, because the use itself can also relate to deeper meanings (Walker, 2011b, p. 210).

#### **2.4.8 Conclusion**

Current and earlier discourses of sustainability and the issues, impacts and potential opportunities have stimulated and provoked diverse responses by scholars and professionals in various fields and organisations all over the world. Environmental degradation and economic concerns are prioritised among the issues that have indirectly affected the social community and the way community lives. The need for and importance of this concept in relation to social well-being has led to the growth of various sustainable development efforts. However, solutions and strategies that have been applied until now, have never fulfilled the social need totally and holistically.



Concern for society has been one of the reasons that has motivated designers and artisans to develop approaches to satisfy people's needs and wants. **Design could be a systematic approach to help achieve sustainability.** How design can contribute to a more sustainable future in this age of mass production (Papanek in Bhamra & Lofthouse, 2007, p. 1) and mass consumption (Fletcher, 2012) will be discussed further in this research by referring to Walker's Quadruple Bottom Line for Design for Sustainability (QBL). This theory is seen as more suitable for adaptation within the brassware craft community and its creative ecology.

Religion and spirituality are significant topics within the sustainability discourse these days, and are important ingredients of daily life in Malaysia. Their contribution towards positive change of the individual and society has significant potential and motivational resources to achieve sustainable living; therefore it would seem to be true that *"spirituality is the heart of sustainability"* (Kumaris, 2014). This understanding stimulates the attempt to investigate the relationship between the brassware craft product, design and practice in the context of spirituality. The relationship between the element of spirituality and craft practice will be taken into consideration for further research in the context of culturally significant brassware craft products, design and practices.

## 2.5 Summary of the Key Findings from the Literature Review

Description	Finding reference
<b>The values of handicraft/brassware as material culture</b>	
<p>What is craft/handicraft?</p> <p>Tangible products, a process of making things, manifestation and physical expression etc., it depends on personal interpretation and understanding.</p> <p>Values are one of the essential elements in preservation work since the understanding of the values could motivate change for a better lifestyle. The values of traditional material culture comprise:</p> <ul style="list-style-type: none"> <li>- Historical; the value of place and its locality; traditional ‘tacit knowledge’, skill and wisdom; intrinsic and extrinsic; associated with socio-economic and cultural.</li> <li>- Inner values</li> </ul>	<p>2.2.1</p> <p>2.2.5, 2.3.1, 2.3.5, 2.3.6, 2.3.7, 2.3.8</p> <p>2.4.2, 2.4.3</p>
<b>The relationship between brassware handicraft, design and sustainability.</b>	
<p>Brassware handicraft is a part of the culture of a nation or ethnic group, and it represents a significant component for socio-culture-economic development.</p> <p>It is a representative of the social identity, and is fundamental for our spiritual well-being and a sense of belonging.</p>	<p>2.2.3, 2.2.5, 2.4.8</p>
<p>Design can make a contribution and play a significant role in safeguarding and ensuring the revitalisation of the culturally significant product and practice of the traditional craft.</p>	<p>2.4.5</p>
<p>Design can make radical changes to society through activities involved in the craft ecology.</p>	<p>2.2.4, 2.4.6</p>
<b>The identification of problems and gaps in brassware handicraft, design and sustainability.</b>	
<p><b>Gaps of craft in the general context:</b></p> <p>The effect of <b>globalisation, urbanisation and modernisation</b> have changed the nature of craft ecology.</p> <p>It has caused significant challenges to the survival of the local craft knowledge and the natural resources that are associated with craft production.</p> <p>The effect of modernisation means that the slow-moving craft economy has diminished, and with it there has been a decline in</p>	<p>2.2.4.1</p> <p>2.2.4.2, 2.3.4</p>

<p><b>inter-generational knowledge transfer.</b> ‘Trade secrets’ that by tradition should strictly remain within the family.</p> <p><b>Commercialisation and capitalism.</b> Global-scale corporations produce mass production factory-based ‘craft’ products that imitate traditional crafts and threaten the livelihoods of many local craftspeople</p> <p><b>Lack of interest among younger people</b> could lead to total extinction of a craft practice along with all the knowledge that has been passed down through generation after generation.</p> <p><b>Appreciation and understanding</b> The <b>aesthetic understanding</b> of traditional designs, products and practices are less known by society as a whole, and therefore the role and status of artisans and skilled craft labour are overlooked.</p> <p>Lack of literature on craft that presents an idea or concept for theory-building. Most earlier literature discusses historical perspective. Collecting cultural data should become a top priority in local, national and international global agendas.</p>	<p>2.2.2, 2.2.4.1, 2.2.52.2.5.3, 2.4.5</p> <p>2.2.4.2</p> <p>2.2.4.3</p> <p>2.2.4.4</p>
<p><b>Gaps of brassware handicraft in both Malaysia and international context:</b></p> <p>Lack of skilled artisans to transfer the knowledge and lack of interest among the young generation to continue the family legacy.</p> <p>Lack of information and knowledge (product and process development, potential market)</p> <p>Lack of attention, appreciation and understanding of the cultural value among contemporary society and the authorities.</p> <p>Modernisation and globalisation impacts, which led to the commercial development of the craft ecology through demolition of crafting sites, have changed the nature of brassware craftsmanship.</p> <p>Scarcity and increasing price of raw material.</p>	<p>2.2.4.2, 2.3.4</p> <p>2.2.52.2.5.1, 2.3.4, 2.3.9 2.5.3</p> <p>2.3.4, 2.2.4</p>
<p><b>Potential and opportunities of design in revitalising the cultural significance of brassware handicraft in accord with the principles of sustainability</b></p>	
<p>The handicraft Industry in Malaysia contributes significantly towards national economic development and growth; it also contributes to the prestige of national cultural heritage.</p>	<p>2.2.4</p>
<p>It creates jobs for the locals, making places more meaningful and sustainable, preserving the natural resources as well as strengthening the resilience of brassware communities</p>	<p>2.4.5, 2.4.6,</p>

<p><b>Inner values, spirituality and designing sustainability (Walker, 2014, p. 36)</b> - explore new possibilities and approaches and do not focus on practical outer needs and wants but on inner, spiritual needs and nourishment.</p>	<p>2.4.8</p>
<p>Knowledge transfer and knowledge exchange in the traditional production of brassware handicraft potentially would be one of the effective solutions.</p>	<p>2.2.4.2, 2.4.6</p>
<p><b>Potential role of design:</b></p> <p>Design for value-creation – in order to stimulate a sense of appreciation through the understanding of the values of material culture.</p> <p>Design for accessibility and exchange of knowledge – using appropriate tools and technology through effective systems and collaborative practices.</p> <p>Co-design for change in the interaction between: designers – brassware producer; brassware producer – society; designer – society, in an attempt to achieve effective strategies or solutions.</p>	<p>2.4.4, 2.4.5, 2.4.6</p>

## **2.6 Discussion**

### **2.6.1 Introduction**

This section discusses the initial key findings from the literature review, including a general review of craft/handicraft (Section 2.2); brassware as one of Malaysia's handicrafts (Section 2.3); sustainability and design (Section 2.4), and presents them here as three themes below:

- i. The value of Terengganu brassware handicraft as material culture and its relationship to design and sustainability.
- ii. The identification of issues and gaps in brassware handicraft, design and sustainability.
- iii. The potential and opportunities of design (design for sustainability) in revitalising the culturally significant design, product and practices of brassware handicraft.

### **2.6.2 The value of brassware handicraft and its relationship to design and sustainability**

The potential value of handicraft as representative of local material culture and traditions for every country is surprising. From the literature review, there is evidence that discusses the significant values: historical value (Section 2.3.2; Section 2.3.6; Section 2.3.8; Section 2.4.7); the value of place (locality) (Section 2.3.2; Section 2.3.5; Section 2.3.6; Section 2.2.5.4); and traditional 'tacit' knowledge (Section 2.2.5.1; Section 2.3.7; Section 2.3.9) of brassware handicrafts in Terengganu, Malaysia, as part of a material culture that is closely associated with the human lifestyle and local societies. Obviously,

this traditional craftsmanship offers intrinsic values as this traditional knowledge is passed from generation to generation. The tacit knowledge of craftsmanship cannot be transferred because this priceless intangible treasure needs real appreciation of the craftsmanship by the successor. Therefore, in order to safeguard the cultural heritage of brassware handicraft and to ensure its sustainability, it has become necessary to educate contemporary society, especially the younger generation, to raise awareness of the understanding of the cultural significance and value of brassware handicraft, which might soon vanish if no proper action is taken to preserve it.

Integrating traditional knowledge of brassware handicraft into the principles of sustainability is relevant today, as one of the goals of the new 2030 Agenda (UNESCO Institute for Statistics [UIS], 2016). Brassware handicraft has been identified as one of Malaysia's handicraft industries with great potential to contribute significantly towards local and national socio-cultural and economic growth. Brassware handicraft production could offer many potential benefits for local people in a variety of ways, which are in accord with the principles of sustainability, including economic development through employment and income generation; human and social developments through apprenticeship and knowledge transfer, thus strengthening the relationship within and between communities. Beyond its contribution to socio-economic areas, brassware handicraft production could also contribute to the cultural heritage and identity of Terengganu.

Brassware handicraft production in Terengganu aligns with the principles of sustainability in many respects; yet craft and sustainability can be strengthened or

weakened by design. It is important to readdress the role of design to ensure the long-term viability of brassware handicraft production in a way that is compatible with sustainability, especially with all the elements of Walker's Quadruple Bottom Line (QBL) of design for sustainability comprising Practical Meaning with environmental responsibility, Social Meaning (social justice, equity), Personal Meaning (inner values, spirituality) and Economic Means (Section 2.4.1.2; Section 2.4.4). These additional elements have been introduced to provide opportunities and clearer purpose to improve the well-being of the individual without compromising core values as well as to achieve sustainability (Walker, 2011; 2014).

### **2.6.3 The identification of issues and gaps in brassware handicraft, design and sustainability**

In this study, brassware handicraft was chosen as a subject to investigate the cultural significance of one of Malaysia's traditional handicrafts, which are currently in decline. The rationale for selecting brassware craft was discussed in Chapter One. A skilled workforce and younger apprentices are two major elements needed to tackle this decline, in order to revitalise and further develop the brassware handicraft industry in Terengganu (Section 2.3.4). The effects of globalisation and urbanisation have led to the younger generation not being interested in continuing family-oriented businesses and thus not seeing these traditional practices as an attractive career option (Section 2.2.4).

The values and meaning of brassware as a cultural product are not known and rarely highlighted, therefore there are only a few people who understand the value of brassware and its symbolic meaning. The valuable implicit meaning and the history

which symbolises the material culture are less appreciated, especially by the younger generation due to the influence of modernisation. Technological advancement has widened the gap in the relationship between the consumer and the traditional material culture. Modern industrialisation has changed the current patterns of consumption and production to become unsustainable (Monique Barbut in Crul & Diehl, 2005; Walker, 2014).

Examining the literature, it has become evident that there has been a dramatic increase in the study of craft in accordance with the principles of sustainability. Moreover, numerous publications discuss the potential outcome of the handicraft industry and the relation to the principles of sustainability around the world (Section 2.4.4; Section 2.4.7). However, there has been a lack of research in recent years on handicraft in Malaysia. Few studies have been conducted, especially in the field of brassware handicraft. However, these studies do not focus on its cultural importance and its values, but rather they only address sustainability issues from the point of view of the production quality, productivity (Section 2.3.9) and business performance (Section 2.4.6).

#### **2.6.4 The potential and opportunities of design in revitalising the cultural significance of brassware handicraft**

The potential of revitalising traditional craft – especially brassware in Terengganu – lies in its ability to create jobs for the locals, thus making places more meaningful and sustainable, preserving as well as strengthening the resilience of brassware communities (Section 2.4.4; Section 2.4.5; Section 2.4.8). Its revitalisation will depend on these traditional practices, and the resulting artefacts, being better valued and



appreciated both within Malaysian society and further afield. It will also depend on craft people being able to receive appropriate monetary rewards for their work and their ability to make a decent living; this will be essential if younger people are to see it as an attractive career path.

Design, can potentially, contribute much to the revitalisation of brassware crafts in the Malaysian context. The accelerating processes of globalisation supported by technological advancement, which provides new opportunities and challenges, have changed the landscape of the brassware handicrafts sector not only in Terengganu but worldwide. Design has been identified as having the potential to make radical changes; for value creation; knowledge exchange; and changes in the interaction among stakeholders; as well as to bridge the gap between the traditional production and the changing of the market (Section 2.4.4; Section 2.4.5; Section 2.4.6). Design also has the potential to revitalise traditional craftsmanship through activities involved in the field of manufacturing (product optimisation, process efficiency, collaborative design, reduction of waste, energy consumption) and commercialisation of goods.

For this reason, as has been said earlier in this section, it is important to readdress the role of design to ensure the viability of brassware handicraft production in accordance with the principles of sustainability. Moreover, no study has yet attempted to address the relationship between brassware handicraft, design and sustainability (Walker's QBL of design for sustainability) in Terengganu, Malaysia. Therefore, a deeper investigation is necessary to identify the potential contribution of design to the process of revitalisation the cultural significant of brassware handicraft in Terengganu and case

studies in collaborative design practice could serve as an effort to implement design for sustainability in Terengganu.

The research question to be addressed is therefore: ***How can brassware handicraft, as a culturally significant craft practice, be revitalised in Malaysia through effective design contribution that is in accord with principles of sustainability?***

- i) *What is the value of revitalising the brassware as a culturally significant craft practice?*
- ii) *What is the opportunity for design to contribute in revitalising the brassware handicraft industry in Terengganu, Malaysia?*
- iii) *How can design contribute to revitalising culturally significant design, products and practices of the brassware craft industry in Terengganu, Malaysia?*

In order to answer the research question, the following objectives will need to be fulfilled.

- i) *To determine the value of the significance of the brassware handicraft in Terengganu, Malaysia.*
- ii) *To identify design opportunities that could make a contribution to revitalise brassware handicraft in Malaysia that is in accord with the principles of sustainability.*

- iii) To propose design-oriented strategies to revitalise culturally significant designs, products and practices of brassware handicraft in Terengganu, Malaysia.*

In conclusion, the brassware handicraft industry in Malaysia must continue to persevere and remain sustainable in the long run in order to enjoy the socio-cultural and economic growth that is consistent with national development growth. Existing brassware artisans and makers must be well-protected and well-equipped with the necessary knowledge to cater to the needs of contemporary societies as well as to facilitate a comprehensive plan to safeguard our heritage. This is to ensure the younger generation will be able to inherit and benefit from this traditional material culture and heritage. Also, the identity of Terengganu traditional brassware handicraft design, product and practice must be well-preserved as there is an opportunity for the brassware handicraft industry to reclaim its former glory. Several proactive strategies could be carried out to ensure the sustainability of traditional craftsmanship, as well as to produce a superior design that meets consumer needs, which in return will help revitalise the handicraft industry. This shows the necessity for further research on brassware handicraft in Terengganu, Malaysia to boost the industry, as well as to bring this artistic heritage handicraft on a par with other Malay handicrafts in particular.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This section describes the research methodology used to collect and analyse the field data from the study area, in order to answer the primary research questions; “How can brassware handicraft, as a culturally significant craft design, product and practice, be revitalised in Malaysia through effective design contribution that is in accord with principles of sustainability?” The implementation of the methodology described in this chapter also allowed the research objectives (Section 2.6.4) to be achieved. Based on the initial findings from the literature (chapter 2), qualitative research methods were employed during the field research stage. The selection of research philosophy, the research approach and methodological choice leading to the specific research methods will be discussed in this chapter.

### 3.2 Research Philosophies

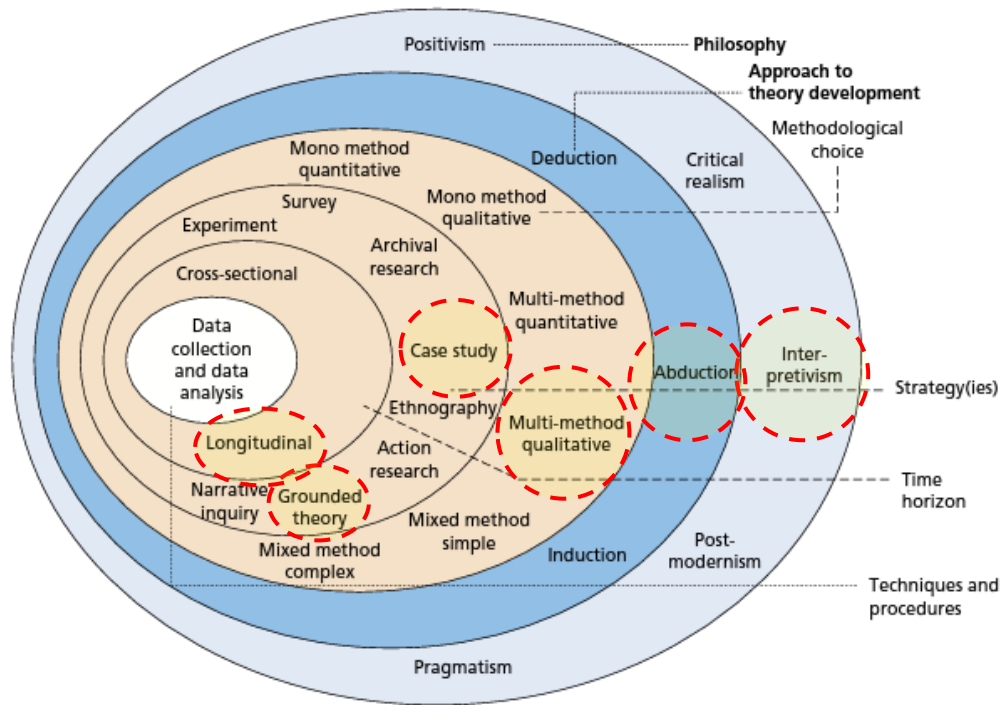


Figure 3.1: Research 'onion' model by Saunders et al. (2016)

The research 'onion' model (Figure 3.1) of Saunders, Lewis & Thornhill (2016, p. 124) is a useful guide in planning the primary research fieldwork. The first layer of the model comprises research philosophies, followed by methodological choices, strategy, approaches, time horizons, techniques and procedures until leading to its core, which comprises data collection and data analysis.

In conducting the primary research fieldwork, followed by the analysis of data, the process should follow accordingly from the outer layer, the research philosophy, and be successively followed by the inner layers. The selection, planning and designing stage of a piece of research is very important. Therefore, every element of each layer of the

research onion model should be understood, and every element that will be taken as a guideline needs to be considered. They are crucial to the development of an appropriate research design which is closely related to the research questions and objectives (Sahay, 2016).

Generally, research philosophy has many branches related to a wide range of disciplines (Saunders cited in Dudovskiy, 2018, p. 35). However, only four research philosophies will be discussed in detail in this section: **pragmatism, positivism, realism and interpretivism**. According to Dudovskiy (2018), the choice traditional research philosophy makes between positivism or interpretivism has raised a significant argument that has been debated within the research community. In addition, pragmatism and realism are included and have also been among the most popular choices to be adapted during the field research as there are always new developments emerging in research practices these days (Dudovskiy, 2018).

**Pragmatism** is accepted and relevant only if it supports action, for which the research question is the most important determinant. The research approach and strategies can be integrated within the same study. Multiple research methods can be used such as qualitative, quantitative and action research. Pragmatism can combine other philosophies such as positivism and interpretivism in a single research project depending on the nature of the research question (Dudovskiy, 2018, pp. 44–45).

**Positivism** holds the view that only “factual” knowledge is gained through observation within the limited role of the positivist researcher during data collection. Positivism adopts the ‘scientific method’ to propose and test theories with highly structured,

usually measurable data, and in which the research is not influenced by the researcher's values (Saunders et al., 2016). This research philosophy aims to explain and predict, and the findings are usually quantifiable, observable and descriptive. Therefore, the findings are noted as having a lack of insight on in-depth issues. Positivism typically adopts a deductive approach and concentrates on facts (Dudovskiy, 2018, pp. 46–50).

**Realism** is associated with a scientific enquiry like positivism. Realism relies on the idea that realist researchers view the world via their own human mind. Philosophers divide realism into two fields: direct realism and critical realism. Direct realism is described as "*what you see is what you get*" (Saunders et al. cited in Dudovskiy, 2018). Critical realists experience the feelings and images of the real world. However, their sensations are potentially misleading, and they do not usually represent the real world (Novikov et al. cited in Dudovskiy). Direct realism concentrates on only one level of study, whereas critical realism concentrates on multi-level studies. Critical realism appreciates the influence and interrelationship between the individual, the group and the organisation (Dudovskiy, 2018, pp. 51–53). Therefore, collection techniques and analysis procedures are varied, utilising either or both quantitative and qualitative data (Saunders et al., 2016).

**Interpretivism** relates to the study of social phenomena in their natural setting. During the research process, the interpretivist integrates human attention into the research and then interprets their observations that are associated with the phenomenon (Dudovskiy, 2018). This philosophy is based on the critique of positivism in the field of social sciences (Dudovskiy, 2018, p. 53). The research investigation is usually conducted

in-depth, with a small sample size and the data collection and analysis processes utilise qualitative strategies comprising interviews and observations (Saunders et al., 2016; Sahay, 2016). Besides the primary data, secondary data research is also used with interpretivism. In this type of study, meanings usually emerge towards the end of the research process (Dudovskiy, 2018, p. 54). **Therefore, taking into account all these considerations, the researchers will adopt the philosophy of interpretivism during the process of data collection and data analysis.** Below is a summary of the data collection methods associated with research philosophies discussed here.

	<b>Data collection methods associated with each research philosophy (Saunders et al. cited in Dudovskiy, 2018, p. 44).</b>			
	<b>Pragmatism</b>	<b>Positivism</b>	<b>Realism</b>	<b>Interpretivism</b>
<b>Popular data collection method</b>	Mixed or multiple method designs, quantitative or/and qualitative	Highly structured, large samples, quantitatively measured but also can apply qualitatively.	Methods chosen must fit the subject matter, quantitative or qualitative	Small samples, in-depth investigations, qualitative

Table 3-1: Data collection methods associated with each research philosophy

### 3.3 Research Approach and Research Strategies

Saunders et al. (2016) divides the research approach into three types; **deductive, inductive and abductive**. Bryman and Bell, cited in Dudovskiy (2018, pp. 65–66), summarised them as follows: the deductive approach tests the validity of assumptions and could be theories and/or hypotheses; the inductive approach contributes to the emergence of new theories and generalisations; on the other hand, the abductive



approach will start with 'surprising facts' or 'puzzles', and the process is devoted to explanation.

**Approach to theory development** – theory can enhance the coherence and originality of academic works (Adams and Buetow (2014) cited in Robson and McCartan (2016, p. 66). *“Theory can mean very different things to different people. Theory is an explanation of what is going on in the situation, phenomenon or whatever we are investigating”* (Robson & McCartan, 2016, p. 66). Theories ranged from formal large-scale academic sources to informal speculation from the general public, and participants in the research.

**Qualitative research overview** - Robson and McCartan (2016, p. 20) add that findings gathered from a qualitative research approach are presented verbally or in other non-numerical forms and there is little or no use of numerical data or statistical analysis. Abductive logic will be applied during the data-collection stage according to concepts and theoretical ideas that emerge. The qualitative research approach focuses primarily on what the informant says and means. Contexts associated with them are significant and subjective, as perceived situations are described from the perspective of their involvements within their natural settings. The design of the research emerges as the research is carried out flexibly throughout the whole process. Objectivity is not valued as there will be a gap and distance between the researcher and informants.

Openness, self-awareness and personal commitment of the researcher are valued and, in the context of generalisability of findings, it is not of significant concern (Robson &

McCartan, 2016). Sampling is usually small scale regarding the number of informants or situations involved, and the social world is viewed as a creation of the people involved.

According to Robson (2011), there are four research purposes that can be adapted during the qualitative research process: **exploratory, descriptive, explanatory (also known as causal research (Dudovskiy, 2018)) and emancipatory**. These purposes have a strong relation to the research problem that has been recognised and with the nature of the research questions proposed (Robson, 2011). The table below compares the main characteristics of these research purposes.

<b>Classification of the purposes of enquiry (Robson, 2011 cited in Hernández Pardo (2012, p. 76))</b>	
<b>Exploratory:</b> <i>To find out what is happening, particularly in little-understood situations, to seek new insights, to ask new questions, to assess phenomena in a new light, to generate ideas and hypotheses for future research. Almost exclusively of flexible design.</i>	<b>Descriptive:</b> <i>To portray an accurate profile of persons, events or situations. Requires extensive previous knowledge of the situation to be described and to define aspects on which to gather information. May be of flexible or fixed design.</i>
<b>Explanatory:</b> <i>Seeks an explanation of a situation or problem, traditionally but not necessarily in the form of causal relationships. To explain patterns relating to the phenomenon being investigated. To identify relationships between aspects of the phenomenon. May be of a flexible or fixed design.</i>	<b>Emancipatory:</b> <i>To create opportunities and the will to engage in social action. Almost exclusively of flexible design.</i>

Table 3-2: Classification of research purpose (Robson, 2011 cited in Hernández Pardo (2012, p. 76))

Dudovskiy (2018, p. 84) says that, in an exploratory research approach, the amount of uncertainty characterising the decision situation is highly ambiguous and the research

approach is usually unstructured. Hence, **this research will adapt the exploratory research approach in order to build a more in-depth understanding of the unidentified issues and the current situation (in this research, this will be within the brassware craft industry in Malaysia.** This research is looking for new insights from the perspective of brassware craft communities as there is a need to generate alternative routes forward for this craft).

Research methods or strategies can be broadly divided into two categories - quantitative and qualitative. According to Robson (2011), research design requires congruence. In this context, this means that not all the research purposes presented earlier (refer table 3.2) can be followed by all kinds of research questions and yet, not all methods can answer the research question. Considering the research problem, the purpose and the research questions, research strategy is established that will guide the direction to be followed during the collection of primary research data.

There are two types of research strategies that can be used for collecting primary research data; fixed or flexible (Robson, 2011). The **fixed strategy is more connected to the research methods that support the collection of quantitative data.** On the other hand, the **flexible strategy is usually related to research methods that support the collection of qualitative data.** However, Robson (2011) adds that a fixed design strategy could also be used with qualitative data. Robson (2011) presents the following table can be used to choose the most appropriate and effective research strategy during the primary fieldwork stage.

<b>Elements to define the research strategy (Robson cited in Hernández Pardo, 2012, p. 78)</b>			
<b>Strategy</b>	<b>Purpose</b>	<b>Research questions</b>	<b>Traditions</b>
<b>Fixed</b>	Commonly more related to descriptive studies through non-experimental traditions or explanatory studies through experiments	What? questions asking how many or how much, who, and where, suggest non-experimental fixed strategies	Experimental studies  Non-experimental studies
<b>Flexible</b>	Flexible strategies are more appropriate to deploy exploratory studies	What? questions concerning what is going on here are linked more to flexible design. How? and Why? questions can also be associated to flexible design	<b>Case studies</b>  Ethnographic studies  <b>Grounded theory studies</b>

Table 3-3: Elements to define the research strategy  
(Robson cited in Hernández Pardo, 2012, p. 78)

Considering the research problems, the research question, and the purpose of this present PhD study, a flexible research strategy was considered to be the most appropriate. Taking into account the lack of previous studies on brassware craft and its relation into design and sustainability, and in order to build better understanding of this field of study, this research is more suited to employ a **flexible research strategy**.

The practice and approach to qualitative research have developed and evolved within a particular research environment, and there is no one right or accepted way of doing qualitative research (Snape & Spencer, 2003, p. 2). Key elements of qualitative research highlighted by Snape & Spencer (2003) are: directed aims at providing an in-depth

understanding of the social world by learning social and material circumstances, experiences, perspectives and histories; small-scale samples; involves close contact between the researcher and participants; extensive, rich and detailed data as well as information; open analysis which may produce detailed description and classification, emergence of new concepts and ideas, or development of typology and explanations.

The research strategies that were chosen by taking into consideration the purpose of the research, the role of the researcher, the data that was to be collected, the method of data analysis that to be applied and how the results will be presented. The most common research strategies for qualitative research include narrative, phenomenology, grounded theory, ethnography, and case study (Robson & McCartan, 2016).

Creswell (2007) presents five strategies for conducting qualitative research. The selection of the approach is based on a few characteristics comprising the focus of the study, the problem proposed, the unit of analysis and even the discipline of the research. The characteristics of each strategy are presented in Table 3.4.

<b>Five qualitative research strategies to inquiry (Creswell cited Hernández Pardo, 2012, p. 79)</b>					
Characteristic	Narrative research	Phenomenology	Grounded theory	Ethnography	Case study
Focus	Exploring the life of an individual	Understanding the essence of experience	Developing a theory grounded in data from the field	Describing and interpreting a culture-sharing group	Developing an in-depth description and analysis of case or multiple cases
Type of problem best suited for design	Needing to tell stories of individual experiences	Needing to describe the essence of a lived phenomenon	Grounding a theory in the views of participants	Describing and interpreting the shared patterns of culture of a group	Providing an in-depth understanding of a case or cases
Discipline Background	Drawing from humanities including anthropology, literature, history, psychology and sociology	Drawing from philosophy and education	Drawing from sociology	Drawing from anthropology and sociology	Drawing from psychology, law, political science and medicine
Unit of analysis	Studying one or more individuals	Studying several individuals that have shared the experience	Studying a process, action or interaction involving many individuals	Studying a group that shares the same culture	Studying an event, a program, an activity, more than one individual
Data collection forms	Using primarily interviews and documents	Using primarily interviews with individuals, although other methods may also be considered	Using primarily interviews with 20 – 60 individuals	Using primarily observations and interviews, but using other sources during extended time in field	Using multiple sources such as interviews, observations, documents and artefacts
Data analysis strategies	Analysing data for stories, “re-storying” stories, developing themes, often using a chronology	Analysing data for significant statements, meaning units, textual and structural description	Analysing data through open coding, axial coding, and selective coding	Analysing data through description of the culture-sharing group; themes about the group	Analysing data through description of the case and themes of the case as well as cross-case themes
Written report	Developing a narrative about the stories of an individual’s life	Describing the “essence” of the experience	Generating a theory illustrated in a figure	Describing how a culture-sharing group works	Developing a detailed analysis of one or more cases

Table 3-4: Five qualitative research strategies

Three qualitative methods are commonly employed to collect data during field work: grounded theory, ethnography and case studies (Robson, 2011).

**GROUNDING THEORY STUDIES** - *" the main concern is to develop a theory of the particular social situation forming the basis of the study. The theory is 'grounded' in the sense of being derived from the study itself. Popular in research on many applied settings, particularly health-related ones. Interviews are commonly used but other methods [...] are not excluded"* (Robson, 2011, p. 135).

**ETHNOGRAPHIC STUDIES** - *" well-established strategy where the focus is on the description and interpretation of the culture and social structure of a social group. Typically involves informant observation over an extended period of time, but other methods (including those generating quantitative data) can also be used"* (Robson, 2011, p. 135).

**CASE STUDIES** - *" well-established research strategy where the focus is on a case (which is interpreted very widely to include the study of a person, a group, a setting, an organisation, etc.) taking its context into account. Typically, this approach involves multiple methods of data collected. Can include quantitative data, though qualitative data are almost invariably collected"* (Robson, 2011, p. 135).

According to Robson (2011, p. 19), typical features of these three qualitative design research strategies are: **flexible research process**; the need to understand phenomena in their setting; situations are described from the perspectives of those who involved; it

is usually small scale in terms of numbers of persons or situations researched, and it takes place in a natural setting.

According to Miles and Huberman (1994) cited in Ibrahim (2012), by conducting qualitative methods, the findings are characterised by strong fundamentals and are original, real and very significant, which could lead to unexpected discoveries and could provide guidance and direction on questions that may not have previously existed.

### **3.4 Data Collection Methods**

In this present research, the data collection process comprises both **desk research (secondary research)** and **field research (primary research)**. Desk research involves collecting and reviewing previous literature related to the research topic from various sources (as included in Chapter 2). Sources include international journals, conference proceedings, books, reports, working papers, newspapers, magazines and other secondary sources related to the scope of studies as well as through the Internet (acquired online and offline). Field research, on the other hand, involves **semi-structured interviews** (the first part of the field research) with selected informants and **case studies** (second part of the field research). In this study, both parts will be conducted primarily in the Terengganu district of Malaysia, the home of the country's brassware crafts.

### **3.5 Sampling**

Sampling refers to the selection of individuals from the population to be included during the primary data collection as the sources of insight. The identification and selection of samples of the population are essential elements in social research. As part of the



research design, a sample of the population is defined and included as part of the study during the data collection process of the fieldwork stage. According to Robson in Hernández Pardo (2012, p. 91), in order to make a decision in selecting the sample of population, several characteristics need to be considered, such as sample size, availability of its members as well as the location where the research is conducted. Additionally, these characteristics are connected to the research resources, which comprise time horizon, cost and mobility. Therefore, the decision is based on what is best for the research according to the availability of resources.

Berg (2009), Robson (2011) and Saunders et al. (2016) present two categories of sampling methods; **probability and non-probability** (also known as non-random sampling). A probability sampling is a method of sampling that utilises some form of random selection where there is a possibility that every member of the population must be considered in the sample. In non-probability sampling, the members are selected non-randomly and therefore not every member of the population has a chance to be included in the study. **Consequently, in this research, a non-probability sample has been selected.** Non-probability samples are divided into dimensional (Robson, 2011), quota, convenience, purposive, and snowball (Berg, 2009; Robson, 2011). However, in this research, as it employs a flexible design approach, it was decided to do **purposive and snowball sampling** during the primary field research.

**The purposive sampling** method is sometimes called *judgemental* sampling (Hagan cited in Berg, 2009, pp. 50-51). This method opens the opportunity to the researcher, by using knowledge and expertise, to select informants who represent the population. Due

to the nature of the research design, aims and objectives only limited numbers of people can serve as primary data sources (Berg, 2009). In this research, the main purpose is to work with Micro, Small & Medium Enterprises (MSMEs) specifically in the field of brassware craft and its stakeholders, who are involved directly and indirectly in sustaining, developing and promoting the brassware craft industry globally. Therefore, several justifications will be considered, as the final decision to be made will affect the data collection stage.

**Informant identification** Potential informants can be identified and gathered from various sources either online or offline or both. Online sources include portals, websites and social media (Facebook page, Instagram) while offline sources include annual reports, newspapers and magazines. In In this study, all these sources were used. In addition, some potential informants were also identified during craft exhibitions and expos. Prior to the data collection process, which involved semi-structured interviews and case studies, all the potential informants were contacted, mostly via email or phone calls.

**The first stage of the data collection process** comprised a semi-structured interview with participants who were clustered into three groups; producers; supporters and buyers (these are discussed in more detail in section 3.6). The first step in this process is to gather all the information and details of the potential informants, starting with producers and followed by supporters and buyers. Most of the potential informants (producers) were identified by contacting the Malaysia Handicraft Development Corporation (MHDC), Terengganu International Design Excellence (TIDE), Sultan Mizan

Royal Foundation and Terengganu Entrepreneur Development Foundation (TEDF) to trace the list of registered brassware enterprises on their database and by using snowball sampling methods.<sup>9</sup> These organisations involve and contribute directly and indirectly towards the development of the art, craft and heritage industry in Malaysia.

### **3.6 Semi-structured Interview Details**

The initial findings from the literature review were insufficient to identify specific issues, problems, and the current status of brassware handicraft in the Terengganu district of Malaysia. Therefore, primary data collection had to be conducted for in-depth research in relation to design for sustainability. Semi-structured interviews were employed to collect a “series of general ideas or abstract statements” from sufficient numbers of key informants which could help make “predictions for future changes”.

According to Robson (2011), interviews are usually employed in qualitative research as a data collection process. There are three main types of interviews commonly used: **structured, semi-structured and unstructured**. Robson (2011) identifies the main characteristics of these types of interviews as follows: a structured interview has predefined questions and is similar to a survey with open-ended questions; a semi-structured interview process is usually conducted with a checklist using some predefined questions, leaving, however, freedom in order to approach the interviewee

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<sup>9</sup> Snowball sampling will be applied when samples are limited and difficult to identify. This sampling method involves identified informants recommending another potential informant to be used in the research. In other words, the snowball sampling method is based on referrals from initial subjects to generate additional subjects.

over points raised; an unstructured interview is more informal and the conversation process flows freely.

Qualitative research with a flexible design is usually related to semi- or unstructured interviews (Robson, 2011). Due to the flexibility of this research design, and considering the findings from the literature, it was decided to carry out **semi-structured interviews** with the potential informants, consisting of various stakeholder groups, such as craft producers, supporters and buyers/traders who are directly and indirectly involved in the field of brassware handicraft in Terengganu, Malaysia. Details of the process and the informants will be explained in the following chapter.

A sufficient number for a non-probability sample size, according to the nature of the study, is suggested by Saunders et al., (2016) as being a minimum of 5 – 25 for semi-structured or in-depth interviews, and 20 – 25 for a grounded theory approach. Selecting the right sample size is vital in order to gain accurate information.

For this research, the semi-structured interviews will involve 20 to 30 people who are experts from different roles and clusters in the brassware handicraft industry. Three expert clusters were identified - Producers, Supporters and Buyers/Traders.

a) Producers: artisans/craft producers, designers, enterprise managers, SME owners, etc.

b) Supporters: academics, government agents, design managers, gallery curators, NGOs

c) Buyers: retailers, traders, users (tourists, users, collectors)

Prior to data collection of a semi-structured interview, the potential informants received an explanation of the study through an email that detailed the research overview, background, aim and objectives as well as the appointment information (see Appendix A.2). Before the interviews began, each informant was given a Participant Information Sheet (PIS) and Consent Form (see Appendix A.1 and A.3: Ethics Application); at the same time, the researcher explained the purpose of the interview.

During the data collection phase, the informants were asked a series of set questions that explored the nature of their work – either in brassware craft-making directly or in roles associated with crafts, such as buying, selling, promoting and so forth. The researcher visited them at their workplace or another convenient, mutually agreed location. Interviews take approximately 45 minutes to 1 hour. As part of this process, the researcher asked permission to audio-record the interview solely for the purpose of this research project. Where appropriate, the researcher also asked permission to video-record and photograph the brassware craft-making practice and the products for use in academic papers and/or conference presentations as well as in this thesis. Due to the issues of confidentiality, any photos or videos used in publications or public presentation will not reveal their identity.

### **3.7 Case Study Details**

Generally, a case study is a strategy or an empirical enquiry that is used to investigate a real-life context of contemporary phenomena through several sources of evidence (Yin, 2003). The evidence for case studies may come from diverse sources such as documents,

archival records, interviews, direct observations, participant-observation, physical artefacts, film, photographs and videotapes (Yin, 2003, p. 83).

Taking into account the research question, a case study is chosen as the approach to carry out the research during the data collection. Specifically, **exploratory case studies** were employed to study and investigate the cultural phenomena within the brassware communities in Terengganu, Malaysia. This type of case study aims to build a better understanding in the field, and is appropriate in this instance because there is a lack of previous studies made on this topic in this particular study area. Besides that, this type of case study was chosen because of its flexibility as the situation in the field might evolve during the research (Robson, 2011).

Ritchie (2003, pp. 35–36) presents a number of different approaches that have been developed to collect qualitative data from the case studies – that focus on studying phenomena in naturally occurring settings. These include participant observation, observation, document analysis, discourse analysis, and conversation analysis.

**Participant observation** – *“the researcher joins the constituent study population or its organisational or community setting to record actions, interactions or events that occur. This method allows and offers the researcher the opportunity to gain additional insights through experiencing the phenomena”* (Ritchie, 2003, p. 35). Pasar Payang Central Market, craft exhibitions and several local brassware workshops were chosen to be part of the study during the data collection.

**Observation** offers the opportunity to record and analyse behaviour and interactions of the samples of population of events, actions and experiences through the 'eyes' of the researcher. It is a useful approach as this study is concerned with investigating the process of brassware craft-making and its associated practices, which involve several other stakeholder groups (buyers, etc).

**Document analysis** involves the study of existing documents, such as media reports, government papers, publicity materials, minutes of meetings or personal documents like diaries or photographs, in order to understand the content as well as to clarify deeper meanings *"which may be revealed by their style and coverage. This method is useful where the history of events or experiences has relevance, in studies where written communications may be central to the enquiry (for example organisational research, studies of public awareness or information) and where 'private' as well as 'public' accounts are needed. Documentary sources also be needed when situations or events cannot be investigated by direct observation or questioning"* (Hammersly and Atkinson cited in Ritchie 2003).

In this research, the case studies involved predominantly **direct observation** and document writing as it searched for an in-depth understanding of the relationship between brassware handicraft, design and sustainability. This method was also combined with other data collection methods, such as **semi-structured interviews** and **document analysis**.

**Observations** can be an important ingredient of an exploratory case study. In this present research it was used in the field research, being carried out at several selected

home-based brassware workshops, as well as enterprise-based and incubator-based or factory-based workshops. All these brassware workshops are practising traditional and non-traditional (modern and improved manufacturing) methods and are located in the districts of Kuala Terengganu and Marang in the state of Terengganu, Malaysia.

**The selection of the location** in which to conduct the observations depends on several factors, such as the variety of the product produced, type of enterprise, and the techniques or methods applied in the brassware handicraft production. Also, all brassware artisans have their different specialisations and expertise in producing products as well as different techniques and methods. For more authentic and accurate data, during the observation process, the activities of craftspeople (in the field this begins with the preparation of materials, designs, manufacturing processes and so forth) in producing brassware handicrafts were recorded (video and photographs) to have a better understanding of the behaviours, practices, local wisdom and values of traditional brassware craftsmanship itself. Dorst and others tell us that the application of this approach can help to develop new design thinking (Dorst, 2011), design knowledge and cross-cultural work practices in this research (Sanders & Stappers, 2008, p. 16). In this present study, the researcher also noted the important information in a notebook during the observation process. These processes were also captured and recorded using a Nikon D90 digital camera.

### **3.8 Data Analysis Method**

Data analysis comprises interpretation and critical analysis of research findings. Considering the selected research approach and research strategy, qualitative analysis



of the data and information are carried out. There are three types of qualitative research data analysis: **quasi-statistical**, **thematic coding** and **grounded theory analysis** (Robson & McCartan, 2016).

Data analysis involves key strategies, including: (i) coding – a process *“for both categorising qualitative data as well as describing the implications and details of these categories”* (Trochim, 2006); (ii) visualisations of information, e.g. diagrams – to pull all of the coded information together and enable researchers to make sense of the information and to address emerging ideas (Trochim, 2006); and (iii) memoing – *“a process for recording the thoughts and ideas of the researcher as they evolve throughout the study”* (Trochim, 2006).

In the first case, the idea is to convert qualitative data into a quantitative format that allows the researcher to work with word frequencies and correlations between terms. This approach is also called **content analysis**. The second approach is **thematic coding analysis**, and it refers to the process of coding the data, splitting it into different groups of codes to form themes and then analysing and interpreting the themes according to the research interest. Finally, the **grounded theory approach** is sometimes considered as part of thematic analysis, but with the condition that the codes emerge during the interaction of the researcher with the data and there are no preconceptions before the analysis. In this approach, the interpretation of the researcher plays a vital role (Robson, 2011). **In this research the approach selected to analyse the data of the main study was thematic coding analysis because the researcher was looking of emerging themes and areas of concern regarding the brassware craft sector in Terengganu, Malaysia.**

During the process of data analysis, all collected data and information from the semi-structured interviews and case studies, such as field notes, textual data (interview transcripts), photographs, videos and any other relevant data were sorted out, coded, labelled and categorised into related themes and subthemes – as recommended by Robson (2011, p. 467). The data and information collected were transcribed into written texts for further analysis.

Atlas.ti software was used as a supporting tool in facilitating the analysis of the large volume of written text. The data analysis process involves the data being divided into smaller units by marking phrases, sentences and significant words as quotations. Then, the data are analysed, reviewed and organised in order to identify and determine the potential relationship between the themes and subthemes. Further discussion then occurs to develop network maps, flowcharts and diagrams in order to visualize and realize the findings.

### **3.9 Ethics Approval Application**

Ethical considerations and arrangements are one of the important aspects in the research process. Prior to commencing the data collection process (semi-structured interviews and case study), ethical clearance was obtained from the *Faculty of Art and Social Sciences (FASS) and Lancaster University Management School (LUMS) Research Ethics Committee (FASS-LUMS REC)* of Lancaster University. This is the requirement of the University's Code of Practice, which all researchers need to follow before carrying out the data collection process. Approval was granted prior to the field research being conducted (ethics approval documentation is included as Appendix X).

### **3.10 Validation of Findings**

Validation of the findings is undertaken over the course of the research to check on *“the quality (accuracy) of the data and the results”* (Creswell and Clark, 2007 cited in Evans, 2010, p.124) and to obtain feedback from informants (Robson, 2002 based on Miles and Hubberman, 1994 cited in Evans, 2010, p.124).

The needs of conducting the triangulation process were fundamentally important. The reason is that the data was obtained and analysed via multiple techniques and tools, and during the data collection it involved a different sample of the population. Therefore, in order to assure the validity of data and findings, the triangulation process was done accordingly. Besides that, the researcher used triangulation of data to validate the authentication of findings as well as to reduce biases.

In this research, a series of concepts and frameworks of brassware craft and sustainability was developed, based on the combined findings from the semi-structured interviews and case studies. A series of several expert interviews or group discussions were then undertaken in which informants were asked to comment on the research and the validity of the findings and to express their views about the concepts and frameworks. This feedback helped clarify and refine some of findings and recommendations.

There were several stages conducted to validate the data as well as the finding. In this sense, the validation of data was done because of the limited knowledge of the researcher on a certain context that needed confirmation by the informant. For instance, once the data transcribing was done, the transcription was shown to the

informant for validation. However, this validating process did not apply to all data transcriptions. As been mentioned earlier, this was done for certain context only.

Validation of the research findings, on the other hand, was conducted to check the accuracy and quality of information and finding gained as well as to draw out feedback and recommendations from selected informants and expert reviewers. This process involved expertise and those with experience in the field of brassware craft, design and manufacturing as well as those in the field of design for sustainability. This process was done individually as well as in group with the experts from brassware enterprises and organisations involved directly in this sector.

### 3.11 Conclusion

This chapter has discussed the research philosophies leading to research strategies that were implemented in this study as well as the research design and approach throughout the fieldwork stage. Qualitative methods were chosen as the primary approach during the data collection and analysis stage. The qualitative approach primarily involved semi-structured interviews and case studies in Terengganu, Malaysia (the field work will be discussed in Chapter 4).

Research Question	Research Objective	Method
<p><b><u>MAIN RESEARCH QUESTION</u></b></p> <p><b>How can brassware handicraft, as a culturally significant craft practice, be revitalised in Malaysia through effective design contribution that is in accord with principles of sustainability?</b></p>		
What is the value of revitalising the brassware as a culturally significant craft practice?	To determine the value of significance of brassware handicraft in Terengganu, Malaysia	Document analysis (LR) Semi-structured interview
What is the opportunity for design to contribute in revitalising the brassware handicraft?	To identify design opportunities that could make a contribution to revitalise brassware handicraft in Malaysia that is in accord with the principles of sustainability.	Document analysis (LR) Semi-structured interview Case studies
How can design contribute to revitalise culturally significant design, product and practice of brassware craft industry in Terengganu, Malaysia?	To propose a design-oriented strategies to revitalise culturally significant designs, products and practices of brassware handicraft in Terengganu, Malaysia.	Document analysis (LR) Semi-structured interview Case studies

Table 3-5: Research design summary

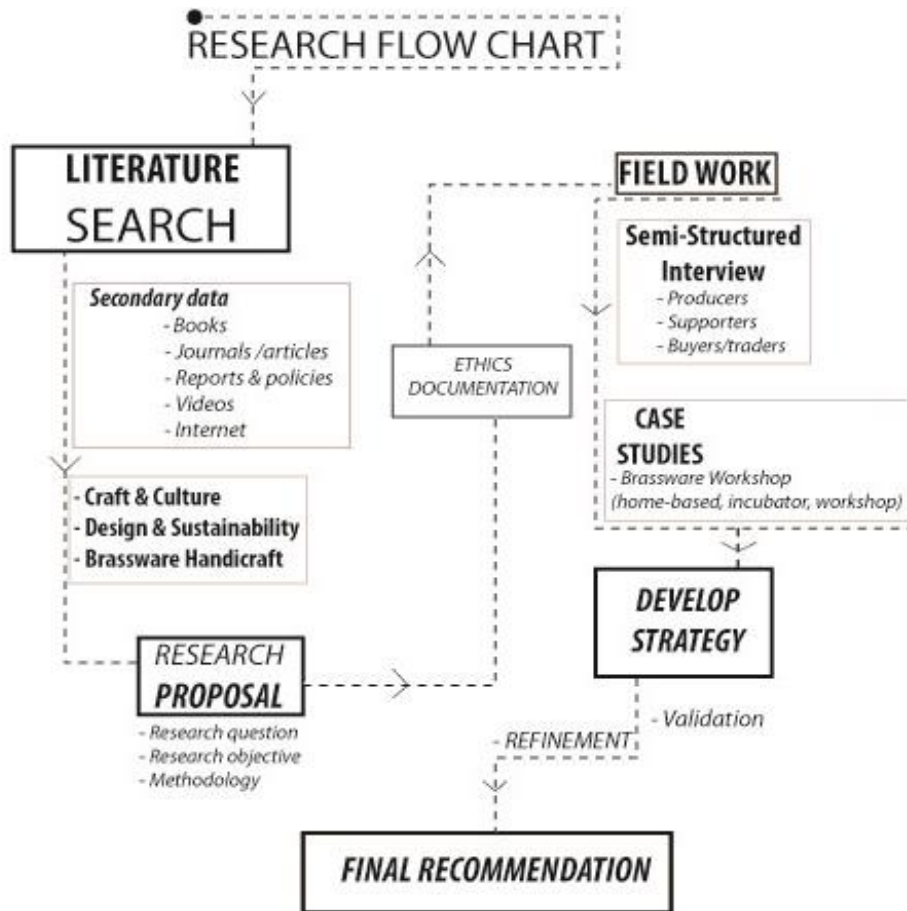


Figure 3.2: Research flow chart

## CHAPTER 4: FIELDWORK/DATA COLLECTION

### 4.1 Introduction

This chapter discusses the primary data collection and data analysis of the research. It also explains the primary field research process which involves multiple qualitative methods comprising **semi-structured interviews** with selected potential informants (the first part) and **case studies** (the second part), which also involved multiple strategies comprised of semi-structured interviews, observation. During the primary research phases Malaysia, the researcher also had the opportunity to review local documentation related to traditional processes. The data garnered from these sources will also be discussed here.

Qualitative research methods were carried out to collect the data in order to answer the primary research question: *“How can brassware handicraft, as a culturally significant craft practice, be revitalised in Malaysia through effective design contribution that is in accord with principles of sustainability?”*.

The primary field research was conducted in Terengganu, Malaysia. Prior to the field research being conducted, ethical clearance was obtained from the FASS-LUMS Research Ethics Committee. Knowledge gained from qualitative research methods can provide rich information and insights (Robson & McCartan, 2016; Saunders et al., 2016). These methods were used in this study to help determine ways to support the brassware craft industry in this region, especially the producers in how to make a living.

## 4.2 Location of the Field Research in the State of Terengganu

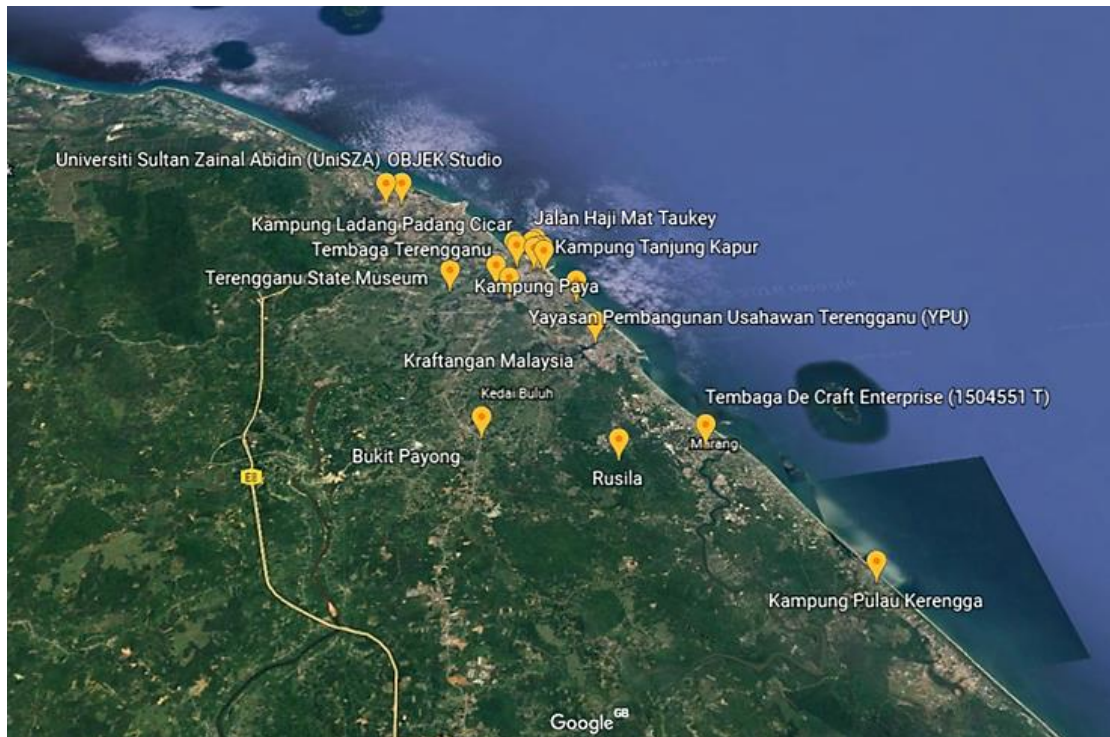


Figure 4.1: The locations of the field study in Terengganu, Malaysia

The field research was carried out primarily in three districts in the state of Terengganu: Kuala Terengganu, Marang and Kuala Nerus. Kuala Terengganu is the capital city of the state of Terengganu. The region is well known for its richness of cultural heritage, and this includes its various handicraft products as well as an abundance of natural resources, both on land and in the sea.





Figure 4.2: The three districts involved in the primary field study

The district of **Kuala Terengganu** is bordered by the Terengganu River that separates it from the district of Kuala Nerus to the north and west. Twenty-eight informants were based in the district of Kuala Terengganu; nine producers, fourteen supporters and five buyers. In addition, interviews were conducted with representative of five organisations<sup>10</sup> as well as six brassware enterprises and five craft retailers.

**Marang** is the coastal district of Terengganu state. There were five informants from this region; P2, P3, P4, P5 and P11. **Kuala Nerus** is the youngest district in the state of

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<sup>10</sup> Terengganu Entrepreneurial Development Foundation, Terengganu State Museum, Sultan Mizan Royal Foundation, Malaysian Handicraft Development Corporation, Terengganu Institute of Design Excellence

Terengganu. It was declared a new district only in 2014, whereas previously it had been part of Kuala Terengganu. Four informants were from this district: two academics from the same institution (S7, S8), one designer-maker (S17) who owned a design house studio, and one collector of brassware (B6). See Table 4.1.

Location of fieldwork	Agencies, Enterprises and their Locations
<b>District of Kuala Terengganu</b>	Malaysian Handicraft Development Corporation (MHDC), Chendering ( <a href="#">S1, S2, S3</a> ) Terengganu Entrepreneur Development Foundation ( <i>Yayasan Pembangunan Usahawan Terengganu (YPU)</i> ) ( <a href="#">S13, S14</a> ) Terengganu Institute of Design Excellence (TIDE) ( <a href="#">S4, S5, S6</a> ) Sultan Mizan Royal Foundation ( <i>Yayasan Diraja Sultan Mizan (YDSM)</i> ), Kuala Ibai ( <a href="#">S15, S16</a> ) Terengganu State Museum, Losong (S9, S10, S11, S12) Kampung Chendering ( <a href="#">P7, P8</a> ) Wanisma Kraf, Bazar Warisan ( <a href="#">P1, B4</a> ) SA Unik Kraf ( <a href="#">P5, P6</a> ) Pasar Payang ( <a href="#">B1, B2, B3, B7</a> ) Chabang tiga ( <a href="#">P13</a> ) Kampung Ladang Titian ( <a href="#">P9, P11, P12</a> )
<b>District of Marang</b>	Tembaga Terengganu, Pulau Kerangga ( <a href="#">P2, P3, P5</a> ) Tembaga De Craft Enterprise, Bukit Khor ( <a href="#">P4</a> ) Kampung Rusila, Marang ( <a href="#">P11</a> )
<b>District of Kuala Nerus</b>	Universiti Sultan Zainal Abidin (UNISZA) ( <a href="#">S7, S8</a> ) Objek Studio ( <a href="#">S17, B6</a> )

Table 4-1: Informants according to district

### 4.3 Semi-structured Interview Details

#### 4.3.1 Data collection process for semi-structured interviews

**Informant identification** - The first step was to identify and gather all the information and details of the potential informants, especially those in the producer cluster, followed by supporters and buyers. All brassware producers were identified by contacting the Malaysia Handicraft Development Corporation (MHDC), the Sultan Mizan

Royal Foundation (SMRF) and the Terengganu Entrepreneur Development Foundation (TEDF). These organisations are based in Terengganu and are directly involved in, and contribute significantly towards, the development of art, craft and the heritage industry in Terengganu. That is why these organisations were seen as the perfect sources for identifying potential informants.

These organisations are among the leading government and non-government bodies that hold lists of craft enterprises in Terengganu. However, the researcher was informed that the current registered list of craft enterprises had not been kept up to date, especially for brassware producers. Therefore, the researcher had to check the entire list of registered brassware enterprises from their database, in order to identify whether or not they were still working and actively producing brassware craft. The researcher had to contact them personally to make sure that the potential participants, especially those named as ‘producers’, were still practising their brassware craftsmanship. An appointment was then set up for a meeting during the primary fieldwork that was carried out between July 2017 - November 2017.

<b>Semi-Structured Interviews</b>		
<b>Cluster</b>	<b>Initial Plan</b>	<b>Final</b>
	<b>No. of Interviewees</b>	
<b>Producer</b>	10	13
<b>Supporter</b>	10	17
<b>Buyer</b>	10	7
<b>Total</b>	<b>30</b>	<b>37</b>

Table 4-2: Semi-structured Interviews - Informants

Initially, there were only thirty informants selected to participate in the semi-structured interviews, with ten informants selected for each cluster. However, the number increased during the data collection phase as several new potential informants were identified. Through snowball sampling 10 additional informant contributed to the study (3 producers, 7 supporters). Unfortunately, there was a decreasing number of informants in the buyer cluster as the researcher managed to find only seven of them rather than the ten anticipated in the initial plan (see Table 4.1). Ultimately, there were thirty-seven informants selected for this primary fieldwork comprising semi-structured interviews and a case study.

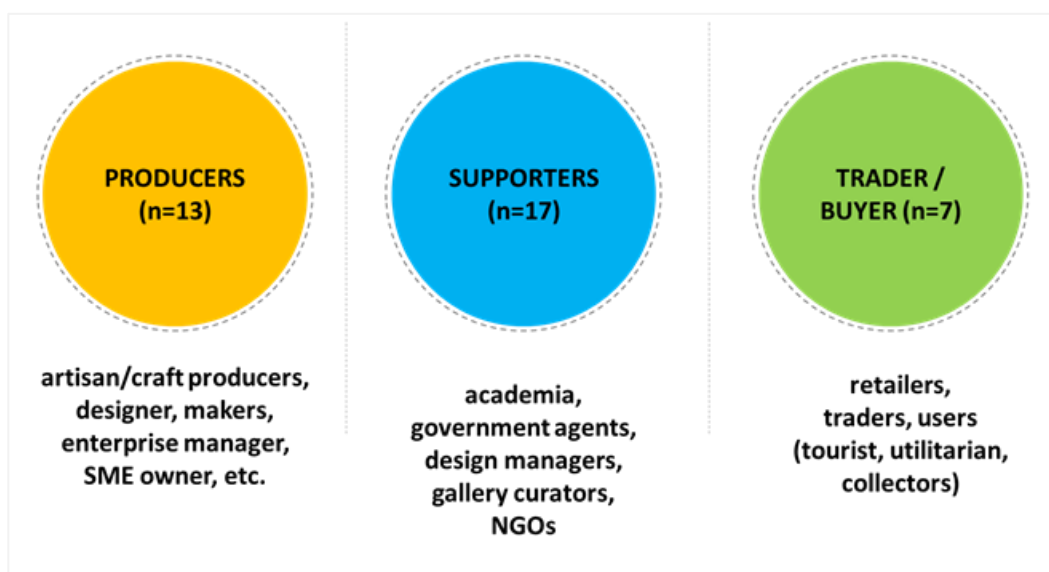


Figure 4.3: Clusters of informants

**Sample of informants** - All of the informants were identified and clustered as ‘Producer’ (n=13), ‘Supporter’ (n=17) or ‘Buyer/Trader’ (n=7). They were chosen to be part of this study because of their distinctive roles and contributions towards the brassware craft industry; and their knowledge and insights were significance to this study. There were

brassware craft practitioners and experts in various fields related, either directly or indirectly, to art, craft and the creative industries. In this investigation, the first phase of the field study focused on brassware craft producers and was then addressed to the supporters and buyers.

**Cluster 1: Producer** – the producers were people whose primary role is directly involved in brassware handicrafts production. They had various roles, backgrounds, experience and expertise, including the owner of a micro or small enterprise, brassware artisan, craft maker, worker, and a designer-maker. Some had multiple roles, while others had only one. For instance, some of the craft makers are also business owners. Their experience in the field ranged from ten to sixty years. The youngest producer, P7, is 25 years old and the oldest producer, P12, is 80 years old. Those with the least experience are P7 and P8 with less than ten years, and P2 and P12 have the most experience in the field with more than fifty years. The researcher's complete summary of the roles and responsibilities of the producers and their experiences in this industry can be seen in Appendix A.1.

**Cluster 2: Supporter** - supporters were people who engage directly or indirectly with the brassware handicrafts sector in Terengganu. They were: educators from public and private education institutions; experts from government and non-government agencies and organisations; business consultants; presidents of associations; politicians; the director of a design house and art gallery; a museum curator; and a secretary of an organisation involved in the creative industries. All the supporters were selected based on their capability and expertise in the craft and creative industry, not limited to its

making but extended to the context of managing, promoting, marketing etc. See Appendix A.2 for full details of the supporters' roles and responsibilities.

**Cluster 3: Buyer/trader** – buyers/traders in this particular research context were people involved in brassware craft industry who focus on trading activities - they buy, sell and collect handicraft products and antique items for business and investment. They presented themselves as traders, retailers, distributors, sales executives, and collectors with experience in dealing with the craft business and being involved in the craft communities for between –five and forty years. Some of them were involved in managing the craft business conventionally at the local craft market, and others followed the current trend of using technology to sell the products. Generally, most of them have multiple roles – they act as buyer, collector, seller as well as user. Appendix A.3 has full details of the buyer/trader roles and responsibilities.

Semi-structured Interviews: structure & frequency						
Structure	Producer		Supporter		Buyer	
Single (1 person)	9	P1 <sup>3</sup> , P2 <sup>2</sup> , P3, P4 <sup>3</sup> , P7 <sup>3</sup> , P8, P11, P12, P13 <sup>2</sup>	9	S7 <sup>2</sup> , S8 <sup>2</sup> , S9, S10, S11, S12, S13 <sup>2</sup> , S14, S17 <sup>2</sup>	7	B1, B2, B3, B4, B5, B6, B7
Group of 2	2	[P5, P6], [P9, P10]	1	[S15, S16]	0	-
Group of 3	1	[P2, P5, P6] <sup>2</sup>	2	[S1, S2, S3] <sup>3</sup> , [S4, S5, S6] <sup>3</sup>	0	-

[] - Group interview

[]<sup>2</sup> - frequency of 2

[]<sup>3</sup> - frequency of 3

Table 4-3: Semi-structured Interviews: Structure & frequency

**Interview structure and frequency** - During the data collection phase, there were a few times that the researcher had a follow-up interview with selected informants. As this study followed the exploratory data collection method, there was new interesting input

gained that warranted detailed explanation and further discussion. During the follow-up phase of the study, informants were asked about any unclear topics and statements from the previous interview session that needed further elaboration. As well, there were several interview sessions that had to be stopped in the middle for unavoidable reasons such as health issues and matters that needed to be settled urgently. Follow-up interviews were sometimes necessary in order to guarantee an in-depth investigation as mentioned in Chapter Three, where the case study involves multiple methods; semi-structured interviews, observation and document analysis.

Table 4.3 indicates the structure and frequency of the semi-structured interviews. Most of the sessions (whether a one-time or a follow-up session) were conducted 'face-to-face'. Some of the follow-up interviews were done by telephone, due to certain constraints such as distance (when the researcher was back in the United Kingdom). Most of the interview sessions were conducted with individuals, and some were conducted with groups of two or three. Usually, this occurred when the informants worked in the same department or organisation, and they were willing to be interviewed in a group.

INFORMANT	KEY ROLE	PRODUCER																							
		P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13											
PRODUCER	MSME Owner	x	x		x	x	x	x		x	x	x	x	x											
	Artisan	x	x		x					x	x	x	x	x											
	Craftsman			x	x	x	x	x	x																
	Labour			x	x	x	x	x	x																
SUPPORTER	Academia	x			x																				
	Government agent																								
	Designer-maker																								
	Gallery curator																								
	NGOs																								
BUYER	Retailers/trader	x	x		x																				
	Dealer	x	x																						
	Collector	x	x																						
INFORMANT	KEY ROLE	SUPPORTER																							
		S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17							
PRODUCER	MSME Owner																								
	Artisan																								
	Craftsman									x*															
	Labour																								
SUPPORTER	Academia							x	x							x									
	Government agent	x	x	x	x	x	x			x	x	x	x	x	x	x	x	x							
	Designer-maker	x	x	x	x	x	x	x			x	x						x							
	Gallery curator				x						x	x													
	NGOs							x	x									x							
BUYER	Retailers/trader																		x						
	Dealer																		x						
	Collector																								
INFORMANT	KEY ROLE	BUYER																							
		B1	B2	B3	B4	B5	B6	B7																	
PRODUCER	MSME Owner																								
	Artisan																								
	Craftsman																								
	Labour																								
SUPPORTER	Academia																								
	Government agent																								
	Designer-maker							x																	
	Gallery curator																								
	NGOs								x																
BUYER	Retailers/trader	x	x	x	x	x		x																	
	Dealer	x	x	x	x	x	x	x																	
	Collector	x	x	x	x	x		x																	

Table 4-4: Roles of the informants



Table 4.4 indicates the distinctive roles of each informant within the brassware craft communities in Terengganu. Previously, the researcher described the primary role of an informant from each cluster (producer, supporter and buyer) and justified why they were selected to participate in this study. Five<sup>11</sup> of the informants claimed to have multiple primary roles<sup>12</sup> in this craft sector. For instance, apart from being a producer, P1 was also a supporter and buyer.

Additionally, all of the informants have a secondary role in addition to the primary role. In this context, secondary role refers to informants, who, for instance, as well as being an enterprise owner, they are also a maker, labourer and an artisan. The same applies to supporters; some worked as a lecturer, while at the same time they also joined NGOs to support the local craft sector; and in the buyer cluster, most are retailers, collectors, dealers and users.

**Informants' education background** - Education is one element used in evaluating informant demographics. It is important to assess the way informants give their responses to the topics discussed during the interview. The informants come from different social groups and backgrounds, and have different ages, levels of expertise, genders etc. Therefore, it is interesting to evaluate their perspectives and insights towards the discussed topics. In this sense, education is evaluated not only through formal education but also involves informal education as well.

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<sup>11</sup> P1, P2, P4, S9, B6

<sup>12</sup> Role in this context refers to the three primary roles (producer, supporter and buyer)

Education level	Informant	Total	Education level	Specific course	Informant
Primary school	P12, B3	2	Diploma	Fine Metal Arts	P1, S1, S11
				Mechanical Engineering	P4
Secondary school	P2, P3, P5, P6, P7, P8, P9, P10, P11, P13, B1, B2, B4, B5, B7	15	Degree	Business and management	S13
Diploma	P1, P4, S1	4		Fine Metal Arts	S2, S3
				Graphic Design	S5
Degree	, S2, S3, S4, S5, S6, S10, S11, S12, S13, S15, S16, S17, B6	13		Textile technology	S6
Master	S7	1	Master	Industrial design	S10, S17, B7
PHD	S8, S14	2		Sociology and anthropology	S4
		37	PHD	Industrial design	S7
				Public Policy	S12
			Entrepreneurship	S8	
				S14	

Table 4-5: Informants' education level and background

The backgrounds and interests of the informants are various and diverse, and include: art, design, culture, business and operations management, history, entrepreneurship, political science and mechanical engineering; in various academic level such as; the educational levels reached range across diploma, degree, Masters and PhD. The majority of the informants selected had graduated in art and design fields such as; fine art, fine metal arts, graphic design, textile and industrial design. Knowing the background and expertise of the informants, as well as what they represent, really helps in this study.

Group	Years of experience			Total
	0-20 years	21-40 years	41-60 years	
<b>Producer</b>	<b>5</b> <i>(P4, P5, P6, P7, P8)</i>	<b>5</b> <i>(P1, P3, P10, P11, P13)</i>	<b>3</b> <i>(P2, P9, P12)</i>	<b>13</b>
<b>Supporter</b>	<b>11</b> <i>(S1, S2, S3, S4, S5, S6, S7, S10, S15, S16, S17)</i>	<b>6</b> <i>(S8, S9, S11, S12, S13, S14)</i>	<b>0</b>	<b>17</b>
<b>Buyer/trader</b>	<b>5</b> <i>(B1, B4, B5, B6, B7)</i>	<b>2</b> <i>(B2, B3)</i>	<b>0</b>	<b>7</b>
<b>Total</b>	<b>21</b>	<b>13</b>	<b>3</b>	<b>37</b>

Table 4-6: Informants – years of experience

**Informants' experience** indicates the relevance of the informants selected as they provide more in-depth and richer insights. Their experiences are vital in determining the validity of the data and information given. From the table above, three out of thirty-seven informants, who were grouped in the producer cluster (P2, P9 and P12), were noted as having the most experience. They are recognised as master brassware artisans by the brassware craft community, and two of them were awarded the brassware craft 'adiguru'<sup>13</sup> by the government, for their knowledge, skill and wisdom as well as their contribution towards the development of the brassware craft industry in Terengganu.

#### 4.3.2 Methods of data analysis for semi-structured interviews

The process to prepare the data was done before the coding process. It involved textual data transcription of each of the interviews with the 13 brassware craft producers; 17 supporters; 7 buyers/traders. Each audio recording was transcribed into a word processor, identifying questions and answers. Each transcription was then transferred

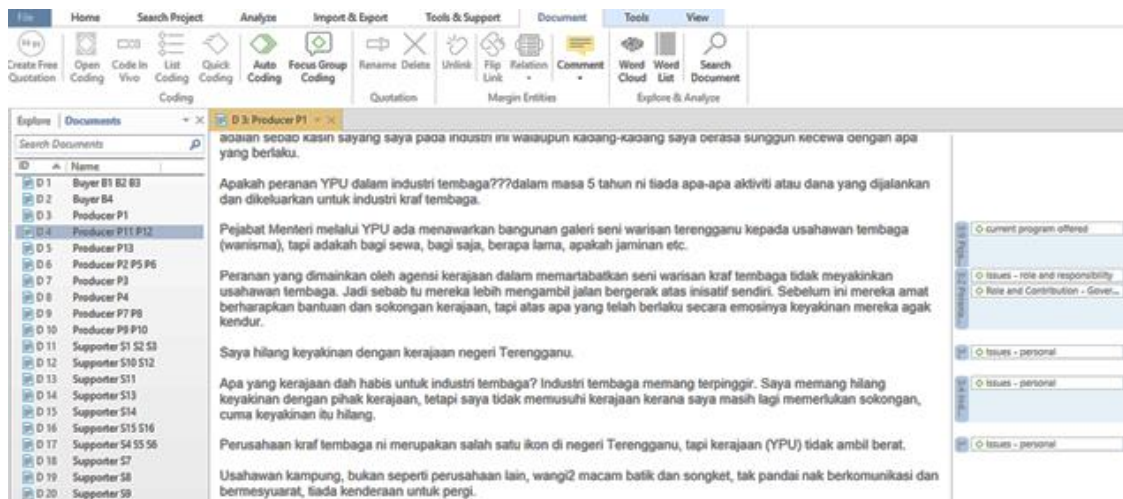


Figure 4.4: Transcriptions were sorted into designated codes in Atlas.ti

<sup>13</sup> 'adiguru' means master craftsmen, award given by the government to the local craft artisans as appreciation for their contribution to the handicraft industry.

into software designed to carry out qualitative analysis using codes. The program selected was Atlas.ti.

It is important to note that because the interviews were carried out in *Bahasa Melayu*, the transcriptions were also in *Bahasa Melayu*, and some of them were translated to English; but the coding process, the development of themes and the following analysis were done in English by translating important pieces of text from the original interviews. The analysis process involved the combination of the use of multiple tools, techniques and software, starting from data preparation, data management and data analysis.

The use of Atlas.ti software as an assistive tool brings new opportunities for data exploration and analysis of the qualitative data. The researcher found that 'word clouds' were particularly useful as a quick and powerful way of seeing what words were more and less frequent in the overall textual data, a quotation (or a set of quotations), or the quotations linked to a particular code (or the codes belonging to a group).

In parallel, Microsoft Excel was employed at times to: (i) record all the bits of data analysed, including key words and descriptions in the answers, and the (encrypted) identity of the informants; (ii) revise the themes/subthemes and rearrange the data into categories; (iii) perform calculations on the number of informants, the frequency with which subjects were explored, etc.; and (iv) prepare the data for presentation.



Figure 4.6: Key words generated from Atlas.ti file exported to Microsoft Excel file for further analysis.

	B	C	D	E	F	G	H
		SIGNIFICANT ISSUES	THEME	INFORMANT	No.	%	WHY?
1		Availability of skilled practitioner and manpower, lack of apprentice from new generation	Apprentice and Skilled workforce	P1-P13, S1-S17, B1-B7	37	100	Died and the knowledge is not transferred, relocating due to development in previous premises led to stop the practice, economic factor led to discontinuation of traditional practice
2		Locality, place, premise, workstation, safety	Place/location and facilities	P1-P13, S1-S17, B1-B7	37	100	Commercial development on the heritage sites. Current premise non-environmental friendly as it surrounded by new development such as condominium and shophot.
3		Technological innovation and R&D on product design and manufacturing process for value added.	Technology adaptation	P1-P13, S1-S17, B1, B3, B4	32	86	Lack of fund and knowledge to upgrand new technology (machine, tools and equipment), afraid of unknown
4		Monotony of design, call for change to meet modern trends and consumer tastes	Design Research and Developmet (DR&D)	P1, P4, P5, P6, P7, P8, P13, S1-S17, B1-B7	31	84	Lack of idea, skill and creativity, unavailability of modern technological assistive equipment
5		Government policy, loans, funds and subsidies (matrrial and insentives).	Government Policy	P1-P13, S1-S17, B1	31	84	Ineffective execution due to lack of knowledge and understanding on the industry in the context of socio-cultural-economy, values, meanings etc
6		Education, training and technical support (preserving the traditional knowledge)	Education and knowledge transfer	P1-P13, S1, S2, S3, S13, S14, S15, S16	31	84	Ineffective execution, improper planning, lack of marketing - due to lack of knowledge and understanding on the industry.
7		Slow in sales, low supply and high demand and price (household and ceremonial product)	Function, market and competition	P1-P11, P13, S1-S9, S14, S17, B1-B7	30	81	Expensive price of local product (high price setting up by Middle-men)
8		Hope and vision for future growth	Future planning for	P1, P2, P4, P5, P6, P9, P11, P12, P13, S1, S2, S3, S4, S5, S6, S7, S8,	29	78	Lack of communication and awareness, afraid of

Figure 4.5: Sorted data in Microsoft Excel – initial findings that led to the conducting of the case studies.

#### 4.4 Case Study Details

As proposed in Section 3.7, this section discusses the detailed process of how the researcher conducted the case studies. The selection of the case studies was based on the findings obtained from the semi-structured interviews. Some of the initial findings gathered from the interviews remained unclear and needed in-depth investigation especially in the context of brassware craft making practice, in order to answer the research questions and to achieve the research objectives. Therefore, the researcher needed to explore and conduct in-depth investigations using appropriate approaches and strategies, via case studies, in order to understand the current situation, status, and conditions and to identify and propose a possible future direction for the revitalisation of the brassware craft sector in Terengganu.

Generally, a case study is designed to investigate a real-life context of a contemporary phenomena through several sources. In each case study, information from various sources were brought together such as documents, archival records, interviews, direct observations, participant-observation, physical artefacts, film, photographs and videotapes. As has been explained in Chapter Three, **exploratory case studies** were employed to study and investigate the cultural phenomena within the brassware communities in Terengganu, in several aspects related to craft product design and its associated practice. The case study research aimed at contributing to a better understanding of this field, taking into consideration that there is a lack of previous studies on this topic.

#### 4.4.1 Data collection process for the case studies

The field research for the case studies took twelve weeks comprising three case studies and involved various activities, including the identification of case studies and selection criteria, and data collection and validation. **Informant identification** involved a search for brassware craft producers and stakeholders associated with the craft industry in general and the brassware craft industry specifically. In this stage, the researcher was rather selective as most of the informants involved in the case studies were the same informants as those selected to participate during the first part of the field study, i.e. a semi-structured interview as discussed in Section 4.3.

There were **four additional informants**<sup>14</sup> selected for the case study, and the rest were follow-up interviews with existing informants. The additional informants were identified through snowball sampling. They consisted of experts in their field and were a university lecturer; an NGO advisor; the former director of Terengganu State Museum; the Head of the Department of Terengganu Entrepreneurial Development Foundation; and a designer-researcher. They all claimed to have a multiple role in the industry.

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<sup>14</sup> Four additional informants were all categorised under the supporter cluster - S18, S19, S20, S21

The journeys undertaken for these case studies are shown in Figure 4.7.

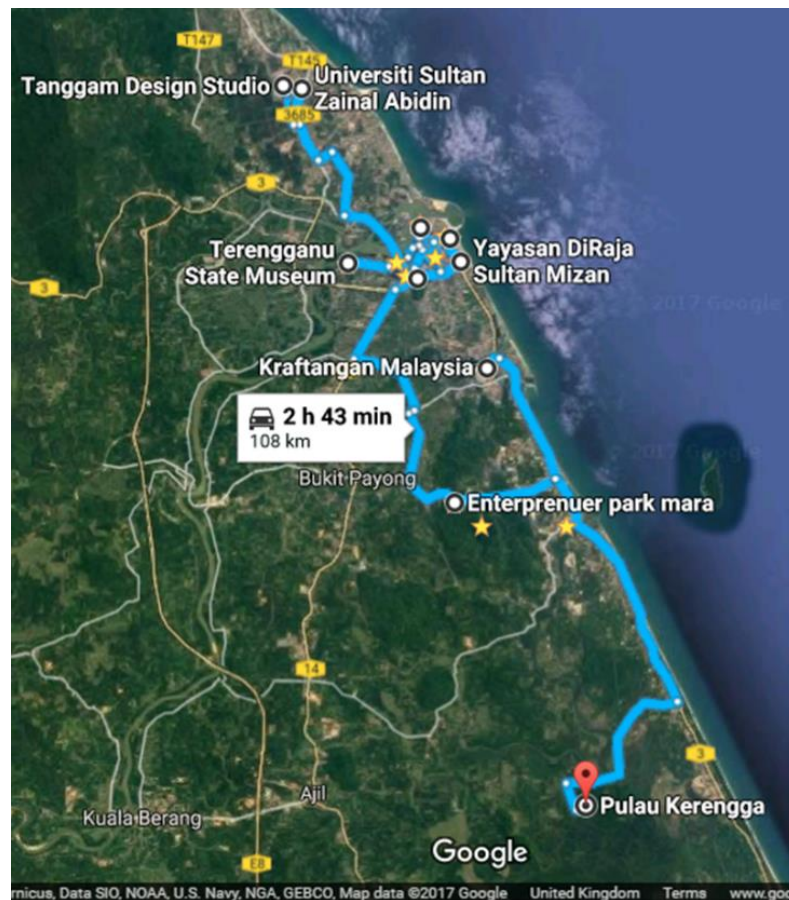


Figure 4.7: Journeys undertaken for the case studies in the Kuala Terengganu and Marang districts

**Selection of the case studies – The first case study sought** to examine the relationship between culturally significant products, design and the practice of brassware craft with its creative ecology (place-based practice). These two villages (*Kampung Ladang* and *Kampung Tanjung*) were known as the only hub for brassware craft making for over 300 years. However, due to the impact of modernisation, this creative ecology has changed to make way for commercial development. Initial findings from the literature review as well as from semi-structured interviews led to the need for in-depth study of the case.



Therefore, the informants who participated in this study were; 1) **PRODUCER:** brassware craft producers who originated from Kampung Ladang and Kampung Tanjung (some of them are still centralised in Kampung Ladang – some of them moved out to other places within Kuala Terengganu district; some are still practising, and some have stopped; 2) **SUPPORTER:** an experts from Research and Documentation Sector and Conservation Sector from Terengganu State Museum; a state government agency representatives<sup>15</sup>; academics specialising in social policy and political science who originated from Kampung Ladang; 3) **BUYER/TRADER:** retailers who buy brassware craft products from local brassware producers and sell them in Payang Central Market. Some of them originated from Kampung Ladang.

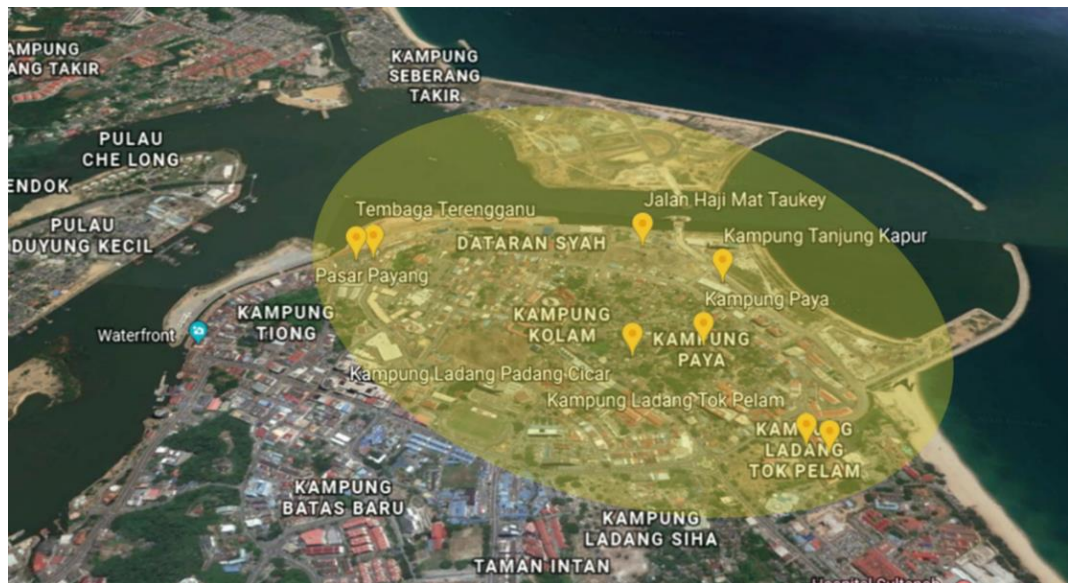


Figure 4.8: Observation locations within the district of Kuala Terengganu

<sup>15</sup> Terengganu Institute of Design Excellence, Terengganu Entrepreneurial Development Foundation

**The second case study** was an in-depth investigation of brassware craft production, for which five brassware enterprises were selected. The case study was carried out to explore and investigate in-depth the details of brassware craft production either traditionally or with more modern techniques. The aim was to identify potential areas of design to help improve the brassware craft production. The brassware enterprises selected to take part in the case study consisted of brassware producers from five enterprises that were categorised as Micro Enterprises. The selection of these enterprises was based on multiple factors: type of the brassware craft product produced; method and techniques used; speciality and expertise; and target market.

The selection criteria were established based on the gaps in the findings from the semi-structured interviews and these gaps specifically related to these criteria (see section 5.2.2). These enterprises have their different specialisations and expertise in producing products as well as different techniques and methods. For instance, brassware craft production comprises several processes involving a number of operators. Every operator has his individual speciality, skills and expertise (Section 5.2.2.1).

**The third case study** was the additional case study that was done based on the findings obtained from the semi-structured interviews and case study 1 and case study 2. The *Bekas Bara Besar* (large incense burner) has been chosen as one of the artefacts to be explored and investigated in further detail in terms of its product, design, making practice, history, values and meaning. A few follow-up interviews were conducted as well as on-site visits to the Terengganu State Museum, the Malaysia Handicraft Development Corporation (Terengganu Branch) and brassware workshop. During the visits, the researcher had informal talks and discussions with several people in the museum and the craft centre, as well as an official meeting with a few craft and culture experts for a more in-depth discussion regarding the making practices, its product, design, history, values and meaning.

**Observation and semi-structured interview** – Direct observation was conducted at several locations in the state of Terengganu, including Payang Central Market and some local brassware craft workshops. During the case studies, the researcher observed the overall process of brassware craft production both traditional and non-traditional methods, starting with the preparation of the raw material until the craft product is delivered to the potential buyer in *Pasar Payang* (Payang Central Market).

Every action and practice of the local brassware producers in the field, such as social interaction within the community, their method of craft making, or any scene related to the study, were video recorded and photographed with their permission. If permission wasn't given, the researcher made notes and sketched the important features in a notebook.



Figure 4.9: Field observations – pouring molten brass and the dewaxing process

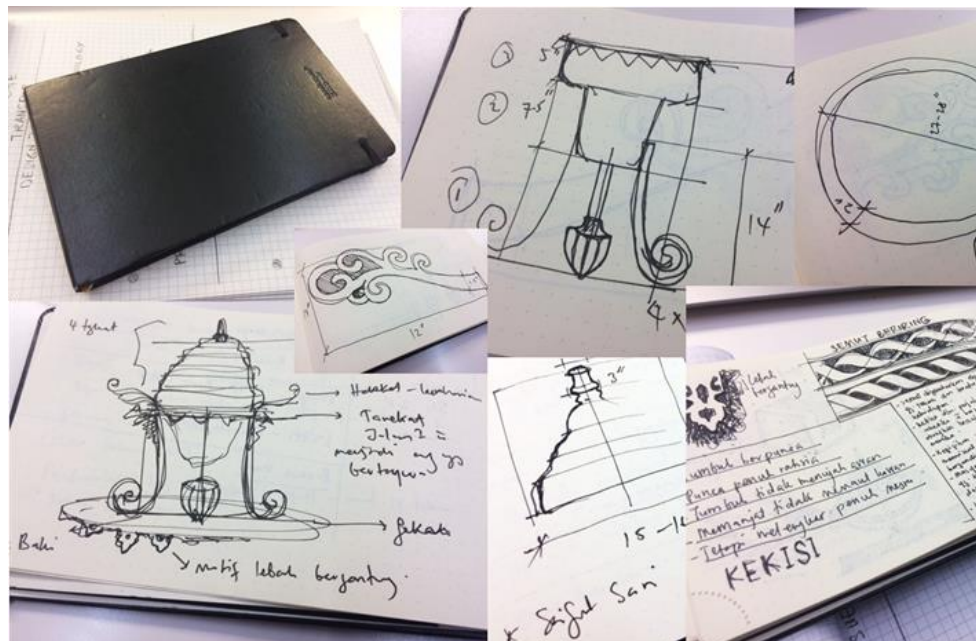


Figure 4.10: Some of the data was recorded in notebooks.



Figure 4.11: Observation at one of the local brassware workshops located in Kuala Terengganu district

**Document analysis** – Document analysis involved reviewing secondary data such as books, journals, articles, newspapers, and economic reports related to brassware handicraft sector which were unavailable during the initial literature review stage. For this technique, the collection of data was done online (portals, websites and social media); the researcher also visited the local public library in Kuala Terengganu; the library at the Universiti Sultan Zainal Abidin; the archive department of Terengganu State Museum; the national archives of Malaysia based in Kuala Lumpur, the Terengganu archive department; and the Malaysian Handicraft Development Corporation library. Most of the data was gathered in the form of economic reports, interview scripts and photographic information, as well as a video documentary.

#### 4.4.2 Methods for data analysis of the case studies

The process of data analysis involves several stages, starting with data management, then data preparation and leading to the process of analysing the primary data obtained from both semi-structured interviews and case studies as well as secondary data obtained through document analysis. These processes comprised; extracting words from transcriptions; developing **codes; identification of themes, patterns and connections in between; and summarising the data**. These data were critically analysed in order to achieve the research objectives and to answer the research questions. This section explains the process of analysing qualitative data. During the process of data analysis, all collected data and information from the semi-structured interviews and case studies, such as field notes, textual data (interview transcripts), photographs, videos and any other relevant data, were sorted out, coded, labelled and categorised into related themes and subthemes.

The data and information collected were transcribed into written texts for further analysis by using both conventional techniques and computerised via Atlas.ti software. The data were then divided into smaller units by marking phrases, sentences and significant words as quotations. Subsequently, the data was analysed, reviewed and organised in order to identify and determine the potential relationship between the emerging themes and subthemes. Further discussion with selected informants who were the experts was done to develop the network maps, flowcharts and diagrams as the findings.



Figure 4.13: Keywords and descriptions were extracted from summary notes and interview transcripts.

BRASSWARE CRAFT PRODUCTION						
MATERIAL, TOOLS AND EQUIPMENTS OF BRASSWARE MAKING						
Phase	Process	Traditional			Non-traditional	
		Material	Tools and equipment	Duration	Material	Tools and equipment
1	Master Pattern Making	Wood (few types of wood such as chengal, jelutong, medang)	Spinning or lathe machine (manual-powered), traditionally the locals call it as 'bindu', hand tools (chisel, knife)	1 day (depends on the design)	Wood, clay, plaster of paris (also act as a mould)	Spinning or lathe machine (electric-powered), hand and power tools (chisel, knife), 3D Print machine (act as master pattern)
2	Wax Pattern Making	Batik wax (white and brown)	Pot/wok, stove (wood-based heating source), knife, basin, water	1 day or (depends on the design)	Industrial wax (casting wax), resin, raw wax (batik wax (white and brown)	Pot/wok, gas-heating stove, wax injector machine, knife, basin, water
3	Mould Making	Sand (fine and rough), clay, paddy husk, water	mixing container (layer 1: mixture of fine sand+clay+water), (layer 2: mixture of rough sand+clay+water), layer 3: mixture of clay+paddy husk+water)	at least 3 days (and depends on the weather)	Wax pattern, plaster of paris (POP) or Gypsum, water, silica sand, wax	Plywood act as a base, metal flusk, measuring cup, mixing container,
			Traditional furnace			

Initial Plan of SSV	Key Role	Sheet4	C1 (Producer)	C2 (Supporter)	C3 (Buyer)	Word Cruncher	Process & Technique	CODES
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Figure 4.12: Data preparation and analysis of the case studies – themes and description were categorised in Microsoft Excel.

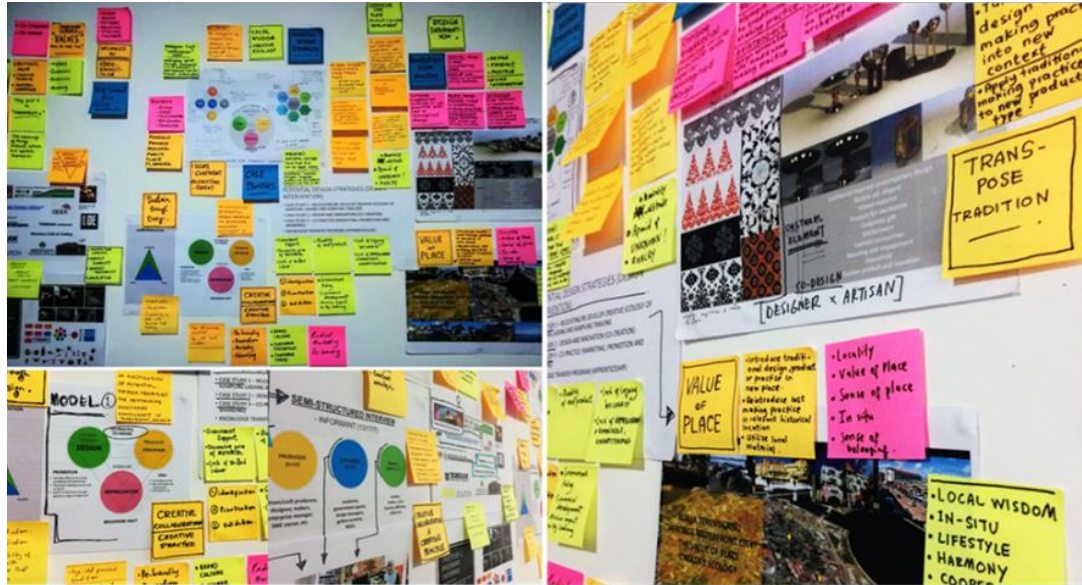


Figure 4.14: The categorisation stage of major themes and sub-themes from the case studies that led to the findings.

#### 4.5 Conclusion

This chapter has presented the primary field research process. The process of findings and securing the interview session is very challenging especially with brassware craft producers as they were busy with their works. Besides that, before conducting a semi-structured interview, the researcher faced certain limitations, in terms of identification of sample due to small sample size especially within the producer and buyer clusters. It was quite a difficult time for the researcher to approach these artisans. While during the interview session, the researcher was dealing with the uncertainties and unexpected problems such as the interviews stopping half-way through; producers withdrew due to health issues and one informant in the supporter cluster died. Regarding the data management and analysis, these processes were performed using Atlas.ti software as an assistive tool that brings new opportunities for data exploration and analysis of the qualitative data.



## **CHAPTER 5: FINDINGS OF SEMI-STRUCTURED INTERVIEWS AND CASE STUDIES**

### **5.1 Introduction**

This chapter discusses the findings from the semi-structured interviews, case studies, and this is followed by conclusions from this field (primary) research.

### **5.2 Section A: Findings of Semi-Structured Interviews**

In responding to the research questions and achieving the objectives of the study, the researcher has investigated the topic of study in-depth and holistically. One of the methods used was the semi-structured interview. The set of questions was developed prior to going into the field. The purpose of the interviews was to fulfil the first and second objective of the field research, namely: to identify and understand the current situation of the brassware craft industry in Terengganu and other related contexts that are significant to the research, and to determine the value of the significance of the brassware handicraft.

Apart from examining the factors contributing to the decline of the brassware industry in this region, it was also important to identify the strengths and weaknesses as well as the opportunities and challenges in reinvigorating the industry. The findings from this phase (first objective) prepared the ground for further investigation in the subsequent stage to achieve the third and fourth research objectives, namely: to identify design opportunities that could make a contribution to revitalise brassware handicraft in Malaysia that is in accord with the principles of sustainability, and to develop design-

oriented strategies to revitalise culturally significant designs, products and practices of brassware handicraft in Terengganu, Malaysia.

### **5.2.1 The current state of brassware craft production in Terengganu**

From the thematic analysis that was carried out on the interview data, keywords were extracted that indicate the current situation and status of the brassware craft sector in Terengganu. Regarding the current state of brassware sector, responses and insights from the interviewees (37 informants in three clusters) were largely similar, but with some variations. Collectively, however, they suggest a sector that is 'in decline'; the reasons given for this decline differed depending on who the informants were and the context (clusters) they represented. The most common responses with reference to the industry's current status were; 'very critical', 'chronic', 'in decline', 'unstable', '*teruk* or *rohok*' (bad), '*nok pupus doh*' (about to become extinct). This indicates just how severe the current situation is.

It can be concluded that the current condition of the brassware craft sector is very critical compared to other craft sectors such as *songket*, *batik* and wood carving (see section 2.2.4). 75.7% of the informants firmly stated how chronic the situation of the brassware craft sector is today. 13.5% of the informants stated that the sector was still stable, and another 10.8% of the informants were not sure.

The table below summarises the analysis of Interviewee responses. The findings have been divided into three categories; ‘declining’, ‘stable’ and ‘not sure’.

<b>The current state of brassware craft sector in Terengganu, Malaysia</b>		
<b>State</b>	<b>Description</b>	<b>Total (%)</b>
<p><b>Declining; Declining, but with positive hope</b></p> <p>Keywords: Critical; chronic; unstable; <i>‘sangat teruk’;</i> <i>‘rohok’;</i> <i>‘nok pupus’</i></p>	<p>The informants who expressed their feelings about this felt like giving up and were demotivated about the industry, especially the producers. They are struggling to sustain the enterprise as well as their livelihood. Some clearly showed their sadness during the interview as they were emotionally affected by the radical change that has happened within their community and ecology. This kind of response was given by most of the informants. These informants are aware of the current condition of their industry. However, deep down, they still hope that brassware craft sector will be able to flourish and be sustained.</p>	<p><b>75.7%</b> <i>(P1, P2, P3, P5, P6, P7, P8 P9, P10, P11, S1, S2, S3, S4, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16, S17, B1, B2, B4)</i></p>
<p><b>Stable</b></p> <p>Keywords: Stable; <i>‘boleh la..’;</i> <i>‘cukup makan’</i></p>	<p>This state was described by the producers who practise the modern way of making and have also widened the scope of brass-based making into the production of engineering parts and non-craft products. They felt that they were not affected by the current state of the brassware craft sector. Knowing the poor current state of brassware crafts motivated them to be more creative in seeking better opportunities and they changed their mindset to more positively solve problems and find solutions. On the other hand, a few of the supporters and one buyer also regard the brassware craft sector as still stable without making any judgement.</p>	<p><b>13.5%</b> <i>(P4, P13, S5, S6, B5)</i></p>
<p><b>Not sure</b></p>	<p>These informants were mentally and physically tired of thinking about what the future might bring to the local brassware craft industry. They were almost giving up on this industry.</p>	<p><b>10.8%</b> <i>(P12, B3, B6, B7)</i></p>

Table 5-1: The current state of the Terengganu brassware craft sector

An additional indicator of decline is the decrease in the annual sales of brassware reported by the MHDC. This decline has also been mentioned by most of the informants, especially from the ‘producer’ cluster. Informants P1, P2, P4, and B1 said they struggle to maintain sales:

*“it is not easy to sell brassware craft products these days, except during the fasting<sup>16</sup> month and school holidays” . (P1)*

*“[I have] mixed feelings towards the industry, I love the industry as it represents the cultural identity of Malay in Terengganu. However, a feeling of ‘anger’ somehow occasionally comes across me when I’m thinking of the way we have been treated by the authorities and societies (retailers and middle-men)” . (P5)*

Apart from the adverse effects raised by most informants, there are also producers, such as P1, P4, P13, who do not feel demotivated and have not given up despite what has happened to their livelihood. The impact of the downturn, such as declining sales and other economic factors, has not weakened their spirit of survival in this industry. In fact, these impacts seem to have boosted their spirits and led them to seek alternatives, for instance by expanding their business by developing new directions and opportunities.

Interviewee P4 has widened his scope by producing engineering parts using the same techniques used to make brassware craft. These parts are supplied locally to the oil and gas industry. The oil and gas industry is one of the most significant contributors to Terengganu’s economic growth. This interviewee also expects to supply his new products to the international market. Similarly, interviewee P1 is not relying totally on the brassware craft business but in this case is not focussing on engineering parts but is adapting the work towards another traditional craft, specifically the creation of *batik block*<sup>17</sup> (*batik stamps*) for creating batik textile. A third interviewee P13 has expanded his speciality to experimentation with crafts using copper sheet, as well as supplying batik stamps to the local batik artisans.

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<sup>16</sup> Fasting month or Ramadhan is the ninth month of the Islamic calendar. Fasting during the month of Ramadan is one of the Five Pillars of Islam. The month is spent by Muslims fasting during the daylight hours from dawn to sunset.

<sup>17</sup> The *batik blok* (batik stamp) is made by bending a copper sheet according to the desired design pattern.

### 5.2.2 Issues arising within the brassware craft community

There are many interconnected issues that have led to the current ‘critical’ condition facing the local brassware craft sector. These will be presented in this section.

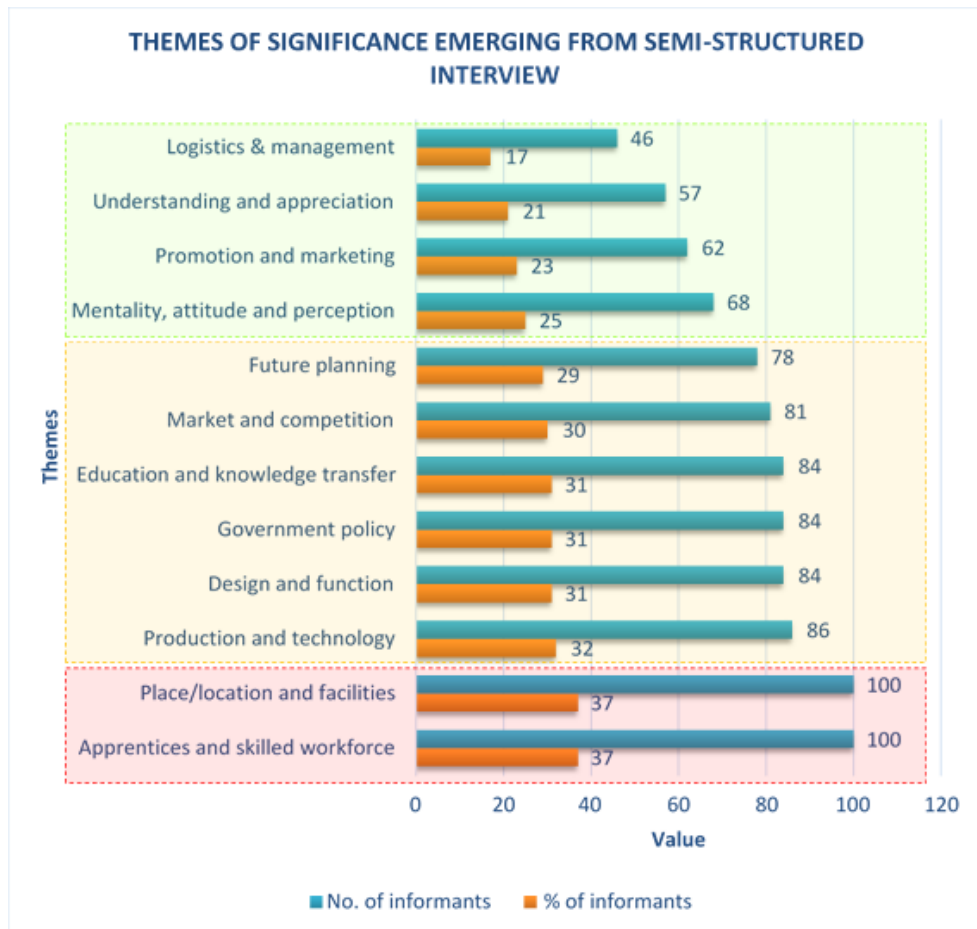


Figure 5.1: Themes of significance emerging from semi-structured interview

Figure 5.1 shows the significant issues arranged into twelve themes which emerged from the thematic analysis. The topics discussed within the context of the themes include: current issues; factors contributing to the issues; potential suggestions and opportunity for change; and the future vision for growth.

The theme “apprentices and skilled workforce” and “place/location” raised the highest percentage (100%) of the most critical issues. The second-highest was “production and technology” with 86%, followed closely by “design and function”, “government policy” and “education and knowledge transfer” at 84%. The remaining areas are “market and competition (81%)”, “future planning (78%)”, “mentality, attitude and perception (68%)”, “promotion and marketing (62%)”, “understanding and appreciation (57%)”, “logistics & management (46%)”. Detailed explanations of these are discussed in the following sections. However, the discussion will not follow nor be based on the ranking as indicated in Figure 5.1, as these identified issues are interrelated.

#### **5.2.2.1 Lack of skilled workforce and apprentices**

The analysis found that the lack of new apprentices, especially from the younger generation, and the availability of skilled labour is the most critical concern. This issue has long been recognised by most organisations, agencies and NGOs, and within craft communities all over the world (section 2.2.4.2). Several factors contribute to the issue where today’s young generation are not interested in continuing the legacy of this family-oriented business. Financial constraints and economics are noted as one of the factors. The younger generation does not view this field as a good prospect for income generation, as mentioned by 70% of the informants (10Ps; 12Ss; 4Bs). This might be because of the view held by most of the public in Malaysia that working in the art and design field will not make you rich (S2; S3; S7). Historically, brassware craft making was regarded as one of the main contributors to the local economy of Terengganu (S9), but nowadays, it does not play a significant role. This is because contemporary society does not place brassware craft products high on their list of things to buy (P4).

Furthermore, making traditional and non-traditional brassware craft is not easy. The process is very intricate, complex and hazardous, as it involves furnace work and handling liquid metals. It is also a time-consuming process that requires highly developed skills. Despite this but adding to the problem, the economic rewards do not reflect the amount of physical work and skill that has gone into the products (P11). As a result, traditional casting technology is incapable of fulfilling current requirements in terms of design, quality of product, and market demand, and it is not an economically attractive career choice for younger people.

*“That is why some of the producers are focusing on custom-made products, and it is not easy to go for mass production as we do not have enough workforce or facilities” (P5; P6).*

Low numbers in the supply of labour will indirectly lead to delays in the production line as each section of the process is done by a different person. Brassware craft production comprises several processes involving a number of operators. Every operator has his individual speciality, skills and expertise. According to P1, P2 and P4, most of the workers involved usually do not stay long and persevere. If other opportunities arise that offer a higher return, they will leave. Only workers who have no other choice remain in the industry.

The other critical situation is in the context of transferring craft skills and knowledge to the younger generation (P1; P2; P4; P10). Currently, there are fewer than five skilled artisans left who are actively producing brassware craft products and most of them are over 60 years old. They have been in this industry a long time, and their skills, knowledge and wisdom are significant. There have been efforts and initiatives among local artisans

encouraging the passing on of craft knowledge. However, the effect seems to plateau due to a lack of interest by the current younger generation in getting involved. One of the reasons why some of the brassware artisans feel half-hearted about transferring their skills and knowledge to their children is because they have faced a real struggle in keeping their business alive in this era of globalisation.

#### **5.2.2.2 Demolition of brassware village to make way for commercial development**

Commercial development at *Kampung Ladang* and *Kampung Tanjung* has led to a change of the brassware craft ecology and its community. As discussed earlier, the impact of the demolition of houses and craft workshops in *Kampung Ladang* and *Kampung Tanjung* has drastically changed the nature of its craft ecology. Obviously, most of the brassware craft producers had to stop their craft business, while some continued their family-oriented enterprise after relocating, which required a great deal of perseverance.

According to P1, B4 and S9 the change of location of business premises (retail gallery) and workshop has resulted in them being overlooked by potential customers, both local and foreign, resulting in fewer buyers and orders. Even though they received financial compensation and new settlements from the authorities, it is arguable as to whether the compensation offered was worth the loss, and the distribution process of new settlement is controversial (P1; P2; P8).

The new settlements, which include apartments, shop lots, and condominiums, have gradually replaced the former heritage village. As a result, traditional brassware making is no longer being produced by most of the brassware producers in *Kampung Ladang*



and *Kampung Tanjung*. The new settlements are simply not suitable for brassware making. Respondents S8 and S9 questioned how brassware artisans and makers can do their work in their flats?

S11 added that the drastic changes that have taken place in the *Kampung Ladang* and *Kampung Tanjung* are due to the demands of the people, who wanted development. They believed that the city of Kuala Terengganu should be comparable to other developed cities in Malaysia such as Kuala Lumpur, Penang and Johor Bahru (S11). This demand opened up opportunities for capitalists who were eager for development. However, the development has had significant negative effects on cultural and traditional ecosystems, because the knowledge and planning about what was to be developed was unclear and less than comprehensive (S8). Hence, because the people's desire for development, but with inadequate planning beforehand, it seems that tradition had to be sacrificed. This is the price they have had to pay and it resulted in the demolition of the heritage village. Consequently, the brassware community is becoming smaller.

S8 added that the development of a place is essential and should be encouraged, stating that development symbolises civilisation as well as being evidence of success. However, when development involves a place that is synonymous with a heritage asset that has cultural value and represents the identity of a place, detailed and practical planning needs to be carried out and taken into account (see section 2.2.5 and 2.4.7, which explains the importance of traditional practice for cultural identity and sustainability).

### 5.2.2.3 Government policy regarding financial support and subsidies

84% of the informants mentioned government policy, especially in the context of financial support such as loans, funds and subsidies, as one of the significant issues facing the brassware craft community. There were various statements and arguments from the informants regarding the financial issue. Interviewees P10 and P13 stated that investments from the authorities are aimed more towards commercial development. Whereas, there is little attention given to the development of cultural assets and traditional heritage (P4; S9; S11; S12) such as traditional craft in general and brassware craft in particular.

Interviewee P5 added, *“If the government wants to help, the government should provide equipment subsidies, financial aid. As well the government should make sure this assistance is given to people who are truly eligible. This is because there is a double standard syndrome in this community, because sometimes, from what we can see, inactive craft makers are given help and vice versa”*.

Capital is crucial for those involved in the brassware craft industry, since it is a massive investment for an enterprise to run a factory. Many brassware enterprises failed to survive during the global economic downturn due to the lack of financial support (P1; P2). Besides, P1 and P4 added that brassware enterprises need a huge amount of capital to transform their manufacturing techniques in order to be aligned with the current manufacturing trend and maintain their place in the market. In addition, consumers are paying more attention to product quality and showing higher expectations of functionality.

Previously there were efforts by supporters to provide subsidised equipment to ease the burden of the brassware producer. However, some of the craft makers did not fully utilise the subsidised tools or machines because they did not know how to operate them (P8; P12). Consequently, some of them went back to using their old machines. New, advanced machinery and equipment require proper training to be operated, which takes time to master (P5; P7).

Proper training needs time and space. So, some of them went back to practising their previous methods, using traditional tools to make brassware craft. It is such as waste of money if the subsidised machinery is not be used (S1; S13). However, even if this effort does not suit the older craftsmen, it might be more appropriate for younger craft makers.

Bureaucracy is one of the issues raised by some of the brassware producers. According to P4 and P7, they are tired of dealing with an excessively complicated administrative procedure with all its rules and regulations, for financial applications, subsidies and other forms of assistance from the involved agencies<sup>18</sup>. However, according to S12 and S4, these are the normal procedures that have been set and they must be followed by every applicant.

#### **5.2.2.4 Manufacturing process and raw materials**

The manufacturing process of brassware craft involves the maker using both physical capability and mental strength, and having the ability to think fast as well as be creative

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<sup>18</sup> Government and non-government agencies

and imaginative. According to all the producers, the manufacturing process of traditional brassware craft is exceptionally complicated, dangerous and laborious, and requires a very dedicated person as they have to withstand the heat of the burning and melting process of the mixture of copper, zinc and additional elements, with the temperatures reaching 1000 – 1200°C. However, these days, it is not easy to imagine young people willing to step into this craft community as well as to practise the metalwork since it is arduous, physically taxing work and it does come with some degree of risk as it involves high temperatures and liquid metals.

The increasing price of raw materials<sup>19</sup> in the global market has also indirectly affected the local brassware sector. Currently, the production of traditional and modern brassware craft products in Terengganu involves very high costs, due especially to the price of copper and zinc. The increasing price of raw materials has led to the rising price of the end product (P4). A few years ago, the price of raw copper was RM10 per Kilo, and currently, the price has risen to around RM15 per Kilo and is expected to continue rising (P2; P5; P6). While the price of zinc (locally known as *anyang*) started around RM2-3 per Kilogram in the 1990s but now the price has vastly increased to RM17 per Kilo (P8). P13 added that the price for copper sheet metal has increased almost 50% in 3 years and is also expected to increase further in coming years.

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<sup>19</sup> The raw materials in this case refer to the cost for casting materials and mould materials.

According to P2, P5 and P6, there is also a significant issue regarding the distribution and sale of raw materials, especially raw copper. Distribution involves several layers of people (middle-men), each of whom takes a share, resulting in high prices of the raw materials purchased by the brassware producers.

The government provides subsidised raw material in the form of bullet cartridges obtained from the Ministry of Defence (MINDEF). According to P2, P6 and P9, these provide the best quality of raw copper. These are supplied to makers via the Malaysia Handicraft Development Association (MHDC). MHDC has been assigned as a distributor to the registered brassware entrepreneurs. However, some unethical entrepreneurs were re-selling the subsidised raw materials to other purchasers to make money; they were not using the subsidised materials themselves to make brassware. Following this unethical behaviour, the government stopped this subsidy for a few years, but started again in 2012. The programme is continuing but with stricter procedures and monitoring. The subsidised copper can be collected at MHDC twice per week and will only be given to brassware enterprises registered with MHDC.

Other informants stated that, besides the subsidised raw material given by the government, another option is to obtain the raw material from the recycling centre. However, the price is slightly higher than the subsidised copper from the government. Usually, the copper-based material and scrap gathered from the recycling centre comes in several forms, such as electric cables, household accessories, furniture parts, and so forth. Brass-made water taps are the best material for making brassware craft due to the copper-zinc composition. As explained by P2, they do not have to add other contents

such as zinc or aluminium because the composition of metal in brass water tap is adequate. Also, raw materials such as copper and zinc are supplied by one of the former brassware producers, who stopped producing brassware and currently concentrates on supplying raw material because it pays more than making brassware.

#### 5.2.2.5 Brassware craft design and functionality

Traditional brassware products are not regarded as essential items in today's society (P1; P4; S1; S3). 84% of the informants mentioned that the current design of traditional brassware craft product is outdated, with a lack of variation and is outside the current fashion. The reason for this is that current brassware craft design still maintains traditional design features (S3; B1; B3), which are unsuited the tastes of modern society (S5; S11; B1; B5). These design issues have opened up an opportunity for imported craft products to flow in the Malaysian market with lower prices and more variety. Furthermore, the variety of contemporary-inspired western designs has resulted in a decrease in demand for local, traditional designs (P1; P4; B3).

According to most informants in the buyer/trader cluster, previously, the buying-power and preferences of local people and tourists was high, but now this has changed. *"Brassware crafts are not necessarily essential goods. Many tourists come to my store, and they like to see brassware craft items. However, they do not buy, because for them it is unnecessary and too expensive"* (B3).

Besides, brassware is heavy and bulky and not a tourist-friendly (B1; S7; S13) product, especially cookware and other traditional items as they are not easy to carry on long-

distance travel (B3; S5). Therefore, it is due to these issues and limitations that most tourists are not interested in buying brassware.

**The kinds of product that they make:**



Figure 5.2: The example of Terengganu brassware traditional items

78% of the informants agreed that brassware craft design should be changed to follow current trends. In contrast, 22% of the informants disagreed and insisted on retaining the traditional concept of brassware craft to be sold in local and international markets. Further explanation regarding brassware craft design will be discussed in more detail in Section B: finding of case studies; and in discussion chapter.

**5.2.2.6 Lack of knowledge and understanding regarding brassware craft values and meaning**

Values and meaning were found to be among the most significant themes when investigating the importance of brassware craft as a culturally significant product, design and practice. 57% of the informants discussed “values and meaning” in various contexts:

- The current issues, understanding and perception regarding the values and meaning of brassware craft by contemporary society as well as by the brassware community
- The importance of understanding the brassware craft values and meaning with regard to revitalising the brassware craft sector.

The collective result from the analysis indicates that among the significant issues faced by the brassware craft producers, as well as the causes and constraints that prevent this industry from being competitive and becoming developed, is the lack of knowledge and understanding by contemporary society towards cultural values and meanings of brassware craft.

Contemporary society, especially the younger generation, do not understand the values of Malay traditional material culture and custom, art heritage, and its philosophies (P1, P2, P4, S9). This issue is not only applicable to local communities but also includes the brassware producers, policymakers and stakeholders (S9, S11, S12). Moreover, the perception of informants and contemporary society as well as their understanding, knowledge and appreciation of traditional craft practices and material culture vary according to their roles, experience and exposure.

Most of the informants perceive the values of brassware craft as something vital in general. However, most of them tend to relate the values of brassware with something tangible and measurable such as; economic value – business purpose and opportunity for the locals; number of sales and profits; and extrinsic meaning of shapes, patterns and motifs. Based on the interviews, only a few informants<sup>20</sup> could explain and discuss

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<sup>20</sup> P1, P13, S9, S12



brassware craft in the context of intrinsic values (philosophical, religious, spiritual values; intrinsic meaning of motifs and patterns).

According to P1 *“Some of the brassware craftsmen do not know about values and meaning that represent the traditional pattern, motifs, inspiration and so forth because they are only master in making things. While a researcher like you is the one who knows more about the intrinsic things such as story, philosophical value and meanings because you are studying and researching about those things”*.

The extrinsic qualities of brassware products are the most significant issue raised by informants especially the aesthetic of the products. According to B3, most of the buyers who came to his premises argued about the quality of the local-made brassware and compared it with imported brassware made in Thailand and sold in *Pasar Payang*. 70% of the informants agreed that the quality of the brassware craft should be improved, while 30% suggested it should be kept as it was. Informants also tended to value the aesthetic elements of the product from its outer surface and perceived it from only one perspective.

Contemporary societies perceive brassware craft products based on the outer appearance of the product without knowing, understanding, and having been informed about the intrinsic values that the craft represents. As mentioned by S13 and P1, brassware craft products should not be perceived and judged merely based on surface quality. Furthermore, there is, as yet, no guideline for setting a quality standard for Terengganu brassware craft (S13).

### **5.2.3 Factors involved in the development and decline of the brassware enterprise**

The impact of globalisation and modernisation are global issues. The implications for developed and developing countries differ depending on the way they are managed by the authorities as well as by society in general (S5). In the context of Malaysia as a developing country, S12 added that globalisation, modernisation and western influence have entered into Malay lands and have indirectly affected the lifestyle of Malay communities, especially the most vulnerable, which is often the younger generation. The wave of globalisation has not only changed the lifestyles, but it also encompasses the socio-economic and cultural character of the nation.

#### **5.2.3.1 Globalisation and modernisation impact on the usability of traditional craft product**

The impact of globalisation, industrialisation and modernisation has eroded the use of brassware products (S5; S12). The flood of imported, mass-produced, multifunctional but cheaper and more varied products has filled the local market. The presence of various types of craft products using other materials such as plastic and other metals have attracted consumers (P4; S2; B2; B5). The new and developed products are designed to please consumers as well as to fulfil their needs. Therefore, the products have gone through the research and development stage, market research, branding strategy and testing. Today, consumers tend to choose something practical and follow current trends (P5; S3). Also, there are so many products to choose from, according to customer preference, aesthetics, usability, whether it is cost-effective, and so forth (P1; S5).

The current economic climate in Malaysia is disadvantageous to the craft industry, particularly to the brassware craft industry. The uncertain economic situation is causing consumers to re-evaluate their expenditure priorities at the expense of non-essential items, particularly premium products such as brassware crafts. Therefore, declining sales records are imminent during the economic downturn and this will significantly affect the overall industry (S14). Additionally, the current economy is discouraging Malaysian people from purchasing premium craft products, especially brassware crafts (S13; P1).

#### 5.2.3.2 Price manipulation by middle-men and retailers

Price manipulation by middle-men and retailers in *Pasar Payang*<sup>21</sup> is also one of the critical issues facing the brassware craft community. This issue has been mentioned by nine<sup>22</sup> producers and five<sup>23</sup> supporters. The practice is indeed unethical (P5; P7), and yet, it is a major threat to the local brassware craft market (P1; P2; P4; P6; S1) and the evidence is explained in the next section (Section 5.2.3.3). The majority of the brassware producers spoke out about this issue as it deeply affected their willingness to sustain this traditional making practice. Interviewee P7 said that *“I will be leaving this industry because I am so tired and feel unappreciated, I might do something else then.”*

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<sup>21</sup> The Central Market, locally known as “Pasar Payang”, is located by the Terengganu River and is one of the most popular tourist spots in Kuala Terengganu. It offers visitors a variety of Terengganu traditional handicrafts such as batik, songket, and brassware, as well as fresh produce. Visitors to this market shop here for local products at reasonable prices. It is also a great place to experience the culture as locals do their daily shopping there too.

<sup>22</sup> P1; P3; P4; P5; P6; P7; P8; P10; P11

<sup>23</sup> S1; S2; S3; S9; S16

Brassware producers work harder and persevere. However, they get paid less by the retailers and it is not worth the hard work. According to P5 and P7, they are in a dilemma and do not even have a choice when it comes to pricing. This depends on the retailers, who control the pricing in the local market. The producers face a real predicament if the retailers in *Pasar Payang* disagree with their prescribed rates as they might not want to buy the products (P7; S4; S13).

This situation is experienced by micro brassware craft enterprises such as P4, P5, P7 and P10 who have no retail premises in the *Pasar Payang* (Central Market). They rely entirely on the retailers in *Pasar Payang* to buy their craft products. Therefore, brassware producers have no choice other than to sell their craft products and get paid with only a small profit or to find other markets by themselves. However, to market their product by themselves is impractical when considering their situation. Most of their time is taken up with completing the orders and they have little or no knowledge of marketing.

Currently, only P1 and P2 have their own retail gallery in the *Pasar Payang*. Therefore, they do not have to worry if their craft product is not bought by other retailers. Brassware craft retailers in *Pasar Payang* also do not buy products from P1 and P2 as they cannot control the price asked by P1 and P2, and do not want to compete with them. According to P1 and P2, the products they produce portray their identity and possess a unique value. They are confident of their long-standing brand in the industry.

*"We do not really worry about the competition, especially from others in the local brassware community. We are confident of our own identity of our products, and we have been in this industry long enough" (P1).* A similar response was obtained from P2

as both are among the leading brassware craft producers in Terengganu and both have distinctive products and identities.

P13 added, in this time of consumerism, most craft practitioners are easily exploited and dominated by retailers. The practitioners are knowledgeable, talented and skilled people who face financial constraints and lack good communication skills as well as being afraid of the unknown. These highly skilled craft makers do not receive proper recognition by the locals, retailers as well as the government of the skills and knowledge they do have.

#### **5.2.3.3 The flooding of imported brassware craft into the local market**

Another issue is the flooding of imported brassware product into the local market that is mainly sold in *Pasar Payang*. Retailers import crafts made by neighbouring countries such as Thailand and Indonesia. Based on observation by the researcher, as well as the interview responses, almost 80% of brassware craft items that fill the shelves in *Pasar Payang* are imported goods. It is questionable as to how imported brassware is flooding almost 80% of the local market without proper control by the authorities (P1; P5; P9).

According to B1 *“Suppliers from Thailand and Indonesia came to the local market carrying a sample of their handicraft, and sometimes, they came here, purchased our craft product samples, and imitated our craft products that symbolise our country’s cultural identity by using modern techniques, and sell them back to our local market at a lower price than our local products”*. B4 added that *“There will be a middle-man from the locals to manage the process. If we are interested, we will make an order”*.

According to B2, regarding the efforts made by the local entrepreneurs to market their products, *“The problem for most of our local brassware craft entrepreneurs is that they do not go out looking for new markets. Non-local entrepreneurs like those from Thailand and Indonesia come here to supply products as they can see the potential of our local market”*.

Brassware retailers in *Pasar Payang* told the researcher that, between 15 and 20 years ago, their business premises were filled solely with local brassware products. However, due to the current situation, in order to sustain their business in this challenging economic phase, they have to change the nature of their business by selling other craft products and not rely 100% on local brassware craft. Analysis indicates that brassware crafts from neighbouring countries is in demand in the local market due to its price being cheaper than locally-made brassware. The stock comes in bundles containing several types of product. S2 and S18 added that the reason for the influx of imported products into the local market is because the lack of sense of belonging towards local craft products led to this issue as people don't care about the value of craft and heritage.

#### **5.2.3.4 Production and technological adaptation**

Local brassware artisans and makers are less exposed to the commercial world and the impact of technological advancement. They are comfortable with the current practice that is connected to their soul. It is not easy to introduce them to new techniques and methods as most of them are over 50 years of age. Learning new techniques would mean they have to stop their daily work to go on a training course (P8; P10; P11). Time constraints could also be one of the issues as, at the same time, they are busy preparing

orders. 86% of the informants are of the opinion that traditional technology is simply unable to cope with market demands in terms of design, production quantity, and finishing quality.

In addition, transitioning to newer technology takes time. This is because the current artisans are complacent and believe in the traditional methods that have been in practice for years can still be relevant. Besides, according to P9, P11 and P12 it is going to be difficult for them to adjust and familiarise themselves with new changes due to factors of age, time, money, and the most crucial factor - preserving the art of craftsmanship itself.

The overall cost of producing traditional brassware craft is extremely high (P1; P2; P4). Wages are too low while the workload is very heavy. P13 claimed that a lack of exposure in the context of commercialisation, and a reluctance by the older practitioners to accept and adapt to technological advancements could be among the factors resulting in the decline of the brassware craft industry. However, in contrast, relying solely on technological progress is not good practice (P13; S9; S15). This is one of the reasons why the uniqueness and beauty of traditional making are disappearing. Sooner or later, the skills and knowledge of this traditional local wisdom will be extinct.

S1, S2 and S3 raised an issue about brassware production and its relationship to the quality of the products and designs that contributed to the decline of the industry. There are a variety of reasons for the length of time necessary for brassware craft production, especially in making large and intricate parts. These include a lack of skilled artisans; no available workforce; a lack of modern tools and machinery to speed up the process; and

financial constraints. Moreover, older producers are more focused on producing traditional products, so they have no time, or inclination, to explore new ideas and methods. They are comfortable with the traditional practices that are closer to their heart. In contrast, young producers are more focused on, and eager to explore, newer ideas that are evolving.

S4 mentioned the mentality and attitude of some of the brassware makers who are 'afraid of the unknown', and afraid of change (S13). Change in this context refers to a change in terms of product variation, product design and craft practices; for instance, from a traditional style of product to more modern style. Therefore, some of them prefer to stay with something they capable of and they are used to.

Exploring new processes and techniques seems uncertain for some of them, especially for the senior craft producers such as P2, P9, P11, P12. For these senior producers, technological advancement has never affected their work and has not been prioritised; they are comfortable with the traditional processes and using the same techniques they have practiced for many years. On the other hand, some want to make a change and are aware of the positive impact and benefits of adopting technological advancement in brassware craft design, product and practice. However, they need a support system, and monitoring and collaboration from experts.

#### **5.2.3.5 Perspectives towards the understanding of brassware craft sustainability among the brassware craft community**

Some respondents said that the brassware craft sector is being stigmatised as a low-income sector by society (P4; S3; S5). In addition, most people in government bodies do



not see this as a significant asset (P1; P13; S8) or something worthy of consideration for socio-cultural and economic growth (P4; S9). They look more towards commercial and economic development and does not see the cultural values that are connected with the brassware community in the context of the community or the potential for tourism (S8; S11). It might be because of they have not been informed about these values or perhaps there is something else that is important to look at (S7; S14; S17).

P1, P4, S2, S3 also remarked that there is a stark difference in perception towards brassware craft between the younger generation entrepreneurs and older generation entrepreneurs. The younger generation often finds the brassware craft industry not to their taste (P4; P7; S1), and they have the opinion that it is difficult to reconcile it with modern lifestyles (S2; S3). Whereas older generations are opposed to change and strongly prefer traditional methods over newer and more efficient methods; they prefer to protect tradition from modern influence (P1; P2).

Brassware craft is an artistic creation where the aesthetic quality depends on the way people perceive it (P1; P7; S9). People who appreciate and understand art would probably see it as an art with value (S3; S7; S10), while people who do not know art probably perceive it as a low-quality product (P13; S1; S3). They tend to see something tangible without thinking about what lies behind it or is intrinsic to it (S9; S11; S13). A lack of information is noted as one of the contributory factors, as contemporary society is not provided with enough information about brassware craft products – their tradition, cultural significance, design and practice (S2; S4; B2).

#### 5.2.4 Potential design strategies – hope and vision for the future

Within regard to hope and vision for the future, it was apparent that the informants wanted the brassware craft industry in Terengganu to flourish and make a comeback. Each cluster of informants had different perspectives and views regarding their hope and vision depending on their roles, duties and responsibilities in the industry. Learning about the hope and future vision from the different perspectives provided some insightful ideas for the proposition as to how design might make a constructive contribution. The role of the researcher in this study has been to effectively bridge the gaps between the different perspectives into one primary platform for revitalisation.

#### Key findings of hope and future vision leading to the proposition of potential design strategies

Key findings of hope and future vision
<ul style="list-style-type: none"><li>▪ <b>Training:</b> Mentoring-Apprenticeship Programme - Identify ways to attract potential young apprentices to join the legacy of the Terengganu brassware craft enterprise.</li><li>▪ <b>Infrastructure:</b> The need to rebuild the heritage village or similar craft making centre.</li><li>▪ <b>Promotion:</b> This is especially important and can include:<ul style="list-style-type: none"><li>○ Education on promotion and marketing</li><li>○ Development of new platforms and approaches for raising awareness, marketing and promotion</li><li>○ The role of influencers, big names, spokesperson in promoting crafts</li></ul></li><li>▪ <b>Technology:</b> Fully utilise the positive sides of technology and modernisation</li><li>▪ <b>R&amp;D:</b> Increase research, design and development and the role of innovation for traditional craft.</li><li>▪ <b>Financial support:</b> This can include incentives, funding and assistance for facilities</li><li>▪ <b>Logistics:</b> Better control and monitoring in subsidised material distribution.</li><li>▪ <b>Collaboration:</b> Co-design practices, collaborating with other disciplines (such as technology specialists, designers, etc.) and knowledge transfer.</li></ul>

Table 5-2: Key findings of hope and future vision

#### **5.2.4.1 Training: Mentoring-Apprenticeship Programme - Identify ways to attract potential young apprentices to join the legacy of the Terengganu brassware craft enterprise**

To implement mentoring and apprenticeship programmes is a hope raised by 80% of the informants. There is a critical need for an effective apprenticeship programme in order to attract the younger generation to work in this industry. Furthermore, the programme should be conducted collaboratively involving various stakeholders (P1; S8; S12). The current leading players in brassware production, such as P1, P2 and P4, are willing to help and support government planning in attracting a new generation to study local heritage craft. There is an opportunity in looking for new trainees who are interested in the brassware craft industry. P4 felt that *“there must be a way to attract the young people to become interested in this heritage craft industry”*. While P1 and P7 added that the programme should start from the very beginning in order to stimulate the interest of the younger generation. The collective view of P2, P5 and P6 was that the young generation (read: trainee, young crafter) should be given more and broader opportunities to continue the legacy of brassware production. More comprehensive opportunities in this context refers to the opportunity to gain knowledge in other areas such as entrepreneurship, business and operation management as well as marketing (S13; S14). It was found that trainees who joined the apprenticeship programme were paid an allowance that was worth far less than the amount of hard work they had put in. Therefore, there is an incentive for trainees and trainers to be paid accordingly during the apprenticeship programme, to the value of their hard work.

#### **5.2.4.2 Infrastructure: The need to rebuild the heritage village or similar craft making centre**

76% of the informants suggested that proper and effective planning should be taken into consideration by the authorities, particularly to redevelop and rebuild the heritage village of *Kampung Ladang*. Development of such a place is vital and significant. However, it must be planned appropriately, especially as a place that has important value and identity.

#### **5.2.4.3 New platform and approach for awareness programme, promotional activities and marketing, research and development**

It is necessary to look for more effective methods in promoting the craft industry (P4; S7; S15), exposing people to it and educating them about it (P1; P2; S4; S14). There should also be collaboration with other organisations with the same vision and mission in order to achieve these positive changes (S13; S16).

- There should be a body/agency that helps to market copper goods (P1; P4; P5; P7).
- Brassware producers hope that government agencies will purchase their craft products as gifts and souvenirs during joint ventures and international programmes (e.g. official visits).

Advanced technology such as social media, mass media; television; radio; newspapers; magazines, websites, blogs and mobile apps should be effectively applied for marketing, promotion and awareness programmes (S8; S13; S14).

#### **5.2.4.4 Financial support in the form of incentives, funding and assistance for facilities**

Artisan crafts are considered state assets when their contribution is significant in preserving the country's traditional material culture. Therefore, 100% of the producers hoped that their contribution towards preserving local wisdom entitled them to be duly appreciated by the government. Incentives for artisans in the form of a monthly allowance should be given accordingly for their effort to keep the brassware craft industry running (P1; P2; P4), as well as continued assistance in the form of raw materials and equipment. There is a significant need to set up a platform (by a government body) to manage and monitor the raw material supply to brassware producers (P2; P5; P6; P8). Producers themselves do not have the time or knowledge to handle the purchasing process as well as looking for new suppliers (P8; P10). Producers also hoped for an increase in financial assistance and training support for marketing and promotional strategies.

#### **5.2.4.5 Collaboration: Co-design practices, collaborating with other disciplines and knowledge transfer**

Regardless of all the struggles the industry is facing these days, 85% of the informants are still optimistic about the brassware craft sector reclaiming its former glory and progressing very well. Most of the informants, especially under the producer cluster, hope that current and future co-practice efforts with government and/or private agencies will be done effectively and with proper support.

The support is hoped for in the context of;

- Market globalisation and localisation (P1; P4; P5; S11; S13).
- Research and Development (R&D) – product and process (P4; P8; S1; S3; S7; S10)
- Co-practice for knowledge-transfer efforts (conveying the knowledge in the context of craft design innovation and development, marketing and promotion, finance, entrepreneurship and other fields that relate to their development) (S7; S8; S13; S14; S16).

The Malay brassware artisans in Terengganu are still hopeful and feel that there is room for the brassware craft industry to shine and develop, and to be able to play a significant role in the Malaysian creative industries. More profoundly, they still hold on to the potential of the sector to contribute equally and still be relevant in improving the economic development of local communities, states and nations.

*“What I would say is, later on, or sooner or later, the brassware industry will flourish, the value of brassware products is going to be higher, people will come back and find this artistic craft. But everything will only change with a proper strategy to revitalise it” (B1).*

The majority of the informants think like B1. They felt that brassware craft sector does have significant potential to be revived and revitalised. Therefore, potentially, with proper action taken through a co-practice approach by adapting the design-oriented strategies, the brassware craft sector will be revitalised and restored to its former glory.

### **5.2.5 Validation and conclusion of the research findings of semi-structured interviews**

The findings that have been gathered from the semi-structured interviews have undergone a validation process through both peer review (academics<sup>24</sup> in Malaysia) and expert review (craft experts<sup>25</sup> and stakeholders<sup>26</sup>). This validation was done face-to-face at their place. This was done to uphold the quality and validity of the findings from the semi-structured interviews before the researcher continued to the case studies. The findings gathered were discussed and comments, criticisms, recommendations and suggestions by the validator were taken into consideration for refinement and development.

Overall, the feedback from stakeholders (all of whom are experts in the field) indicated that the findings from the interviews corresponded well with their understandings of the current state of brassware crafts in this region, but they also suggested further investigation should be done to look in-depth. Most gave positive feedback which they agreed with the findings and input to continue with the next stage of the research, which is the case studies.

The issues (theme: place and location; apprentices and skilled experts; knowledge and appreciation) that have been identified and raised were noted as being among the most significant issues facing brassware craft sector in Terengganu. They all agreed with the issues raised by the researcher during the validation process. The findings were

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<sup>24</sup> S7; S8; S17; S18

<sup>25</sup> P1; P2; P4; P6

<sup>26</sup> S1; S6; S14; S20

presented in the form of tables, charts and graphs. The detailed information is attached in Appendix C.

It is apparent from the findings from these interviews that many interrelated issues and factors have contributed to the decline of the brassware craft industry in Terengganu. Amongst this variety of issues, it will be important to identify the most significant factors that will need to be taken into consideration as the basis for further action. After analysing all the data from the semi-structured interviews, the findings led to the continuation of in-depth investigation via a number of case studies. These case studies were conducted to gain a deeper understanding of the specific issues that relate to the identification of causes of the decline of culturally significant brassware craft products, design and practice.

### **5.3 Section B: Findings of Case Studies**

The findings obtained from semi-structured interviews were insufficient to answer the research questions and to achieve the research objectives (Section 4.4). Consequently, three in-depth case studies were carried out through investigation of the brassware craft sector and its associated practices in Kuala Terengganu region. This was done in order to have a better understanding of the current status of this brassware craft and its local wisdom, its values and meaning, and to explore and identify potential design strategies to revitalise brassware craft sector. In addition, local practices that are deep-rooted within the local community, such as production by brassware craft practitioners and how they use local materials and techniques, and their relation to the traditional custom have also been assessed and investigated. This section presents the findings in detail.



### **5.3.1 Case study 1: Creative ecology of *Kampung Ladang*, Kuala Terengganu**

In the first section of this chapter (Section A), the findings obtained from the semi-structured interviews were discussed. Thirty seven informants raised the topic of ‘theme: place’ as one of the significant criteria in discussing the issues that contribute to the decline of the Malaysian brassware craft industry. This case study sought to examine the relationship between culturally significant products, design and the practice of brassware craft with its creative ecology (place-based practice).

#### **5.3.1.1 *Kampung Ladang* as heritage village**

Heritage is closely linked with the notion of village (S9; S19), while brassware craft practice is associated with the specific village of *Kampung Ladang*. Seventy-six per cent of the informants repeatedly pointed to the former strategic location of *Kampung Ladang*. *Kampung Ladang* is among several villages within the city of Kuala Terengganu that is known for its place-based creative ecology (S18), and historically, this village was rich in tradition and culture (S7; S11). Interviewee S11 added that “*Kampung Ladang has so much potential in many ways and is very significant to the district of Kuala Terengganu*”. Due to the impacts of globalisation, however, the significance of *Kampung Ladang* as a heritage village has long since disappeared; this is because commercial developments have replaced the heritage village. The redevelopment of the city of Kuala Terengganu indirectly led to the demolition of settlements including artisans’ houses,

craft workshops, retail galleries and other localities. It has also caused the decline of the brassware industry, the centre of which was *Kampung Ladang* (Section 5.2.2.2).



Figure 5.4: Area affected by commercial development in Kuala Terengganu



Figure 5.4: The transformation of Kampung Ladang, 2010 and 2020

**5.3.1.1.1 Background of brassware communities in Kampung Ladang, Kuala Terengganu**

Referring to Table 5.3, the majority of the informants (8 out of 13 or 62% of the brassware producer cluster namely P1, P2, P3, P6, P7, P8, P10 and P11) became involved in brassware making practices through the continuing the legacy inherited from their predecessors. While the remainder (namely P4, P5, P6, P12 and P13 with 38%) are non-inherited producers, as five of them started their brassware making practices after they had gone through continuous training and incubator programmes organised by agencies and government bodies such as the Malaysia Handicraft Development Corporation (MHDC), *Yayasan Diraja Sultan Mizan (YDSM)* and SIRIM Berhad.

Start-up practices	Informant	No.	%
Inherited	P1, P2, P3, P6, P7, P8, P10, P11	8	62
Non-inherited	P4, P5, P9, P12, P13	5	38
TOTAL		13	100

Table 5-3: Start-up practice

Brassware craftsmen in Terengganu belong to two clusters; **full-time** and **part-time**. Full-time craftsmen like P1, P2, P4, P5, P6, P7, P11 and P13 rely significantly on this industry to make a living. The daily craft production is based on both local and global demand. Part-time craftsmen like P3, P8, P9, P10, P12 commonly make brassware products as a hobby in their free times. Some of them are in another full-time job, and some were full-time craftsmen before, but due to their age, they switched to being a part-time craft maker and produce a small quantity of products (3 – 5 units). All the craft activities are

done at their house. Typically, they build a small workshop near their home or they work under the house (high stilt house).



Figure 5.5: Brassware craftsmanship activities are conducted at the home

Once the products are finished and ready to be sold, they call the retailers from *Pasar Payang* to come and get the products, but sometimes they send them to the retailers. In this case, the craftsmen are not bound by a time constraint. It all depends on their situation and availability, and they do the work if and when they feel like it. All the brassware retailers in *Pasar Payang* understand this and are aware of the way full-time and part-time brassware makers work.

Some of the producers also go to their colleagues' workshops to use tools and equipment if they lack certain tools or equipment or if theirs are not working correctly. Sometimes, some of the part-timers do not attempt to complete the whole production process. Due to restrictions such as lack of tools and equipment, lack of skills, and time

limitation, they send the unfinished products to another maker to complete the finishing processes (sanding, polishing etc.).

Village artisans or home-based craft practitioners learn the craft-related traditional knowledge and develop their skills through informal learning. Knowledge and skills are transferred through training and daily observation together with hands-on practice, trial and error. More formal craft education has also been obtained through training programmes offered by government agencies and some of craftsmen have graduated from public or private higher institutions that offer art and design courses

Most of the craftsmen, however, (i.e. apart from P2, P3, P9 and P10) did not have the opportunity to continue formal education to the tertiary level. However, they developed their skill and knowledge through informal training<sup>27</sup> under a master craftsman's supervision. Informal education through craft training definitely has the most effective and meaningful knowledge transfer as the close relationship between trainee and master gives a greater sense of respect (P2; S8; S9).

#### **5.3.1.1.2 *The way of life of the brassware community in Kampung Ladang***

This family-oriented enterprise has been the dominant practise within the Kuala Terengganu capital and has been centred in *Kampung Ladang* and *Kampung Tanjung* since the 18<sup>th</sup> century with the support of royal patrons (S9; S11). According to most of the producers, working in the brassware making field is flexible in term of time. The work

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<sup>27</sup> Informal training in this context refers to the way an informant gathers the knowledge and skill of crafting activities.

culture of brassware craft making is not like other craft practices; the duration of work time or hours of operation is uncertain (P1).

Production does not occur every day as it depends on orders being placed. However, P9 describes brassware making thus, "*It is a one-shot work/production, once you start you cannot stop due to technical considerations as well as time and cost constraints. Some processes cannot be delayed*". According to most of the producers, it takes around a week to complete an order using modern methods, and three weeks to a month on average using traditional methods.

Every brassware producer has their own expertise or talent in producing brassware craft. Even though some of them have the ability to make every type of product, they tend to focus on what they feel close to, and let other producers focus on theirs. They also respect other artisans in terms of making products as they do not want to make the same product. Furthermore, some of them have only mastered the production of specific brassware products because they have been practising this same skill most of the time. For instance, P1 is famously known for *acuan kuih*, P2 is best known for *periuk* and *kebak laksa*, and P12 is best known for his *tepak sireh* and *kendi*.



Figure 5.6: Mould for tradition dessert (*acuan kuih bakar*)



Figure 5.7: Traditional Brassware from *Kampung Ladang*

Within the brassware craft community, three groups of people perform their own specific roles. There is an enterprise owner or master craftsman (*adiguru*)<sup>28</sup>, an assistant craftsmen who is skilful but not yet proficient enough to be recognised as a master craftsman, and a labourer who follows the instructions of both the master and the assistant. The labourer ordinarily only performs specific aspects of the process.

<sup>28</sup> *Adiguru* received awards and received recognition from the government for their contribution to the country. An *adiguru* is a very well known craft practitioner within the craft community.

The master craftsman/enterprise owner and labourer and the assistant craftsman equally need each other. They work collaboratively and make sure their job is completed. The enterprise owner has the skills, but often does little making himself as he tends to be more focussed on management, marketing, designing etc., while the assistant craftsman or labourer will be assigned tasks by the enterprise owner and does the craft without having to think of other things.

Therefore, during the knowledge-transfer phase, the level of difficulty of the skills taught by the master craftsman depends on the level of acceptance and ability of the trainee<sup>29</sup>. S9 shared his experience that when he was a 10-year-old child at primary school, his grandfather used to ask him to assist in the brassware making process. Usually, it started with something easy such as purchasing raw materials, the arrangement of tools and other sorts of work that could be done by a child.

The labourers within the local brassware community are very transient, and the reason for this is multi-factorial. One of the factors is the financial barrier. Sometimes they are paid daily, and this depends on the amount of work they do (product per unit). Every labourer will be assigned according to their expertise. The analysis indicates that usually, the maximum number of workers for a brassware enterprise is 7. However, according to P1, if there is an urgent job that requires a larger workforce, additional workers will be brought in from another brassware enterprise. In this sense, most of the brassware workers are not bound to a specific enterprise as most of them are flexible workers.

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<sup>29</sup> Trainee in the context could refer to assistant craftsman, labourer and new apprentice.



In the context of the working culture and practice of brassware craft producers in Terengganu during the 20<sup>th</sup> and until the 21<sup>st</sup> Century, i.e. before and after the demolition of *Kampung Ladang* and *Kampung Tanjung*, the working culture is collaborative. They do not perceive another brassware enterprise as a rival.

*“We make relations and befriend with other craft communities in various fields and are not limited to one. Brassware artisans, woodcarvers, batik makers etc. are all our friends in these crafting communities. So, from these we can gain and learn many things. Sometimes, these different kinds of knowledge will be combined to become one special art piece (P13)”.*

- **Roles and contribution of women in the brassware craft industry**

Women have also played a significant role in the brassware craft industry since the beginning, and the role and contribution of women<sup>30</sup> in the production of this heritage crafts continues today. Women are regarded as significant figures who complement the authentic beauty and softness in the making of Malay brassware craft product. The role of women in brassware artisanship varies according to the tasks they are given.

During the interviews, only P1, P2, P9 and P11 spoke about the contribution of women in developing this artisanal industry in the land of Terengganu. Therefore, the role of women should not be forgotten and should be celebrated accordingly. Women also contribute to the industry through several functions and tasks, especially if they have

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<sup>30</sup> Women in this context refer to the wife of a husband, the daughter of a father and a worker of an employer.

particular skills to bring. For example, in two cases the artisan's wives were skilled at completing very intricate and complex tasks that required patience and perseverance (P9; P11). This includes work that needs skill involving fine art such as wax pattern carving and making, clay mould coating, and so forth (P11). For instance, different processes are conducted by different people – women might sculpt the design in the wax patterns, but men do the casting where the molten brass is poured into the clay mould. That said, during a visit to one of the local artisan's<sup>31</sup> workshops, the researcher observed a woman<sup>32</sup> also practicing the casting process; she was pouring the molten brass into a mould. Surprisingly too, she did this without wearing any safety gear. According to P1, in earlier times *“the ladies helped their husbands at the workshop...pouring molten brass wearing only the batik sarong<sup>33</sup> tied at the bosom”*. Certainly, knowing the hazardous conditions of the workplace and being surrounded by the heat of the fire, wearing such light, non-protective clothing in such heat might be understandable but it is also very risky because the conditions are extremely hazardous.

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<sup>31</sup> Producer (P9)

<sup>32</sup> Wife of P9

<sup>33</sup> 'Sarong' is a garment consisting of a long piece of cloth worn wrapped round the body and tucked at the waist or under the armpits, traditionally worn in South East Asia



Figure 5.8: Wife of artisan is pouring molten brass into the clay mould



Figure 5.9: Women workers in the production process during the making of wax patterns (photo courtesy of Terengganu State Museum)

### **5.3.1.2 The values associated with traditional brassware craft**

#### **5.3.1.2.1 Personal values and meaning**

The things that strengthen most of the artisans to continue this nearly died out traditional brassware craft practice is because they are genuinely in love on this industry. Furthermore, artisans made craft for a variety of reasons: to support their families (P4; P6; P11); to fulfil consumer demands (P1; P2; P11); as well as to show that they appreciate their God-given knowledge (P1; P2; P13; S9). P7 and P8 were eager to continue the legacy left by their father, even though their skills and knowledge are limited as they are still young. However, due to the strong sense of duty and of belonging, they felt a responsibility to continue and to learn this heritage skill. Interviewees P1, P4 and P9 felt that it is their duty and responsibility to keep doing this heritage craft, regardless of all the issues and limitations they face, which have been discussed in the previous section. Making brassware craft is a form of therapy for P2, P9 and P12 and fulfils their favourite pastime activity. All of their senses to feel, manifest and make associations are used - through their creative mind and imagination.

In earlier times, *Kampung Ladang* could be identified through the smell and sound of brassware craft making, specifically the aromatic smell of burnt and melting copper and the sounds of polishing and grinding (P1; P2; P9; S8; S11). A few informants, P7, P8 and S9, shared their stories of when they were young and living in a brassware craft community. *"I have lived in Kampung Ladang since I was little and there were about 5-6 brassware craft workshops around my house (P7). P8 added, "when I was a kid, I loved to ride bikes around the village. During the ride, I could see on my left and right handicraft crafts activities being made".*

#### **5.3.1.2.2 Social connectedness as part of social meaning within the community**

The Malay way of life in the past was more harmonious compared to nowadays (S12). Malay people spoke profoundly about manners and respect. The community lived happily and respected one another. The young respected their elders, students respect the teachers/masters and the wife obeyed her husband, etc. B4, P6 and P12 emphasised the context of social connectedness within the brassware community. They said how they had fallen in love while working within the brassware communities in *Kampung Ladang*, Kuala Terengganu. Having a good relationship with their employer and being treated like family meant they stayed in their position and were proud of being part of the community. That is how they valued their work as part of the brassware community in Terengganu.

In earlier times, some of the craftmakers in *Kampung Ladang* and *Kampung Tanjung* did not rely entirely on making brassware craft for their living (S8). Some also worked as fishermen. Early in the morning, they went out to sea to catch fish, and in the evening they made their brassware crafts. During the monsoon season (usually from November to March), they could not go to sea. So, to fill their free time, they did other craft activities such as brassware making, boat making and wood carving; and all of these activities were done collaboratively.

### **5.3.1.2.3 Functional meaning that brings emotional value**

Prior to industrialisation, brassware products were both nationally ubiquitous and culturally significant because their forms and decorations were characteristically Malaysian. In the context of the social practice of contemporary Malay society, in terms of the functionality of traditional brassware craft product, most brassware craft items can be considered as seasonal products where these authentic artefacts are usually only used and seen during Malay ceremonial events such as engagements and weddings. Therefore, according to S8 “*the high price should not be a problem as we do not use it every day, especially the ceremonial items*”. Unlike kitchenware that is used daily, which is more utilitarian and less expensive to purchase. However, there appear to be many advantages to using brassware craft products, at least this is the view of a number of the interviewees. For example, according to P1, in the context of cooking, it can preserve the authentic taste of traditional food and the food lasts longer. That is why most traditional Malay dishes are still cooked using traditional brassware cookware and these are still very much in demand.

P2 and P7 added that, in the process of making traditional Malay desserts such as *kuih bakar*, *bahulu* and *nganang*, the use of a traditional brass *kuih* mould, and being baked in a coconut shell over charcoal, could give an aromatic smell and authentic taste. The taste is said to be far better than with modern oven-baked dishes (P9). Usually, a few months before the month of Ramadhan, brassware producers such as P1, P2, P4 and P7 are busy producing the *achuang kuih* (mould for a traditional Malay dessert). The demand is higher during the month of Ramadhan and Eid Mubarak, where Muslims fast for a month. Local people always demand traditional *kuih* that has been cooked using

brass moulds such as *kuih bakar*, *bahulu*, and *penganan*. All these *kuih* are usually eaten during the breakfast (breaking of the fast) as a dessert and sometimes will be had after the *tarawih*<sup>34</sup> or also as *moreh*.<sup>35</sup> Therefore, sales during the month of Ramadhan are significantly higher than during other months.



Figure 5.10: Malay traditional cuisine cooked in brassware cookware

Regarding the care of brassware items, they are extremely sensitive to air humidity because oxidation can affect the surface of the brassware goods over time. Therefore, there it is necessary to polish the items when their colour starts to change, fade or lose its shine. However, somehow depending on how people look at it, there are differing opinions on the changing look on the surface. Ancient brassware covered by *patina*<sup>36</sup>

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<sup>34</sup> Tarawih refer to extra prayers performed by Muslims at night only during Ramadan after the salat of Isha (night prayer).

<sup>35</sup> Feast after the solat tarawih.

<sup>36</sup> Patina is a thin layer that variously forms on the surface of copper, brass, bronze and similar metals (tarnish produced by oxidation or other chemical processes).

can be aesthetically appealing to some people who perceive it as art, but vessels with such heavy patina on their inner surface cannot be used for cooking.



Figure 5.11: The ancient brass water vessel covered by patina as collection.

Usually, brassware items that are used for cooking have not been given special attention due to their function of always been used. In contrast, brassware items that fall under the category of decorative and gift items usually need extra care. Typically, these items will be displayed in a sealed, transparent case to prevent frequent human touch.

#### **5.3.1.2.4 Histo-geographical values associated with the place**

Histo-geographical values that relate to the place where brassware craft is being practised have been discussed and partly reviewed in the Literature Review section (Section 2.3.3). During the interviews, only P1, P2, S11, S12, S19 commented on the importance of history and its significant value in stimulating understanding and a sense of appreciation among the locals. These informants are experts from the Terengganu State Museum. Some of the informants under producer clusters such as P1 and P2 gave only limited information, and the rest were unsure or had no idea about histo-geographical values.



The values and meaning of brassware craft also lie in the historical context that is associated with the place where the craft is practised and produced. Which means, through its history, brassware craft could be valued by conveying past stories that have emotional values that could encourage, motivate and inspire, as well as people learning from it (S11, S12, S19). History has proved how authorities in the past during the reign of Baginda Omar (1839 to 1876) supported the brassware craft sector in Terengganu, and many programmes were offered to the local artisans (S11).

It is interesting to share with the wider society the story of how brassware originated and flourished here. According to S9 and S11, the Malay Pattani community pioneered the brassware craft industry in Kuala Terengganu. Other informants said that this local wisdom might come from Indo-China (Funan). According to P2, he was told by his forefather that the process of brassware making in Terengganu might have originated in Indonesia (*Bugis* and *Acheh*). Due to the effect of civil war, people migrated from there to Terengganu and settled at *Kampung Ladang*. They brought with them the skill of making crafts and started to generate an income from that. That was why the brassware industry is centred here in *Kampung Ladang* and this skill spread only to this community.

S9 and S19 explained the significance of historical context and its relationship to the geographical value of Kuala Terengganu as a capital city as well as an administrative centre. Historical evidence indicates that there were massive trading activities in the city of Kuala Terengganu and its surrounding area. It became one of the famous trading centres alongside Malacca, which also attracted traders from all over the world as Malaysia is located between the Indian Ocean and the South China Sea. Kuala

Terengganu also became a stopping place for traders who wanted to rest and use it as a shelter during the monsoon season.

Conveying the historical value and its significance could be a great potential for achieving social appreciation and increasing knowledge and awareness (S11). S11 added that learning about history and meaning provides a deeper understanding and stimulates a sense of appreciation towards traditional material culture and its provenance. In addition, it gives value and could potentially change perceptions of craft producers and the larger community (public, potential buyers, customers, etc.). An understanding of history could also stimulate the craft maker to be more innovative in creating something that represents the identity of the local culture.

#### **5.3.1.3 The sales system and potential markets for Terengganu brassware**

Usually, orders come in two types; direct and indirect. For direct orders, the buyer comes to order directly from the brassware producer; for indirect orders, the buyer uses middle-men to buy the products or to place an order. Once the products are finished and ready to be sold, the producer will call the retailer from *Pasar Payang* and their appointed runner to collect the products from their home/workshop. Sometimes the producers send the brassware product straight to the retailers at *Pasar Payang*.

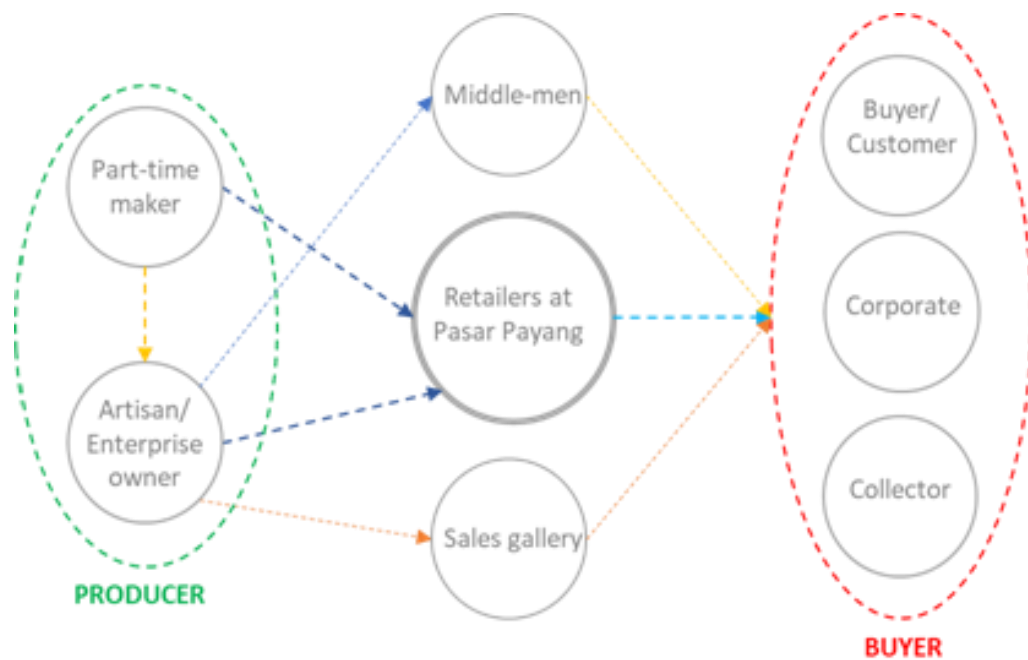


Figure 5.12: Sales system and logistic

B1, B2 and B4 stated that, usually, they buy brassware craft products from brassware producers immediately and they pay cash, because they understand that most brassware makers need to use the money to keep their business rolling over. On the contrary, P5 and P7 stated that some retailers always delay when it comes to payment. They take the product first and pay the maker later. This kind of attitude has caused the makers to feel unappreciated (P1; P5; P7).

There are only a few brassware enterprises where the workshop and sales gallery operate in the same place. In this situation, the customer can see the process of brassware making before they buy a craft product. Only P1, P2, P4 and P7 are using online platforms to sell and market their products, while the rest still use the traditional way of business, in which the product is marketed locally through a middle-man. The

reason, according to P9, is that *“our company does not make online sales through social media and other platforms because we have got no time, and lack knowledge about that method.”*

A number of the supporters (S13; S18; S21) were of the view that brassware entrepreneurs should be more proactive in exploring new ways to market brassware products. They should fully utilise the benefits and advantages of technology as a platform in trading, marketing and promotion, for example, through the use of social media platforms such as Facebook, Instagram, WhatsApp, Telegram and others. These mobile apps are known for being mobile-friendly, user-friendly, easy to handle, and most importantly, it is a cost-effective method. S14 mentioned the Marketing 4.0 approach, where the practice of marketing is moving from traditional to digital. This approach has been applied within SME incubators who registered and have been monitored by YPU. Every program was organised by YPU in collaboration with other agencies.

#### ***5.3.1.3.1 Potential markets for Terengganu brassware crafts***

Terengganu brassware is a premium-priced cultural product commodity (S4; S20), and the price is expensive compared to imported brassware sold in the local market. Terengganu needs to market its brassware products within the high-end and niche sectors (S19). High-quality traditional Terengganu brassware potentially could re-enter the speciality market as in previous years during its highpoint in the 20<sup>th</sup> century (S10). Locally made products that convey “traditional”, “heritage” and “human-touch” were in demand back then when they were exported as far as London (P7; S2), Tokyo and New

York (S18). In order to meet the demand of the international high-end niche market, Terengganu brassware will have to ensure that the product meets the standard set by the current market and demand and is indeed produced in Terengganu (S13; S18; S20).

The Terengganu brassware craft product market can be basically divided into two:

- **Housewares** – comprising utensils, kitchenware and tableware.
- **Collectables** – includes souvenirs, corporate gifts, interior products and decorative pieces.

Both types are marketed locally and globally. The ‘Terengganu market’ refers to products that are sold in *Pasar Payang* (Payang central market) and local art galleries in Terengganu. ‘Outside the Terengganu market’ refers to all those other places where brassware craft is marketed – in other states in Malaysia, as well as internationally: through the Association of Southeast Asian Nations (ASEAN), and Middle Eastern and European craft expos and festivals (S19).

Findings indicate that souvenirs and kitchenware are among the brassware craft categories with enormous potential for sustainable design development. *Souvenirs/tourist products or corporate gifts* are also noted as brass-based products that have a considerable potential to be developed further, especially in the context of design variation, design innovation and packaging. In Terengganu, brass-based souvenirs can be divided into low-end and high-end products, based on whether they are destined for local or international markets (S2; S4; S5). These products have been so classified by the Malaysian Handicraft Development Corporation (MHDC). Currently, the brassware craft

enterprise is still exploring the latest innovative ideas, designs and trends to keep pace with the wishes of valuable clients (S1; S3).

There are wide selections of premium quality brass-based corporate gifts that are suitable for any occasion. Kitchenware/cookware such as pots, pans, woks, and Malay traditional dessert moulds are identified as potential brass-based products that still maintain their position as vital things to be found in the kitchen. These days, copper-based cookware is back in demand. A gleaming set of stylish and classic copper pans is the latest must-have kitchen gadget (S18). S18 added, based on his reading of the Euromonitor report, the global kitchenware market was set to grow by US\$20.3 billion in new sales over the ten years of 2009–2018.

In early periods, artisans selected local markets as their outlets to sell their products. However, with expanding tourism, the trend to globalise rural craft markets offered a wide opening to several traditional ethnic products across the world. Linking the craftsmanship to a specific lifestyle and creation of new market niches, such as vintage fashion and creation of sustainability – the needs of the potential buyer to be met.

#### ***5.3.1.3.2 The role of 'big names' in promoting brassware craft items***

P2 relates that Malaysia's leading chef using brass-made kitchenware on the demonstration of traditional Malay cuisine on television has made an enormous impact on his business. The demand for his product such as frying pan and pots is increasing tremendously. During Ramadhan 2019, Malaysia's famous fashion icon cooked traditional cuisine using traditional brassware pots live on his social media platform. On

the live video demonstration, he mentioned that the brassware pot was inherited from his parent and bought in Terengganu.

Surprisingly, the free promotion has dramatically raised the demand for brassware pots and, as told by P1, P2, P5 and B3, their stocks were all sold out in less than a month. The point here is, this kind of marketing approach is proved to have helped the sector grow with the right and effective strategy in hand. During the interview with policy makers, the researcher mentioned this approach and it is to be taken into consideration.

Brand awareness matters in order to boost the market to a promising level – long-term development and influential acts have resulted in the popularity and high-brand awareness of the leading players in the market. Brands are representative of product quality, performance and class as well as the service and strength of enterprises.

#### **5.3.1.4 Organisations that significantly contribute towards the development of brassware craft**

**Malaysia Handicraft Development Corporation (MHDC)** - the establishment of the MHDC in 1979 led to the promotion of traditional skills and helped the handicrafts sector to expand and become commercially viable. It helped organise the sector in training potential handicraft-makers, setting up small factories for them, providing raw materials, and collecting and marketing the finished products through *Karyaneka*.<sup>37</sup> There are twelve *Karyaneka* outlets all over Malaysia where various selections of Malaysian craft are sold. Both *Karyaneka* and the MHDC under the National and Rural

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<sup>37</sup> Government handicraft marketing company

Development Ministry spent nearly 13 million Ringgit (US\$7.3million) to strengthen the country's handicraft industry. They encouraged and helped with the setting up of small and medium-sized firms in the sector and spent millions to purchase machines for government-assisted handicraft workshops through the Ministry's cottage industry division.

**Sultan Mizan Royal Foundation (*Yayasan Diraja Sultan Mizan (YDSM)*)** - Sultan Mizan Royal Foundation is a charitable foundation based in Kuala Terengganu. The foundation was officially launched by His Royal Highness (HRH) The Sultan of Terengganu, Al - Wathiqu Billah Sultan Mizan Zainal Abidin Ibni Al-Marhum Sultan Mahmud Al-Muktafi Billah Shah, on 12 Jamadilakhir 1426 Hijr (19<sup>th</sup> July 2005). The Foundation was conceived by His Royal Highness, and the Sultan is graciously playing the role of founder, patron and chairman (TINTA Editorial Team, 2017).

**Goals of YDSM:**

- Implementing programmes for the poor, marginalised and low-income groups by empowering them.
- Developing quality human capital through education and training.
- Encouraging research and publications on the history, religion, culture and heritage of Terengganu as well as implementing various programmes on preservation, conservation and development of Terengganu material cultures such as art and craft.
- Contributing to environmental conservation and sustainable development.



- Acting as a catalyst through the implementation of YDSM's programmes in support of initiatives of the government and other stakeholders.

**Terengganu Entrepreneur Development Foundation (*Yayasan Pembangunan Usahawan Terengganu (YPU)*)** - The Terengganu Entrepreneur Development Foundation (YPU) was incorporated on 31st March 1994 under the Companies Act. YPU was established as a specialised socially oriented organisation to encourage entrepreneurship development and micro-small-medium-sized enterprises (MSMEs) in the State of Terengganu. YPU started operating on 1st July 1994, and after more than 25 years of operation, YPU has been given more challenging responsibilities and also serves as the Secretariat of Terengganu Entrepreneur Development Secretariat Council, which is comprised of 33 entrepreneurship & medium enterprise companies in Terengganu State.

With a focus on improving the entrepreneurial development of Terengganu, YPU's activities are based on the programme that provides:

- Funding.
- Skills upgrades.
- Entrepreneurship infrastructure development.
- Business development and promotion & marketing.

#### **5.3.1.4.1 Current craft development programs**

Terengganu is the only state in Malaysia that has a specialised state-run agency that coordinates all entrepreneurial activities and programmes as well as micro, small, medium enterprises which are not limited to craft but are in other fields as well. At present, various programmes and activities have been taken up by these organisations to develop, revitalise and preserve the craft industry in Terengganu. Some were implemented as a collaborative effort, and some were not. One of the most significant programmes is **'Satu Daerah Satu Industri' (SDSI) (One District One Industry)**, which was initially introduced in 1992. Currently, the SDSI campaign focuses on product or service development based on the district's identity to draw tourists in. These campaigns are anticipated to inculcate innovative and creative societal development and simultaneously nurture community spirit through socio-economic activities. Newly implemented concepts will be based on a more sustainable, durable and progressive business model that emphasises a value-added chain in order to gain maximum benefits (S14; S20). Through this concept, SDSI should no longer be regarded as side income resources or just a mechanism to eradicate poverty, but a form of profit-generating business potential that could guarantee continuous income in the long run.

100% of brassware craft producers are aware of the importance of **new development in the context of craft production and process innovation, e-commerce** for trading activities, and craft product promotion and marketing. However, there were a number of constraints that hindered these attempts to change. The analysis revealed lack of knowledge and skill as being particular problems. Therefore, YDSM and MHDC work collaboratively in organising **craft incubator and apprenticeship programmes**.

Incubator programmes will be offered to new apprentices as well as to selected craft enterprises. They will be given working premises complete with equipment and other supplies at an affordable rent. In addition, the incubator apprentice will be monitored and trained by experts and proper knowledge will be passed on in the context of idea and concept generation and process development, as well as marketing and promotion. The main objective of the programmes is to provide a support system for the craft enterprises.

In addition, there are many events and programmes structured every year to assist craft enterprise such as: **National Craft Day (*Hari kraf kebangsaan*)**, which involves a **craft festival, craft demonstrations, exhibitions, interactive crafts, craft education, games and competitions and cultural performance**. All the programmes and activities were conducted and organised collaboratively between several local and international organisations.



Figure 5.13: Promotional poster for National Craft Day 2020

#### **5.3.1.4.2 Geographical Indications (GI) and brassware craft enterprise in Kampung Ladang**

Geographical Indications (GI) relates to a mark on a speciality product that is linked to its place of origin, such as handicrafts, minerals and agriculture-related products. GI is recognised as part of the international trade framework and global trade dynamic as it provides legal protection to an association between a specific product and a geographical name. The purpose and benefit of GI registration is to prevent misleading claims as well as to hinder any usage by unrelated third parties. GI products could potentially bring a higher retail price to the GI community and GI product producers. Consumers perceive GI products as having higher quality and being better established compared to non-GI product (S18).

The brassware craft sector in Terengganu successfully managed to obtain **GI recognition by the Intellectual Property Corporation of Malaysia (MyIPO)** in 2013 (S13). The process of application has been led by Terengganu Entrepreneur Development Foundation under the Department of Entrepreneurship and Product Development. However, after the recognition was given, no follow-up programme significantly revitalised and made a radical change to the industry (P1; P6; P9; S13). Therefore, several challenges present themselves to the efforts to create and ensure the continued survival of the brassware craft enterprise in activities related to GI products. They include:

- Lack of competitiveness and innovation due to a low level of technological application and small scale of production;
- Lack of skilled expertise and manpower; inadequate management skills;
- High-risk job with an uncertain income;
- Harsh working environment;
- Lack of knowledge and information about markets, standards and technology options, market opportunities, and business strategies;
- Lack of knowledge about laws and regulations; and underdeveloped inter-business linkages and value chains.

The brassware craft enterprise in Terengganu may also lack competitiveness with neighbouring countries. This is because brassware craft products from those countries are generally more cheaply produced and technologically advanced compared to those from Terengganu. The brassware craft sector is relatively small with insufficient resources and faces financial and human resource constraints, thus limiting the amount of local craft produced for local and international markets. To address these problems, MHDC collaborated with YPU and YDSM and are embarking on projects to increase production and quality of the brassware products in Terengganu. The projects involve the following aims:

- To increase the production of brassware craft, and to increase the quality of the final products by modernising but at the same time retaining their authentic beauty and identity;
- To provide employment and supply the market with brassware craft that fulfils the demand and needs;
- To increase support to the businesses who provide the necessary know-how and markets to brassware producers. Support will be provided to producers who come from the private sector and non-profit organisations;
- To provide design support and design capacity building.

The project will bring in selected designers and will train local brassware craft producers to undertake the designing of the brassware products as part of the creative-collaborative effort. To market brassware products to international and domestic customers, the MHDC collaboratively organises the Terengganu Handicraft Festival, National Craft Day. Programmes such as craft festivals and expos have been an opportunity to showcase the wide variety of Terengganu handicrafts to a wide range of potential customers.

The MHDC, YPU and YDSM through IKMAS, being aware of GI, are very interested in creating GI for brassware craft. Generally, the Terengganu Handicraft Association understands the need for GI and the importance of GI in their trade. However, their main worry is the cost of preparing the necessary GI application and also on how to encourage the understanding of GI among their members.

#### ***5.3.1.4.3 Emerging issues and perspectives of the informants regarding brassware craft development programmes***

The perspectives of brassware craft communities and stakeholders vary regarding the current and previous programmes offered and organised by government and non-government organisations. P1, P2 and P11 stated that the current approach of brassware craft development as well as inserting the value of culture and identity within Malay society seems unsuccessful. They talked about the poor execution of programme planning (P4; S6; S10; S12) due to lack of effective collaboration between involved organisations and craft producers (S1; S7; S11). It was felt that implementation of development programmes should involve other agencies in contributing ideas in order

to achieve the objectives and the mission of preserving the heritage crafts industry (S4; S10; S18).

*According to P4 “there were a few meetings with them [agencies and NGOs] organised by MHDC regarding the craft development programme, but it ended up with nothing getting any better: all the issues, complaints and sharing that had been suggested did not reach the upper level”.*

According to P2, P4 and P7, the support from agencies like YPU regarding the promotion and marketing effort is getting slower and not like previous years. Earlier, everything was provided during roadshows and exhibitions all over Malaysia, including accommodation and allowance (P5; P6). From the supporters’ side, they stated that, some brassware producers take for granted the programmes or campaigns offered to them, for instance, the material subsidy campaign. The campaign aimed to offer a subsidy to brassware craft entrepreneurs in the form of bullet shells. However, the programme had been terminated due to several entrepreneurs taking the subsidy for granted and some of them selling the raw material to get some fast cash.

Therefore, a few informants, such as P2 and P4, arranged and planned their own strategy to defend and support this industry and help move it forward. P4 is eager to make any collaborative effort and would love to meet any experts who could help the brassware craft community, and any investors for business matching, and he does not rely 100% on the government and agencies.

### 5.3.2 Case Study 2: Brassware craft making processes

This case study was an in-depth exploration and investigation of the details of brassware craft production, both traditionally and with more modern techniques. The researcher observed and studied brassware craft production and its associated practices such as; preparation of materials, tools and equipment; the full cycle of brassware production from the making of the master pattern to the finishing stage; as well as supply chain management, delivery, marketing and trading activities. This case study aims to identify potential areas where design can help improve brassware craft production.

#### 5.3.2.1 Brassware craft production

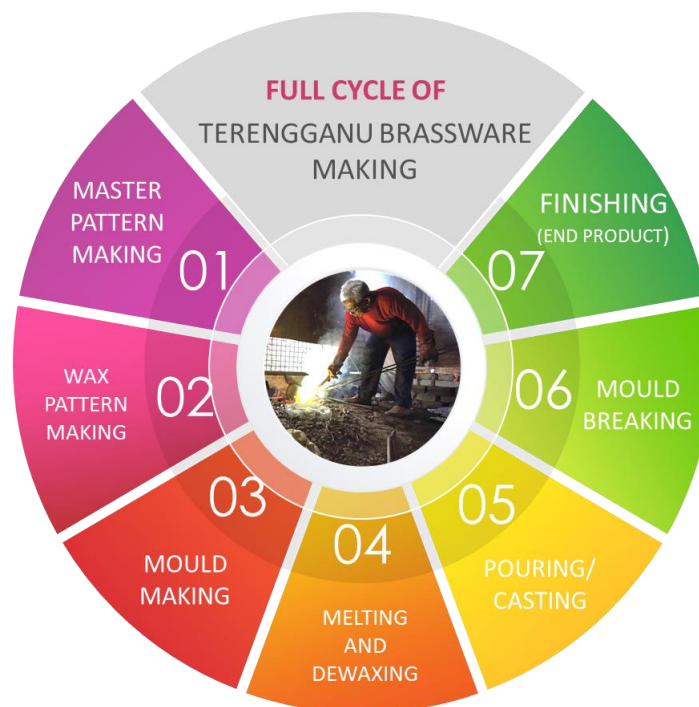


Figure 5.14: Full cycle of brassware craft making

The full cycle of brassware handicraft making, whether a traditional or more modern process, comprises several phases that need to be handled precisely and with care.



There are seven phases that need to be mastered by the producer.<sup>38</sup> These are: 1) Master pattern making; 2) Wax pattern making; 3) Clay mould making; 4) Dewaxing of the clay mould; 5) Pouring/casting of the molten copper; 6) Shake-out/cracking/mould breaking; 7) Finishing (see Figure 5.7).

### Traditional way of brassware making

PHASE	PROCESS	TRADITIONAL	
		MATERIAL	TOOLS AND EQUIPMENT
1	Master Pattern Making	Wood (a few types of wood such as <i>chengal, jelutong, medang</i> )	Spinning or lathe machine (manually powered), local name ' <i>Bindu</i> <sup>39</sup> ', hand tools (chisel, knife ' <i>baja</i> ')
2	Wax Pattern Making	<i>Brown microcrystalline wax (Batik wax)</i> , paraffin wax	Pot/wok, stove (wood-based heating source), knife, basin, water
3	Clay Mould Making	Sand (fine and coarse), clay, paddy husk, water	mixing container (layer 1: a mixture of fine sand + clay + water), (layer 2: a mixture of coarse sand + clay + water), layer 3: a mixture of clay + paddy husk + water)
4	Dewaxing of clay mould	Clay mould, charcoal, copper, zinc, aluminium, tin	Traditional furnace (charcoal-powered), manual-powered blower (to control the heat), clay graphite crucible, loading tongs
5	Pouring/casting	Molten brass and emptied mould	Crucible, loading tongs
6	Mould-breaking	Water (to cool)	Hammer
7	Finishing	Polishing/shining agent	Spinning/lathe machine or <i>bindu</i> , chisel, sanding paper, polishing agent

<sup>38</sup> The producer in this context could be a labourer, craftsperson or artisan. In fact, each has their specific duty, speciality and responsibility towards the assigned job.

<sup>39</sup> Bindu is a traditional lathe machine.

### Modern, more developed way of brassware making

PHASE	PROCESS	NON-TRADITIONAL	
		MATERIAL	TOOLS AND EQUIPMENT
1	Master Pattern Making	Wood, clay, plaster of Paris (also acts as a mould)	Spinning or lathe machine (electric-powered), hand and power tools (chisel, knife), 3D Print machine (acts as a master pattern)
2	Wax Pattern Making	Industrial wax (casting wax), resin, raw wax ( <i>batik</i> wax (white and brown))	Pot/wok, gas-heated stove, wax injector machine, knife, basin, water
3	Mould Making	Wax pattern, plaster of Paris (POP) or gypsum, water, silica sand, wax	Plywood acts as a base, sheet metal bent into a box, measuring cup, mixing container,
4	Melting & Dewaxing	Block mould, crucible tongs, crucible, copper, zinc, aluminium	Electric/gas furnace, blower, safety gear, crucible, loading tongs, copper, zinc, aluminium, tin
5	Pouring/casting	Molten brass and emptied mould	Crucible, loading tongs, safety gear
6	Mould-breaking	Water (to cool)	Hammer
7	Finishing	Polishing/shining agent	Spinning/lathe machine or <i>bindu</i> , <i>chisel</i> , <i>sanding paper</i> , <i>polishing agent</i>

Based on observations, it was found that almost 70% of brassware-making processes nowadays employ traditional techniques that have been adapted with the help of advanced assistive tools and machines. For instance, clay, silica sand and rice husk are among the essential elements required in the production of the clay mould. The clay is obtained locally within the Kuala Terengganu area, specifically from the paddy fields and along the Kuala Terengganu riverbanks. However, nowadays, outsourced processed materials such as silicon rubber are used for moulding the wax pattern and plaster of Paris (gypsum) for moulding the casting material. A mixture of plaster of Paris, silica sand

and water is used to produce the block mould to make the traditional artefact or product.



Figure 5.16: A) Rice husk, B) Sand and C) Mixture of clay, sand and water



Figure 5.16: Grinding process to remove rough edges using modern tools.

The finishing stage, consisting of grinding and polishing, is done with a traditional, handmade tool called a *bindu*.<sup>40</sup> The modern polisher is a motorised tool, but still needs to be manually operated and controlled by the craft maker. Modern finishing gives a

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<sup>40</sup> *Bindu* is a home-made pedal-driven polishing machine.

more refined, precise finish to the final product. However, in doing so, it loses some of the traditional 'handmade' aesthetic qualities.

From observation at the workshop, it was found that the brassware producer was encountering some difficulties with regard to production and operation management. Production management involves the application of planning, organising, directing and controlling the production process. Current practices tend to be unstructured and rather disorganised (P4; P5; P7) due to a lack of knowledge and expertise, and a reluctance to hire a designated person for production and operation management due to financial constraints.

#### **5.3.2.2 Practical value and meaning of traditional brassware craft practice – 'tacit' knowledge, technical uniqueness of art expression**

Brassware craft is engineered craft (P1). It is a combination of artistic expression and technical uniqueness (P2; S9). The value of traditional handicrafts lies in the 'tacit knowledge' of the 'human touch' of making. Therefore, traditionally made brassware craft products should not be compared with machine-made products (P1; P2; S9).

*Contemporary societies usually see machine-made craft as perfectly done with super-fine finishing compared to our local traditional-made craft which according to them is of lesser quality due to its surface finish (dull and less shiny) (P5).*

The way of making brassware craft – either fully or partly mechanised, or wholly manual – has different effects on people. These differences are related to their level of understanding and knowledge about art and craft (P4; P13; S2; S11). There is a term

used to characterise the value of traditional handmade craft: 'perfect in imperfection' (S7). Small flaws in the brassware surface are indications of the artisan's perseverance during the making of the craft (P4; P13). Every part of their soul, ideas, philosophy, creativity and values are applied in their masterpiece because they love doing it; it is a part of their life (S8; S19). Making brassware is not just a process of making tangible things. If we look from a more profound perspective, as one interviewee put it, it's making and inherent values reveal their way of life, the way people should learn and live (S9). S9 added that there is a purpose for everything that is made, and knowledge is inherited from generation to generation.

Previously during 1980s to 1990s, many foreign tourists, especially from Europe, came to Kuala Terengganu to see and experience the process of traditional brassware casting for themselves. P1 said that *"Appreciation by foreigners (international tourists and experts) towards our traditional casting technology brings them here to Kampung Ladang to see and experience it for themselves"*. Some of them were engineers in their own country.

Undoubtedly, the traditional skills of brassware artisans in the past were highly respected. These rigorous and subtle crafting skills have been studied and practised, and, consequently, this skill is being learned by more people every year. According to P1, *"that is the reality of this industry. Outsiders appreciate our local heritage craft more than our locals"*. While S9 added that *"Tourists come to our place to see and experience our lifestyle, our culture, art and heritage. They do not want to see the modern structure of our building etc. as theirs are better than ours (S9)"*.

Designing and making brassware craft is spontaneous (P2; P9; P10). Experience has meant the artisans follow their own instincts. There is no proper planning and there are no guidelines or manuals to be referred to and followed. That is the significance difference between a skilled artisan and a factory-based producer. Brassware craft making is a profoundly risky job as there is always uncertainty and a sense of surprise during its production (P6; P9). The outcome is sometimes unexpected, even though the same process and technique has been carried out for many years.

Moreover, the risk of the product being damaged is high, as it all depends on the skill of the maker. According to P2, *“we cannot expect perfection in producing a product”*, and P7 added that *“we must always prepare for the worst. There is no guarantee the product will be in good quality and well-finished except with the use of the new, modern technique”*.

For example, during the field study at one of the artisan’s workshops, the researcher observed the pouring process.<sup>41</sup> From twenty clay moulds only twelve were passed to go into the finishing stage. The rest were rejected and needed to be refined. From discussion with the artisan, several reasons led to these product failures, such as a lack of focus, lack of skill, or it was just an unlucky day.

Although some people perceive the pouring process to be a simple job, it is, in reality, a very intricate process, as the temperature of the molten copper and the clay mould cannot be controlled by an artisan when using the traditional process. Mastery develops

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<sup>41</sup> Hot molten brass is poured into the clay mould

with time and experience. However, brass is recyclable, and every damaged or failed product can be re-melted. Alternatively, some adjustment and repair can be done if there is just minor damage.

Copper, zinc, tin and aluminium are melted in the pre-heating of the furnace for around 20-30 minutes on average. However, there is no exact timing for melting the mixture. Most of the artisans just know it through how it looks, for instance, by the colour of the clay mould, as well as from the smell. It is hard to explain – it all based on experience. No manual is followed, everything is in their head and is reliant on God's will; this is what they believe. If there is a significant problem that cannot be recovered during the finishing process, they have to re-melt all the NG-products and start all over. What matters are time and skills – these are the tacit skills.

Nowadays, some brassware artefacts that fall in the category of 'antique' and 'rare' are still highly valued, especially by collectors. According to B1, the selling price can be ten times higher than the regular price. Informants B1, P1, P4 and S8, used to be, and some still are, collectors themselves. They enjoy collecting rare and antique brassware, but nowadays they are focusing more on their businesses. Collectors all over Malaysia contact them to ask for rare and antique brassware artefacts and other crafts as well, *"There were also some collectors, who instead went house to house just to find rare and antique artefacts (B1)"*.

### 5.3.2.3 The impact of technology on the brassware craft community

The brassware craftspeople's way of living has been influenced by various technological advancements in devices and assistive tools; these can have positive and negative impacts on traditional practices. Discussions covered the use and impact of 'technology' in the context of manufacturing and production of the product, trading (E-commerce), marketing/promotion (online platform), and branding (logo and packaging).

There is a significant need for the adaptation through modern technological applications, while at the same time, traditional techniques should be retained (S8). *The adaptation of technological applications such as advanced machines, equipment, and assistive tools in the traditional craft industry is vital as it could speed up the production process, lessen human-power consumption (P1; P11; P13) and the product can be batch-produced (P5; P7; S3).*

In the years before industrialisation occurred in the craft industry in Malaysia, brassware craftsmanship relied 90% on manual skills and 10% on the use of human-powered traditionally made tools and simple machines. The wisdom and creativity of local brassware artisans was also clearly portrayed through the innovative ideas of inventing human-powered mechanised equipment named '*bindu*' and other assistive tools. Nowadays, the '*bindu*' has been replaced by more highly developed electric-powered lathe machines and hand tools. The nature of craft making has evolved in line with the change in trends and times.

For example, it is not easy to sustain and control the consistency of the heat with the traditional furnace. The electric furnace is a viable and beneficial alternative because



the heat is easy to control, and the melting process can be done more rapidly (P9). According to P13 and S3, modern technology can have advantages but is also an expensive investment for the producer. Therefore, there is a need for financial support from the government so that modern technology can be used within the local craft community.

Technology can help achieve production consistency, but S1, S2, and S3 all stated that it is not an easy task to encourage local artisans to accept new technology and methods. Most of the artisans were more than fifty years old and it takes time for them to learn new things alongside doing their work. There are other limitations too, such as being unable to invest so much expense and time in adapting to modern technology (S4, S5, S6).

There is a significant need for Research & Development (R&D) in identifying, developing and introducing new techniques and methods to solve product and process production issues, as well as the formulation of new materials, and improving surface finishing and product quality. These areas have been developed by a team of researchers from SIRIM (Standard and Industrial Research Institute of Malaysia) (S14). They have aimed for more cost-effectiveness, better time consumption and batch production (S4; S5; S6).

The brassware entrepreneurs P1, P2, P4, P7 formed a collaboration with research centres such as SIRIM and MHDC in identifying and researching the development of new processes or methods in enhancing production capacity, product design, and process quality. The new improved process or practice they had learned was applied to their brassware crafting activities. This new knowledge was then transferred to the labourers

who work with them. S14 added that, as a researcher, they also need financial support from the government through grants as the cost of doing research is high.

#### **5.3.2.4 Design, spirituality and their relationship with the environment**

Malay culture reflects the thoughts and beliefs of the Malay people. Life based on Al-Quran and Sunnah (the way of the Prophet, Rasulullah's lifestyle) have successfully raised the status of religion and the honour of the Malay race. During the production of craft making, P8 stated that *"I do not have a plan for most of my artwork as I follow my intuition. However, I realise sometimes it does not go as planned because it is all up to God's will."*

There are times when everything was done correctly and vice versa. That is why the concept of *tawakal* has always been practised by the artisan. *Tawakal* is the Islamic concept of reliance on God or "perfect trust in God and reliance on Him alone". P13 added that *"the concept of 'tawakal' should be put close to our heart, and we should hold tightly to that concept"*. Most brassware producers believe in *rezeki* (sustenance) given by Allah SWT. Therefore, some of the producers do not care much about making a profit.

Furthermore, according to some interviewees, it is vital to have kind thoughts towards other people (P9, P10). P2, P13 and S9 believed that talent and skill are gifts from Allah SWT, and should be shared with others. *"Everything I do is because of Allah (P12); I work solely for Allah; all satisfactions come from HIM with his will. That is why most of my artwork is closely associate with the Islamic concept, and where I got my inspiration from (P13)"*.

There is a need and demand for a deepening of knowledge, especially religious knowledge. Only spiritual values can preserve the happiness and tranquillity of human life, thus motivating craftspeople to work hard and enjoy the work (S9). As said by S9, making craft, designing and creating are a sort of *Dakwah* - a form of religious activity that preaches and teaches through design practice by observing, adapting and being inspired by Allah's creations, such as shapes, patterns and motifs of environmental subjects such flora, fauna, clouds etc (P13, S12).

For instance, S13 took a monumental incense burner (*bekas bara besar*) as an example that represents the product's many values and meanings. The making of the incense burner, as well as its design, portrays something spiritual, mystical and mysterious. Therefore, the *bekas bara besar* was selected as one of the case studies, and is presented and discussed in detail in the case study section (5.3.3).

'Bamboo shoot (*pucuk rebung*)' motifs are also one of the popular traditional motifs that has always been used in Malay traditional material culture, including the brassware craft. *Pucuk rebung* represents a form of hope. Because bamboo is a tree that is not easy to fall and fractured by a strong gust of wind. The motifs of 'Pucuk Rebung' can usually be seen in *songket* cloth. The use of '*Pucuk Rebung*' motifs on *songket* cloth means that the user will have good fortune and hope in every step of their life.

The environment and nature have taken on significant reference and influence alongside the social values of the Malay community. As mentioned by S12 "*Malay art philosophy must return to nature*". The features of earth such as the flora and fauna and the character of being are studied and explored. Besides, the concept of nature and

spirituality have a unique relationship and are intimately associated with Malay art craft (P1). These are often adapted in the design of traditional Malay craft as well as in traditional architecture.

The thinking of Malay artisans in the past was delicate (*halus*), splendid and very meticulous (*teliti*). Malay artisans during the 'old time' always had something in their mind and visualised it in the form of tangible things (P13). Every inspiration was developed according to the instincts of the artisan. They created something, not merely because of a trend; but because they had thought it. Everything they chose to be adapted and inspired in their creation, like patterns, motifs and texture symbolised something, and had reasons, meanings and philosophies. The use of motives and patterns was intended to convey a message or information as well as to educate in the form of advice, mandate, reminder and internally expressed intentions (S11).

S10 shared that, in order to understand all the philosophies, values and meanings, requires in-depth thinking, and it is hard to understand at first. However, it still depends on how the artisan or maker uses, manipulates, exploits and is inspired. There are no rules and regulations per se. However, some of them just follow what their inheritance or masters taught them. Some also manifest their art through researching and exploring creativities with innovative ideas at the same time as building their own identity. Developing and generating ideas taking natural elements as inspiration is not as easy as it looks. Every single element of colour, texture, shape, and movement will be incorporated into the detailed notion, "*As an individual who is involved with art.... we are not just researching art... we are also researching the 'soul' of art (S3)*".

### 5.3.3 Case Study 3: *Bekas Bara Besar* – iconic heritage artefact

The findings from the semi-structured interviews and case study 1 and case study 2 have identified some brassware artefacts that authentically show the wisdom of local artisans as well as how they truly represent the identity, culture and tradition of the state of Terengganu (Section 5.2.2.5; Section 5.2.2.6; Section 5.3.2.4). These artefacts possess distinctive tangible and intangible aspects related to their design, the product itself and the practice that produced it. Therefore, the *Bekas Bara Besar* (large incense burner) has been chosen as one of the artefacts to be explored and investigated in further detail in terms of its product, design, making practice, history, values and meaning.

The *Bekas Bara Besar* is one tangible example of the importance and uniqueness of Terengganu local wisdom. The cultural and beliefs of Malays have undergone many changes over its history. Since prehistoric times it has seen transitions in belief from animism to Hinduism and Buddhism and eventually, in the 14<sup>th</sup> century, Islam. The advent of Islam metaphorically brought light into Malay communities and changed the way people believe and how they live. The contribution and influence of both Hinduism and Islam have been substantial in the Malays' way of life, cultures and customs. Some of the customs and traditions are still practiced today as long as they do not break the law and the Syariah (Shariah) of Islam. More recently, western-style modernisation also moved into the Malay culture and lifestyle. This significant change has had a massive impact on the lifestyle of Malay communities and transformation on the development of Malay arts and traditions, their social practices in relation to traditional material culture, and their sense of appreciation, as well as their sense of community (see Section 5.2.3.1).

The story of *Bekas Bara Besar* was identified, including the history, social relationships, technical uniqueness, inspiration, function, values and meaning. During the field research, multiple methods were applied including both primary and secondary research. A few follow-up interviews were conducted as well as on-site visits to the Terengganu State Museum, the Malaysia Handicraft Development Corporation (Terengganu Branch) and the brassware workshops to see the actual *Bekas Bara Besar*,<sup>42</sup> the copy,<sup>43</sup> as well as the miniature version.<sup>44</sup>

During the visits, the researcher also had informal talks and discussions with several people in the museum and the craft centre, as well as an official meeting with a few craft and culture experts for more in-depth discussion. The researcher also talked with artisans who are involved directly in the making of the copy of *Bekas Bara Besar*. This programme was a collaborative effort between the Malaysian Handicraft Development Corporation and one of the local brassware enterprises.

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<sup>42</sup> Exhibited at the Royal Gallery, Terengganu State Museum

<sup>43</sup> Exhibited at the gallery of Malaysia Handicraft Development Corporation (Terengganu Branch)

<sup>44</sup> Made by SA Unik Kraf, one of the local artisans registered under MHDC for the incubator programme



Figure 5.17: A) Original artefact, B) Replica artefact

### 5.3.3.1 History of *Bekas Bara Besar*

The *Bekas Bara Besar* in Figure 5.16a was made of white copper (*tembaga putih*) by Encik Mat bin Omar and Encik Abdullah bin Haji Ali in 1940. The founder, who instructed them to make the incense burner was an Islamic scholar or *Sufis* named Haji Sheikh Muhammad Abdul Al-Suhaimi (Sheikh Suhaimi). Sheikh Suhaimi was born in Indonesia in 1843 and died 1905 in Klang Selangor. Almarhum Sultan Sulaiman Badrul Alam Shah awarded this incense burner to Abidin Mosque, Kuala Terengganu.

The incense burner is used to create smoke and fragrance in mosques and is an item for ceremonial and religious events such as *Maulud nabi*, *majlis tahlil* and so forth. This majestic ornamental incense burner was crafted using the traditional lost wax casting technique. It has unique designs and styles designed with floral motifs that reveal the high skills and unique craftsmanship of the brassware artisans as well as signifying the

epicentre of the development of the brassware enterprise in the state of Terengganu. Historical writings also describe the collaborative efforts involved in the making of this traditional artefact that symbolises spirituality, including the maker, the *ulama*<sup>45</sup> and the sultan, or royal patron.

The values and meaning of this artefact in the contexts of art, design, making practice and history are thought-provoking. The uniqueness of the design itself would have made people stare and consider its spiritual meaning, as well as prompting a second look simply at the artefact itself (S12). According to S9, *Bekas Bara Besar* is more than just a physically unique structure or artefact as it is also portrays a lesson; it is not only made as a functional commodity.

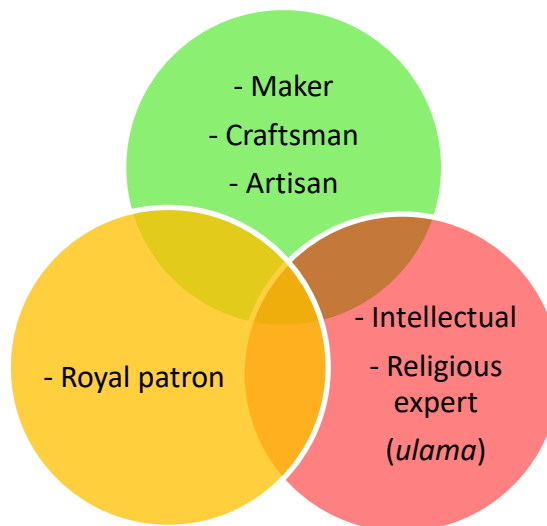


Figure 5.18: Collaborative efforts approach in the making of *Bekas Bara Besar*

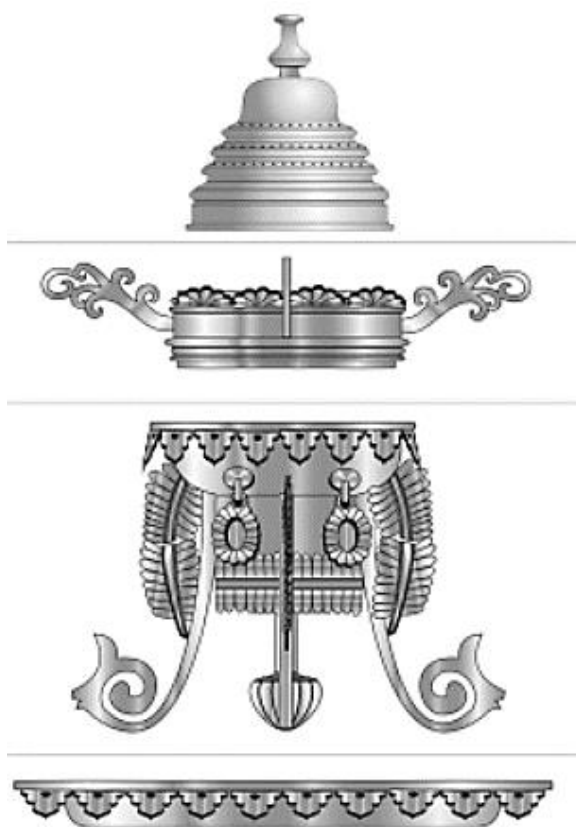
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<sup>45</sup> In Islam, the *ulama* (/ˈuːləˌmɑː/; Arabic: علماء 'Ulamā', singular عالِم 'Ālim, "scholar", literally "the learned ones", are the guardians, transmitters and interpreters of religious knowledge, of Islamic doctrine and law.



### 5.3.3.2 Artefact description

The *Bekas Bara Besar* is one of the masterpieces of brass handicraft in Terengganu. This degree of ornamentation is significant evidence of the highly skilled knowledge, wisdom and artistry of local Malay brassware artisans in Terengganu during the third quarter of the 20th century. It is 130 cm. high, 72.5 cm. wide and weighs approximately 150 kilogrammes. It is the largest incense burner that has ever been made in Malaysia. The original *Bekas Bara Besar* has been part of the Terengganu State Museum collection since 1979, where it is currently exhibited in the Royal Gallery. The *Bekas Bara Besar* comprises four main separate and detachable parts: lid, container for fragrance, body, and *baki* or large trays (*alas pelapik*).



**Part A: Lid (*penutup*)** - The design of the lid is inspired by the shape of *Kubah* (dome in English and *qubba* in Arabic) of the mosque. *The dome has significance within the mosque—as a symbolic representation of the vault of heaven. The shape of the holder on the lid is inspired by the floral element called "buah gutung"*

**Part B: The container for fragrance** - The container for the fragrance is ornamented with decorative floral motifs called *ketola* flowers (*bunga ketola*) and *sulur kacang* for the holders.

**Part C: Body and feet (*badan dan kaki*)** - The body part of the incense burner is beautifully decorated with the motifs of *lebah bergantung*, fern (*paku pakis*) and *buah asam gelugur*, as well as *sulur kacang* that functions as a stand to support the body.

**Part D: The large tray as base** - The large tray is used as a base and decorated with *lebah bergantung* motifs

Figure 5.19: 3D design of Bekas Bara Besar by Parlan (2016) and descriptions

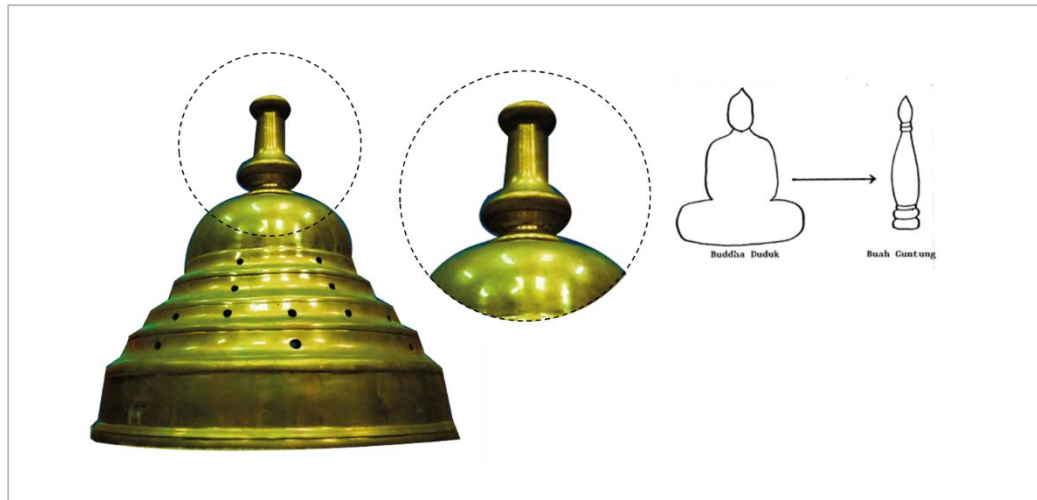


Figure 5.20: The shape of the holder on the lid is inspired by the floral element called "buah guntung"

Another example is the *Buah guntung*, a roof ornamentation of a traditional Terengganu house. The word *guntung* means the high place (*tempat tinggi*) (S19). *Some say the 'buah guntung' represents the sitting Buddha and the tombstone. It is meant as a reminder to people that they should always be mindful of death, that they need to find supplies for the afterlife, and life in this world is temporary.*

In addition, the motif of *lebah bergantung* has always been used in Malay traditional design practice, such as traditional architecture and craft. There is a hadith from our beloved Prophet Muhammad PBUH, in which he advised believers to be like a bee. The behaviour of a bee can be taken as an inspiration because the organised and structured life of a bee community can benefit humans. Bees live and work closely and collaboratively. *"They go out early in the morning to find flowers. Even though they go to dirty places, they look for good, beautiful and fragrant things. The moral value here*

*is, what we can learn from bees is: that we should have no prejudice towards others; do not disturb people; and always benefit people (S9).*

### **5.3.3.3 Current design revitalisation effort**

*Bekas Bara Besar* should be designated as one of the national treasures of Malaysia because it is an iconic artefact that truly represents the state of Terengganu. The values and meaning of the *Bekas Bara Besar* ought to be promoted and shared more widely, especially among people living in the region. This artefact clearly demonstrates the knowledge and skills of our local artisans in creating not only a functional item, but one that also carries such a precious value. The selection of motifs is related to education, philosophy and customs that help form a diligent, courageous and civilised nation (S9; S11).

*Bekas Bara Besar* Terengganu is an example of Malay art that is based on Islamic values, which are apparent in the functional and aesthetic features. Not only is its role to give external satisfaction through the aromatic fragrance that is produced but its appearance also has a significant function in symbolising prosperity and cultural advancement. Therefore, re-making the *Bekas Bara Besar* by applying modern techniques and tools have been one of the effective solutions that have been done to sustaining and spreading its values.

The process would still employ casting technology, but with the application of modern equipment and tools. This has been done by one of the local brassware enterprises collaboratively under the supervision of MHDC designer and SIRIM R&D team. The original artefact was measured before undergoing the re-making process where design and shape are retained but the process has been modernised and the reproductions are much smaller.



Figure 5.21: The replica of *Bekas Bara Besar* is used as a corporate gift

## 5.4 Summary of Key Findings

Description	Finding reference
The current condition of the brassware craft sector is very critical due to the effect of globalisation	5.2.1
<b>MAIN INTERRELATED ISSUES AND FACTORS CONTRIBUTING TO THE DECLINE OF BRASSWARE SECTOR</b>	
<b>Apprentices and skilled workforce</b> - Availability of skilled practitioners and workforce as well as lack of apprentices from the younger generation to continue the legacy of family-oriented business.	5.2.2.1
<b>Place/location and facilities</b> - The change of brassware craft ecology and its locality, craft business premises, workshops, workstations, safety.	5.2.2.2
<b>Production and technology</b> - Cost and quality of raw material, tools and types of equipment, operation, maintenance and production capacity; technological innovation and R&D on product design and manufacturing process for value-added effect. Environmentally harsh working place and complexity of the brassware making process	5.2.2.4; 5.2.3.4
<b>Design and function</b> - Monotony of design, call for change to meet modern trends and consumer tastes, research and development (R&D), packaging design.	5.2.2.5
<b>Logistics &amp; management</b> - Logistics and supply chain management (SCM), planning and data management, network communication and transportation, management efficiency.	5.3.1.6
<b>Market and competition</b> - Slow in sales, low supply and high demand and price (household and ceremonial products). <b>Promotion and marketing</b> - Packaging, branding and visual identity, image development.	5.2.3.2 5.2.3.3
<b>Understanding and appreciation</b> – lack of understanding, appreciation and recognition of artefacts (an item of cultural, historical, philosophical, spiritual, value, meaning of interest).	5.2.3.5 5.2.3.2 5.2.2.6
<b>Mentality, attitude and perception</b> – discuss the mindset, attitude and perception of stakeholders (producers, supporters, buyers), impact of change or transformation regarding traditional material	5.2.4.1 5.3.1.2

<p>culture; sense of duty and responsibilities of the younger generation, community, government and NGOs.</p> <p><b>Education and knowledge transfer constraint</b> - Education, training and technical support (preserving the traditional knowledge), knowledge and awareness of the market, marketing and promotion.</p> <p><b>Government policy</b> - Government policy, loans, funds and subsidies (material and incentives), bureaucracy.</p>	<p>5.2.2.3</p> <p>5.2.4.3</p> <p>5.2.4.4</p> <p>5.3.1.1.1</p> <p>5.2.4.4</p>
<p><b>POTENTIAL DESIGN STRATEGIES - THE RELATIONSHIP BETWEEN BRASSWARE HANDICRAFT, DESIGN AND SUSTAINABILITY.</b></p> <p>Designers can contribute through design for value creation, education and knowledge-transfer especially regarding brassware craft values, knowledge, wisdom, and practice, and their significance with the wide Malaysia population.</p> <p>Attention should be paid to; widening the scope and context of apprenticeship programmes; re-building the creative ecology of Kampung Ladang; proposing a practical holistic syllabus that collaboratively involves other organisations; improvising knowledge-transfer practice; proposing activities to stimulate awareness and a sense of appreciation in society especially the younger generation. Also, brassware producers should be trained in business management and planning as well as branding and market trends in order to support the development of this sector.</p> <p>Co-design practice to support artisans, supporters and policy makers could be among the practical approaches to bridging the gap between stakeholders.</p>	<p>5.3.1.4.2</p> <p>5.3.3.3</p> <p>5.2.4,</p> <p>5.3.3.1</p> <p>5.3.1.4.2</p> <p>5.3.1.3.1</p> <p>5.3.1.3.2</p> <p>5.2.4.5</p> <p>5.3.1.4.2</p> <p>5.3.3.3</p>

## 5.5 Conclusion

In reporting these qualitative results, the researcher highlights the significant themes that emerged from the analysis of semi-structured interview data and this comprises quotations from the primary sources, which also consist of tables and figures and the researcher's comments on the significant data shown. More elaborate commentary on the results will be made in the Discussion chapter. These case studies on traditional brassware revolve around a descriptive analysis study which focuses on: the historical, developmental and production processes; the application and adaptation of natural elements as a source of inspiration; the idea of motifs being created through a sense of appreciation for the beauty of nature; and the development of ideas adapted to the appearance and shape of the components of *Bekas Bara Besar* Terengganu. The explanation of the characteristics of brassware craft heritage to the other members of society is essential as it is the best way to create awareness of the existence of Malay civilisation through craft artefacts.

## CHAPTER 6: DISCUSSION OF FINDINGS

### 6.1 Introduction

This research investigated the key factors and their relationships that can inform the revitalisation of brassware handicrafts Terengganu, Malaysia in accordance with the principles of sustainability. This thesis has already presented the research findings from the three major data sources:

- Literature Review (LR) – about sustainability, design and brassware craft gathered from international and local sources (Chapter 2).
- Semi-structured interviews – conducted with 37 respondents in three groups based on their different roles and clusters in Malaysian design and craft industries: producers (n=13), supporters (n=17) and buyers (n=7) (Chapter 5: Section A).
- Three case studies – Case Study 1, creative ecology of Kampung Ladang, Kuala Terengganu; Case Study 2, brassware craft making process; and Case Study 3, *Bekas Bara Besar* – iconic heritage artefact (Chapter 5: Section B).

This chapter addressed the primary research question: ***How can brassware handicraft, as a culturally significant craft practice, be revitalised in Malaysia through effective design contribution that is in accord with principles of sustainability?*** Major problems and issues were identified (Section 5.2.2) and prioritised to come up with proposed solutions through a design framework and potential design strategies to be adapted by brassware craft producers and stakeholders.



In this chapter, five main research findings are identified in relation to the research questions. These findings are derived from the analysis of information from the three major data sources mentioned above.

## **6.2 Brassware Craft Values and Meaning and its Relationship with Design and Sustainability**

This section addressed research question 1) *What is the value of revitalising the brassware as a culturally significant craft practice?*

The collective results of the literature review analysis (Section 2.6.2), semi-structured interviews (Section 5.2) and case studies (Section 5.3) indicate that the themes of 'values' and 'meaning' are significant elements associated with traditional brassware craft design, product and practice within the brassware craft communities in Terengganu. Values and meaning can be divided into two main groups, **intrinsic** and **extrinsic** (see table 6.1) and followed by five components and its elements. These values have been identified based on several attributes emerging from the themes being extracted from analysed primary and secondary data. These data were triangulated from several sources, including literature reviews (Chapter 2), findings from semi-structured interviews with informants (Section 5.2), and findings from the case studies (Section 5.3).

Five attributes were extracted: place (Section 2.3.1; Section 5.3.1.1; Section 5.3.1.2.3); local-cultural and tradition (Section 2.3.7; Section 5.3.1.2.1); philosophical and spiritual

(Section 5.3.2.4; Section 5.3.3); social (Section 5.3.1.2.1); economic (Section 2.2.5.3; Section 2.3.5; Section 5.3.1.3) (Figure 6.1).

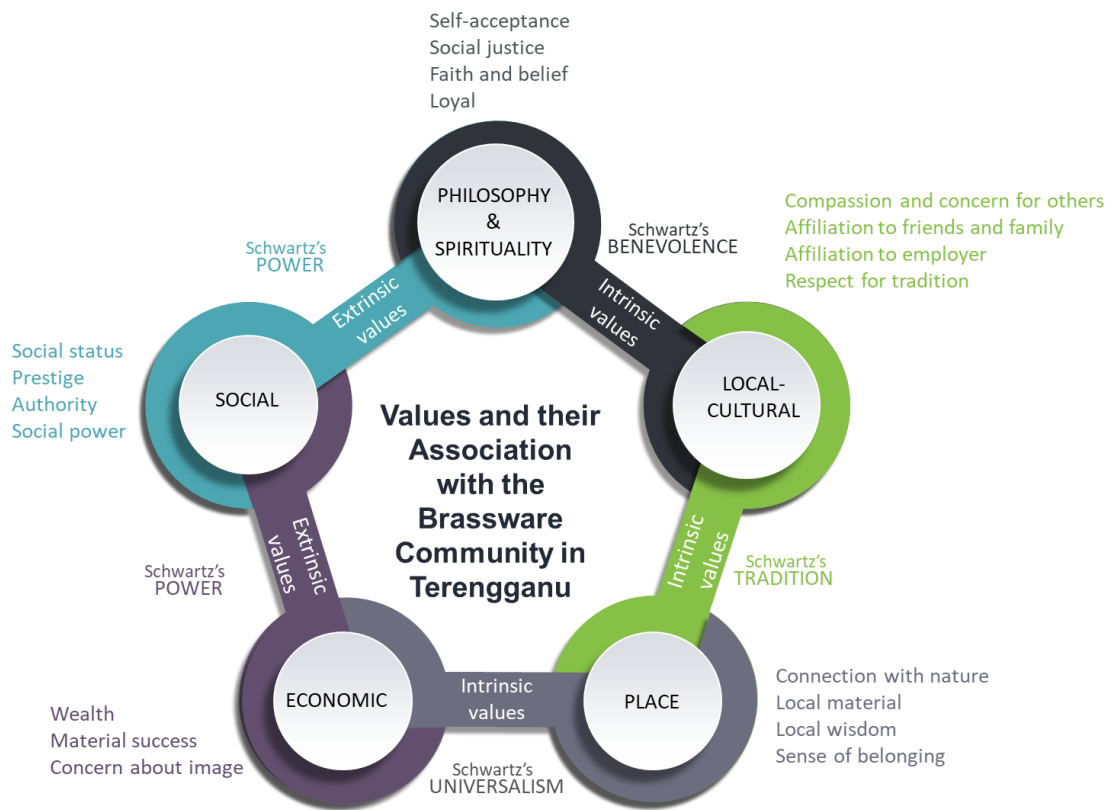


Figure 6.1: Values and their Association with the Brassware Community in Terengganu

VALUES AND THEIR ASSOCIATION WITH THE BRASSWARE COMMUNITY IN TERENGGANU		
Group of Values	Elements	Brassware community in Terengganu
<b>Intrinsic Values</b> (Values that are inherently rewarding to pursue)	<b>LOCAL-CULTURAL AND TRADITION</b>	
	Affiliation to friends and family Affiliation to employer Respect for tradition	<ul style="list-style-type: none"> <li>• Continue family legacy due to a strong sense of duty and sense of responsibility in maintaining traditional art and heritage.</li> <li>• Encourage friends and younger generation to work with brassware; they will be trained to continue this heritage industry.</li> </ul>
	Compassion and concern for others	<ul style="list-style-type: none"> <li>• Remember their role as an artisan to make a product to be used by society.</li> </ul>
	<b>PLACE</b>	
	Connection with nature Local material Local wisdom Sense of belonging	<ul style="list-style-type: none"> <li>• Natural elements (flora and fauna) – features and characters are taken as inspiration, subject matter etc.</li> <li>• Appreciate God’s creation.</li> <li>• Using local material to make craft product.</li> <li>• The manifestation of art in brassware- making practice.</li> </ul>
	<b>PHILOSOPHY AND SPIRITUALITY</b>	
	Self-acceptance Faith and belief	<ul style="list-style-type: none"> <li>• Accept the fate that this God-given gift and talent need to be shared with others as well as to please and serve people.</li> </ul>
Social justice	<ul style="list-style-type: none"> <li>• ‘sharing is caring’ - the distribution of wealth, opportunities and privileges within a society.</li> </ul>	
Loyal	<ul style="list-style-type: none"> <li>• Continue the traditional practice for the sake of future generations as well as to keep the tradition.</li> </ul>	
<b>Extrinsic Values</b> (Values that are centred on external approval or rewards)	<b>ECONOMIC</b>	
	Wealth	<ul style="list-style-type: none"> <li>• Money as a means to an end, for the sake of survival, struggles and career development.</li> </ul>
	Concern about image	<ul style="list-style-type: none"> <li>• Brassware production as part of Terengganu identity; local wisdom is undervalued.</li> </ul>
	Material success	<ul style="list-style-type: none"> <li>• This is seen through sales and income, social acceptance, understanding and appreciation.</li> </ul>
	<b>SOCIAL</b>	
	Social status	<ul style="list-style-type: none"> <li>• The use of brassware craft products, as well as the design that symbolises one’s status.</li> </ul>
	Prestige	<ul style="list-style-type: none"> <li>• Certain brassware crafts, such as ceremonial items, hold a special place within brassware community.</li> </ul>
Authority	<ul style="list-style-type: none"> <li>• Role of authorities to use their voice and power to encourage people to support the craft industry.</li> </ul>	
Social power	<ul style="list-style-type: none"> <li>• Relate to the way contemporary societies perceive brassware craft as part of traditional material culture, use etc.</li> </ul>	

Table 6-1: Values and their Association with the Brassware Community in Terengganu

Examining the literature in Section 2.2.5 and 2.6.2, it has become evident that, Schwartz's self-transcendence values (universalism and benevolence) and conservation values (tradition) (Public Interest Research Center, 2011, p. 16) are more aligned with traditional brassware and with sustainability. Besides that, Brassware handicraft production in Terengganu is compatible with sustainability, especially with all elements of Walker's Quadruple Bottom Line (QBL) of Design for Sustainability comprising Practical Meaning with environmental responsibility, Social Meaning (social justice, equity), Personal Meaning (inner values, spirituality) and Economic Means. This became evident from information gathered from the literature review (Section 2.6.2) and three case studies (Sections 5.3.1, Section 5.3.2, Section 5.3.3).

The findings indicate that most people within the brassware craft communities are not aware of, nor recognise or understand the intrinsic values, as compared to the extrinsic (Section 5.2.2.6). The reason is that they have not been introduced to this idea by their *guru* or forefathers, or from the wider brassware community (Section 2.2.4.2; Section 5.2.2.1). **It became apparent from the research that knowledge and information about brassware craft values and meaning needs to be more widely known and shared among the brassware craft community as well as wider society** (Section 5.2.4.3). An understanding of both intrinsic and extrinsic values and meaning could potentially stimulate greater appreciation of the brassware craft sector by contemporary Malay society (Section 2.2.4.3; Section 5.3.3).

### **6.2.1 The effect of understanding values and meaning through education and knowledge transfer**

Understanding the values and meaning of brassware craft products, design and practice as well as the conditions, and how much effort is made by the local artisans would potentially increase customers' sense of appreciation of the artisans' craftsmanship (Section 5.2.4.3). As we saw from results discussed in Section 2.2.4, Section 2.2.5, Section 2.4.6 and section 5.2.4, **there is a need for the brassware craft sector to update itself in terms of processes and designs, in order to remain relevant to a contemporary buying public.** Also, as discuss in Section 5.3.3 there is a need to improve the narrative about this traditional craft, so that people can better understand and appreciate its importance in the culture and history of Malaysia

The thing raised consistently by most informants was; what needs to be changed and what needs to remain? P6 and P12 added, the will to do something is not enough to make a change. In their current situation, willingness to change requires support in the form of capital (Section 5.2.4.4) and added knowledge (design, marketing, management etc.) (Section 5.2.4.3; Section 5.2.4.5; Section 5.3.2.4). As discussed in Section 5.2.3.4, local brassware artisans and makers are less exposed to the commercial world and the impact of technological advancement. Even with the internet and the ability for everyone to have a smart phone and access to website today, the current platform for explaining, educating, and justifying is lacking, and some efforts that have been adapted within brassware community were unsuccessful (Section 5.3.2.4). That is one of the reasons why information regarding cultural values and their importance is inaccessible

to the broader society, leading to lack of awareness of cultural importance in people today (Section 5.2.3.5).

### **6.3 The Value of Place and its Relationship with Geographical Indications (GI)**

**Place** is one of the most significant and essential elements in craft activities and practices (section 2.2.5.4; section 2.3.2; section 2.6.2; section 5.2.2.2; section 5.3.1). There is considerable research worldwide that discusses the significance of place associated with history, values, meaning and locality (section 2.2.5.4). The production of traditional handicrafts manifests as an engagement between the maker, local materials, and the product, which is strongly connected and emotionally related to history and meaning, as well as connected to place and a sense of community (Drake, 2003, pp. 519-521; Walker, 2014, p. 92; Brown, 2014, p. 6; Hosagrahar et al., 2016, p. 17)

Currently, the brassware craft sector in Terengganu is still small compared to those of the neighbouring countries such as Thailand and Indonesia (Section 2.2.4.3; Section 5.2.3.3) even though Terengganu was once one of the biggest brassware craft producers in ASEAN<sup>46</sup> in the past, and specifically during the first quarter of the 20<sup>th</sup> century (Section 2.3.6). One of the most prominent findings that emerged from the research is how important place is towards the safeguarding of traditional material culture assets and associated practice (Section 2.2.5.4; Section 2.6.2; Section 5.2.2.2) in which, in this case, *Kampung Ladang* is the main topic of discussion (Section 5.3.1). Even though this topic has been comprehensively discussed by the higher levels of authority, it has always

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<sup>46</sup> The Association of Southeast Asian Nations

been passed over and allowed to disappear without any effective action being taken (Section 5.3.1.4.3).

### **6.3.1 The importance of Geographical Indicator (GI) towards revitalisation of brassware craft sector**

Previous discussions in Section 5.3.5 indicate that GI is one of the vital components in the revitalisation of the brassware craft creative sector in Terengganu. As a communal intellectual property (IP), GI plays a significant role in Terengganu's economic development by creating a symbol of quality for local products. Incorporating GI could potentially drive local brassware craft enterprise forward and open up positive competition locally and internationally.

Analysis of the research findings suggested that most brassware craft producers, whether they are enterprise owners or workers, as well as some supporters, do not understand the concept of GI and its importance for the development of local material culture. Awareness and understanding (Section 2.4.7; Section 2.6.2; Section 5.2.4.3) of GI is necessary among all stakeholders (Section 5.3.1.4.2).

Geographical Indicators are not just a form of intellectual property, but are a tool for development and overcoming challenges faced by the brassware enterprise and it will be a catalyst towards advancement in technology, innovation and effective management (Section 5.3.1.4.2). Utilising Geographical Indicators will help Terengganu to boost-up the niche market through product differentiation, offering niche, high-quality products with high standards and a long tradition (Section 5.3.6).

### **6.3.2 The importance of understanding the history connected to a place**

The history of *Kampung Ladang* located in the district of Kuala Terengganu is fascinating and closely related to the local practice of brassware craft production (Section 2.3.1). History can be a significant element in educating and conveying knowledge as it enables us to understand and discover our culture, heritage and tradition (Section 5.3.1.2.4). In turn, this allows us to understand and appreciate our present.

The history of brassware and its cultural relevance are important in raising awareness about this heritage practice. By studying and understanding the story of past successes as well as failures, mistakes that have been made can be avoided in the future (S20). Besides, S11 added that *“the past stories of the glory of the brassware sector and action taken by the authorities to enhance the craft industry in Terengganu should be taken as a reference today to sustain and live for the future”*. The understanding of history connected to a particular place could potentially stimulate the sense of appreciation towards culturally significant products, designs and practices (Section 5.3.1.2.4).

### **6.4 Call for Change Towards Design and Revitalisation**

This section addressed research question 2) *What is the opportunity for design to contribute in revitalising the brassware handicraft industry in Terengganu, Malaysia?*, and research question 3) *How can design contribute to revitalising culturally significant design, products and practices of the brassware craft industry in Terengganu, Malaysia?* To date, various design intervention strategies have been applied to diverse fields of craft all over the world (Section 2.4.4 – Section 2.4.7). Many of these have been effective in helping them move towards economic viability and sustainability. Therefore, some of



these successful are possible to adapted within the brassware craft sector in Terengganu, Malaysia.

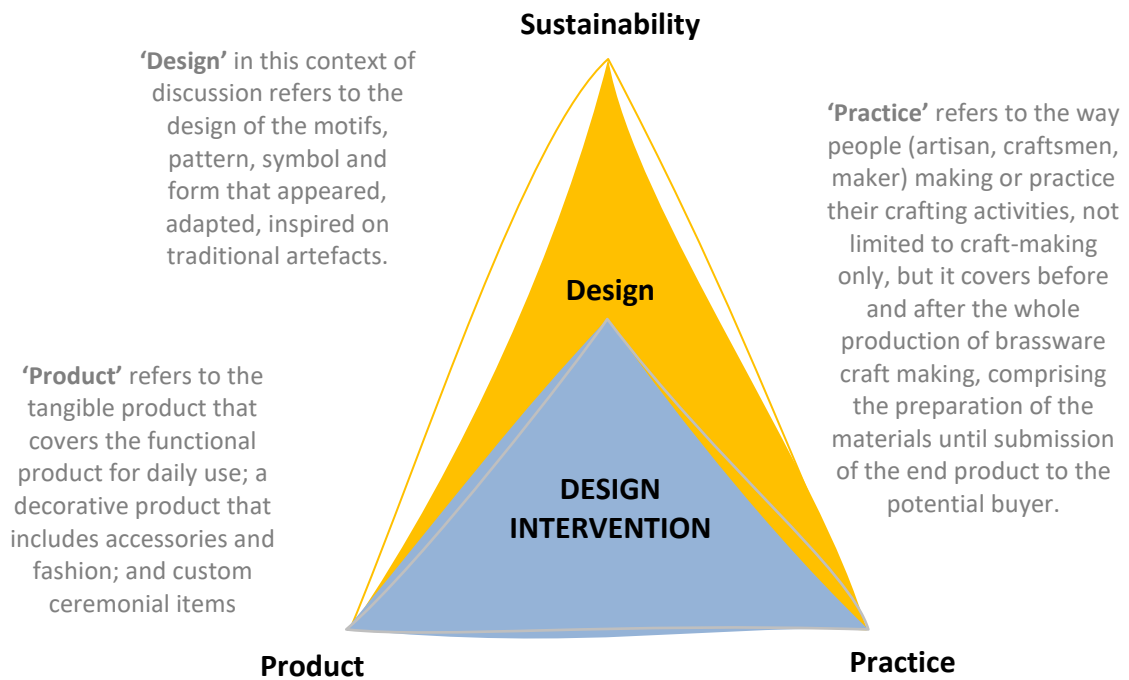


Figure 6.2: Design Intervention Triangle of Design Intervention Strategy

Figure 6.2 shows the design intervention triangle of brassware craft design intervention strategy comprises three main components towards sustainability which is 'product', 'design' and 'practice'. **'Product'** refers to the tangible product that covers the functional product for daily use; a decorative product that includes accessories and fashion; and custom ceremonial items. **'Design'** in this context of discussion refers to the design of the motifs, pattern, symbol and form that appeared, adapted, inspired on traditional artefacts. **'Practice'** refers to the way people (artisan, craftsmen, maker) making or practice their crafting activities, not limited to craft-making only, but it covers before

and after the whole production of brassware craft making, comprising the preparation of the materials until submission of the end product to the potential buyer.

#### **6.4.1 The needs for a paradigm shift in brassware craft design innovation**

The majority of producer and supporter agreed that a paradigm shift in design innovation could guarantee the sustainability of brassware craft industry for a long time (section 5.2.2.5; section 5.2.4.3). Innovation and creativity elements influence significantly in term of design aspect and product development. Innovation should fundamentally be rooted in tradition while maintaining a contemporary appeal (Section 5.3.2). Therefore, they stated that proper strategies could be planned in order to make a radical change and move this industry towards revitalisation (Section 2.6.4; Section 5.2.4; Section 5.3.1.4; Section 5.3.2.3). The adequate and in-depth investigation required to get into the idea and identify possible solutions.

From a design viewpoint, the elements of production, lack of aesthetic quality and design have dramatically contributed to the decline of brassware craft industry in Terengganu (section 5.2.2.4). In this case, brassware craft design remains unchanged over the years in addition to inferior finish quality due to poor craftsmanship practice by some of the maker (not the kind of 'perfect in imperfection') (section 5.2.2.5). The reason is that, the slowness in design innovation is due to lack of exposure to the current design trend (Section 5.2.2.5) and technological application (Section 5.2.3.4). Brassware producer regarded themselves as a maker and not a designer. They only follow what has been given as well as inherit what has been inherited (Section 5.3.1.1.2). One of the ways they learn is through copying and trial and error (Section 5.3.1.1.1). There is still

'afraid of unknown' in order to change into something new, as they are afraid to take risks (Section 5.2.3.2; Section 5.2.3.4).

Surprisingly, only a minority of informants in producer cluster are stressed about the importance of design intervention in revitalising the brassware industry. However, these 'minority' informants dominantly play a significant role in this sector, and yet these 'minority' are the biggest brassware producer in Terengganu, Malaysia. The others are not really stressed out this 'design intervention' issues as they mostly see that continue the legacy of this traditional knowledge of brassware making is more important and critical (Section 5.2.3.5).

The study discovered that kitchenware and collectibles have a high potential for sustainable design (Section 5.3.1.3.1). This is based on four essential aspects determining the long-term viability of handicraft enterprises: skilled workforce, production capacity, product viability, market viability.

The industry still exists and persevere until today as there is still a significant demand for the particular brassware craft products especially kitchenware (section 5.2.2.5; section 5.3.1.3.1). Therefore, indirectly the brassware craft production is still in the running. However, if there is no proper measure in making this industry back in line, there is huge potentiality that this industry is going to be extinct. With proper strategies and effective planning as well as management, brassware craft sector has the potential to go far and progress (section 5.2.4; section 5.3.1.3.2).

#### 6.4.2 The positive sides of technology in brassware craft production

The Malay traditional brassware craft making practice has evolved in line with technological advancement within the Terengganu craft community. The emergence of technology and modernisation within the community has affected their work culture and practice in both positive and negative ways (Section 2.3.4; Section 2.4.4; Section 5.2.4). Seven interrelated and complementary elements in brassware craft production have been assembled by the researcher: workforce; machinery and tools; raw material; process and technique; workshop; technology; supply chain.<sup>47</sup>

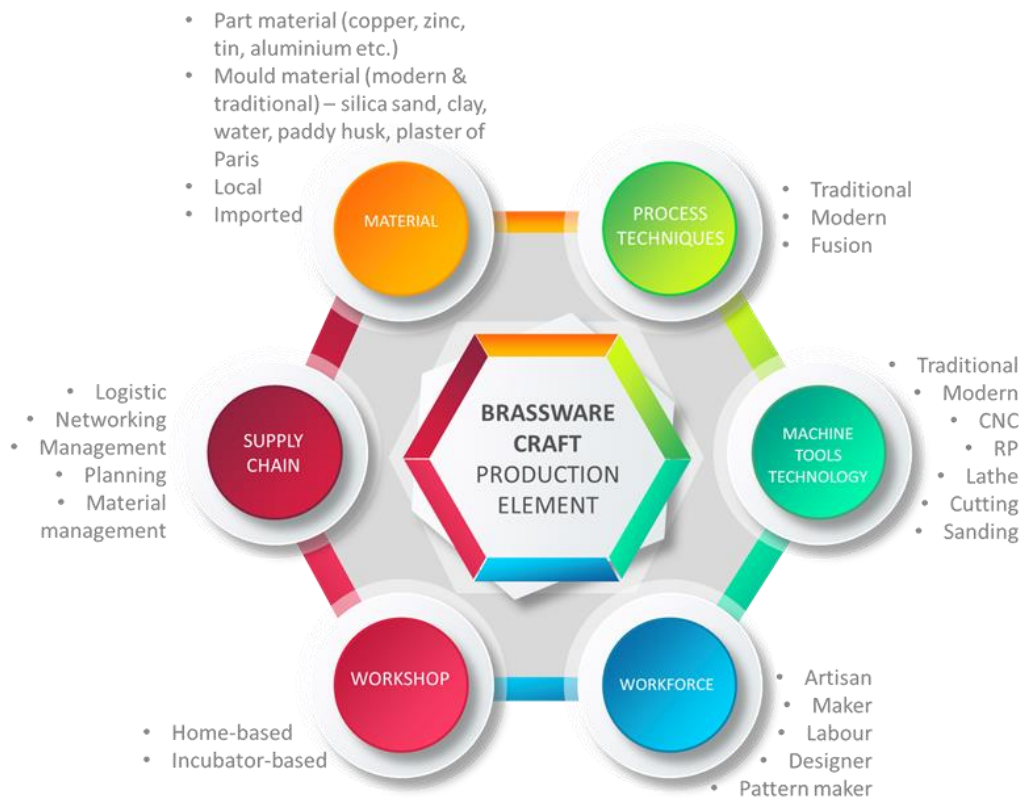


Figure 6.3: Brassware craft production elements

<sup>47</sup> A supply chain is a network between a company and its suppliers to produce and distribute a specific product, and the supply chain represents the steps it takes to get the product or service to the customer. Supply chain management is a crucial process because an optimised supply chain results in lower costs and a faster production cycle (source: <https://www.investopedia.com/terms/s/supplychain.asp>).

Based on the findings presented in section 5.3.2, it can be concluded that all the brassware craft producers have altered several processes in their making practices to survive and to follow the current trend towards modernisation. However, they still retain the most significant element that represents tradition and local identity (Section 5.3.2.2) while adapting newly developed processes by using automated and mechanised tools (Section 5.3.2.3).

The role of technology is significant in developing and sustaining artisanal industry (Section 2.3.10; Section 2.4.4; Section 5.3.2.3). For instance, the application of modern **technology is notable as being one of the viable solutions for production optimisation** (Section 2.6.4; Section 5.2.3.4). Technology through advanced machinery and tools only acts as an assistive tool as the human touch is still prioritised in craft making (Section 5.3.2.3). The use of modern machines and tools will not diminish the artistic values that exist in the production of craft products because ideas, innovations, human touch, spirit, and values still play an important role in the creation of such artistic products (Section 5.3.2.2).

**The increasing price and limited sources of raw materials** facing brassware producers have been among the significant issues as discussed in section 2.3.5 and section 5.2.2.4 that have made the majority of brassware producer cease production, and some have closed their business. Furthermore, the increased cost of the raw material indirectly increases the price of the finished product; therefore, it will affect potential buyers as they will think twice before buying brassware craft.

However, there is disagreement between the producer and supporter informant groups over the issue of raw materials. Most supporters don't regard raw materials as a significant issue in the decline of the brassware craft industry in Terengganu because raw material is subsidised by the government (Section 5.2.2.3). For them, raw materials might be one of the problems, but it is not a key issue (Section 5.2.2.4). The rising price of raw materials is a global issue and therefore uncontrollable, indirectly affecting the brassware craft sector in Terengganu (Section 2.2.4.1).

New technologies that exist in the market should be applied accordingly with the help of government through financial assistance, funding and subsidies (Section 5.2.4.4). Mechanised machinery, tools and equipment, could help speed up the production and lessen the amount of manual labour (Section 5.3.2.3). In addition, R&D and innovation for traditional crafts should be enhanced (Section 5.2.4.5).

**This can be done through design intervention efforts;**

1. Exploration of new method and techniques.
2. New formulation and exploration of the combining different materials.
3. Using technology to create products that represent the local culture and identity.
4. Improvisation of product quality, especially in the surface finishing.

Entrepreneurs are very concerned about achieving the production target in order to earn capital. Hence, learning and transitioning to newer technology is going to cost them valuable production time. Advanced technology might entice the younger population to take part. However, indiscriminate introduction of advanced technology to replace the

traditional method could compromise the quality, and eventually spell an end to the authentic value of fine craftsmanship, the handmade aesthetic appeal it currently enjoys.

Effective product and process optimisation provide values and could potentially make a significant difference to local brassware craft enterprises as well as brassware production. In order to achieve product and process optimisation, every collaborative individual, as well as stakeholders, should have a clear objective and vision. Besides, with every advancement in computer technology, optimisation is being increasingly applied to support brassware craft product development and manufacturing.

#### **6.4.3 Design for Marketing and Sales**

Branding, marketing and promotion have been major themes talked about by most of the informants from all clusters (section 5.2.2). Undoubtedly, these three elements play a very significant role in brassware craft enterprise. To sustain the business operation as well to be marketed widely, proper strategies of branding, marketing and promotion could potentially have a massive impact on sales and business viability in the long run (section 5.2.4). Most brassware producers are aware of the importance of marketing to promote their craft product and branding as well as their own niche and identity. However, most of the brassware producers do not have the knowledge (Section 5.2.3.2) or confidence to move ahead, as they do not have the time to learn new things (section 5.2.4.4).

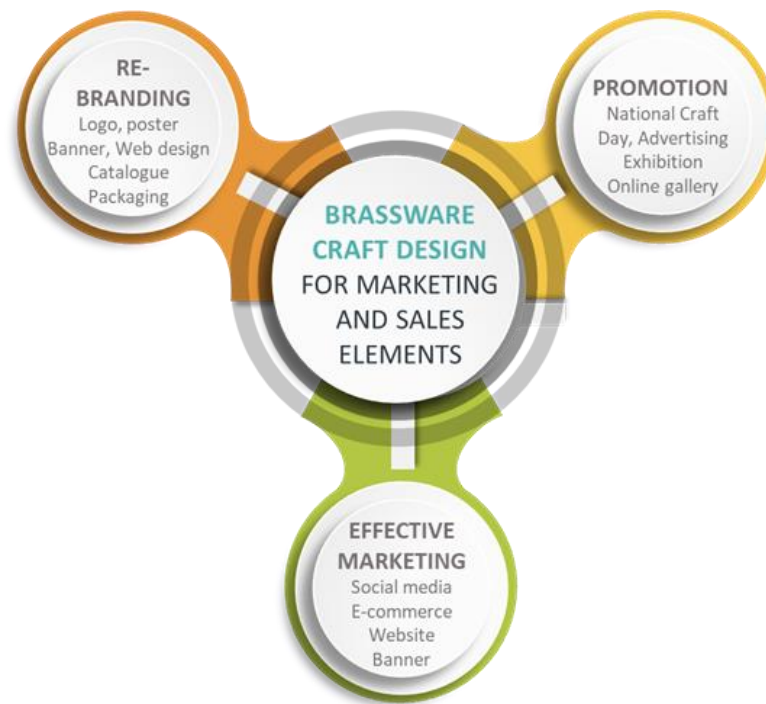


Figure 6.4: Brassware craft design for marketing and sales elements

There is a critical need to promote our local material culture to give society a better understanding of its material culture, from which, a sense of appreciation could develop (Section 5.2.4). Therefore, these promotional activities, rebranding and marketing should be done through a creative collaboration between brassware craft producers and supporters (Section 2.4.5; Section 5.2.4.5). Previous promotional campaign materials did not raise awareness, especially among the younger population (Section 5.3.1.4).

Entrepreneurs should embrace new forms of marketing brassware craft products through **internet marketing, electronic media, mass media and social media**. Entrepreneurs should also be more proactive in exploring new forms of marketing strategies to improve their product design standard, with a priority being placed on



proper market research. In addition, entrepreneurs should formulate strategies to expand their market reach to hospitality, tourism and other related sectors before pursuing other market sectors.

#### **6.4.4 The need for greater knowledge and education to raise awareness on the importance of brassware craft values and meaning.**

The other issues that are hindering Terengganu brassware craft sector's growth are in the context of knowledge and education (section 5.2.2.5; section 5.3.2.4). The research findings related to this can be summarised as follows:

- Knowledge in regard to brassware craft making and its production (Section 5.2.2.1).
- Knowledge in selling activities (Section 5.2.3.3; Section 5.3.1.6) as well as promotion and marketing (Section 5.2.3.2; Section 5.3.1.3).
- Knowledge and understanding of brassware craft values and meaning (Section 5.2.2.5).

However, most of the issues discussed in regard to this theme are:

- Limitations in traditional brassware craft knowledge (Section 5.3.1.2).
- Knowledge transfer of brassware craftsmanship to the younger generation or new apprentices (Section 2.3.4; Section 5.2.2.1).
- Lack of knowledge and information in regard to brassware craft values and meaning, especially the intrinsic values (Section 5.2.2.5).

**The importance of education and knowledge transfer** is a significant factor in stimulating a strong sense of appreciation towards the value of material culture (Section 5.2.2.3; Section 5.2.4.3). **Therefore, education is vital in conveying the importance of brassware craft as part of traditional Malay material culture. Through education, contemporary society could understand the values of our local material culture, significance, processes, intrinsic meaning, and generally raising awareness.** P1 shares the importance of knowledge-seeking and exploration of the wider world in order to gain experience as well as to challenge oneself. *“The farther we travel the stronger sense of appreciation we could feel towards our nation’s identity, heritage and culture”*. There is a crucial need for brassware craft practitioners as well as the community to see the outside world and step outside their comfort zone (S7; S11). Experiencing other cultures from other places around the world would give us insight and a sense of appreciation as well as a sense of belonging to our local culture and identity (S5; S10; S12).

Many countries such as the United Kingdom, France, Norway, Italy, South Korea and India have taken many practical actions to preserve their material culture, including heritage buildings, arts, crafts and practices, and planning for revitalisation and restoration to safeguard their cultural assets (Section 2.2.5.3; Section 2.3.9). However, the people in Terengganu do not understand the cultural significance of brassware as one of the traditional heritage crafts that has a great potential to contribute towards the state’s economic and socio-cultural growth and development (Section 5.2.2.5). Regarding knowledge transfer, some craftspeople only accept the skills and knowledge from their predecessor (father, grandfather etc.), and then apply it. They haven’t got any input from philosophical stories or meanings, which could be the reason they have

no knowledge of values, meaning and philosophical matters. Therefore, brings out the critical issue of craft and sustaining craft.

### **6.5 Collaborative practice approach as sustainable practice**

This section addressed research question 3) *How can design contribute to revitalising culturally significant design, products and practices of the brassware craft industry in Terengganu, Malaysia?*

Co-practice has long been carried out within brassware craft industry in Terengganu since early of 18<sup>th</sup> Century between artisans, designer and supporter (Section 2.3.6; Section 5.3.3). However, from the initial finding from the analysis that had been done, it raised an unanswered question about the effectiveness of previous craft-design co-practice effort within brassware craft communities today. The outcome was not as good as it supposed to be and the brassware craft sector has not changed much compared to other craft sector (Section 5.3.1.4.3).

Co-practice efforts could be one of the useful options to make a radical change within brassware creative communities as every individuals and organisation have their own niche, core business, speciality (section 2.4.5; section 5.2.4.5). Collaboration could provide wider opportunities to all parties to engage in learning and exchange tacit knowledge, perspectives and insights (Tung, 2012, p. 82; Busch et al., 2014, p. 387). Through collaboration and networking, it is evident that local craft enterprise could make a change with the help and support by other parties (section 5.3.1.3). The change

not only directed towards the local market only but also widen the opportunity towards the global.

Design practice in the creative craft industry in Malaysia has witnessed a change in the last decade (Section 5.2.4.5). Various collaborative attempts by multiple organisations such as design schools, scholars, individuals, government and non-government agencies have integrated the design process amongst the grassroots by working closely with the craft makers (Section 2.6.4; Section 5.3.1.1.2; Section 5.3.1.2.2; Section 5.3.1.4)

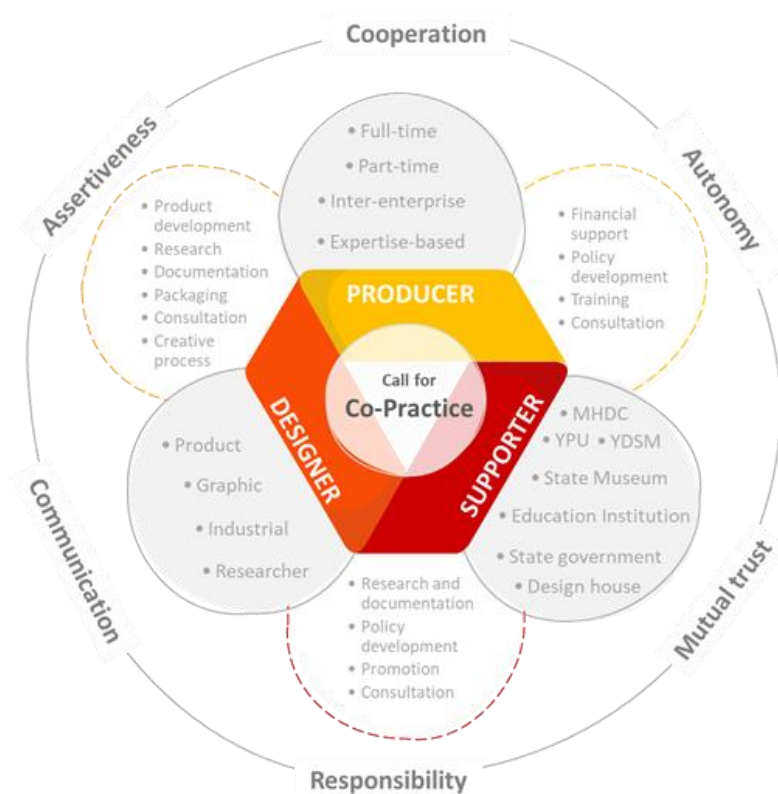


Figure 6.5: Terengganu brassware co-practice model and its element

Co-practice brings together innovative academics, industrial experts, policymakers and craft producers to identify the potential solution in revitalising the culturally significant brassware craft design and practices in Terengganu, Malaysia. Co-practice approach involves micro and macro entities.

- **Macro co-practice** comprises the co-practice effort between clusters (producer, supporter, designer).
- **Micro co-practice** comprises the co-practice approach between single cluster, for instance, the co-practice between craft producers within the brassware community.

Collaboration elements must comprise cooperation, assertiveness, autonomy, responsibility, communication, coordination and mutual trust are the main ingredients which are very important for each party to achieve a better outcome (see figure 6.5). This collaborative practice is implemented in identifying and researching the development of new potential design strategies comprising;

- the knowledge-transfer process to convey information regarding brassware craft values and meaning (Section 6.4.1).
- enhance production capacity, product design, and process quality, marketing and promotion as well as revitalising the industry (Section 6.4.3; Section 6.4.4).

Everyone has a part to play in preserving the traditional material culture of a country or a region, along with its associated practices. It should not be left to the authorities alone; it needs collaborative efforts by a variety of stakeholders as well as the general public.

An associated point is that various authors (section 2.4.4; section 2.4.5) discuss craft-design revitalisation all over the world; through effective collaborations, co-design could be an important factor in the revitalisation of brassware crafts in Terengganu.

## **6.6 Brassware craft design intervention framework and the role of designer**

This section addressed research question 3) *How can design contribute to revitalising culturally significant design, products and practices of the brassware craft industry in Terengganu, Malaysia?* From the findings, it was clear that design can potentially, contribute much to the revitalisation of brassware crafts in the Malaysian context (Section 6.4.5).

Design has been identified as having the potential to make radical changes; for value creation; knowledge exchange; and changes in the interaction among stakeholders; as well as to bridge the gap between the traditional production and the changing of the market (Section 2.6.4). Design also has the potential to revitalise traditional craftsmanship through activities involved in the field of manufacturing (product optimisation, process efficiency, collaborative design) and commercialisation of goods (Section 5.2.4.5).

The empirical findings in this research reveal that the role of design is not limited to creating and inventing a tangible product or service but can also contribute significantly towards identifying potential directions for ensuring the future of brassware craft producers through exploring “the values and meaning of brassware craft”, in relation to the contemporary society especially the younger generation.

### 6.6.1 Brassware Craft Design Intervention Framework

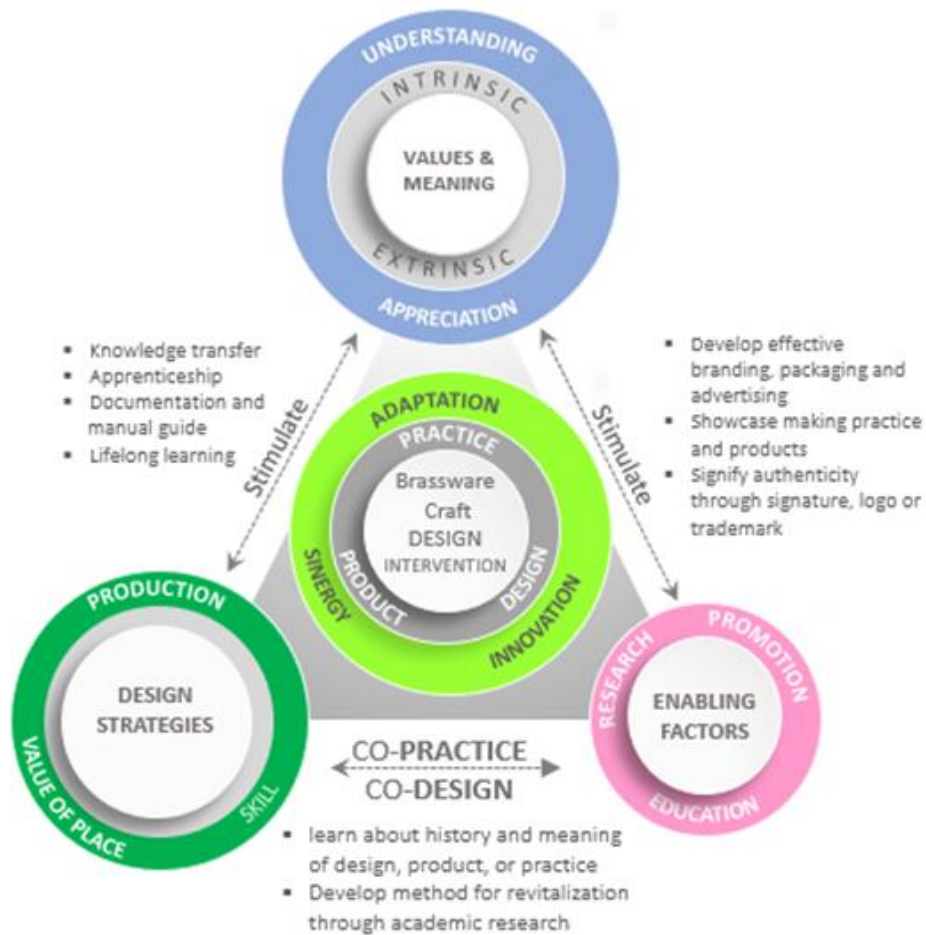


Figure 6.6: Brassware craft design intervention framework

The design framework is structured based on the findings (literature reviews, semi-structured interview and case studies) to gain support from policymakers and to convey knowledge in order to stimulate understanding as well as appreciation towards brassware craft as part of our local material culture (see Figure 6.6).

### **6.6.2 The role of designer**

The role of the designer in this research is to sustain brassware crafts in ways that are relevant to a contemporary culture especially in Terengganu. Designers can contribute in the revitalisation of local craft industries by bridging the gap between tradition and modernity, thereby assisting in meeting the needs of contemporary society (Craft Revival Trust, 2005, pp. 92–106). Previous efforts have addressed a number of possible strategies for revitalisation in the context of knowledge transfer and skill development (Section 2.4.4; Section 5.3.1.1.1; Section 5.3.1.4.1). However, in the context of brassware craft in Terengganu, they are still not succeeding due to the poor execution of programme planning due to lack of effective collaboration between involved organisations and craft producers (Section 5.3.1.4.3) as well as lack of understanding and appreciation towards local material culture and its values (Section 5.2.2.6). Therefore, the designer can contribute through education and knowledge transfer especially regarding design knowledge and skills, to convey the information of brassware craft values, knowledge and wisdom, practice and significance for the wider Malaysian population (Section 6.2).



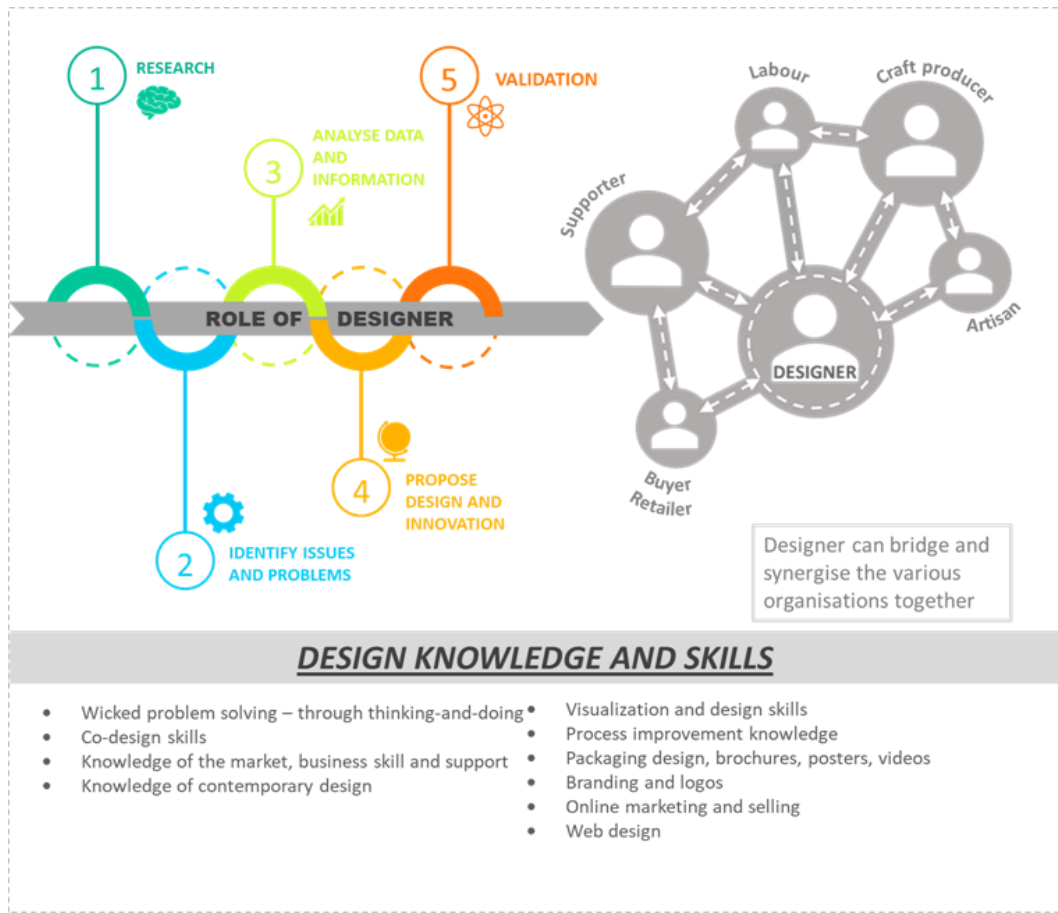


Figure 6.7: The role of designer

The designer contributes to local brassware producers by sharing and offering a design idea (concept, design features, design inspiration, design influence) that meets the demand of contemporary society, as well as consulting, monitoring or even producing a creative idea and concept (Section 5.2.4.3; Section 5.2.4.5). Meanwhile, craft maker is responsible for translating and realising the design ideation suggested by the designer using all the skills, knowledge and imagination, together with the use of tools, equipment and materials needed. They work collaboratively via a two-way communication until the product is fully completed.

Design can boost profitability of brassware craft sector in a number of areas, including visual information, designed products and advertising as well as branding identity. Designer will equip artisan with design knowledge and skills considering that designers are a part of craft community.

Potentially, it is the designer who can bridge and synergise the various organisations together in revitalising brassware craft heritage through effective design strategies and creative collaboration practice to achieve craft design, product and practice sustainability. Numerous safeguarding mechanisms have been implemented in other countries that can be adapted for the local craft scene (Section 2.3.10; Section 2.4.4). The process of safeguarding can also be adapted for Malaysia, including identification, documentation, research, preservation, protection, promotion, enhancement, and transmission through education that has been supported by organisations such as UNESCO(2003,p.3) (Section 2.4.5).

## 6.7 Design Strategies for revitalisation

This section addressed research question 3) *How can design contribute to revitalising culturally significant design, products and practices of the brassware craft industry in Terengganu, Malaysia?*

### 6.7.1 Strategy 1: Rebuilding the brassware creative ecology of *Kampung Ladang*, Kuala Terengganu

The strategy developed and proposed from the findings of this research aims to present and promote a creative ecology of *Kampung Ladang*, Kuala Terengganu as the hub of brassware craftsmanship. Traditional craft such as brassware is often defined by the history, aesthetic quality, identity and socio-cultural meanings associated with a particular place. For example, the epicentre of the Terengganu traditional brassware craft is known to be based in *Kampung Ladang*, Kuala Terengganu. *Kampung Ladang* portrays a wide range of values:

- **Cultural and heritage values** through the richness of its traditional craft-making practice (section 5.3.1.1; section 5.3.2; section 5.3.3).
- **Economic value** through craft business and trading activities (section 5.3.1.3).
- **Social value** through the way of life of the local community and their social-connectedness within a craft creative ecology (section 5.3.1.2.2).
- **Personal and sentimental values** of the people associated with the place, histories and localities (section 5.3.1.2.1; section 5.3.2.4).

The term 'creative ecology' is fitting for *Kampung Ladang* located in the district of Kuala Terengganu. An ecology concerns relationships, interdependencies and interactions. The term 'creative ecology' is used here to refer to the interrelationships between people, practices, products, place, process, and personal values and beliefs.

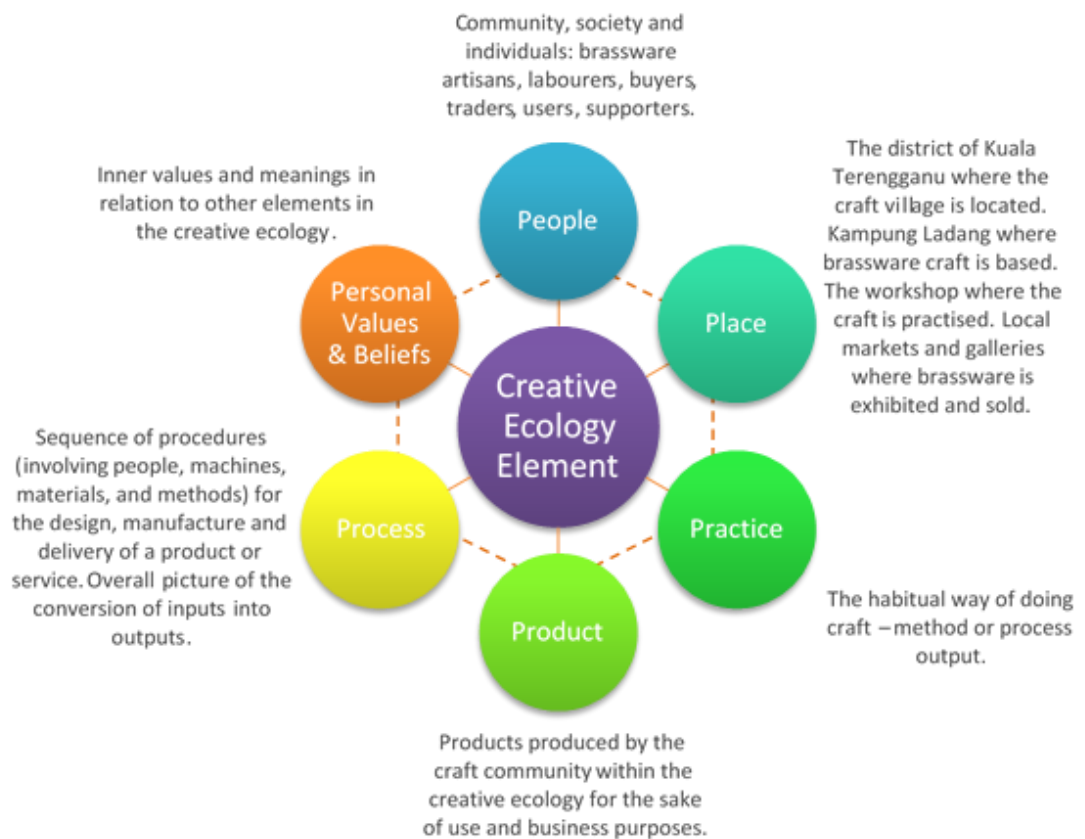


Figure 6.8: 6Ps of Creative ecology elements



Figure 6.9: Proposed brassware craft hub in *Kampung Ladang*

- The brassware craft hub features craft product showcases, craft-learning area, mini library, seminar room, cafes that provide traditional cuisine cooked with brassware products.



Figure 6.10: Documentation for brassware craft revitalisation program

The designer contributes via documentation and publication which incorporate written and visual/photographic information on the values of brassware crafts, revitalisation plan, as well as its cultural identity and historical context. The vision of a creative ecology for Kuala Terengganu and rebuilding *Kampung Ladang* as a brassware hub can be achieved through the collaborative efforts of brassware producers, supporters and buyers (Section 6.4.5). Moreover, the majority of stakeholders interviewed during this research agreed that collaboration is necessary for tackling the issues and revitalising the brassware craft sector (Section 5.2.2, Section 5.2.4.5).

The value of place for traditional brassware craft needs to expand beyond the local craft community. The public need to be informed of the significance of the craft's origin. The commercial value of craft can be increased with more promotion of the place. *Kampung Ladang*, for example, has become popular because of its craft, which has spawned other business such as in the tourism industry. The local people who live among the craft community also value the local craft business highly. This symbiotic relationship associated with place can be utilised as a craft revitalisation strategy

### **6.7.2 Strategy 2: Developing programmes for transferring knowledge and skills**

Among handcraft producers, knowledge transfer and development are required. The issue of knowledge transfer in traditional production, particularly from senior artisans to younger practitioners, is addressed (Section 5.2.2.1). Marketing, production technology, product design and development, supply chain, and distribution are all areas where artisans may enhance their skills (Section 5.2.4). Brassware producers in Terengganu through the help of designer are working on ways to enhance their creativity by exploring a variety of designs to appeal to consumers in the contemporary market and which, it is hoped, will help to increase sales, as part of their potential design strategy for brassware craft revitalisation.

The continuation of traditional material cultures, their products, designs and making practices is important for local identity and visual culture. Such continuation requires efforts to be made to train a skilled and knowledgeable workforce of craft makers, which is traditionally done through an apprenticeship programme in which a young person works alongside and learns from an experienced craftsperson.

To overcome these shortcomings, recommendations that emerge from the findings of this present research are as follows:

- **New platform and strategies** - the government through designated agencies are encouraged to produce a new platform and strategies to attract new generation craftspeople. Opportunities should be opened up for young people as they will be the ones to continue this heritage industry (Section 5.2.4.3).
- **Funding and promotion** - Apprenticeship and training programmes with suitable funding, promotion, and which convey the value and knowledge of cultural

importance could be a workable solution to attract the younger generation to this industry (Section 5.2.4.4).

- **Syllabus** - The syllabus for teaching brassware craft should be updated to bring it in line with current trends, practices and other considerations and limitations. Course content should not only emphasise manufacturing knowledge, but it should be added with entrepreneurial and management knowledge (Section 5.2.4.5).
- **Collaboration** - The co-practice approach is considered one of the best approaches to increase the effectiveness of apprenticeship programmes (Section 6.5).

Skills are developed through organised courses or workshops to assist brassware craft makers in developing their knowledge and awareness of business or enterprise practises, as well as knowledge and abilities in marketing, creating items for specialised markets, company management and other related areas. This potential strategy overlaps with Research & Education and Sustain Through Design and the skills being developed here support artisans to employ those strategies themselves.



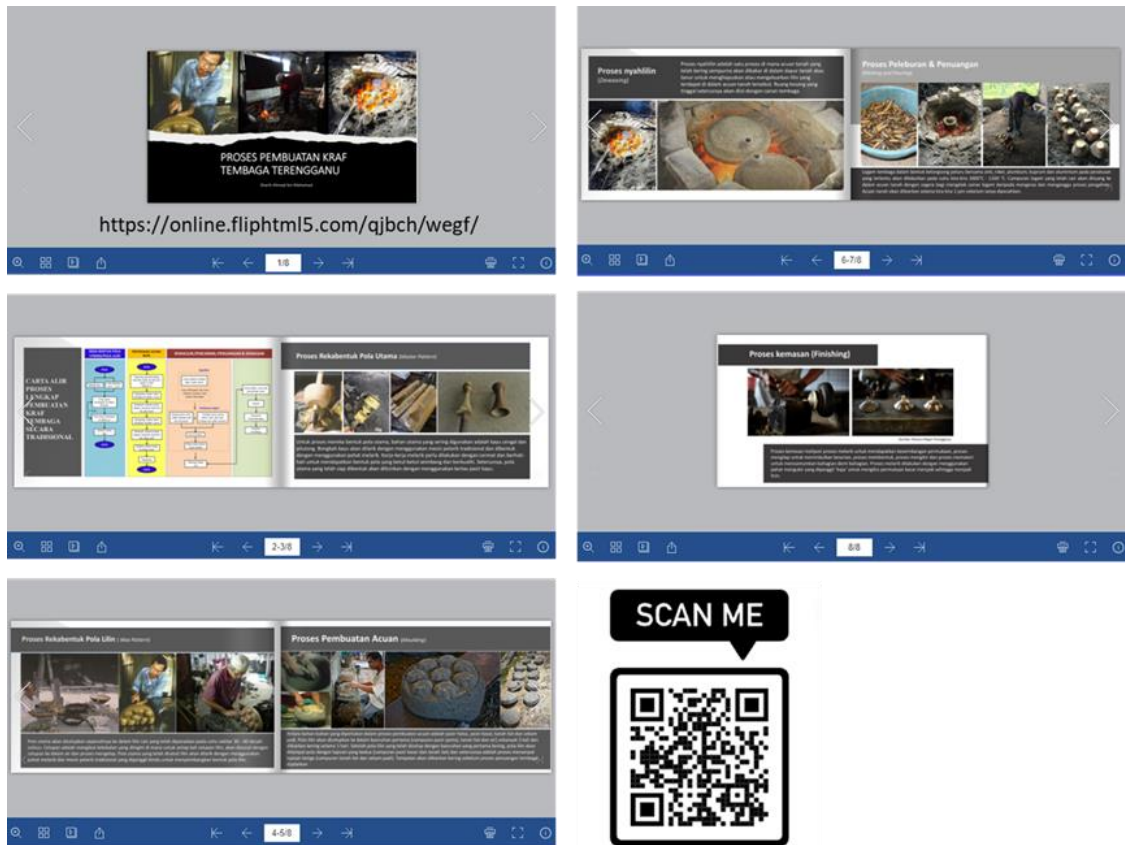


Figure 6.11: Using technology through e-book for education and knowledge transfer especially to the younger generation for easy accessibility.

### 6.7.3 Strategy 3: Enhancing brassware craft production

Section 6.4.1 and 6.4.2 discussed the needs for a paradigm shift in brassware craft design, innovation and a willingness to embrace the positive aspects of technology that could be employed by the brassware craft community to enhance craft production. This research recommends a number of options to enhance the making of brassware craft products.

**1. Strategy approach: Speed up the making process by simplifying the product or process** - simple patterns could be effectively used that would retain some of the traditional aesthetic but would be simpler and quick to make.

- **Pros:** The process could be made more time efficient and cost effective. A simpler, less ornamental aesthetic would better suit modern tastes and could, therefore, help boost sales.
- **Cons:** loses some of the visual complexity of the originals, and some of the skills, which make the craft what it is.
- **Suggestion:** The use of templates could be used to produce some but not all brassware products. This would enable different quality products to be made, at different price points, thereby offering most affordable products to those who are unable to afford the more traditional, but more expensive brassware.

**2. Strategy approach: Change the process with modern techniques and retain traditional product design** - using new modern techniques to simplify the product and make it less intricate and retain the traditional elements of product design.

- **Pros:** process made more time efficient; product can be produced in batches; intricate design can be made easier.

- **Cons:** loses some aesthetic values and some of the skills, which make the craft what it is.
- **Suggestion 1:** Using plaster of Paris as a mould material for wax pattern making. The mould is reusable, therefore it could speed-up the process.



Figure 6.12: Plaster mould for wax pattern of *keris* (Malay dagger) and its end product

- **Suggestion 2:** Technological advancement such as Computer-Aided Design (CAD) software and rapid prototyping could also help in the process of master pattern making.

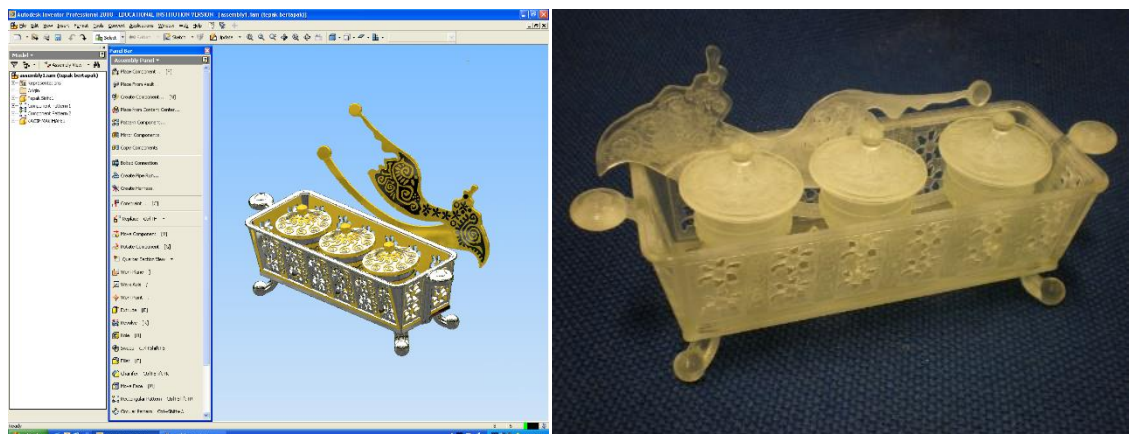


Figure 6.13: *Tepak sirih* prototype made using rapid prototyping technology

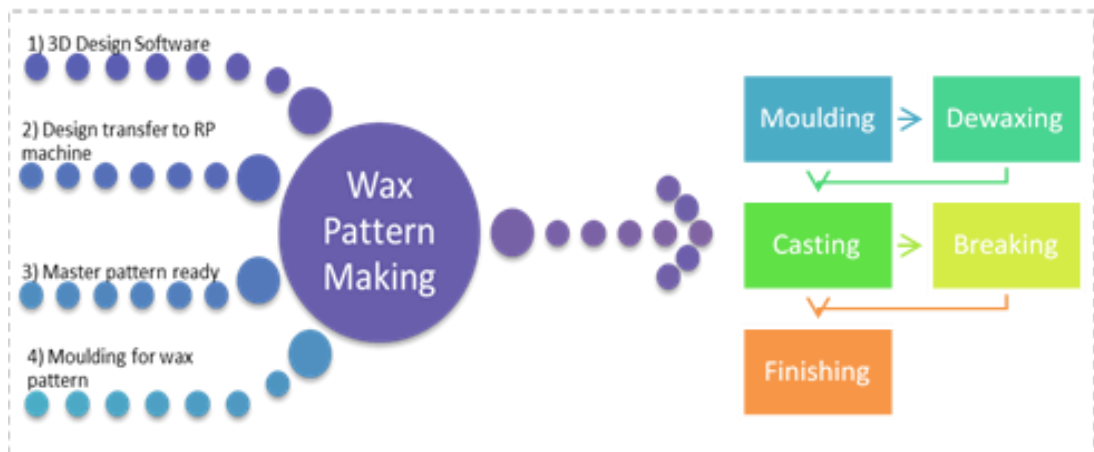


Figure 6.14: The application of rapid prototyping technology in wax pattern

These are realistic options for keeping the tradition relevant. The practice changes, the product changes. It retains some aspect of the traditional, social and cultural significance of brassware, such as shape, pattern and motifs, but it is updated, less expensive, more efficient, more affordable, aesthetically better suited to modern tastes, and more usable. The important thing is to understand and identify what really matters and what perhaps isn't so important. It is also important to bear in mind that change will be necessary if the brassware craft industry is to remain relevant and stay economically viable.

#### **6.7.4 Strategy 4: Develop effective promotion by improving product packaging, branding and advertising**

Section 6.4.3 considered marketing, promotion and its associate elements as one of the powerful elements towards revitalisation. Currently, the marketing and promotion of brassware products has not been very effectively managed or coordinated – it also imposes costs and burden on local brassware enterprises (Section 5.3.2.3). Moreover, the brassware producers are unable to conduct market research and analysis. Therefore, they need support from craft organisations and local authorities by joining marketing and promotion programmes such as craft festivals and exhibitions (Section 5.2.4.3).



Figure 6.15: Brassware products display during National Craft Day 2018 exhibition (photo courtesy of S5)

Exhibitions also provide an opportunity for brassware craft producers to network with other producers and identify the latest trends. Catalogues showing different product designs and styles can be distributed to retailers, allowing them to select what they want.

Product packaging plays a vital role in positioning the product as well as the company to raise the perceived values of potential buyers. Therefore, providing proper packaging that ensures aesthetic quality and value for money could potentially increase customers' satisfaction. Furthermore, by improving the packaging, it could increase and stimulate the interest of the potential buyer, either locally or globally, to buy local brassware craft.



Figure 6.16: Proposal for updating brassware craft packaging



Figure 6.17: Example of design intervention— traditional brassware pot upgraded with glass lid as well as packaging box.

**In-flight magazine** - one successful effort has been the **co-practice** projects of a few organisations working **collaboratively** with non-governmental organisations and other multi-national companies in Malaysia. IKMAS UKM, with participant S18 as a director, has connected the local brassware community with AirAsia Airlines to promote brassware craft industry through features and advertisements in in-flight magazines. Professional photographers and videographers were hired to record the process of brassware making in order to document this local tradition and knowledge and circulate it among the wider society.



Figure 6.18: Example of design intervention - the story of brassware craft sector featured in Air Asia in-flight magazine.

### 6.7.5 Strategy 5: Brassware craft product updating through mixed material and external traditional design elements

For this strategy, the designer and craft maker work together to revitalise a brassware craft making practice by mashing up two types of Terengganu traditional craft which is traditional batik and brassware craft. This strategy invites the designer to create a new aesthetic for traditional making practices, while keeping within an established product type. Elements of traditional design may be included, but given a fresh 'look' to keep products up to date with customer preferences.

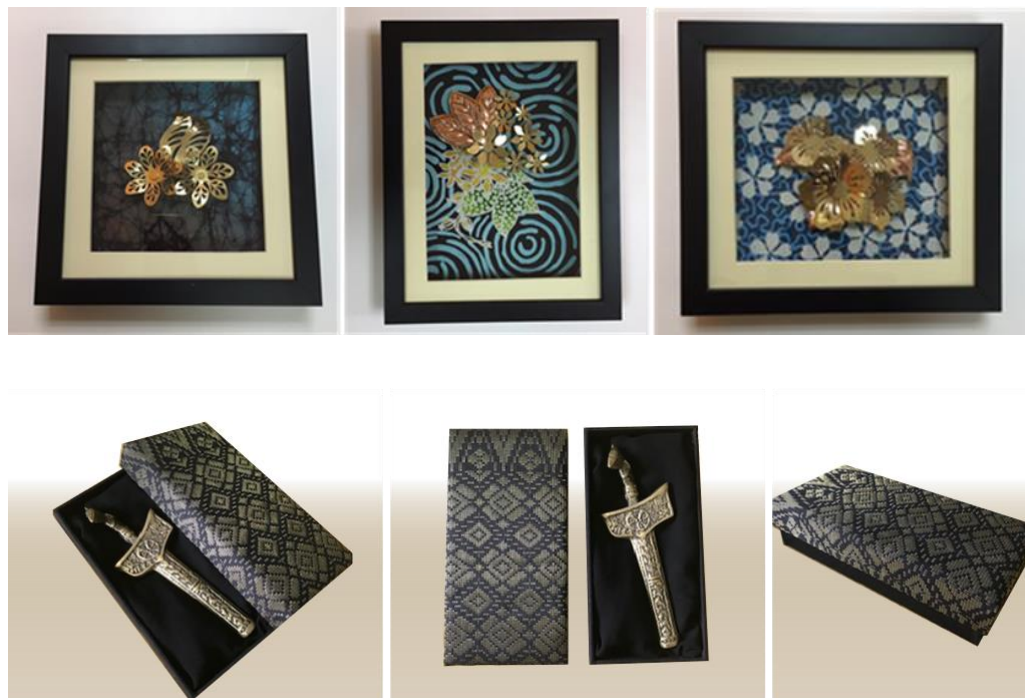


Figure 6.19: Brassware craft product updating through mash-up concept.

Brassware craft producers should match current trends in terms of product quality, styling and design, uniqueness and products that are exciting and attractive, since these product attributes could change over time. Producers need to **research** the different



kinds of products their targeted retailers carry and develop, and so design products that match the needs of these retailers. Such information can be used to improve the producer's marketing strategy.

Brassware craft producers could ensure that product designs remain relevant to the traditional, transitional and modern styles as required by craft retailers. The traditional designs are driven by age-old designs as well as by culture and traditions. Modern designs keep up with changes in the preferences and taste of craft buyers while transitional designs are a combination of traditional and modern.



**Figure 6.20:** Brass pot with wooden cover to add value

Traditional craft products are conventionally quite stable and changing slowly over time. Changing this to become trendy and changing regularly really loses some important aspects of craft. While this may be necessary for some of the products in order to stay viable as some of the more traditional designs, methods and products could also be retained. It's important to recognise this and get the right balance so that tradition doesn't disappear altogether, and with it the traditional craft practices, knowledge and skills.

### **6.7.6 Conclusion of the proposed design strategies for brassware craft revitalisation**

A strong case would have to be made to government for them to do this. Clearly, there is a cost to implementing and following all these recommendations. That would show why, potentially, that over time, the outlay would pay back dividends by; creating new employment opportunities for young people; help maintain cultural identity, which is important for people's sense of identity; create new opportunities for (post-Covid19) tourism – at the national and international levels; provide a viable, home-grown alternative to cheap, imported brassware; offer an opportunity to Malaysia to apply for UNESCO ICH recognition for its domestic brassware industry, thereby boosting recognition, raising its status and visibility in the country, and encouraging young people to enter the profession and see it as a worthwhile career alternative. Currently, Malaysia Brassware Crafts are not included on the UNESCO list – the Malaysian entries are mostly music and theatre (<https://ich.unesco.org/en/state/malaysia-MY>). Programmes such as the UNESCO Intangible Culture Heritage initiative help countries recognise the cultural significance of, and the need to safeguard, its traditional practices, and their often relationship to sustainability – especially local knowledge, social equity, good work, artistic and cultural sustainment etc.

### **6.8 Validation of the Proposed Potential Design Strategies**

A validation stage was conducted to test the appropriateness of the proposed design strategies for revitalizing the brassware craft sector. This was achieved via a series of validation interviews with *peer reviewers* (n=6: academics<sup>48</sup> in Malaysia); *expert*

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<sup>48</sup> S7; S8; S14; S17; S18; S20

*reviewers* (n=4: craft experts<sup>49</sup>); and *stakeholders*<sup>50</sup> (n=7) to check the accuracy and quality of information and findings as well as to draw out feedback and recommendations from selected informants and expert reviewers.

Face-to-face discussions were arranged by the researcher with reviewers in Malaysia, and some of the follow-up interviews were done by telephone, due to the distances involved. Visualisations of information (extracted from written information in the form of tables, charts and frameworks, as well as a conference paper) were used to discuss the research findings with the reviewers for their feedback and recommendations (see Appendix C).

Examples of feedback from the reviewers include:

- There is a significant change in the way local craftmakers make use of the technological advancements proposed (Section 5.3.2.3), especially in the context of marketing and promotion (P4; P6; S18; S19). Demand for brassware craft product is increasing, especially kitchenware and souvenirs (P1; P2; P4; P6).
- The role of the designer as a bridge connecting producers, supporters and buyers has made a significant difference in the way knowledge and information about brassware craft values are conveyed to stakeholders. The issues being faced by the brassware craft sector are beginning to be heard by the authorities and have been discussed during the Terengganu State Legislative Assembly (S19).

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<sup>49</sup> P1; P2; P4; P6

<sup>50</sup> S1; S6; S14; S18; S19; S20; S21

- The power of effective promotion and marketing that have been adapted through a co-practice approach (Section 6.3.3) are shown by the increasing number of visitors to the cultural and traditional programmes organised by agencies, ministry, state government etc., for instance, National Craft Day, Cultural Village, craft exhibitions etc. (S18; S20).

**Academic conference:** The paper entitled *“The impact of globalisation on the creative ecology of a heritage village : a case study from Malaysia”* (Mohamad & Walker, 2019), was submitted to the International Conference on Islamic Civilization and Technology Management for double-blind peer review, accepted for inclusion and was orally presented at the conference. The paper won the best paper award. The researcher discussed the findings with the reviewers and conference attendees to obtain their feedback and recommendations.

The researcher also participated in the Local Wisdom Seminar ‘Sustainable Heritage’, organised by Terengganu State Museum in 2018. There, the researcher met several Malay cultural experts and shared the research findings as presented in Section 5.2. Subsequently, the former director of Terengganu State Museum stated the significance of the brassware craft sector as one of the Terengganu’s local wisdoms, and the need for further actions towards revitalisation.

## 6.9 Summary of discussion

Summary of Findings	Literature review	Semi Structured Interview	Case studies
<b>VALUES AND THEIR ASSOCIATION WITH BRASSWARE COMMUNITY IN TERENGGANU</b>			
Values are one of the essential elements in preservation work since the understanding of the values could motivate change for a better lifestyle.			
Terengganu brassware craft Values can be grouped into two; <ul style="list-style-type: none"> <li>• <b>intrinsic values</b> (values that are inherently rewarding to pursue)</li> <li>• <b>extrinsic values</b> (values that are centred on external approval or rewards)</li> </ul>	2.2.5		
<b>Element of intrinsic values</b> comprises – connectedness; affiliation to friends and family; affiliation to the employer; connection with nature; compassion and concern for others; self-acceptance; social justice; and creativity.	2.3.7		5.3.1
<b>Element of extrinsic values</b> comprises - wealth; concern about image; social status; prestige; material success; authority; and social power.	2.3.8	5.2.2.5	5.3.2
	2.4.2		5.3.3
	2.4.3		
<b>BRASSWARE HANDICRAFT PRODUCTION IN TERENGGANU IS COMPATIBLE WITH SUSTAINABILITY, ESPECIALLY WITH ALL ELEMENTS OF WALKER’S QUADRUPLE BOTTOM LINE (QBL) OF DESIGN FOR SUSTAINABILITY COMPRISING:</b>			
<ul style="list-style-type: none"> <li>• Practical Meaning with environmental responsibility</li> <li>• Social Meaning (social justice, equity)</li> <li>• Personal Meaning (inner values, spirituality)</li> <li>• Economic Means</li> </ul>	2.4.1		5.3.1
	2.4.2		5.3.2
	2.4.3		5.3.3
The values of revitalising the brassware craft as a culturally significant craft practice are: <ul style="list-style-type: none"> <li>• it indicates our Terengganu Malay cultural identity;</li> <li>• it stimulates a sense of belonging and appreciation towards traditional local material culture.</li> </ul> Therefore, from an understanding of it, the brassware craft profile could be raised locally and to outsiders as an important source that can benefit the craft community by securing an income generation.			

Summary of Findings	Literature review	Semi Structured Interview	Case studies
<b>POTENTIAL DESIGN STRATEGIES - THE RELATIONSHIP BETWEEN BRASSWARE HANDICRAFT, DESIGN AND SUSTAINABILITY.</b>			
Adaptation of various design intervention strategies into local brassware community	2.4.4 – 2.4.7	5.2.2.4 5.2.4.3	5.3.1.3.2 5.3.1.4.1
<b>Design through education and knowledge transfer</b> can make a contribution and play a significant role in safeguarding and ensuring the revitalisation of brassware craft sector especially regarding; brassware craft values, knowledge, wisdom, and practice, and their significance with the wide Malaysia population	2.2.4 2.4.5 2.4.6	5.2.4	5.3.1.4.2 5.3.3
<p><b>Attention should be paid to;</b></p> <ul style="list-style-type: none"> <li>• Widening the scope and context of apprenticeship programmes.</li> <li>• Re-building the creative ecology of Kampung Ladang.</li> <li>• Proposing a practical holistic syllabus that collaboratively involves other organisations.</li> <li>• Improvising knowledge-transfer practice.</li> <li>• Proposing activities to stimulate awareness and a sense of appreciation in society especially the younger generation.</li> <li>• Brassware producers should be trained in business management and planning as well as branding and market trends in order to support the development of this sector.</li> </ul>			
<b>Co-design practice</b> to support artisans, supporters and policy makers could be among the practical approaches to bridging the gap between stakeholders.	2.4.4 2.4.5 2.4.6	5.2.4.5	5.3.2.4 5.3.1.4.1 5.3.1.4.2

## **CHAPTER 7: CONCLUSION AND ORIGINAL CONTRIBUTION TO KNOWLEDGE**

### **7.1 Introduction**

This chapter aims to provide conclusions to the body of research contained within this thesis. First, it presents an overview of the recap of research question, research objectives and findings (section 7.2) and followed by the claim of contribution to knowledge and potential beneficiaries (section 7.3). Second, it discusses overall limitations and strength of the (section 7.4). Third, it presents an agenda for further research that has emerged from this investigation (section 7.5). The chapter ends with concluding remarks regarding the body of research contained within this thesis (section 7.6).

This study has examined the values associated with brassware handicraft in Terengganu, Malaysia, and has considered the potential of design in making this traditional heritage craft relevant to the needs and demands of contemporary society. In addition, it has investigated the potential role of design and design strategies in helping to revitalise this culturally important craft.

## 7.2 Conclusion

The study began with a general review of the literature related to craft/handicraft (Section 2.2); brassware as one of Malaysia's handicrafts (Section 2.3) and craft in relation to the principles of sustainability (Section 2.4), and the initial key findings are presented as three themes below:

- The value of Terengganu brassware handicraft as material culture and its relationship to design and sustainability (Section 2.6.2).
- The identification of issues and gaps in brassware handicraft, design and sustainability (Section 2.6.3).
- The potential and opportunities of design (design for sustainability) in revitalising the culturally significant design, product and practices of brassware handicraft (Section 2.6.4).

These three themes enabled the researcher to achieve the research objectives (Section 1.3; Section 2.6.4) and the finds contribute to answering the main research question, ***how can brassware handicraft, as a culturally significant craft practice, be revitalised in Malaysia through effective design contributions that are in accord with principles of sustainability?***

Primary data acquisition was carried out through fieldwork in which the researcher conducted semi-structured interviews with thirty-seven informants comprises three clusters; producers (n=13), supporters (n=17) and buyers (n=7) (Section 4.3). The findings from these led to the second part of the field study, which took the form of three case studies (Section 4.4; Section 5.3). Key findings from semi-structured



interviews identified the status of brassware handicraft in Terengganu, which is very critical and in decline compared to other craft sectors (Section 5.2.1); factors related to its decline in recent times (Section 5.2.2; Section 5.2.3); and perceptions of brassware craft communities in Terengganu in understanding craft's potential in relation to design for sustainability (Section 5.2.3.5).

This study concentrates on stressing the critical issues being faced by the brassware craft sector in Terengganu (Section 5.2.1; Section 5.2.2). It discusses the customs and ceremonies involved in the Malay way of life; the process, design and functions of brassware craft in the lives of the Malay people (Section 5.3.1). In the context of the design process, the research concentrates on the ornamentation of brassware craft products, the motifs used in exhibiting aesthetic balance and harmony which appears to be of critical importance in Malay culture (Section 5.2.2.5; Section 5.3.2.4). The decoration on brassware craft items is indicative of its function and fundamental to its aesthetic (Section 5.3.1.2.3). This research also develops the point that, in studying traditional brassware craft, it is essential not just to examine its physical structure but also to appreciate the way it is made and why (Section 5.3.3). It will help readers understand and appreciate the practical, symbolic and aesthetic dimensions of the craft, and the way the making practice is interrelated with other elements of Malay culture and life (Section 6.2).

Regarding brassware craft values and meaning, the researcher has taken into account three main components as guidelines during the fieldwork stages (Section 4.4; Section 5.3); 1) the values of craft makers and their understandings of the meanings and

significance of brassware; 2) the relationship of the values and meanings associated with brassware craft to product, design and practice; 3) the implications of these various values and meanings for design contributions and the development of appropriate design strategies for the future sustainability of brassware crafts.

The thematic analysis that has been done from the textual data transcription, field notes, photographs and videos gathered from both semi-structured interviews (Section 4.3.2) and case studies (Section 4.4.2) reveals that brassware craft has many associated intrinsic and extrinsic values and meanings (Section 6.2). Five attributes were extracted: place (Section 2.3.1; Section 5.3.1.1; Section 5.3.1.2.3); local-cultural and tradition (Section 2.3.7; Section 5.3.1.2.1); philosophical and spiritual (Section 5.3.2.4; Section 5.3.3); social (Section 5.3.1.2.1); economic (Section 2.2.5.3; Section 2.3.5; Section 5.3.1.3)

From a design perspective, one of the more significant findings is the potential design has for contributing to the revitalisation of culturally significant products, designs and practices in the brassware craft industry in Terengganu. This was discussed in sections 6.4 and section 6.5 through several design intervention approaches conducted collaboratively with producers and supporters. Through such design interventions, designers have played a significant role in bridging the gap between producers, supporters and buyers. In addition, new opportunities have been proposed through effective design strategies (Section 6.7). The role of the designer is to assist the local brassware enterprise in being more creative, innovative and competitive in promoting the 'Made-In-Malaysia' brand as one of excellence, reliability, and trustworthiness.

- To formulate and put into action a marketing strategy for product promotion and market research for commercialisation (Section 6.7.1; Section 6.7.4).
- To support authorities in organising training programmes to improve producers' knowledge and skills (Section 6.7.2).
- To promote, assist and develop brassware producers in the making of products (Section 6.7.3; Section 6.7.5).

The active participation of government agencies, private sector, non-governmental organisations (NGOs) and people in culture-, arts- and heritage-related activities and programmes through co-practice approaches is highly encouraged by the brassware craft community. Discussion of the previous literature (Section 2.6.2) and discussion of findings of both semi-structured interviews and case studies (Section 6.5) have demonstrated the importance of education of craft makers, stakeholders and general publics as well as knowledge transfer from craftmakers to stakeholder and vice versa to understanding the relationship between; a) the values held by craftmakers and other stakeholders and b) sustainable principles in order to develop new, positive directions for the future of brassware crafts in the region.

For instance, brassware craft could be explored in terms of; 1) the process of making objects that are associated with the ways of life local communities; 2) skills development, imagination and creativity, the ability to express original ideas, process information based on resources and personal meaning. Design can help to enable brassware producers to adopt a more entrepreneurial approach for example, in product

design and development in relation to marketing and sales, which could provide employment and income.

The research findings contribute to developing, promoting and globalising the brassware craft industry. Through the synergy of multiple forms of expertise, creative and innovative products could be achieved and reach an acceptable international standard. Appreciation of brassware craft as one of Terengganu's local heritage traditions will be enhanced as part of a broader nation-building agenda. Government initiatives such as funding, skill upgrades, entrepreneurship infrastructure development, business development, promotion and marketing are currently being developed to help brassware producers.

It has become necessary to cultivate social awareness, especially among the younger generations, of the cultural significance of safeguarding the tangible and intangible cultural heritage to ensure sustainability. There is a need to cultivate increased social awareness of the traditions and cultural values of traditional brassware crafts, especially among younger generations (Section 5.2.4.3).

**The main research findings are summarised, as follows.**

- Brassware handicraft production in Terengganu is compatible with all the elements in Walker's Quadruple Bottom Line of Sustainability (personal meaning, social meaning, practical meaning and economic means).

- Designers can contribute through design for value creation, education and knowledge-transfer especially regarding brassware craft values, knowledge, wisdom, and practice, and their significance with the wide Malaysia population.
- In order to ensure the long-term viability of brassware handcraft communities and enterprises, there are five main areas of design for sustainability that need to be considered.: (i) product design and development, (ii) design for marketing and sales, (iii) production development, (iv) knowledge transfer and knowledge development, and (v) value of place.

### **7.3 Contributions to Knowledge and Potential Beneficiaries**

#### **7.3.1 Original Contributions to Knowledge**

This research provides original contributions to knowledge based on:

Thematic analysis identified twelve connected themes (Appendix C1) that should be highlighted to revitalise the brassware handcraft industry. It is hoped that the findings, which have been summarised in tables, would be useful as a reference and guide for stakeholders as they plan for the growth of brassware crafts. They will also aid in determining which areas of development should receive greater attention in the future.

The development of an original value typology for brassware craft based on the synthesized analysis of the key concepts of sustainability, value, and the characteristics of brassware craft also contribute to the knowledge (Section 6.2). Another contribution to knowledge is that the varied cultural significance of brassware craft has been publicised and acknowledged through the revitalisation of craft as part of Malaysia's traditional material culture.

This research provides detailed information about the creative ecology of traditional brassware craft making in Terengganu, Malaysia. It introduces the framework of the recommended design contributions to enable the future viability of brassware craft practices. Although it was developed based on the case studies of brassware craft community in Terengganu, the descriptors used in this framework are broad enough to go beyond the divisions of brassware craft techniques and communities.

This framework has potential for use in research conducted in other regions of Malaysia or other countries, where their craft contexts are similar. It demonstrates how the framework can be applied in the real- world setting and how design can make valid contributions to the cultural revitalisation of brassware craft practices.

These proposed potential design-oriented strategies will be a reference and guideline towards revitalising culturally significant brassware craft products, designs and practices in Terengganu, not only for brassware producers but also for the local community in general.

### 7.3.2 General contribution to knowledge

The findings of this study were validated by peer reviewers in a research article that was published in conference proceedings and presented at international design conferences in Malaysia (2019). The citation information is:

Mohamad, S. A., & Walker, S. (2019). *The impact of globalization on the creative ecology of a heritage village: a case study from Malaysia*. In S. Fahmy, S. H. S. Omar, N. Abdullah, & R. M. Mohamed (Eds.), *Proceedings of the International Conference on Islamic Civilization and Technology Management*. Research Institute for Islamic Product and Malay Civilization (INSPIRE) Universiti Sultan Zainal Abidin (UniSZA)

Following that, the proposed design-oriented strategies were subjected to a validation process. The involvement of experts in the validation process of design strategies is critical to the research's trustworthiness. These validations show that this study has helped to increase the amount of information about brassware craft and design for sustainability that is available from both international and local sources.

### **7.3.3 Contributions to Potential Beneficiaries**

The potential beneficiaries of this research include:

- Brassware artisans, pattern maker, handicraft communities and enterprises.
- Buyers, retailers, middle-men and merchandisers of brassware handicrafts.
- Designers, design researchers, educators, design students.
- Project managers, business owners.
- Policymakers, strategic planners.

These stakeholders will all benefits, especially if they are associated with educational and research institutions, government agencies, non-governmental organisations (NGOs), and enterprises. The impact upon the beneficiaries of the research is thus: design practitioners will be provided with a framework and documentation which will allow them to effectively explore culturally significant designs, products and practices, and how in turn these might be revitalised using contemporary technologies, processes and communication strategies.

Consumers will be provided with fresh and exciting designs, products and awareness of processes of cultural significance; commerce and industry will benefit from the development of commercially sustainable modes of engagement with culturally relevant designs, products and practice. Through the knowledge-transfer and training activities, it is hope that the beneficiaries of this effort would be able to produce and market handmade products which could compete successfully on the global market. The goal was to help them emerge from stagnant situations in terms of product development by giving them access to materials and networks, thus helping them increase their levels of



income. The training activities of this project enabled them to learn a creative skill and, in this way, contributed to their business development.

Involving the stakeholders more directly in the proposed design-oriented strategies for which they are the beneficiaries not only ensures project relevance and sustainability, but also ensures that the economic, social and cultural rights of the artisan are taken into consideration and their craft practices are protected.

#### **7.4 Limitations and Strengths of the Research**

Although this research has successfully demonstrated that design can contribute to the revitalisation of the brassware craft sector in Terengganu, it has certain limitations, in terms of **identification of sample and small sample size** especially within the producer and buyer clusters. As shown in Section 4.3.1, half the informants in the producer cluster are more than 60 years old. Therefore, health was one of the factors limiting the fieldwork. In addition, two producers withdrew due to health issues and one informant in the supporter cluster died.

As presented in Sections 2.3.4 and 5.2.2.2, commercial development in *Kampung Ladang* has resulted in the demolition of artisans' houses and workshops. Consequently, artisans were emotionally affected by the radical change within their community. It was quite a difficult time for the researcher to approach these artisans, and, following the demolition, most artisans moved away, and their new addresses were not recorded by the Craft Council. Therefore, the researcher had to try to trace them himself and this also affected the process of identifying the sample.

**Lack of publications** - there is a substantial body of scholarly work on the history of Malaysian Handicrafts; however, there is a comparatively significant lack of empirical data, literature and statistics about cultural heritage and craft, especially in the area of brassware craft. Although there has been great effort to collect and investigate craft research materials, it is mostly unwritten, and would have vanished over time. In the foreword to Sheppard (1986), written by the 2<sup>nd</sup> Malaysian Prime Minister, Tun Haji Abdul Razak bin Hussein, he welcomed the effort to produce more written publications and research on Malay decorative arts and cultural heritage.

**Restricted access to research data** - As this research is involved with local commercial craft organisations, access to commercial data was difficult. Statistics are one of the key components in assessing the vitality of crafts as cultural goods in order to form a better cultural policy and design-oriented strategy, and collecting pertinent data needs to become a top priority. Statistical data from local craft reports is needed to make a comparative study. However, those data were considered 'private and confidential' by the organisations and were not disclosed.

One of the strengths of this study is that it represents a **comprehensive examination of the whole process of brassware craft production**. This understanding allowed the researcher to become closer to the brassware craft community in Terengganu. The strengths of the study also include **the in-depth analysis of qualitative approach, where the researcher personally connected with the research scope and context**. Although the current study is based on a small sample of participants, the selection was done

accordingly and the fieldwork stages were done with a high rate of formal and informal follow-up interviews with the informants.

### **7.5 Recommendations for Further Research Work**

This research has yielded many questions that need further investigation in future research. It is recommended that further research in regards to the areas of 'Design and Innovation' and 'Process and Production' should be continued since these areas will continue to evolve in line with the changing technology.

Further research could also be undertaken in the area of 'Design and Spirituality'. The findings from Case Study 3 (Section 5.3.3) have opened up new opportunities to explore and investigate more in this area. More research is required to develop a deeper understanding of the relationship between brassware craft design and spirituality. Additionally, emerging issues related to both these areas could be further investigated across various groups of people at local and national levels, especially in the context of Malay practice.

Further research should be conducted to determine the effectiveness of the current strategies that have been adapted by the brassware enterprise. In order to ensure the success of this revitalisation effort and the design strategies implemented, the support and input from all stakeholders are essential. Survey research could be used to further validate the potential design strategies and design intervention framework among all stakeholders.

## 7.6 Concluding Remarks

Malay society, especially in Terengganu, has undergone enormous socio-cultural and economic changes, especially over the last five decades. The impact of globalisation has largely driven this change, in ways that are both positive and negative. The essence of the artistic and cultural life of the Malay people has survived the passage of time, and the more delicate features of this proud cultural heritage form a solid foundation for the evolution of national identity. In the 21<sup>st</sup> century, these cultural traditions are increasingly being reassessed and revitalised, as the richness of the values and meanings associated with locality and sense of community are recognised as having great potential to promote local identity and achieve social well-being. The brassware craft, which is a heritage craft, should be preserved and conserved. These two terms are interrelated and inseparable, *'like the bamboo and the riverbank,'* and *'like a rhythm with a song'*. Both are equally important in maintaining the nation's heritage and culture.

The findings of this investigation have important implications for future practice in sustaining the culturally significant products, designs and practices of brassware crafts. One implication of these findings is that the importance of values and meanings have started to be recognised and understood, and attempts to convey the traditional knowledge and wisdom associated with the craft have gained positive support from government as well as from local people.

The results of this research are expected to teach contemporary society about the importance of traditional cultural heritage values that highlight the cultural identity of the Malay community in Terengganu, where the knowledge and skills of this heritage

industry have been handed down from an ancestral legacy. The researcher wants contemporary societies to understand and experience the intrinsic and extrinsic values and philosophy that the earlier artisans tried to convey through the patterns, motifs, making practices, and use of materials in the craft production and application, as well as in traditional Malay social practices. If there is no action taken to preserve this traditional heritage, the brassware craft making practice is on the point of disappearing. Its value as a product, design and practice needs to be explained and broadcast to the local and global communities.

The brassware craft industry continues to exist because the entrepreneurs and artisans are determined to preserve this heritage, supported by a market demand that makes this business sustainable. Entrepreneurs and artisans need one another. Artisans should focus on what they do best, that is to produce the highest-quality products and leave the management and marketing matters to the entrepreneurs. It is essential for the tacit 'know-how', knowledge and wisdom, the human touch and experience of brassware artisans to be transferred and preserved as these have been developed over many generations. The impact of these efforts could potentially give the brassware community, and the broader society, a better understanding of the values of culturally significant brassware crafts, and could indirectly raise the profile of the brassware craft sector in Terengganu.

## REFERENCES

- Abd Wahab, N. (2016). Perkembangan Kegiatan Perusahaan Tembaga dalam Kalangan Masyarakat Melayu di Terengganu pada Abad ke-20. In A. Mohd Noor & A. H. Haris (Eds.), *Permata Budi - Karya Sumbangsih Sempena Persaraan Profesor Datin Paduka Datuk Dr. Ramlah Adam* (pp. 401–430). Kuala Lumpur: Penerbit Universiti Malaya.
- Abdullah, M. Y. (1993). Gendang Dong Son di Muzium Negeri Terengganu: Satu Catatan. *Jurnal Arkeologi Malaysia*, 6.
- Adams, W. M. (2006). The Future of Sustainability: Re-thinking Environment and Development in the Twenty-first Century. In *The World Conservation Union*. <https://doi.org/10.1007/1-4020-4908-0>
- Adamson, G. (2007). Thinking Through Craft. In *Journal of Design History* (Vol. 22). <https://doi.org/papers2://publication/uuid/1C62543C-1842-48D7-AB1F-C13C85C31B5F>
- Ahmad, M. N. (2000). *Siri kraf Tangan Tembaga*. Klang, Selangor Darul Ehsan: Pustaka Mawar.
- Awang, M. S., Abdullah, M. Y., Abu Bakar, M., & Ali, O. (1992). *Sejarah Darul Iman 1361H=1942M, Edisi Baru*. Persatuan Sejarah Malaysia Cawangan Terengganu Dengan Sokongan Kerajaan Negeri Terengganu Darul Iman.
- Awang, R. (1984). *Perusahaan Pembuatan Kecil, Kajian Kes Keatas Perusahaan Tembaga di Terengganu*. Universiti Kebangsaan Malaysia.
- Backman, M. (2016). Malay Brassware. Retrieved March 26, 2016, from <http://www.michaelbackmanltd.com> website: <http://www.michaelbackmanltd.com/EssayMalayBrassware.html>
- Banks, M. (2010). Craft labour and creative industries. *International Journal of Cultural Policy*, 16(3), 305–321. <https://doi.org/10.1080/10286630903055885>
- Barnwell, M. (2011). *Design, Creativity & Culture An Orientation To Design*. London, UK: Black Dog Publishing Limited and the author.
- Basole, A. (2014). *Authenticity , Innovation and the Geographical Indication in an Artisanal Industry : The Case of the Banarasi Sari*. Boston.
- Berg, B. L. (2009). *Qualitative Research Methods for the Social Sciences* (Seventh Ed). Pearson.

- Betjemann, P. (2008). Craft and the Limits of Skill: Handicrafts Revivalism and the Problem of Technique. *Journal of Design History*, 21(2), 183–193. <https://doi.org/10.1093/jdh/eqn011>
- Bhamra, T., & Lofthouse, V. (2007). *Design for Sustainability: A practical approach* (R. Cooper, Ed.). Gower Publishing Limited.
- Bhattacharya, S. (2011). Dhokra Art and Artists of Bikna: Problems and Prospects. Retrieved February 3, 2016, from Chitrolekha International Magazine on Art and Design website: <http://chitrolekha.com/dhokra-art-and-artists-of-bikna-problems-and-prospects/>
- Blackmore, E., Underhill, R., McQuikin, J., Leach, R., & Holmes, T. (2013). *Common Cause for Nature - A practical guide to values and frames in conservation*.
- British Museum. (2011). What is the role and value of crafts today? Retrieved March 29, 2016, from The British Museum website: <http://blog.britishmuseum.org/2011/08/17/what-is-the-role-and-value-of-crafts-today/#>
- Brown, J. (2014). *Making It Local : what does this mean in the context of contemporary craft?* London.
- Busch, O. Von, Holroyd, A. T., Keyte, J., Yin, S. C., Ginsburg, H., Earley, R., ... Hansson, H. (2014). In the Making : The “power to the people” workshop track at crafting the future. *The Design Journal*, 17(3). <https://doi.org/10.2752/175630614X13982745782966>
- Chapman, J., & Gant, N. (2007). *Designers, Visionaries + Other Stories, A Collection of Sustainable Design Essays*. Earthscan.
- Chatterjee, S. (2015). The Ancient Craft of Dhokra : A case study at Bikna and Dariapur in West Bengal. *International Research Journal of Interdisciplinary & Multidisciplinary Studies (IRJIMS)*, 1(IV), 19–23. Retrieved from <http://www.irjims.com>
- Cheah, H. F. (2013). Promoting craft in British Malaya, 1900-1940. *Journal of Modern Craft*, 6(2), 165–185. <https://doi.org/10.2752/174967813X13703633980812>
- Chin, Y.-W., & Lim, E.-S. (2018). SME Policies and Performance of in Malaysia. *ISEAS Yusof Ishak Institute*, (August), 470–487. <https://doi.org/10.1355/ae35-3i>
- Chudasri, D. (2015). *An Investigation into the Potential of Design for Sustainability in the Handicrafts of Northern Thailand*. Lancaster University.
- Chudasri, D., Walker, S., & Evans, M. (2012). An Overview of the Issues facing the Craft

- Industry and the Potential for Design , with a Case Study in Upper Northern Thailand. *DRS 2012 Bangkok*, 314–426. Bangkok: Chulalongkorn University.
- Chudasri, D., Walker, S., & Evans, M. (2020). Potential areas for design and its implementation to enable the future viability of weaving practices in northern Thailand. *International Journal of Design*, 14(1), 95–111.
- Clark, G., Kosoris, J., Hong, L. N., & Crul, M. (2009). Design for sustainability: Current trends in sustainable product design and development. *Sustainability*, 1(3), 409–424. <https://doi.org/10.3390/su1030409>
- Clark, R., & Estes, F. (1998). Technology or Craft: What are we doing? *Educational Technology*, 38(5), 5–11.
- Copper Development Association. (2013). *The copper advantage: A guide to working with copper and copper alloys*. Retrieved from [www.antimicrobialcopper.com](http://www.antimicrobialcopper.com)
- Copper Development Association Inc. (2017). Copper is the metal of civilization. Retrieved January 10, 2017, from Copper Development Association Inc. website: [www.copper.org](http://www.copper.org)
- Costin, C. L. (1998). Introduction: Craft and Social Identity. *Archaeological Papers of the American Anthropological Association*, 8(1), 3–16. <https://doi.org/10.1525/ap3a.1998.8.1.3>
- Cox, S. (2018). Revitalization by Design. In S. Walker, M. Evans, T. Cassidy, J. Jung, & A. T. Holroyd (Eds.), *Design Roots - Culturally Significant Designs, Products, and Practices* (pp. 177–187). Bloomsbury Publishing Plc.
- Craft Revival Trust. (2005). *Designers Meet Artisans: A Practical Guide* (R. Sethi, C. Duque Duque, & I. Vencatachellum, Eds.). New Delhi, India: Craft Revival Trust, Artesanfas de Colombia and UNESCO.
- Cultural Industries Growth Strategy (CIGS). (1998). The South African Craft Industry Report. In *Department of Arts, Culture, Science And Technology (DACST)*.
- Daskon, C., & Binns, T. (2009). Culture, tradition and sustainable rural livelihoods: Exploring the culture-development interface in Kandy, Sri Lanka. *Community Development Journal*, 45(4), 494–517. <https://doi.org/10.1093/cdj/bsp019>
- Data.gov.my. (2016). Malaysia Creative Industry Data.
- Davey, C. J. (2011). The early history of the lost-wax casting. *Metallurgy and Civilisation: Eurasia and Beyond Achetype*, 7(3), 227–238.
- Dessein, J., Soini, K., Fairclough, G., & Horlings, L. (2015). Culture in, for and as



- Sustainable Development. Conclusions from the COST Action IS1007 Investigating Cultural Sustainability. In *University of Jyväskylä*. Retrieved from <http://www.culturalsustainability.eu/>
- Dictionary.com. (2017). Sustainability: Define Sustainability at Dictionary.com. Retrieved January 10, 2017, from Dictionary.com website: <http://www.dictionary.com/browse/sustainability?s=t>
- Djalali, A., & Vollaard, P. (2008). The Complex History of Sustainability. In A. Oosterman (Ed.), *VOLUME 18*. Netherlands: Stichting Archis.
- Dodd, F., & Morgan, A. (2013). *Defining and measuring craft: a review for the Craft Council, Report one: definitions 1998 - 2012*. Retrieved from [http://www.craftscouncil.org.uk/content/files/13-06-13-defining\\_and\\_measuring.pdf](http://www.craftscouncil.org.uk/content/files/13-06-13-defining_and_measuring.pdf)
- Dormer, P. (1997). *The Culture of Craft*. Manchester University Press.
- Dorst, K. (2011). The core of “design thinking” and its application. *Design Studies*, 32(6), 521–532. <https://doi.org/10.1016/j.destud.2011.07.006>
- Drake, G. (2003). “This place gives me space”: Place and creativity in the creative industries. *Geoforum*, 34, 511–524. [https://doi.org/10.1016/S0016-7185\(03\)00029-0](https://doi.org/10.1016/S0016-7185(03)00029-0)
- Du Pisani, J. A. (2006). Sustainable development – historical roots of the concept. *Environmental Sciences*, 3(2), 83–96. <https://doi.org/10.1080/15693430600688831>
- Dudovskiy, J. (2018). *The Ultimate Guide to Writing a Dissertation in Business Studies: A Step-by-Step Assistance*. Retrieved from <https://research-methodology.net/downloads/e-book/>
- Elkington, J. (2018). 25 Years Ago I Coined the Phrase “Triple Bottom Line.” Here’s Why It’s Time to Rethink It. Retrieved December 13, 2018, from Harvard Business Review website: <https://hbr.org/2018/06/25-years-ago-i-coined-the-phrase-triple-bottom-line-heres-why-im-giving-up-on-it>
- Elliot, E. A. (2016). Craft consumption and consumer transformation in a transmodern era. *Journal of Business Research*, 69(1), 18–24. <https://doi.org/10.1016/j.jbusres.2015.07.016>
- Embong, A. R. (2012). Pendahuluan: Sejarah dan Masa Depan. In *Terengganu Merentasi Tiga Abad Kesultanan, Politik, Ekonomi, Agama dan Budaya*. Yayasan Diraja Sultan Mizan (YDSM).

- European Copper Institute. (2018). Curious About Copper. Retrieved May 20, 2017, from European Copper Institute website: <https://copperalliance.eu/resources/curious-about-copper/?download=please>
- Evans, M., Holroyd, A. T., Walker, S., Cassidy, T., & Jung, J. (2018). Strategies for Revitalization of Culturally Significant Design, Products, and Practices. In S. Walker, M. Evans, T. Cassidy, J. Jung, & A. T. Holroyd (Eds.), *Design Roots - Culturally Significant Designs, Products, and Practices* (pp. 341–359). Bloomsbury Publishing Plc.
- Evans, M., Walker, S., Jung, J., Darby, S., & Cassidy, T. (2017). *Design Routes: Revitalising Culturally Significant Designs, Products and Practices by Design*. Manchester School of Art, Manchester, UK.
- Farley, H. M., & Smith, Z. A. (2012). Sustainability : Guiding Principle or Broken Compass ? *Enviromental Practice*, 14(1), 85–86. <https://doi.org/10.1017/S1466046611000524>
- Fening, P. A. (2015). The State of Cottage Industries in Ghana : A Case of Cast Aluminium Pot Fabrication Industry. *Asian Journal of Humanities and Social Sciences (AJHSS)*, 3, 100–108.
- Ferraro, E., White, R., Cox, E., Bebbington, J., & Wilson, S. (2011). Craft and sustainable development: reflections on Scottish craft and pathways to sustainability. *Craft + Design Enquiry*, 3, 1–28. Retrieved from [www.craftaustralia.org.au/cde](http://www.craftaustralia.org.au/cde)
- Filho, E. R. (2015). Brazilian design for sustainability: In search of a local approach. *Journal of Cleaner Production*, 107, 467–474. <https://doi.org/10.1016/j.jclepro.2014.08.065>
- Fillis, I. (2012). An aesthetic understanding of the craft sector. *Creative Industries Journal*, 5(1–2), 23–41. <https://doi.org/10.1386/cij.5.1-2.23>
- Fletcher, K. (2012). Durability, Fashion, Sustainability: The Processes and Practices of Use. *Fashion Practice*, 4(2), 221–238. <https://doi.org/http://dx.doi.org/10.2752/175693812X13403765252389>
- Flew, T. (2014). Creative Industries - A New Pathway. *InterMEDIA*, 42(1), 11–13. Retrieved from [http://eprints.qut.edu.au/68631/1/Intermedia\\_CI\\_article\\_42\\_1\\_2014.pdf](http://eprints.qut.edu.au/68631/1/Intermedia_CI_article_42_1_2014.pdf)
- Frost, & Sullivan. (2005). *Market Feasibility Study and Business Development Plan for the Handicrafts Sector*.
- Gmelin, H., & Seuring, S. (2014). Determinants of a sustainable new product development. *Journal of Cleaner Production*, 69, 1–9.

<https://doi.org/10.1016/j.jclepro.2014.01.053>

- Haron, H., Yusof, N. A., Taha, M., & Mutalib, N. A. (2014). Motifs of Nature in Malay Traditional Craft. *Middle-East Journal of Scientific Research*, 21(1), 169–180. <https://doi.org/10.5829/idosi.mejsr.2014.21.01.21132>
- Harris, J. M. (2000). Basic Principles of Sustainable Development. *Life Support Systems*, (June), 26.
- Hernández Pardo, R. J. (2012). *Designing Sustainable Product Service Systems: a business framework for SME implementation*. Loughborough University.
- Hickey, G. (1997). Craft Within a Consumer Society. In *The Culture of Craft1*. Manchester University Press.
- Holroyd, A. T. (2018). Forging New Futures - Culturally Significance, Revitalization, and Authenticity. In S. Walker, M. Evans, T. Cassidy, J. Jung, & A. T. Holroyd (Eds.), *Design Roots - Culturally Significant Designs, Products, and Practices*. Bloomsbury Publishing Plc.
- Holroyd, A. T., Cassidy, T., Evans, M., Gifford, E., & Walker, S. (2015). Design for ‘ Domestication ’: the Decommmercialisation of Traditional Crafts. In Louise Valentine, B. B. de Mozota, J. Nelson, S. Merter, & P. Atkinson (Eds.), *11th European Academy of Design Conference*. Paris: Sheffield Hallam University, U.K.
- Hopwood, B., Mellor, M., & O’Brien, G. (2005). Sustainable development: Mapping different approaches. *Sustainable Development*, 13(1), 38–52. <https://doi.org/10.1002/sd.244>
- Hosagrahar, J., Soule, J., Girard, L. F., & Potts, A. (2016). Cultural Heritage , the UN Sustainable Development Goals , and the New Urban Agenda. *International Council on Monuments and Sites (ICOMOS)*, 1–18. Retrieved from <http://www.usicomos.org/wp-content/uploads/2016/05/Final-Concept-Note.pdf>
- Hossouri, A. (2004). Handicrafts : Problems and Methods. Retrieved January 25, 2016, from [www.caroun.com](http://www.caroun.com) website: <http://www.caroun.com/Research/Craft/Problems&Methods.html>
- Howe, T., & Dillon, P. (2001). Cultural niche and the contexts of craft, design and fine art. *The Design Journal*, 4(April), 50–57. <https://doi.org/10.2752/146069201789389629>
- Howe, T., & Dillon, P. (2015). Cultural Niche and the Contexts of Craft, Design and Fine Art. *The Design Journal*, 4(5), 50–57. <https://doi.org/10.2752/146069201789389629>

- Hunt, L. B. (1980). The long history of lost wax casting - Over five thousand years of art and craftsmanship. *Gold Bulletin*, 13(2), 63–79. <https://doi.org/10.1007/BF03215456>
- Ibrahim, M. H. (2012). *Panduan Lengkap Menulis Cadangan dan Laporan Penyelidikan Pelajar Pra Universiti/IPT* (First Edit). Kelantan: Pustaka Aman Press Sdn. Bhd.
- Inayatullah, S. (2009). Spirituality as the Fourth Bottom Line. <https://doi.org/10.1016/j.futures.2004.10.015>
- India-Craft. (2011). Handicrafts Introduction. Retrieved April 21, 2016, from <http://www.india-crafts.com> website: <http://www.india-crafts.com/business-reports/indian-handicraft-industry/handicraft-introduction.htm>
- Isa, S. S., Isa, S. S., & Ali, A. (2011). The Development of the Creative Economy in Malaysia as Experienced in Two Different Case Studies. *2011 IEEE Symposium on Business, Engineering and Industrial Applications (ISBEIA)*, 521–526. <https://doi.org/10.1109/ISBEIA.2011.6088873>
- Ismail, P. (2009). *Adiguru kraf Tembaga*. Malaysia.
- James, P. (2015a). *Urban Sustainability in Theory and Practice - Circles of sustainability*. Routledge.
- James, P. (2015b). *Urban Sustainability in Theory and Practice - Circles of sustainability*. <https://doi.org/10.1007/s10668-015-9643-0>
- Jayawickrama, H. M. M. M., Dharmawardana, M., Kulatunga, A. K., Karunarathna, K. G. S. P., & Osadith, S. A. U. (2016). Enhancement of Productivity of Traditional Brass Manufacturing Industry Using Sustainable Manufacturing Concept. *Procedia CIRP*, 40, 562–567. <https://doi.org/10.1016/j.procir.2016.01.134>
- Jenkins, W. (2009). Sustainability theory. In *Berkshire Encyclopedia of Sustainability: The Spirit of Sustainability* (pp. 380–384). Berkshire Publishing Group.
- JPBD. (2009). *Morfologi Bandar Kuala Terengganu*.
- Kabanda, P. (2015). *Work as Art: Links between Creative Work and Human Development*. Retrieved from <http://hdr.undp.org/en/content/work-art-links-between-creative-work-and-human-development>
- Kamarudin, Z., Latip, N. S. A., Mansor, M., Salleh, N. H., & Hakim, L. (2013). Sustainability of Malay traditional craft and craftsmanship as cultural heritage in Kuala Kangsar, Perak, Malaysia. *Journal of Architecture, Planning & Construction Management*, 3(1), 152–170.

- Kapur, H., & Mittar, S. (2014). Design Intervention & Craft Revival. *International Journal of Scientific and Research Publications*, 4(1), 2250–3153. Retrieved from [www.ijsrp.org](http://www.ijsrp.org)
- Klamer, Arja. (1996). *The Value of Culture* (Arjo Klamer, Ed.). Amsterdam: Amsterdam University Press.
- Klewitz, J., & Hansen, E. G. (2014). Sustainability-oriented innovation of SMEs: A systematic review. *Journal of Cleaner Production*, 65, 57–75. <https://doi.org/10.1016/j.jclepro.2013.07.017>
- Kothari, A. (2007). Traditional Knowledge and Sustainable Development. In *International Institute for Sustainable Development, Draft for Discussion*. Retrieved from <http://www.iisd.org>
- KPMG LLP. (2016). *Innovation through craft : Opportunities for growth*.
- KSCPP. (2008). Fifty Wonders of Korea Volume 2. Science and Technology. In Korean Spirit & Culture Promotion Project (Ed.), *Korean Spirit & Culture Promotion Project* (Vol. 2). Retrieved from <http://www.kscpp.net>
- Kumaris, B. (2014). Spirituality - The heart of sustainability. Retrieved January 6, 2017, from Brahma Kumaris Environment Initiative website: <http://environment.brahmakumaris.org/news/worldwide-news-a-events/258-spirituality-the-heart-of-sustainability>
- Kurin, R. (2007). Safeguarding Intangible Cultural Heritage: Key Factors in Implementing the 2003 Convention. *International Journal of Intangible Heritage*, 2, 9–20.
- Lah, S. C., Esa, N., Rajamani, L., Mohamed, B., Bidin, M. O., Osman, O., & Wan Talaat, W. I. A. (2015). Conserving Local Knowledge in Traditional Healing through Knowledge Transfer. *SHS Web of Conferences*, 18, 04003. <https://doi.org/10.1051/shsconf/20151804003>
- Leigh, B. (2000). *The Changing Face of Malaysian Crafts - Identity, Industry and Ingenuity*. Oxford University Press.
- Malaysian Handicraft Development Corporation (MHDC). (2014). Craft definitions. Retrieved March 22, 2016, from Malaysian Handicraft Development Corporation (MHDC) website: <http://www.kraftangan.gov.my/en/craft-information-2/craft-definitions/>
- Malaysian Handicraft Development Corporation (MHDC). (2016). *Kraftangan Malaysia - Annual Report 2015*. Retrieved from [http://www.kraftangan.gov.my/utama/arkib/?o\\_page=50&lang=ms](http://www.kraftangan.gov.my/utama/arkib/?o_page=50&lang=ms)

- Mandal, D., Sahoo, K. L., Poddar, P., & Paul, K. K. (2014). Development of Energy Efficient Coke Based Brass Melting Furnace for Rural Artisans. *Indian Foundry Journal*, 60(1), 41–45. Retrieved from <http://www.indianfoundry.org/onlinelibrary/pdf/jan-2014.pdf>
- Margetts, M. (2010). Taking Time: Craft and the Slow Revolution. *Journal of Modern Craft*, 3(3), 373–375. <https://doi.org/10.2752/174967810X12868890612565>
- Martins, N., Brandão, D., Alvelos, H., & Silva, S. (2020). E-marketplace as a tool for the revitalization of portuguese craft industry: The design process in the development of an online platform. *Future Internet*, 12(11). <https://doi.org/10.3390/fi12110195>
- McCarty, M. (2012). Why Your Heritage is Important. Retrieved March 26, 2016, from MCCARTYHERITAGE website: <https://mccartyheritage.wordpress.com/2012/10/25/why-your-heritage-is-important/>
- Mcintyre, M. H. (2010). *Consuming Craft: the contemporary craft market in a changing economy*. Retrieved from [www.craftscouncil.org.uk](http://www.craftscouncil.org.uk)
- McPeake, K. (2013). Building Crafts in the Built Environment. *Making Futures Journal*, 3, 1–617. [https://doi.org/10.1386/crre.5.2.281\\_5](https://doi.org/10.1386/crre.5.2.281_5)
- MHDC. (2011). *Malaysian Handicraft Annual Report 2011*.
- MHDC. (2014). *Malaysian Handicraft Annual Report 2014*.
- Miller, K. (2020). The Triple Bottom Line: What it is & Why it's Important. Retrieved from Harvard Business School website: <https://online.hbs.edu/blog/post/what-is-the-triple-bottom-line>
- Mohamad, S. A. (2014). *Pemantapan Industri Kraftangan Tembaga Melalui Inovasi Proses Alternatif Penghasilan Pola Lilin*. Universiti Malaysia Sarawak.
- Mohamad, S. A., Abd Rahman, K. A. A., & Abdullah, M. F. A. (2013a). Enhancement of Terengganu brassware craft design and manufacturing process : The wax pattern innovation. *International Sustainable Tropical Environmental Design Conference 2013 (SusTED'13)*. <https://doi.org/10.13140/RG.2.1.4843.2240>
- Mohamad, S. A., Abd Rahman, K. A. A., & Abdullah, M. F. A. (2013b). PROBLEM ANALYSIS AND CHALLENGES OF TERENGGANU BRASSWARE INDUSTRY. *Terengganu International Tourism Conference 2013 (TITC2013)*. <https://doi.org/10.13140/RG.2.1.4069.2565>
- Mohamad, S. A., & Walker, S. (2019). THE IMPACT OF GLOBALIZATION ON THE CREATIVE ECOLOGY OF A HERITAGE VILLAGE : A CASE STUDY FROM MALAYSIA. In S. Fahmy,

- S. H. S. Omar, N. Abdullah, & R. M. Mohamed (Eds.), *Proceedings of the International Conference on Islamic Civilization and Technology Management*. Kuala Terengganu: Research Institute for Islamic Product and Malay Civilization (INSPIRE) Universiti Sultan Zainal Abidin (UniSZA).
- Mohd Noor, S. R. (1978). *Sejarah Perkembangan "Cottage Industries" di Terengganu dari Abad ke 18 Hingga Tahun 1970an*. Universiti Kebangsaan Malaysia.
- Mohd Nor, S. Z. (2012). Terengganu's Silica Sand as Moulding Material for Investment-Cast Copper Alloys. *UMT 11th International Annual Symposium on Sustainability Science and Management*, (09th-11th July 2012), 1306–1310. Retrieved from [https://www.researchgate.net/publication/241698369\\_Terengganu%27s\\_Silica\\_S\\_and\\_as\\_Moulding\\_Material\\_for\\_Investment-Cast\\_Copper\\_Alloys](https://www.researchgate.net/publication/241698369_Terengganu%27s_Silica_S_and_as_Moulding_Material_for_Investment-Cast_Copper_Alloys)
- Mohlman, K. (1999). Craft-as-Industry and Craft-as-Culture: Analysing Handicraft Production in Commercialized Asia and Beyond. *Asian Journal of Social Science*, 27(1), 113. <https://doi.org/10.1163/030382499X00228>
- Moreno, Y. J., Santagata, W., & Tabassum, A. (2004). Material Cultural Heritage , Cultural Diversity , and Sustainable Development. *ACEI, 13th International Conference on Cultural Economics*, 1–30.
- Muchtar, A. A., Akmal, A., Prihatim, P., & Sumadi, S. (2020). Revitalization of Tarompa Datuak Crafts Through Design Development as an Efforts to Strengthen Creative Economic Existence in the Era of Disruption. *Indonesian Journal of Economics, Social, and Humanities*, 2(2). <https://doi.org/10.31258/ijesh.2.2.105-118>
- Muda, M. S., & Halim, M. A. S. A. (2011). Usahawan Kraf di Malaysia : Analisa Laluan Terhadap Perhubungan Inovasi Produk , Komitmen Perniagaan dan Perkembangan Perniagaan. *Persidangan Kebangsaan Ekonomi Malaysia Ke VI (PERKEM VI)*, 2, 208–217.
- Muhamad, W. R. W. (2008). *Kilauan Tembaga*. Kuala Lumpur: Perbadanan Kemajuan Kraftangan Malaysia.
- Murray, K. (2011). Sustainability in Craft and Design Volume. *Craft + Design Enquiry*, 3, 1–6. Retrieved from [www.craftaustralia.org.au/cde](http://www.craftaustralia.org.au/cde)
- Mutua, K., Massimo, S. K., & Mburu, P. T. (2016). An Empirical Study of the Botswana Handicraft Market. *Journal of African Business*, 8916(March). <https://doi.org/10.1300/J156v05n02>
- Niedderer, K., & Townsend, K. (2014). Designing Craft Research: Joining Emotion and Knowledge. *The Design Journal*, 17(4), 624–647. <https://doi.org/10.2752/175630614X14056185480221>

- Norkhalbi, S., & Wahsalfelah, H. (2014). Sejarah Sosio-Budaya Kraftangan di Brunei Darussalam : Barangan Logam dan Kain Tenunan. *Jurnal Kajian Sejarah & Pendidikan Sejarah*, 2(1), 29–40.
- Nugraha, A. (2018). Transforming Tradition in Indonesia. In S. Walker, M. Evans, T. Cassidy, J. Jung, & A. T. Holroyd (Eds.), *Design Roots - Culturally Significant Designs, Products, and Practices* (pp. 147–162). Bloomsbury Publishing Plc.
- Nunez, M. C. (2011). Sustainability and Spirituality : a Transdisciplinary Perspective. *Transdisciplinary Journal of Engineering & Science*, 2, 74–80.
- Nurse, K. (2006). Culture as the Fourth Pillar of Sustainable Development. *Small States: Economic Review and Basic Statistics*, 11(June), 32–48. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?rep=rep1&type=pdf&doi=10.1.1.183.5662>
- Osman, S., & Zin, N. (2010). Proposed model for courseware development of virtual teaching and learning traditional craft. *2010 International Symposium on Information Technology*. <https://doi.org/10.1109/ITSIM.2010.5561333>
- Owens, A. (2017). Craft Micro-Enterprises Contributions to Sustainability. *Nordic Journal of Science and Technology Studies*, 5(1), 1–9. Retrieved from <https://doi.org/10.5324/njsts.v5i2.2323>
- Parlan, Y. (2016). Signifikasi Bekas Bara Besar Terengganu dalam Seni Warisan Kraf Tembaga. *Jurnal Seni Dan Pendidikan Seni2*, Vol. 4, 32–39.
- Parts, P.-K., Rennu, M., Jääts, L., Matsin, A., & Metslang, J. (2011). Developing sustainable heritage-based livelihoods: an initial study of artisans and their crafts in Viljandi County, Estonia. *International Journal of Heritage Studies*, 17(5), 401–425. <https://doi.org/10.1080/13527258.2011.589199>
- Pöllänen, S. (2013). The meaning of craft: Craft makers' descriptions of craft as an occupation. *Scandinavian Journal of Occupational Therapy*, 20, 217–227. <https://doi.org/10.3109/11038128.2012.725182>
- Prasad, K. D., Jha, S. K., & Prakash, A. (2015). Quality, productivity and business performance in home based brassware manufacturing units. *International Journal of Productivity and Performance Management*, 64(2), 270–287.
- Public Interest Research Center. (2011). *The Common Cause Handbook*. Public Interest Research Center.
- Qattan, A. (2009). *Handicrafts Market Demand Analysis*.
- Rees, H. (1997). Pattern of making: thinking and making in industrial design. In *The*



*Culture of Craft*. Manchester University Press.

- Richard, N. (2007). Handicrafts and Employment Generation for the Poorest Youth and Women. In *United Nations Educational, Scientific and Cultural Organization (UNESCO)* (Vol. 17). Retrieved from <http://unesdoc.unesco.org/images/0015/001567/156772e.pdf>
- Risatti, H. (2008). *A theory of craft: Function and Aesthetic Expression*. Accessible Publishing Systems PTY, Ltd. ACN 085 119 953.
- Ritchie, J. (2003). The Applications of Qualitative Methods to Social Research. In J. Ritchie & J. Lewis (Eds.), *Qualitative Research Practice - A Guide for Social Science Students and Researchers*. London: SAGE Publications.
- Robson, C. (2011). *Real World Research: a resource for users of social research methods in applied settings* (Third Edit). Wiley.
- Robson, C., & McCartan, K. (2016). *Real World Research - A Resource for Users of Social Research Methods in Applied Settings* (Fourth). Wiley.
- Rogerson, C. M. (2000). Rural Handicraft Production in the Developing World: Policy Issues for South Africa. *Agrekon*, 39(2), 193–217. <https://doi.org/10.1080/03031853.2000.9524938>
- Rossi, C. (2015). Craft and the creative economy. *International Journal of Cultural Policy*, 1–4. <https://doi.org/10.1080/10286632.2015.1102907>
- Roy, T. (1996). Home Market and the Artisans in Colonial India: A Study of Brass-ware. *Modern Asian Studies*, 30(02), 357–385. <https://doi.org/10.1017/S0026749X00016504>
- Sachan, N., Munagala, V., & Chakravarty, S. (2013). *INNOVATION CLUSTER IN THE BRASSWARE INDUSTRY AT MORADABAD , UTTAR PRADESH*.
- Sah, R. (2011). *Brass Metal Craft A Need Assessment Survey, Barpeta, Assam 2011*.
- Sahay, A. (2016). Peeling Saunder' s Research Onion. In *ResearchGate*. Retrieved from <https://www.researchgate.net/publication/309488459>
- Sanders, E. B.-N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *CoDesign*, 4(1), 5–18. <https://doi.org/10.1080/15710880701875068>
- Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research Methods for Business Students* (Seventh Ed). Pearson.
- Sekar, H. R. (2007). *Impact of Technological Change on the Demand for Child Labour in*

*Brassware Industry of Moradabad.*

- Senevirathne, S. R. M. P., Wewala, W. H. S. S., Jayasekara, B. M. T. D., Vidanapathirane, T. R., & Oshadie, M. N. L. B. (2010). *Study To Identify the Possibilities and Constraints in Developing Curricular for Sri Lankan Traditional Handicraft Sector Under the National Vocational Qualification Frame.*
- Shariff, N. A. (2010). *Seni kraf Pilihan Terengganu.* Kuala Terengganu: Yayasan Diraja Sultan Mizan (YDSM).
- Sheppard, M. (1986). *A Royal Pleasure Ground - Malay Decoratives Arts and Pastimes.* Oxford University Press.
- Silah, S., Basaree, R. O., Isa, B., & Redzuan, R. S. (2013). Tradition and Transformation: The Structure of Malay Woodcarving Motifs in Craft Education. *Procedia - Social and Behavioral Sciences*, 90, 823–831. <https://doi.org/10.1016/j.sbspro.2013.07.157>
- Singh, H. N., & Singh, D. K. (2015). Reviving the brassware industry in Moradabad, India. *Emerald Emerging Markets Case Studies*, 5(6), 1–23. <https://doi.org/10.1108/EEMCS-10-2014-0262>
- Sloan, K., Klingenberg, B., & Rider, C. (2013). Towards Sustainability: Examining the Drivers and Change Process within SMEs. *Journal of Management and Sustainability*, 3(2). <https://doi.org/10.5539/jms.v3n2p19>
- Snape, D., & Spencer, L. (2003). The Foundation of Qualitative Research. In J. Ritchie & J. Lewis (Eds.), *Qualitative Research Practice - A Guide for Social Science Students and Researchers.* London: SAGE Publications.
- Soini, K., & Birkeland, I. (2014). Exploring the scientific discourse on cultural sustainability. *Geoforum*, 51, 213–223. <https://doi.org/10.1016/j.geoforum.2013.12.001>
- Sood, S., & Tulchin, D. (2014). Quadruple Bottom Line. Retrieved January 10, 2017, from Social Enterprise Associates website: <http://upspringassociates.com/wp-content/uploads/2014/09/TipSheet13QBL.pdf>
- Sridhar, K., & Jones, G. (2013). The three fundamental criticisms of the Triple Bottom Line approach: An empirical study to link sustainability reports in companies based in the Asia-Pacific region and TBL shortcomings. *Asian Journal of Business Ethics*, 2(1), 91–111. <https://doi.org/10.1007/s13520-012-0019-3>
- Takuya, K. (2010). Traditional art crafts (Dento Kogei)" in Japan: From reproductions to original works. *Journal of Modern Craft*, 3(1), 19–35. <https://doi.org/10.2752/174967810X12657245205107>

- Teijgeler, R. (2015). Heritage for peace. *Preservation, Digital Technology and Culture*, 44(1), 43–44. <https://doi.org/10.1515/pdctc-2015-0006>
- Terengganu (SUK). (1999). *Pembangunan Terengganu Dahulu dan Sekarang*. Kuala Terengganu: Pejabat Setiausaha Kerajaan Negeri Terengganu.
- TINTA Editorial Team. (2017). TINTA. *Yayasan Di Raja Sultan Mizan*, 1(January-June).
- Tonis (Bucea-Manea), R. (2015). SMEs Role in Achieving Sustainable Development. *Journal of Economic Development, Environment and People*, 4(1), 41. <https://doi.org/10.26458/jedep.v4i1.102>
- Tourism Malaysia. (2014). Malaysia Truly Asia. Retrieved August 10, 2016, from Malaysia Tourism Promotion Board website: <http://www.tourismmalaysia.gov.my/>
- Tourism Malaysia. (2018). TOURISM MALAYSIA BAGS THE BRANDLAUREATE BESTBRANDS AWARD. Retrieved December 15, 2018, from <http://www.tourism.gov.my/> website: <https://tourism.gov.my/media/view/tourism-malaysia-bags-the-brandlaureate-bestbrands-award>
- Tseng, M. L., Chang, C. H., Lin, C. W. R., Wu, K. J., Chen, Q., Xia, L., & Xue, B. (2020). Future trends and guidance for the triple bottom line and sustainability: a data driven bibliometric analysis. *Environmental Science and Pollution Research*, 27(27), 33543–33567. <https://doi.org/10.1007/s11356-020-09284-0>
- Tung, F. W. (2012). Weaving with rush: Exploring craft-design collaborations in revitalizing a local craft. *International Journal of Design*, 6(3), 71–84.
- Twarog, S., & Kapoor, P. (2004). Protecting and Promoting TK: Systems, National Experiences and International Dimensions. In S. Twarog & P. Kapoor (Eds.), *United Nations*. Retrieved from [http://www.unctad.org/en/docs//ditcted10\\_en.pdf](http://www.unctad.org/en/docs//ditcted10_en.pdf)
- UCLG. (2009a). Culture, local governments and Millennium Development Goals. In *United Cities and Local Governments (UCLG)*.
- UCLG. (2009b). Culture and sustainable development: examples of institutional innovation and proposal of a new cultural policy profile. In *United Cities and Local Governments (UCLG)*.
- UNESCO. (1996). Our creative diversity. *Report of the World Commission on Culture and Development*, 64. Retrieved from <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Our+creative+diversity#1>
- UNESCO. (2003). Convention for the safeguarding of the intangible cultural heritage. In

UNESCO. <https://doi.org/10.1163/ej.9789004180444.I-786.6>

UNESCO. (2014). *MALAYSIA UNESCO Country Programming Document 2013-2016*. Retrieved from <http://unesdoc.unesco.org/images/0023/002303/230313E.pdf>

UNESCO. (2015). *2005 Convention Global Report - Re | Shaping Cultural Policies - A Decade Promoting the Diversity of Cultural Expressions for Development*. Retrieved from United Nations Educational, Scientific and Cultural Organization (UNESCO) website: <http://unesdoc.unesco.org/images/0024/002428/242866e.pdf>

UNESCO Institute for Statistics (UIS). (2016). *The Globalisation of Cultural Trade: A Shift in Consumption. International flows of cultural goods and services 2004-2013*. <https://doi.org/http://dx.doi.org/10.15220/978-92-9189-185-6-en>

UTEN-T. (2015). *Terengganu's Economic Transformation Programme - The way forward*.

Vecco, M. (2010). A definition of cultural heritage: From the tangible to the intangible. *Journal of Cultural Heritage*, 11(3), 321–324. <https://doi.org/10.1016/j.culher.2010.01.006>

Wahab, N. A. (2013). Kegiatan Perusahaan Dalam Kalangan Masyarakat Melayu di Terengganu 1800-1941. *Sarjana*, 28(1), 137–162.

Walker, S. (2011a). Meaning in the Mundane, aesthetic, technology and spiritual values. In *The Spirit of Design: Objects, Environment and Meaning* (pp. 163–184). Earthscan.

Walker, S. (2011b). *The Spirit of Design - object, environment and meaning*. Earthscan.

Walker, S. (2012). The Object of Nightingales: Design Values for a Meaningful Material Culture. *Design and Culture*, 4(2), 149–170. <https://doi.org/10.2752/175470812X13281948975459>

Walker, S. (2013). Design and Spirituality: Material Culture for a Wisdom Economy. *Design Issues*, 29(3), 89–107. <https://doi.org/10.1162/DESI>

Walker, S. (2014). *Designing Sustainability: Making radical changes in a material world* (1st editio; S. Walker, Ed.). Routhledge.

Wan Isa, W. M., Mat Zin, N. A., Rosdi, F., & Mohd Sarim, H. (2019). Digital Preservation of Cultural Heritage: Terengganu Brassware Craft Knowledge Base. *International Journal of Advanced Computer Science and Applications (IJACSA)*, 10(6), 107–114. [https://doi.org/10.1007/978-3-319-47164-8\\_7](https://doi.org/10.1007/978-3-319-47164-8_7)

Watene, K., & Yap, M. (2015). Culture and sustainable development: Indigenous contributions. *Journal of Global Ethics*, 11(1), 51–55.

<https://doi.org/10.1080/17449626.2015.1010099>

Wolfe Wilson, S. (2010). Towards Sustainable Craft Production in Jamaica. *Journal of Modern Craft*, 3(2), 191–207.  
<https://doi.org/10.2752/174967810X12774789403609>

www.unesco.org. (n.d.). Traditional Craftsmanship. Retrieved May 3, 2016, from UNESCO website: <http://www.unesco.org/culture/ich/en/traditional-craftsmanship-00057#>

Yair, K., & Schwarz, M. (2011). Making value: craft in changing times. *Cultural Trends*, 20(3–4), 309–316. <https://doi.org/10.1080/09548963.2011.589711>

Yin, R. K. (2003). *Case Study Research: Design and Methods* (3rd Ed.). London, UK: Sage Publications, Inc.

Yusof, F., Abdullah, I. C., Abdullah, F., & Hamdan, H. (2013). Local Inclusiveness in Culture based Economy in the Development of ECER, Malaysia: Case Study from Kelantan. *Procedia - Social and Behavioral Sciences*, 101(2001), 445–453.  
<https://doi.org/10.1016/j.sbspro.2013.07.218>

## APPENDIX A

### DOCUMENTATION OF APPLICATION FOR ETHICAL APPROVAL FOR RESEARCH

#### A.1 Participant Information Sheet



#### Participant Information Sheet

Name of Researcher: Sharih Ahmad bin Mohamad (PhD Candidate)

Supervisor: Professor Stuart Walker

Title of Project: An Investigation of Potential Design Strategies for Revitalising Brassware Handicrafts in Terengganu, Malaysia

Sponsor: Ministry of Higher Education Malaysia

I am a PhD student at Lancaster Institute for the Contemporary Arts (LICA), Lancaster University, United Kingdom. I would like to invite you to participate in a 45 minutes interview for my research study which intend to investigate the potential and opportunity in relation to design for sustainability, in preserving the cultural significance and value of traditional brassware craftsmanship in Terengganu, Malaysia. Please take time to read the following information carefully before you decide whether or not you wish to take part.

#### What is this study about?

This research is aimed to understand and identify the significance of cultural values of brassware craftsmanship in relation towards sustainability. The brassware craft is one of our cultural assets and it is currently in decline in the context of socio-economic-cultural values. There is a potentiality for further investigation on the tangible and intangible authenticity and technical uniqueness of the brassware craft through design-oriented strategy or system to ensure the sustainability of this craft as well as revitalising the cultural significance of brassware craft industry in Terengganu, Malaysia.

**Why have I been invited?**

You have been identified as a possible participant in this study because you are the expert in the field of crafts/brassware craft with the role(s) of producer, supporter and/or buyer.

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

You will be asked to agree to be interviewed by the researcher. The interviews will be may take up to 45 minutes and an hour and will be held on a date, time, and place to suit you. Before the interview starts, you will be asked to read and sign a Consent Form. If you agree, the interview will be audio recorded and will be transcribed. All interviews will be anonymised prior to transcription. Only I will know your identity. If you do not agree to be recorded I will take notes during the interview and will anonymise those notes.

**What are the possible benefits from taking part?**

This study will allow the participants to share their experiences, knowledge and expertise in brassware craft industries as their insight and opinion will contribute to the understanding of cultural significance of brassware handicraft product in the future. The researcher is willing to share the findings of research with them and keep them informed as the project develops. In the longer term, the research conducted during this study may offer opportunities for supporting and enhancing brassware handicraft industries mainly in Terengganu, Malaysia.

**Do I have to take part?**

No. It is your choice whether to take part in this research or not. You are under no obligation to participate. You do not need to offer an explanation if you decide not to take part.

**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 withdraw the research at any time, but after two weeks from the date of the interview the data provided will be used.

### **What are the possible disadvantages and risks of taking part?**

No risks are anticipated if you participate in this study, but if you experience any distress during the interview, I will stop the interview and any recording. I will ask if you want to continue with the interview, and if you do not I will contact you a week later to see if you want to resume the interview, or whether you want the data collected in the part-interview to be included in the study. If you do not, I will securely destroy the data. As I will be asking about your experience in brassware craft industry, you may disclose your experiences and knowledge. But your personal information is confidential and will be anonymised.

### **Will my data be identifiable?**

The information you provide is confidential and will be anonymised when it is disseminated. Only the researcher will know the identity of the participant. Access to the audio and visual data is restricted to me and my PhD supervisors. The only other person who will have access to the data is a professional transcriber who will listen to the recordings and produce a typed transcript of your interview. The transcriber will sign a confidentiality agreement. All participants will be treated anonymously to respect their privacy. The data (e.g. your name and other information about you that can identify you) will be treated as confidential and I will anonymise any audio and video recordings and hard copies of any personal data, so that you will not be identified.

### **How will my data be stored?**

During and after the study, all data will be my responsibility and will be stored securely on University premises. The digital recorder cannot be encrypted but I can confirm that any identifiable data (including recordings of participants' voices) will be deleted from the recorder as quickly as possible. Data will be transferred to an encrypted computer safely secure in the University. All data will only be accessible to the researcher. All data relating to the study will be securely destroyed 10 years after the study has been completed.

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

The results of the study will be published in my doctoral research thesis and journals and will be presented at academic seminars and conferences. A summary of the results will be made available to all participants. 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 our interview with you), so that although I will use your exact words, you cannot be identified in our publications.



**Who has reviewed the project?**

The study has been reviewed and approved by Faculty of Arts and Social Science and Lancaster Management School's Research Ethics Committee.

**What if I have a question or concern?**

If you have any queries about the study, please feel free to contact myself at [s.a.mohamad@lancaster.ac.uk](mailto:s.a.mohamad@lancaster.ac.uk) or by phone on +447490948918 / +60199590549, or my supervisor Professor Stuart Walker ([s.walker@lancaster.ac.uk](mailto: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 contact:

Judith Mottram, Head of Department, Lancaster Institute for the Contemporary Arts, Lancaster University, Lancaster, LA1 4YW, tel: +44 (0)1524 594395, email:[judith.mottram@lancaster.ac.uk](mailto:judith.mottram@lancaster.ac.uk)

**Thank you for considering your participation in this project**

## A.2 Example of Letter/Email invitation for Participant



### EXAMPLE OF LETTER/EMAIL INVITATION FOR PARTICIPANT

Name of Researcher: Sharih Ahmad bin Mohamad (PhD Candidate)  
Supervisor: Professor Stuart Walker  
Title of Project: An Investigation of Potential Design Strategies for Revitalising Brassware Handicrafts in Terengganu, Malaysia  
Sponsor: Ministry of Higher Education Malaysia

Dear Sir/Madam,

I am a PhD student at Lancaster Institute for the Contemporary Arts (LICA), Lancaster University, United Kingdom. I would like to invite you to participate in a short interview for my research study which aims to understand and identify the significance of cultural values related to brassware craftsmanship, especially with regard to the principles of sustainability. Brassware craft is one of our cultural assets and it is currently in decline. There is potential for investigation into its tangible and intangible cultural heritage as well as its technical uniqueness. The aim of the research is to develop a design-oriented strategy or system to ensure its sustainability.

You have been identified as a possible participant in this study because you are the expert in the field of crafts/brassware craft with the role(s) of producer, supporter and/or buyer. If you agree to be interviewed, the interview session will take approximately 45 minutes and will be held on a date and at a time and place to suit you. It is your choice whether to take part in this research or not. This letter provides information about the project. In the interview I will ask you a set of questions about your work and your experiences in the brassware industry. With your permission, I will write down and/or audio and/video record your answers. At any time you can withdraw from the research if you wish.

Before you decide to participate, it is important for you to understand why the project is being done and what it will involve. Please read the attached Participant Information Sheet and please ask me if there is anything that is not clear, or if you would like more information. The consent form; which you will sign if you decide to participate, is also attached for your guidance.

If you have any further questions, please email me for clarification. If you would like to participate or want to clarify anything in person before making a decision, I am happy to help you and we can arrange to meet at your convenience.

Yours faithfully,

Sharih Ahmad bin Mohamad  
Email: s.a.mohamad@lancaster.ac.uk  
Phone: +447490948918 and +60199590549  
Lancaster Institute for the Contemporary Arts (LICA)  
The LICA Building  
Lancaster University

### A.3 Consent Form

## CONSENT FORM



Project Title: An Investigation of Potential Design Strategies for Revitalising Brassware Handicrafts in Terengganu, Malaysia

Name of Researchers: Sharih Ahmad bin Mohamad

Email: s.a.mohamad@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) 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 of taking part in the study then my data will be removed and not used.
- 3) I understand that I will be treated anonymously in that I will be identified in any of the research outputs.
- 4) I give my consent and understand that any information given by me may be used in future reports, academic articles, PHD thesis, publications or presentations by the researcher/s, but my personal information will not be included.
- 5) I understand that any interviews will be audio-recorded and transcribed and that data will be protected on encrypted devices and kept secure.
- 6) I understand that data will be kept according to University guidelines for a minimum of 10 years after the end of the study.
- 7) 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**

## **A.4 Semi-structured Interview Guidelines**

### **SEMI-STRUCTURED INTERVIEW GUIDELINES**

#### **Samples of Informants**

This semi-structured interview will involve 20 to 30 people who are experts from different roles and clusters in brassware craft industry. There are three experts' clusters which have been identified - Producer, Supporter and Buyer. The first phase of the field study will focus on brassware craft producers and supporters.

- a) Producers: artisan/craft producers, designer makers, enterprise manager, SME owner, etc.
- b) Supporters: academia, government's agents, design manager, gallery curators, NGOs
- c) Buyers: retailers, traders, users (tourist, utilitarian, collectors)

#### **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 to 1 hour 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.*

**SIGN LETTER OF CONSENT AND PROVIDE PROJECT INFORMATION SHEET**

**QUESTIONS (primarily for Producers/craft makers – to be adapted for supporters and buyers)**

**General description about informant**

- Would you share with me about your background? (Prompts: your expertise and experience, education or training, skills, employment history, etc)
- How would you describe the kind of work that you do in general terms? (Prompts: how would you define it in simple terms?)
- Could you briefly describe the kind of brassware products you produce? (Prompts: type of products (e.g. utility, tourism, traditional custom), how long have you been doing this and why?)
- Why are you doing this work (making this product)?
- What are your motivations? (Making a living; appreciation of tradition, sense of duty to continue the tradition, enjoyment, creativity etc.)
- Is this your sole occupation or do you do other things as well to make a living?

**Issues and constraint**

- What is your opinion about current situation in local brassware craft industries?
- (Prompts: Demand? Markets and customers (domestic, tourist, export markets)
- Styles and customer preference (traditional, contemporary, modern)
- Dependability of the markets
- Appreciation by locals and foreigners?
- Logistics?
- Facilities and knowledge transfer
- Young generation apprentices and a retention of traditional brassware craft
- What things can motivate younger generations to be with the handicraft industry and how?

**Detailed description about how brassware artisan work**

- The detailed process (full cycle) of brassware making? Idea/concept, design, production, market. Is it a fixed process or has it evolved over time?
- What materials do you use and why? How and where they are sourced? Are there any distinctive characteristics of the materials?
- 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 work in collaboration with others? If so, who are involved? Are they working in similar ways? Does your work differ from the other people you work with? If so, how? 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?

## **WORK PERCEPTION**

### **Personal level**

- How do you value your work? What do you value most in your work?
- What is the most important aspect of your work?
- For you? For others (ask the interviewee to define key stakeholders if appropriate)?
- In terms of the kinds of information that informs your work, where does it come from? What do you draw on?
- Do you think your work is traditional? If so, in what ways is it traditional and what traditions does it represent? (Products, materials, techniques, skills, imagery etc.) Are there aspects that are less or not traditional?
- Could you tell me more about your traditions and what did you learn from them? (I.e. the knowledge, values, and the things that are important to pass on from one generation to the next?) (Prompt: are these related to family, community, religion, nationality, etc.)
- How do you think such traditions will be continued? If not, why not, If so, why (and how)? Do you make artefacts to pass on traditions? And what combined efforts are there or you think may be needed at community/society level to ensure that these traditions continue?

### **Community/social level**

- How do you think your work is perceived by people in your community?
- (Leave for interviewee to define their 'community')?
- by people outside of your community?
- Do you think your work was perceived differently in the past? If so, what changes do you think have occurred to change people's perceptions?
- What is your contribution in developing social and community engagement in small-scale enterprises?

### **Creative Ecology Questions – ecology of creative practice**

- Do you see other brassware crafts enterprise as competitors? Does it affect you?

- Do you feel there are any benefits for you from others doing similar work in the region?
- What effects on you and your work do the following have (only discuss as appropriate):
- Other craft makers, other artists
- Other Businesses (Restaurants, Cafes, Galleries, Shops, Hotels etc.)
- Crafts Events : National craft Market,
  - Governments events
- International Craft Market
- International Folk Arts Museum
- Other cultural events Music, traditional, tourism, Food, Other?
- Tourists, Local community
- Municipal or Regional Government, Policies etc.

**Future direction**

- What are you working on at the moment? (Current work focus and interests)
- What do you hope to work on in the future?
  - How do you see you work developing over time?
  - Would you like to keep it more or less the same, or change, or grow, etc?
- What kind of effort do you think needs to be taken to sustain your practice (on both personal and social levels)?
  - What do you think are the most important aspects about your work that need to be sustained?
  - What parts of your work could be changed or done in other ways (without damaging or devaluing the important aspects of what you do?)
- Are there aspects of your work that you particularly enjoy or value?
- Are there aspects that you dislike or would prefer not to have to do?
- AOB (further information, contacts and follow-up)

APPENDIX B      **SUMMARY OF THE ROLES AND RESPONSIBILITIES OF  
INFORMANTS**

**B.1 Producer**

Informant	P	S	B	Description of Roles and Expertise	Age (2018)	Experience
P1	x	x	x	Full-time enterprise owner, inherited practices, the 6th generation of family-oriented business, trainer for apprenticeship program organised by YDSM, owned sales gallery in <i>Bazar Warisan</i> and Kampung Ladang. Practises both traditional and non-traditional making. Highest education level: Diploma in Fine Metal Art from local university.	49	>30 years
P2	x		x	Full-time enterprise owner, inherited practices, one of the biggest brassware producers and the most skilled artisan in Malaysia, awarded Master brassware craftsman by Government, owned sales gallery in Pasar Payang. Practice traditional making. Highest education level: Secondary school	72	>50 years
P3	x			Full-time craftsman and expert in wax pattern making, also supply wax pattern to another enterprise, inherited skill and practices, mainly works with his brother (P2)	50s	>20 years
P4	x	x	x	Enterprise owner started brassware enterprise after joining training organised by SIRIM, more towards the non-traditional process, trainer and technical member of the apprenticeship program by YDSM	43	>10 years
P5	x			Enterprise owner - collaborate with P6, previously worked as a brassware maker with another enterprise (Dezainer Kraf), then opened his own under incubator program supervised by MHDC	30s	>10 years
P6	x			Enterprise owner - collaborate with P5, previously worked as a brassware maker with another enterprise (Dezainer Kraf), then opened his own under incubator program supervised by MHDC. Inherited skill from his father.	30	>10 years
P7	x			Enterprise owner - collaborates with P8 (his older brother), continuing family legacy after his father passed away, learned brassware making at a young age.	25	<10 years
P8	x			Enterprise owner - collaborates with P7 (his younger brother), learned brassware making and continued family legacy seriously after his father passed away	32	<10 years
P9	x			Enterprise owner and craftsman himself, started brassware making after training with artisan (P10's father) at Kampung Ladang, worked with SIRIM as a technician in casting department before running his own brassware enterprise, can practise both traditional and non-traditional making.	73	>40 Years



P10	x		Previously worked with his father. Unfortunately, he had stopped brassware making after his father died, sometimes he helped P9 before totally stopped practising due to a health condition.	64	>30 Years
P11	x		Enterprise owner – inherited practice and originated from Kampung Ladang then moved to Rusila, Marang. Specialised in making <i>gobek sireh</i> , <i>tepak sireh</i> and <i>kacip</i> .	64	>30 Years
P12	x		Enterprise owner – non-inherited practices but developed skills through training from other brassware artisan. Specialised in making rounded <i>tepak sireh</i> and teapots. Stopped making brassware in 2017 due to a health condition.	80s	>50 Years
P13	x		Enterprise owner – Specialised in copper sheet metal working. Never had any formal training, developed skills through observation and trial and error. Has a strong passion for art, design and spirituality.	45	>20 years

Table 7-1: Summary of the roles and responsibilities of producers and length of experience

## B.2 Supporter

Informant	P	S	B	Description of Roles and Expertise	Age (2018)	Experience
S1		x		Full-time designer-maker in the metal craft department (brassware) at Malaysia Handicraft Development Corporation (Terengganu branch). Highest education level: Diploma in Fine Metal Art	30s	>30 years
S2		x		Full-time designer-maker in the metal craft department (brassware) at Malaysia Handicraft Development Corporation (Terengganu branch). Highest education level: Degree in Art and Design	30s	>50 years
S3		x		Full-time design executive (metalcraft department) at Malaysia Handicraft Development Corporation (Terengganu branch). Highest education level: Degree in Art and Design	30s	>20 years
S4		x		Full-time design executive at Terengganu International Design Excellence (TIDE). Expertise: Fine art, graphics and craft design. Highest education level: Degree in Fine Art from a local university.	33	>10 years
S5		x		Full-time design executive at Terengganu International Design Excellence (TIDE). Expertise: Graphics and craft design. Highest education level: Degree in Graphic Design from a local university.	38	>10 years
S6		x		Full-time design executive at Terengganu International Design Excellence (TIDE). Expertise: Textile and craft design. Highest education level: Degree in Textile from the local university.	38	>10 years

S7		x		Full-time academic (industrial design) at a local university in Malaysia and part-time industrial and graphic designer. Highest education level: Master of Art in Graphic Design and continuing PhD in Design.	31	<10 years
S8		x	x	Full-time academic (international policy, politics and history) at a local university in Malaysia. NGO activist. Highest education level: PhD.	40s	<25 years
S9	x	x	x	Formerly worked as head of section of registration department at Terengganu State Museum Board before retiring in 2017, an expert in Malay craft tradition and culture mainly brassware craft. The 6th generation of brassware craft maker originated from Kampung Ladang. S9 was a brassware maker before joining TSMB in 1979.	60	>30 Years
S10		x		Full-time assistant curator (exhibition) at Terengganu State Museum Board. Involved directly in designing and exhibiting traditional craft artefact. Graduated in Bachelor of Arts in Industrial Design from a local university.	30	>5 Years
S11		x		S11 is an expert in the history of Kuala Terengganu, especially on the villages. He has been collecting artefacts and researching on most of the villages that have historical value and significant meaning. He has worked as a curator in the department of history for almost 22 years. S11 also graduated in Fine Metal studies.	49	>20 Years
S12		x		Formerly positioned as a sector head at the district museum, retired in 2018. Responsible for planning, building and developing district museum as well as conducting research, conservation, exhibition, documentation and publication of heritage material and tradition. Sociologist and anthropologist, an expert in Malay traditional culture and heritage. Highest education level: Masters	50	>20 Years
S13		x		Assistant manager (Product and SDSI) Entrepreneurship and Product Development.	40s	<25 years
S14		x		Chief Executive Officer at state governmental organisation specialising in entrepreneurial development. Entrepreneurship coach and consultant for SMEs. PhD in Entrepreneurship	40s	<25 Years
S15		x		Secretary and project coordinator. Experience in managing programmes for the local craft community. Management expert and experienced in publicity as a publication committee member.	30s	<10 years
S16		x		Project Coordinator Executive at Sultan Mizan Royal Foundation ( <i>Yayasan Diraja Sultan Mizan</i> (YDSM)). Responsible for coordinating numerous programmes organised by YDSM	30s	<10 years
S17		x	x	Full-time designer-maker and design consultant based in Terengganu.	35	>10 Years
S18		x	x	Public policy expert PHD in Law Economist	50s YO	>30 Years

S19		×		Former director of Terengganu State Museum Malay culture and arts expert	60s YO	>40 Years
S20		×		Manager (Product and SDSI) Entrepreneurship Business mentor	50s YO	<25 Years
S21		×		Manager (Entrepreneur development) Business management (SME)	40s YO	>10 years

Table 7-2: Summary of the roles and responsibilities of supporters and length of experience

### B.3 Buyer/trader

Informant	P	S	B	Description of Roles and Expertise	Age (2018)	Experience
B1			×	Continued the retail business after his father. Born in Kampung Ladang, Kuala Terengganu. Buys brassware craft from local and international craft makers and sells them back in Pasar Payang. He also sells other handicrafts and acts as a collector.	38	>20 years
B2		×	×	B2 has been working as a retail executive for P2 for more than ten years and is responsible in managing the sales premises in Pasar Payang. Their premises only sell brassware handicrafts.	30s	>10 years
B3			×	B3 has been doing this retail work for more than 40 years. She can be considered a veteran in this craft retailing field centralised in Pasar Payang. Her business premises also supplies other craft products and is not limited to brassware.	Early 70s	>40 years
B4		×	×	B4 has been working as a sales executive as well as managing the sales gallery for more than ten years. She also a marketing and planning executive at her company.	30s	>10 years
B5			×	B5 is working under P2 and managing an online platform through Facebook and Instagram. Sometimes, they also join in the craft market organised by local craft agencies and authorities.	40s	>10 years
B6		×	×	Full-time designer-maker and design consultant based in Terengganu with more than ten years' experience in the industry. Started as a craft retailer and collector for five years and also sells craft products online and offline.	35	<5 years
B7			×	B7 works as a retail executive for one of the local state agencies related to the craft industry and manages the gallery located at the Sultan Mahmud Airport in Kuala Terengganu.	20s	<5 years

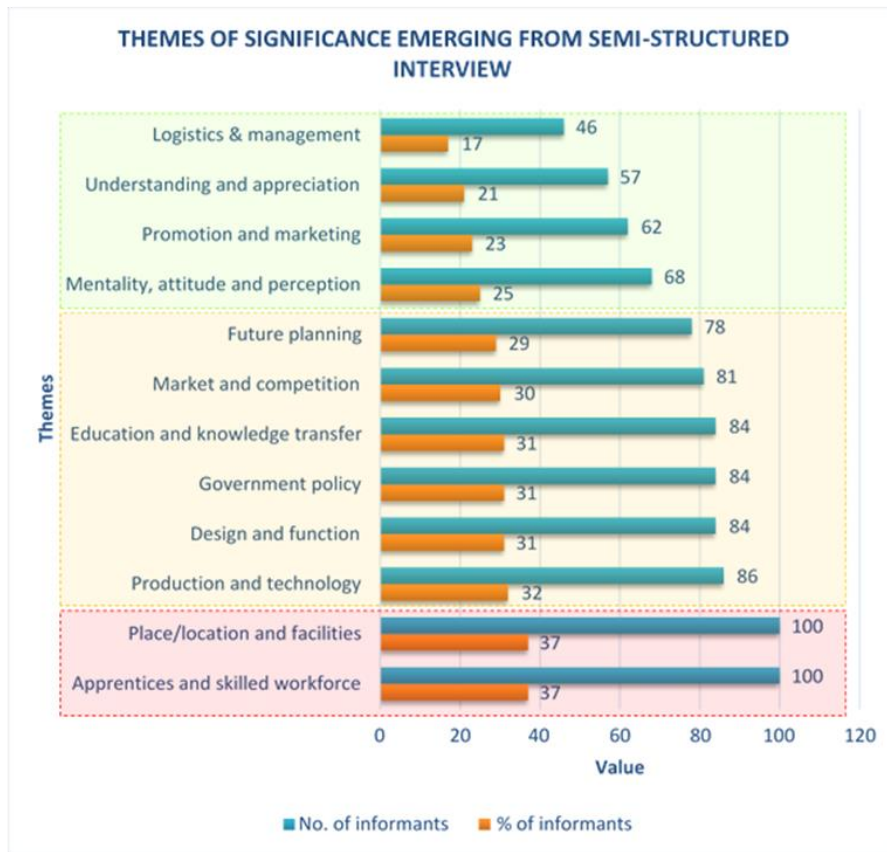
Table 7-3: Summary of the roles and responsibilities of buyers/traders and length of experience

## APPENDIX C VALIDATION – VISUALISATION OF INFORMATION

### C.1 Table Summary of Issues and Propose Potential Strategies

	THEME	SIGNIFICANT ISSUES DISCUSSED	WHY?	POTENTIAL STRATEGIES
1	Apprentices and skilled workforce	Availability of skilled practitioners and workforce. Lack of apprentices from new generation to continue the legacy of family-oriented business.	Died and the knowledge is not transferred. Relocating due to development - led to stop the practice. Economic factor led to discontinuation of traditional practice	Apprenticeship and training program for young generation. Knowledge-transfer (advanced technology, business management, marketing and promotion)
2	Place/location and facilities	The change of brassware craft ecology and its locality, craft business premises, workshops, workstations, safety.	Commercial development on the heritage sites.	Re-locating of heritage sites, awareness campaign of 'sense of place', 'value of place', propose 'creative ecology'.
3	Production and technology	Production capacity; technological innovation and R&D on manufacturing process for value-added. Cost and quality of raw material, tools and types of equipment.	Lack of fund and knowledge to upgrade new technology (machine, tools and equipment), afraid of unknown.	Knowledge-transfer (production and operation management, advanced technology through RP and CNC technology, by Co-design practice, funding from the government
4	Design and function	Monotony of design, call for change to meet modern trends and consumer tastes, research and development (R&D).	Lack of idea, skill and creativity, unavailability of modern technological assistive equipment.	Design knowledge and skill through Co-design program (product design, design innovation, information design, packaging design etc)
5	Government policy	Government policy, loans, funds and subsidies (material and incentives), bureaucracy.	Ineffective execution due to lack of knowledge and understanding on the industry in the context of socio-cultural-economy, values, meanings etc.	Co-practice as to propose strategies, guideline, framework, planning to government and authorities. Designer collaborate with stakeholders and policy makers.
6	Education and knowledge transfer	Education, training and technical support (preserving the traditional knowledge), knowledge and awareness of the market, marketing and promotion.	Ineffective execution, improper planning, lack of marketing - due to lack of knowledge and understanding on the industry,	Co-practice - where designer collaborate with government and NGOs in designing craft revitalisation programs for education.
7	Market and competition	Slow in sales, low supply and high demand and price (household and ceremonial products).	Expensive price of local product (high price setting up by Middlemen)	Education and awareness program on local cultural significance.
8	Future planning	Future planning for improvement, hope and vision for future growth of brassware craft, in particular, and craft and other artisanal industries in general.	Lack of communication and awareness, afraid of unknown	Co-practice as to propose strategies, guideline, framework, planning to government and authorities. Designer work together with stakeholders and policy makers.
9	Mentality, attitude and perception	Mindset, attitude and perception of stakeholders. Impact of change and transformation regarding traditional material culture toward local material culture.	Afraid of unknown, always hope for major help, afraid of change, emotionally disturbed, financial and economic barrier, modernisation	Awareness campaign
10	Promotion and marketing	Packaging, branding and visual identity, image development.	Lack of creativity and capital in improvising and investing on packaging; lack of knowledge	Co-design program, knowledge-transfer
11	Understanding and appreciation	Understanding, appreciation and recognition of artefacts (an item of cultural, historical, philosophical, spiritual, value, meaning of interest).	Lack of awareness and exposure on the cultural value and its significance not only by the locals but from some of the producers as well	Education and awareness program on local cultural significance, website or Portal, Co-design, promotion
12	Logistics & management	Logistics and supply chain management (SCM), planning and data management, network communication and transportation, management efficiency.	Lack of knowledge in operation management, unstructured planning, not updated data management	Knowledge-transfer (co-practice)

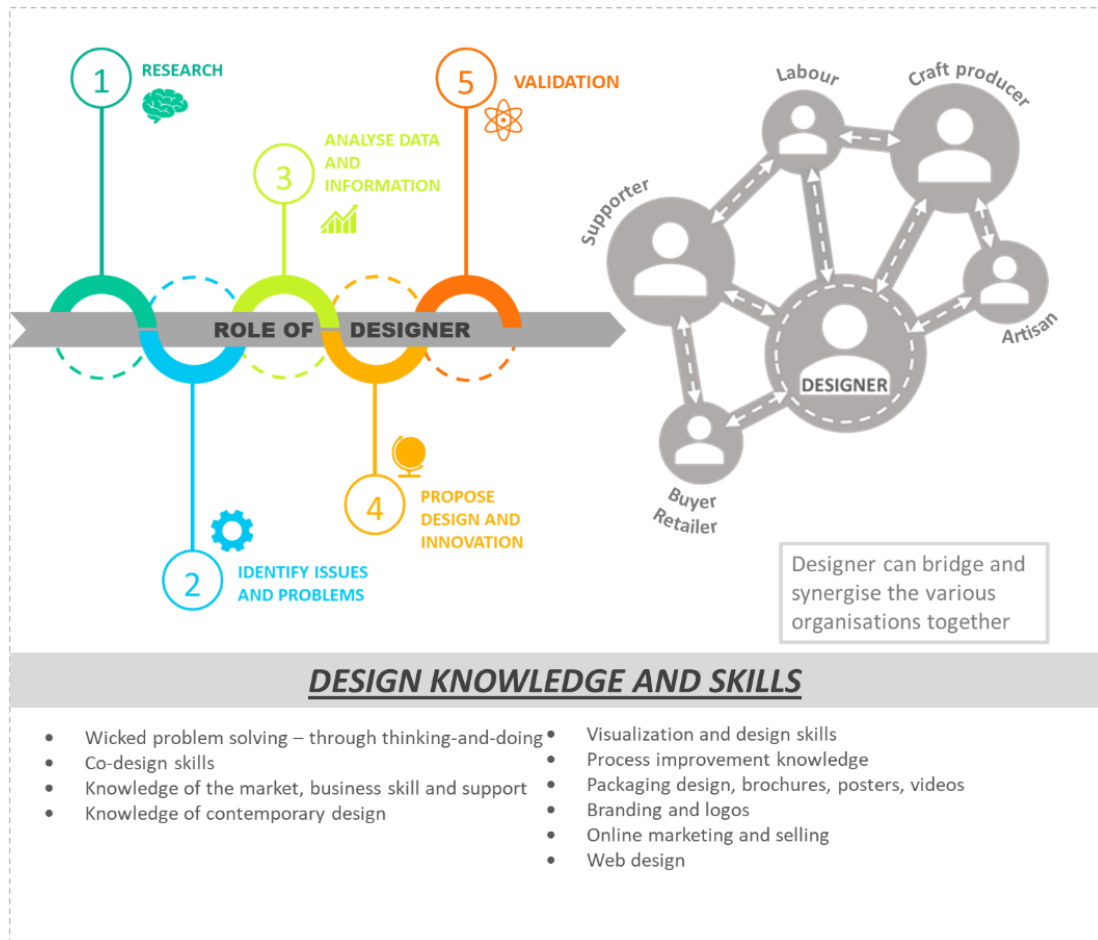
## C.2 Terengganu Brassware – Issues and Challenges



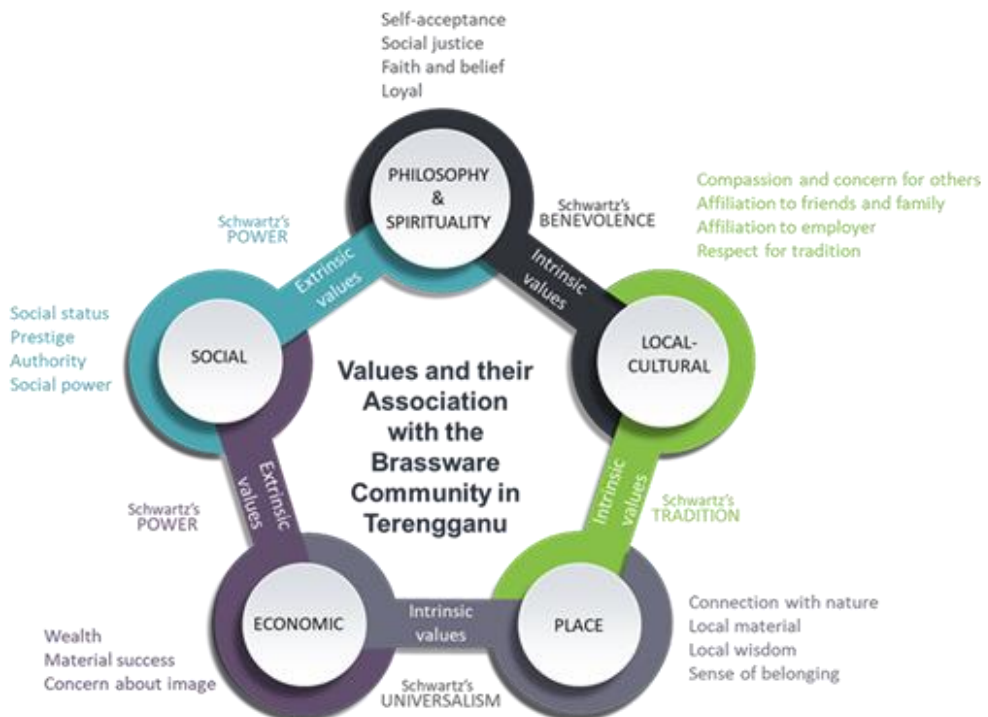
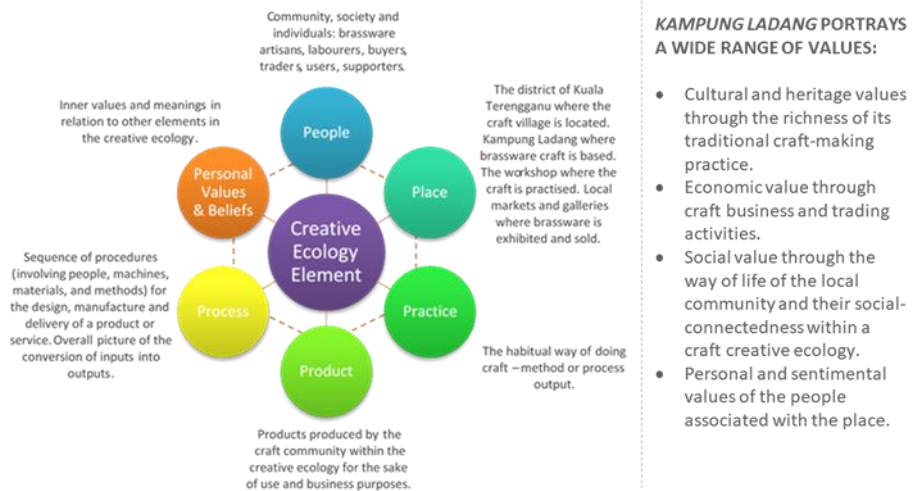
### C.3 Design Intervention Triangle of Design Strategy



## C.4 Design Contribution – Role of Designer

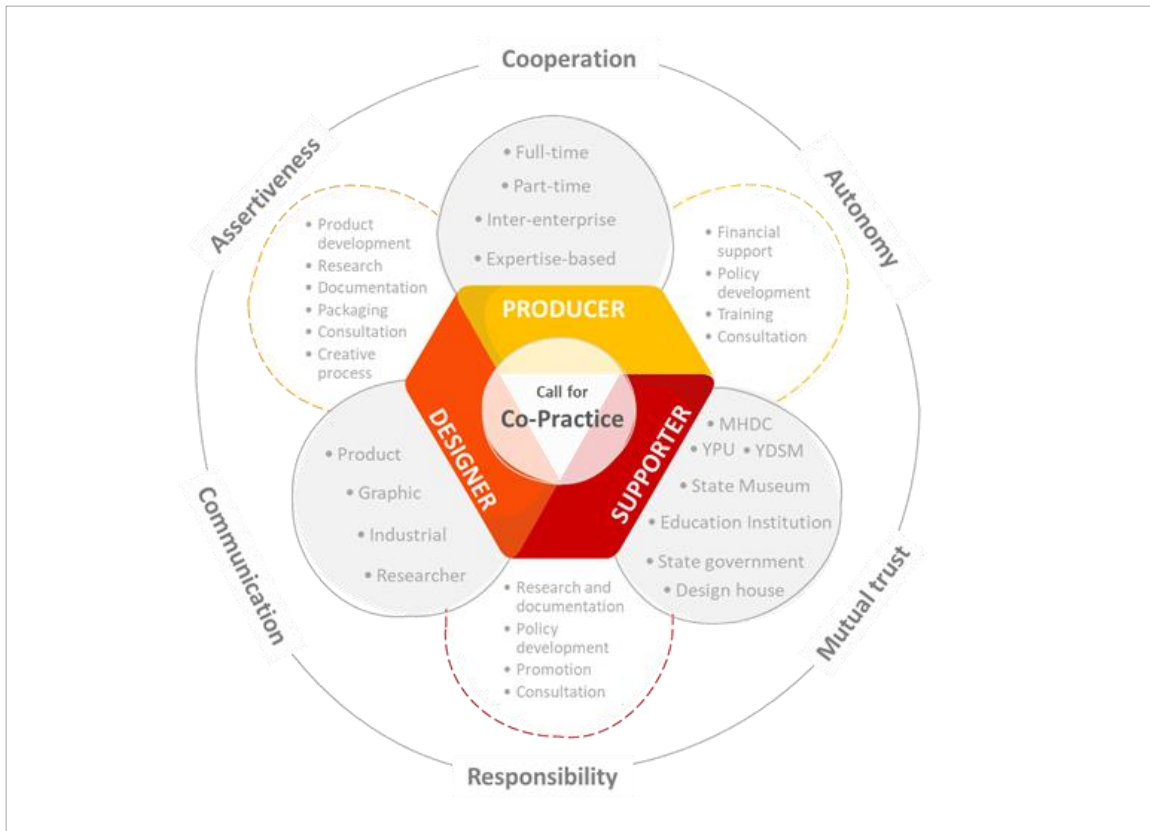


## C.5 Creative Ecology of Kampung Ladang, Kuala Terengganu

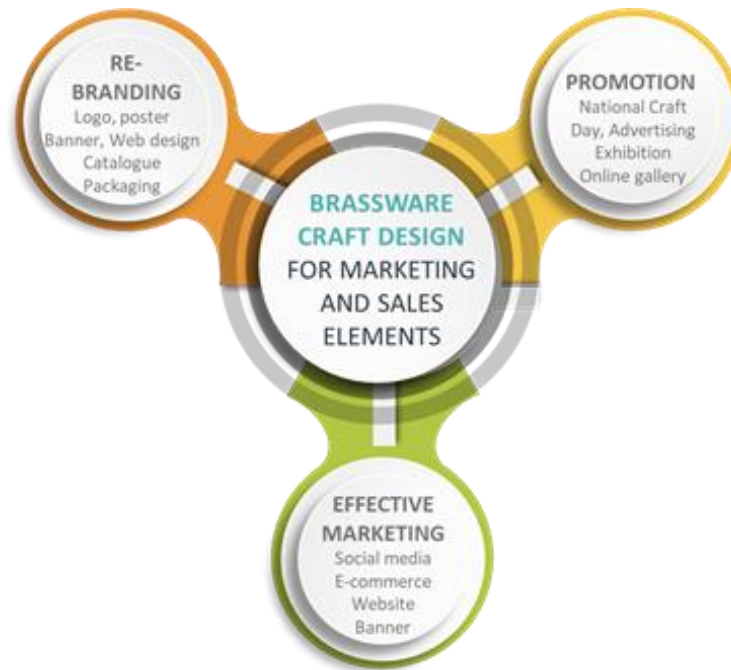




## C.6 Co-Practice as Sustainable Practice



### C.7 Brassware craft design for marketing and sales element



### C.8 Brassware craft production element

