

The Preservation of Malaysian Traditional Sport and Games through Design

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Doctor of Philosophy

Certificate of Originality

I hereby declare that this thesis is entirely my own and that any sources of information have been fully cited. I confirmed this thesis had 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 next.

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Abstract

Academic research is still overlooking the subject of Malaysian traditional sports and games (MTSG). The scarcity of academic publications addressing MTSG demonstrates the importance of this research. Globalisation and technological advancement have introduced ever-increasing attractions, such as digital gaming, which has lessened the general interest in MTSG. When the researcher observed the local community in Malaysia, he discovered that it was difficult to find children and young people playing MTSG compared to the researcher's childhood. Although a personal observation may not be pragmatic in rationalising the research, it did serve as the catalyst for researching MTSG. Despite the lack of academic references and preliminary findings, the Malaysian government, local organisations, and even individual Malaysians have highlighted the importance of keeping MTSG alive. It is envisaged that active participation in MTSG activities ensures the longevity of cultural assets, thereby preserving them. However, current attempts are limited, and MTSG remains unappealing to children, teenagers, and adults as a modern leisure activity. This realisation prompted the researcher to consider alternative solutions by using design as a creative method to help reintroduce MTSG into society. The research was conducted with a pragmatic approach, including literature reviews, interviews, field experiments, design workshops, and design evaluation. The framework presented in this research provides a strategy for the potential re-introduction of MTSG. The research concludes that the MTSG can be re-introduced through design intervention on the activities using the models developed from the research framework.

Keywords: MTSG, Cultural Preservation, Traditional Games and Sports, Re-introduction.

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The Preservation of Malaysian Traditional Games and Sport (MTSG) through Design

CHAPTER ONE

Chapter 1: Introduction

This chapter provides an overview of the research and its components. This introductory chapter will explain the research's motivation and justification, as well as the key concepts, research scope, and significance. The research structure will be described at the end of this chapter. This chapter's overview structure is displayed below.

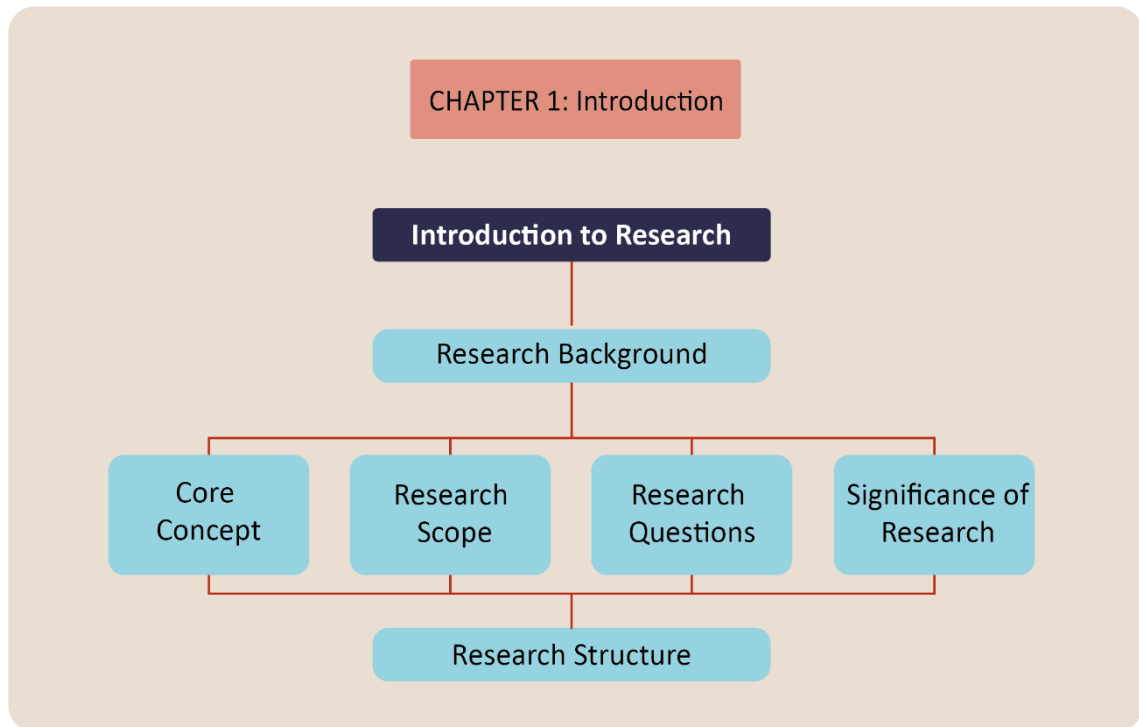


Figure 1: Chapter 1 structure overview.

1.0 Introduction

The terminology of play is often seen as an entertaining timewaster but continues to imbue every aspect of society. Play activity has been observed to go along with the existence of culture itself, as mentioned by Huizinga (1938) in his book "Homo Ludens – A research of the play element in culture". Through the years, researching play activities has revealed a far more complex structure, which is an established part of society. As play becomes a tradition, it has become embedded in many cultures in the form of dance, storytelling, songs, sports, and games. This research specifically aims to explore play in the context of sports and games. Each community and society has its own set of games occasionally played at specific times, such as festivals or rituals. In general, play, in the form of sport and games, has evolved into a fun activity and one that contributes positively to the local community.

Malaysia is one of the Southeast Asian countries located in the centre of the region. Traditional sports and activities have long been a component of Malaysia's unique community culture. As time passes, these activities confront enormous obstacles and may go extinct due to the varied repercussions of globalisation. With the advancement of technology in entertainment, the alternatives for play activities are expanding, and newer play formats such as digital games and e-sports have grown popular and are garnering more and more attention (Jupiter Media, 2006). Meanwhile, traditional games and sports, which have been recognised for their relevance in society and the ability to instil cultural values in children, have received insufficient attention and are gradually being forgotten. Not only is there a decline in the local community and youth participation in traditional games, but traditional sports and games are also not expressly addressed in the context of the academic research, which marks a serious oversight in past studies. This matter was observed through the searches of an academic journal (see chapter 2) which returned a low number of academic publications on the specific Malaysian traditional games and sports context.

Malaysian traditional sports, games, and pastimes have been designated as intangible heritage by the government, necessitating a preservation effort. However, according to the literature review, the current preservation effort

appears to be confined to a few strategies, including educational-based publications, but there appears to be no design-based research (See chapter 2.4.6). This research's main interest is Malaysian traditional sports and games (hereinafter referred to as MTSG) and exploring MTSG preservation through design.

1.1 Background

My interest inspired the first research concept in folk games. After observing and comparing current generation activity preferences with past generations, I have been thinking, "*Where have these games gone?*"

I was intrigued when I noticed that the introduction of new leisure activities, entertainment technologies, and modern sports were piquing the younger generation's interest more than traditional folk games. As an academic and designer, these challenges incite several questions and provide numerous solutions, leading to the choice to construct the original proposal for this project.

In this research, the phrases 'traditional sport' and 'traditional games' are used interchangeably but have the same meaning (refer to chapter 1.2). Traditional sports and games (later abbreviated as TSG) are a type of play that has existed, but they are usually underappreciated. While some people believe that the research of play and games is only a time-wasting and unproductive pastime, interest in the research of play and games has recently begun to develop in a variety of fields such as psychology, sociology, pedagogy, ethnology, culture, and so on (Kovacevic & Opic, 2014). Although 'play' is unique, it is a naturally occurring phenomenon for all living creatures on the planet. J. (Huizinga, 1949) concluded that,

"Even its simplest form of an animal level, play is more than just some normal physiological phenomena or a psychological reflex, and it goes beyond the confines of purely physical or purely biological activities".

Simply put, everyone plays, and the only distinction is in the degree of seriousness with which they engage in the activity they refer to as 'playing'.

Play and games are intrinsically linked to culture. Games are sub-contexts that exist within the subject of the play. 'Game' is defined as "a form of competitive activity or sport played according to rules" (Oxford Dictionaries, 2010). The terminology of the 'game' is vast, depending on the context in which it is used. The existence of games embodies cultural meaning, as introduced by Salen & Zimmerman (2004), who stated that the "*structure of a game reflection of the*

culture in which it is played". Games provide a social context for cultural learning by incorporating an ideological component. Through games, society's values are embodied and transmitted. (E. Zimmerman & Salen, 2003) mentioned that game reflect cultural values and ideologies and contributes to the strengthening of a culture's value system.

Games evolve and are adapted to the needs of the era in which they are implemented. Even so, some traditional play activities, such as traditional games, are facing challenges. The TSGs are gradually disappearing, but they remain in the collective social memory (M. Bronikowska & Groll, 2013). Those that remain may face extinction due to globalisation and the popularity of homogenous sports (Linaza et al., 2013b).

It is difficult to quote a TSG definition because it is ambiguous, but a group of researchers and experts proposed a new definition of traditional games in Europe in 2009, which was later recognised by UNESCO, which states that:

"Traditional games are motor activities of leisure and recreation which can have a ritual character. They are part of the universal heritage diversity. They are practised in an individual or collective manner, deriving from regional or local identity; they are based on rules accepted by a group that organises competitive or non-competitive activities" (M. Bronikowska & Groll, 2013).

While TSGs are still played on occasion and at special events, they have failed to capture the attention of today's generation in comparison to modern sports and games. TSG's value extends beyond providing players with simple entertainment. TSG practice has the potential to improve global health and, when uniformed and institutionalised, can transform into sport (UNESCO, 2009). Hazelton et al. (1995) mentioned that TSG benefits the player's health, improves social interaction, and instils the habit of obeying the rules. While there are no strict rules or penalties in TSG, the player is responsible for adhering to the rules that have been agreed upon between them and alerting other players to bad moves and deflections (Hazelton et al., 1995).

Malaysian traditional sports and games (MTSG) also face challenges in sustaining their existence. Ironically, even though there is a specific occasion to

promote MTSG in Malaysia almost every year, it still fails to capture society's attention to value them (Utusan Malaysia, 2015; Utusan Malaysia Online, 2013).

Through a preliminary search of the literature, I noticed that information about MTSG is limited, and sources are scarce due to the subject's lack of academic exploration, particularly in the context of design. The majority of MTSG-related research publications discovered addressed topics such as the use of specific MTSG in educational systems, the reintroduction of specific MTSG via digital approaches, and the cause and effect of MTSG play on children's development (see chapter 2). Meanwhile, the emphasis on MTSG preservation from a design standpoint has not been critically examined and requires attention. These are referred to as the knowledge and research gaps, respectively, which I will further explore in this research.

1.2 Core concepts

This research is structured around core concepts that can be described in several ways. This section defines these terms in the context of this research to aid comprehension.

1.2.1 Traditional sport and game (TSG)

The terms 'traditional sport' or 'traditional game' give us the same concept and are sometimes used interchangeably. However, in this research, focusing on a specific term will prevent confusion. The first use of the TSG abbreviation as a stand for 'traditional sports and games' was referred to by Blanchard (1995), as mentioned by Bronikowska & Groll (2013), derived from the words 'traditional game' and 'traditional sport'. Alternatively, by referring to Merriam-Webster and Oxford Dictionaries, the definition of the term 'game' in this research refers to "activities that require physical, mental, and skills attribution in which an individual or team competes against another per rules for entertainment, referring to past or existing activities of a culture that are not related to digital content" (*Game / Definition of Game by Merriam-Webster*, n.d.; Oxford Dictionaries, 2010a). Thus, in this research, the abbreviation of TSG for traditional sports and games will be used as it is sufficient for the reader to understand the context of 'local-based' activity that requires physical, mental, and skill attribution in a competitive or individual setting, providing entertainment for the user that is not related to digital content.

1.2.2 Malaysian traditional sport and game (MTSG)

Malaysian traditional sports and games are relatively new terms, even within Malaysia, and the abbreviation MTSG is used in this research. Previous studies of MTSG (see chapter 2.2.3) provide no clear and specific definition of the subject. Therefore, it is important for this research to address the MTSG definition clearly, so by adapting from the TSG term above, MTSG can be defined as activities that require physical, mental, and skills attribution in which an individual or team competes against another per rules for entertainment, referring to past or existing activities of a Malaysian culture that are not related to digital content.

1.2.3 Preservation

The MTSG is recognised as an intangible heritage under the National Heritage Act of Malaysia 2005 (Act 645) by the Heritage Department of Malaysia, governed by the Ministry of Tourism, Art, and Heritage Malaysia, although it also consists of the tangible element of the activity (Jabatan Warisan Negara, 2021). The effort to preserve them as cultural elements is justifiable.

In the definition statement by Alivizataou in his research, referring to previous researchers (Lowenthal 1985, 1998; Nora 1989; Smith 2006), he mentioned that cultural preservation is an "*effort to protect, conserve, or safeguard the traces of the past for the future, which constitutes a key narrative of modernity*" (Alivizatos, 2016).

Inspired by the statement, this research will borrow the context of preservation to sustain the MTSG activity by exploring feasible approaches to conserve the game through the reintroduction of the activity to society through the design process.

1.2.4 Design

Simon (1988) stated that design is an effort to change existing situations to preferred ones, and the idea is that designers reframe things through imagining several preferred situations rather than framing a problem and solving it (Koskinen et al., 2011).

The MTSG subject is dear to the Malaysian community. This research is of utter importance for being constructed based on the design approach, as it can provide an alternative approach to form the tangible interaction and offer the stakeholders in this research a way to express their emotions towards the cultural product. This research is in conjunction with the established approach of industrial design, which focuses on the beauty of the physical appearance and visuals using semantic and visual metaphors (Wensveen, 2018).

The design approach takes precedence over more than just the ornamentation process, especially in a cultural-product related subject, as the values of the activity are more than just the visual of the tangible artefact; they

are embedded in the experience. Design research has a long tradition of establishing and informing theory using detailed case studies. Case studies typically revolve around depictions of individuals, organisations, or events that are contextually time-and-space-bound (Abildgaard & Christensen, 2017) and are used in this research.

Design is used as a mediator between the cultural subject and the designers in this research, who are guided to provide alternative preservation solutions through design practice and imagination.

1.3 The Research Scope

The scope of this research is narrowed to the cultural preservation of a specific Malaysian intangible heritage, for which the subject of MTSG is critical and has been recognised by the National Heritage Department. (Jabatan Warisan Negara, 2021).

Malaysia is a multicultural country with a strategic geo-location that has exposed it to global trade and foreign cultures since its inception. The multi-diverse culture that exists within Malaysia makes the country unique and colourful (UNICEF, 2010). Although cultural diversity is maintained by the respective people, some cultures or lifestyles are shared by every other race in Malaysia and give meaning to Malaysian culture (Cheah, 2002; Heriot-Watt University, 2015) and MTSG is one of the shared cultures that can be observed in the Malaysia scene (Putra et al., 2014).

Naturally, the focus group of this research will be Malaysians, as the subject is closely related to their culture, and the personal context and values of the MTSG can only be captured through them.

Considering that the research will be undertaken within a design-based approach, the next focus group that is important in delivering the meaning of this research are designers. Again, since the research is a country-specific cultural product, it is justifiable that the Malaysian designers are the most suitable focus group for this research.

1.4 The Research Questions

This research began with the wider aim of exploring the roles of design within country-specific cultural issues, which is why this research is about the MTSG. In Malaysia, existing scholarly research has not discussed the information on the MTSG in detail (see Chapter 2.4.6), thus reflecting a significant omission in past studies. A review of a variety of relevant scholarly repositories reveals that the MTSG is less investigated.

The issue above is illustrated by the result of a review of prominent repositories, such as Scopus and Proquest. A simple search of the Scopus database for the term 'Malaysian traditional games' between 2012 and 2021 yielded 39 primary documents and 5 secondary documents. Meanwhile, the Proquest Database (filtered under Design & Applied Art Index and Art & Humanities) returned 116 hits for the same keyword. Thorough searches through the same database using related keywords also retrieved limited results (appendix 1). However, most of the publications listed through the search are unrelated to the research subject. Another search through the online Malaysia National Library system returned a result of 205 registered documents of the *permainan tradisional* ranging from the years 2002–to 2021 (appendix 2). In this case, the number of available reference documents on the MTSG is low, even though the documentation is hardly accessible to the public. However, in non-academic publications, there are efforts by individual Malaysians to document MTSG through personal blogs and websites. There was also some interest in the social media and mainstream media reporting on MTSG, as such reports on the annual activities being handled by the local authorities, the need to preserve and introduce the activity to current generations, and the issues with the declination of the MTSG activity (Mohammad Dzulhisham Che Hassim, 2014; Sinar Harian & Harian, 2015; Utusan Malaysia, 2015; Utusan Malaysia Online, 2013).

According to preliminary literature searches, the decline of MTSG is due in part to the globalisation of homogeneous entertainment and sports, emphasising the importance of preserving the subject. However, despite some efforts to keep the MTSG alive through local governance by including the MTSG

activity in every cultural festival annually (see chapter 4.1.5), it still doesn't appeal to Malaysian society, especially youngsters. Thus, I came out with the questions, what is the status of MTSG and the values of the activity towards Malaysians? What is it about MTSG that needs to be preserved? How might we re-introduce the MTSG to current society? Can design be a mediating process in providing an alternative approach to preserve the MTSG?

Even though there are no formal sources for the MTSG, there are several publications that have been identified focusing on the context of MTSG (see chapter 2.4.6). The majority of the publications focused on researching the effects of specific MTSG activities on education, modifying MTSG activities through digitisation, and innovating a specific MTSG. However, there is no extensive research on the definition, values, and preservation strategies of the MTSG, especially in design, as of date, thus leaving us with a gap to be filled in.

Some of the gaps identified through the preliminary understanding of the MTSG through the literature section, and intending to re-introduce the Malaysian as a means to preserve the activity, led to the development of the specific research questions within this research.

The core research question in this research is how design can help to preserve the MTSG. Thus, I keep the question general but directed to be flexible in searching for the information. In addition to the core question, supplementary questions would help me to understand the knowledge within the MTSG subject and curate the method to answer them. The questions are:

1. What are the status, issues, and values of the MTSG?
2. What is the available strategy and effort to preserve the MTSG?

The visual flow of the research question's structure is shown in figure 2 below.

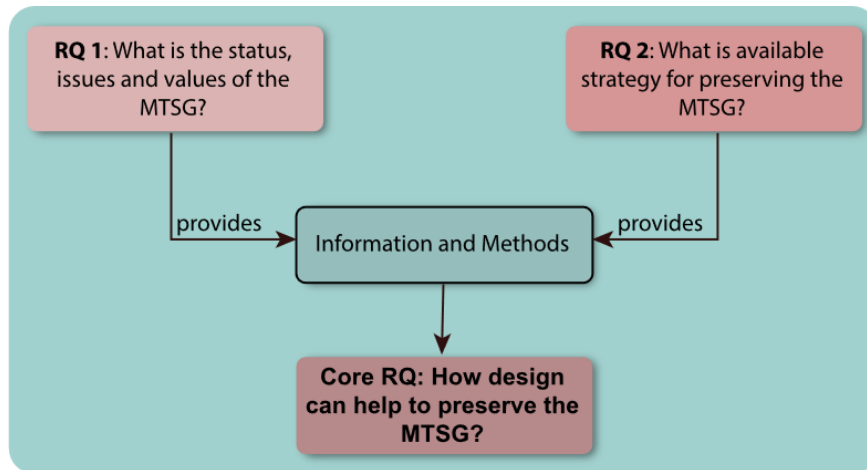


Figure 2: The research questions and the flow to answer the core question.

These elements in the research questions are then treated as the objectives for this research, which results in the formulation of the conceptual framework and the research structure.

The visualisation of the conceptual framework helps in identifying a focus and exploring variables in this research. As a conceptual framework, it explains what you expect your research to find. It depicts how the variables that we are researching may relate to each other, and this conceptual framework is usually portrayed before the data collection (Bas Swaen, 2015).

Figure 3 below shows the conceptual framework for the research depicted by the research questions and preliminary knowledge about the MTSG in the literature review. This conceptual framework is the preliminary research guideline for constructing the research structure.

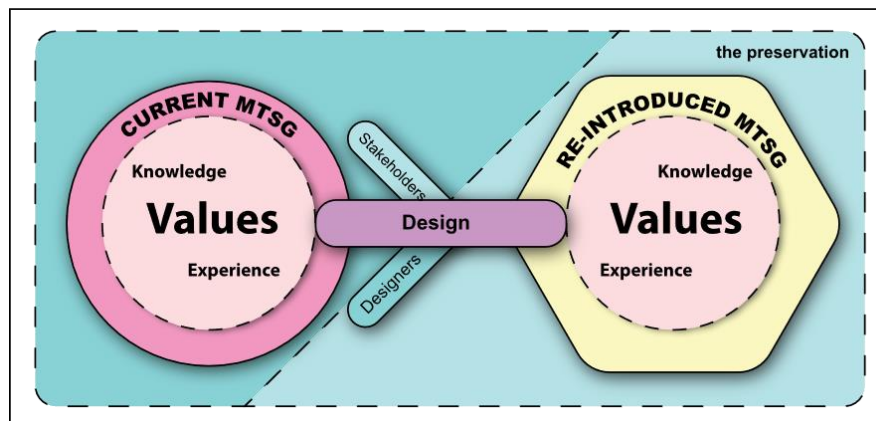


Figure 3: Visual representation of the conceptual framework for this research.

1.5 Significance of Research

The decline of MTSG activity through my personal observation and limited resources in the research of MTSG was the justification for this research. The launch of several efforts to preserve TSG globally, such as the UNESCO-Tencent project "the creation of a digital library on traditional games" by (Wang Kaihao, 2015) and the TAFISA project "Recall: Games of the Past – Sports for Today" (TAFISA, 2015), proves that there is a growing interest in this field. The subject of TSG has been addressed as an important cultural heritage on a global scale and even in Malaysia, where there was the establishment of a specific council called MAFIRMA (Recreational and Leisure Council of Malaysia), which later disbanded in 2017, to monitor and support traditional sports and games movements in Malaysia. We need to look into how much support the MTSG activity receives from related organizations.

The challenges of globalisation and current entertainment choices, combined with a falling trend of physical activities, particularly in MTSG, are impeding the knowledge and skill transfer of the traditional game (Bernama, 2011; Mohammad Dzulhisham Che Hassim, 2014; Sinar Harian & Harian, 2015). If the previous generations were not involved in playing traditional games and the younger generation did not show any interest in playing the game, eventually, the cycles of cultural knowledge and skill transfer would cease to exist (Sinar Harian & Harian, 2015; Utusan Malaysia, 2015).

The relationship between TSG and the player is not only bound by knowledge and skill; it transcends physical and mental attribution too. The bonds between multiracial societies are strengthened by the existence of TSG. These factors are extremely significant to the future of MTSG preservation.

The attention toward MTSG in Malaysia is lacking and quite new in the academic field, so the data is difficult to collect. Discovering the MTSG subject through exploratory research helps in identifying problems that have not been studied clearly, establishing priorities, developing definitions, and improvising the final research design (Earl Babbie, 2013; Patricia M. Shields, 2013).

It provides cultural significance and proposes to preserve traditional sports and games through its design approach. It will be useful as a reference for further research and offer new possibilities to re-introduce traditional sports and games to society.

1.6 Structure of the Research

The research flow explained in figure 4 outlines the structure of these research activities. In initial research, the exploratory research method is appropriate to tackle new problems or concerns that are missing in sources and to help evaluate research design, sampling technique, and method of data collection (Singh, K. 2007, p.64; Brown, R.B. 2006, p.43).

In chapter 1, the research started with the background, identifying the core concepts and scope of the research. This allowed me to concentrate on portraying the purpose of this research. The preliminary information on the MTSG raised a few questions, which were later formulated to be the main research questions (see chapter 1.4). The formulation of the research questions then leads to the construction of the conceptual framework of this research, which enables me to work within the keywords depicted in the framework (see Figure 3). The keywords make it easier to focus on certain elements of the MTSG for the extensive information searching in chapter 2.

The second chapter displays an extensive literature collection that assists me in understanding the MTSG. The subchapter context in chapter 2 has been optimised by referring to the background research, the research questions, and the conceptual framework. Failure to manage the literature would succumb to random information unrelated to the research and easily lost in the translation of the data. Some of the information captured in the literature sections, such as the MTSG type, rules, and guidelines, was used in creating a systematic manual for Chapter 3.

The research methodology is presented in Chapter 3. This chapter justifies the way the research data collection process was planned. A design-based approach was mentioned, and the pilot research was the first phase, followed by another phase, as shown in figure 4. This chapter's research flow was tailored to the research questions and conceptual framework. Its purpose is to determine the conceptual framework's predictive power in answering the research questions. The data collection at this stage leads to the analysis and conclusions in the following chapter.

In chapter 4, the findings from each phase, including the pilot research, are described. The findings are summarised and triangulated with the information from the literature.

Chapter 5 discusses the findings of each phase and the relationship between these phases in answering the research questions. This is where all the information was triangulated, and the discussion on the early conceptual framework took place. The discussion would lead to the final key preservation technique, using design as a mediator. The final chapter (chapter 6) concludes the discussion and makes recommendations regarding the overall findings.

Visual representation is perhaps the simplest way to grasp the overall concept of how this research was structured. Figure 4 illustrates the research structure and how each chapter is connected to the others.

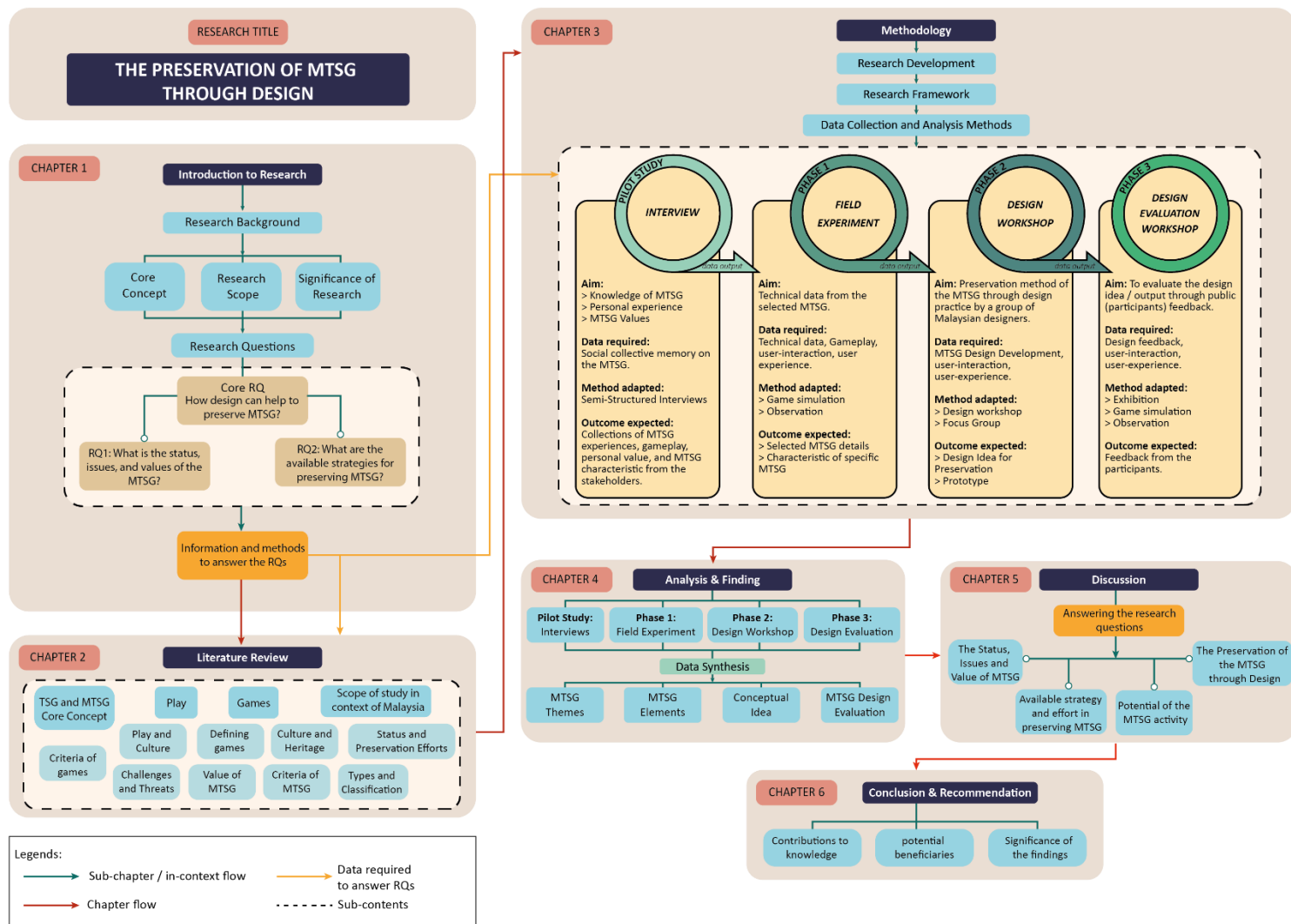


Figure 4: Overview of the research structure.

CHAPTER TWO

Chapter 2: Literature Review

The investigation begins in this chapter by exploring and discussing the core concepts of the TSG and MTSG, with an emphasis on the context of play, games, culture, and heritage. While part of the topic is rather broad, the literature will primarily address the connecting context for the comprehension of MTSG.

Understanding the word ‘play’ will help in a better understanding of the word ‘game’ as a more complex form of play. The subject of ‘game’ will next be examined through the lens of culture and heritage, leading us to investigate TSG and, finally, MTSG.

In this chapter, the exploration of the works of literature on related keywords in the context of the research is shown in the figure below.

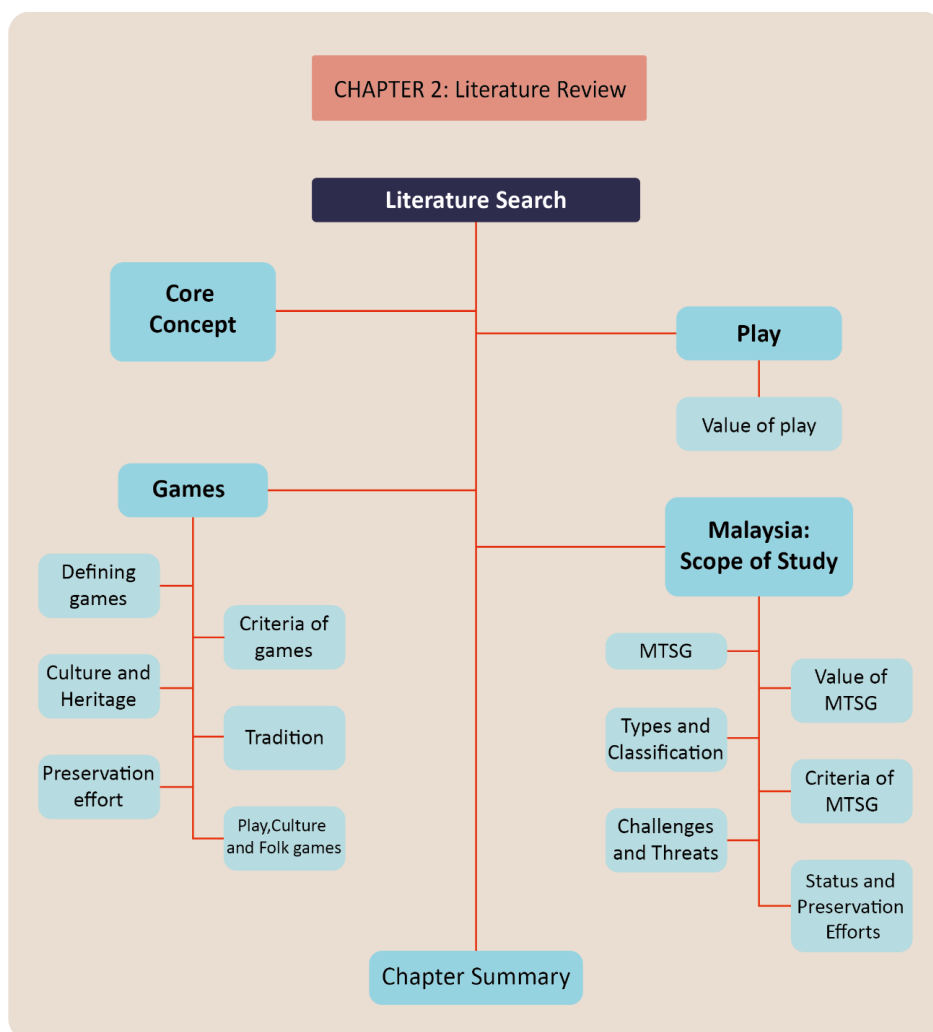


Figure 5:Chapter 2 structure topic overview.

2.1 The Core Concept of TSG and MTSG

To comprehend the TSG, I first examine the relationships between core concepts such as play, games, heritage, and culture, as depicted in Figure 6. The figure shows how each concept relates to the others and demonstrates how the literature contributes to a preliminary understanding of TSG. According to the figure, a game is a type of play, whilst heritage is a subset of culture. The convergence of these relationships leads to the knowledge of TSG, which is constituted by the area of intersection.



Figure 6: Exploration of the core concepts of TSG.

Sierra & Kaminski (1995) define traditional children's games as those that are played casually with no or little equipment, that children learn through observation of other children, and that can be played without reference to written rules. These games are usually played by children between the ages of 7 and 12, with some latitude on both ends of the age range. They also mentioned that children's traditional games (also called folk games) are those passed down through generations. However, their definition is limited to children's games, while this research seeks to find a more general definition for traditional games.

M. Bronikowska (2015) stated that in 1990, UNESCO recognised the traditional game as part of popular culture based on tradition and creations of a cultural community, which have been expressed by a certain group and does reflect its cultural and social identity; and the standard and values transferred verbally, imitation or practice.

Blanchard (1995) coined the term TSG (traditional sports and games). Blanchard (1995) viewed TSG as a form of sports activity associated with a particular local ethnicity or culture that is competitive, involves physical play, and has game-like elements but has fewer or no professional attributes than modern sport. Blanchard (1995) concludes that TSG's preservation of traditional values, development of player skill, and connection of past and present exemplified the best of sports institutions' fundamental qualities.

According to M. Bronikowska & Groll, the TSG qualifies them as cultural heritage (2013). TSG are historical-cultural creations that serve as a form of enjoyment and reflect a community's deep social roots, most notably in ways of behaving, communicating with others, interacting with the environment, traditional rites, ceremonies, and everyday life practices. Physical games are a part of a diverse and vibrant cultural heritage.

TSG has been recognised and preserved by a broader number of stakeholders, including researchers, non-governmental organisations, public organisations, and international organisations such as UNESCO and The Association for International Sport for All (*TAFISA*) (M. Bronikowska & Groll, 2013; Hazelton et al., n.d.; Linaza et al., 2013a; Sakuma et al., 2012).

UNESCO defined TSG in 2009, but M. Bronikowska & Groll (2013, p.2) stated that the definition is too lengthy and ambiguous. They have advanced a different definition of TSG as,

“Indigenous, regional (folk) or national forms of culture of physical movement related to certain bodily traditions that are part of human heritage, and transmit cultural and universal values, regardless of their geographical locations, socio-cultural status, and despite political influences, as they are passed from one generation to the next by physical actions (performances and competitions) such as everyday life habitual/working activities, local festivals, national tournaments”.

This TSG definition and elements prompted us to examine the MTSG's fundamental concept and to develop a more precise definition of the subject in this research, beginning with an understanding of the concept of play. By delving deeper into the subject of the play, I attempted to determine the value of play in terms of culture.

2.2 Play

Huizinga (1949) asserted that play predates culture and that the term 'play' is insufficiently defined. He also emphasised that play is more than a simple gesture expressing a physiological or psychological reflex. It transcends the confines of a particular physical or biological activity.

The common linguistic definition of play is "*participation in an activity for the sake of enjoyment and recreation rather than a serious or practical purpose*" (Oxford Dictionaries, 2010b). Play is a broad term that encompasses a variety of voluntary, intrinsically motivated activities intended to provide recreational pleasure and enjoyment (Garvey, 1990). However, Brian Sutton-Smith argues that the play's precise definition is ambiguous (Avedon & Sutton-Smith, 1971).

According to Jean Piaget (1962), a Swiss clinical psychologist best known for his "theory of cognitive development", the existence of numerous theories of the play demonstrates that the subject is difficult to grasp. Despite the ambiguity of the definition of play, (Bateson et al., 2013) identified five defining characteristics of play based on their research:

1. The behaviour (play) is spontaneous, rewarding, motivating and serves as a goal to the individual. Play is amusing.
2. The behaviour (play) would only occur if the players were in good health and condition. Play is a sign of well-being.
3. The play behaviour comprises actions and thoughts that can be communicated in novel ways. Temporary alterations in social relationships among players, such as role reversals, will occur. Play is a catalyst for uniqueness.
4. The player is shielded from the concept of serious behaviour. The behaviour looks to be without profit and may be accompanied by a non-serious gesture. Work or serious behaviour is the polar opposite of play.
5. In comparison to non-playful adult behaviour, when it comes to playing, the action or concept may be repeated, incomplete, or excessive. Play is dynamic and ever-changing.

The most common misconception about the play is that people often tend to associate it with children. Bateson et al. (2013) oppose this and state that "while play is often regarded principally as an activity of young animals or children, it also occurs in adults of many species." Play happens to be a fundamental behaviour of humans and animals that can be observed and occurs naturally.

While some scholars (Caillois, 2006; Huizinga, 1949) describe playing as an unproductive activity, this misconception has been challenged over the years by scholars such as (Pearce, 2006). Play transcends age, race, and culture. While some view plays as frivolous and unproductive, others disagree, as suggested (Bateson et al., 2013). The feature of the play is one of the significant proofs that play enables creativity, management, social interaction, emotion, and physical attribution, thus defying the unproductive aspect of play.

2.1.1 The Value of Play

Play can take various forms of activity, from the form of improvisation, pretence, performance, mimicry, interactive, sport and games.

"Improvisation, composition, writing, painting, theatre, invention, all creative acts are forms of play, the starting place of creativity in the human growth cycle, and one of the great primal life functions. Without play, learning and evolution are impossible. Play is the taproot from which original art springs; it is the raw stuff that the artist channels and organizes with all his learning and technique" (Stephen Nachmanovitch, 1990).

Bateson et al. (2013) argue that play is an essential behaviour that fosters creativity, which in turn encourages innovation, on the grounds that playful behaviour and thought can generate radically new approaches to physical and social challenges.

Sports are a type of universal play in which physical, social, and emotional interactions can be observed. According to Nobeit Elias (1978), sport is a crucial component of the process of civilisation. Sport's 'victory' and 'defeat' can also influence one's emotions. The sensations that individuals encounter can be so surreal that they have an effect on their emotions and behaviours (Sheed, 1995).

In a serious work environment, play may appear irrelevant; this is especially true for adults who spend a significant amount of time at work. However, Ventura et al. (2013) demonstrate that playing games and engaging in recreational activities can promote persistence, an optimistic motivational style, and positive affect. By incorporating play into the workplace, we can increase productivity, creativity, and innovation, as well as job satisfaction, workplace morale, social bonding, and job performance. We can also reduce turnover, absenteeism, and stress (Lawrence Robinson et al., 2016).

Individuals' cognitive development can be aided by integrating various forms of play. According to Gao and Mandryk (2012), even ten minutes of exercise can help individuals improve their cognitive thinking. Another research-based on playing and focusing on video games concluded that playing video games in moderation has a beneficial effect on academic success-related skills such as time management, focus, executive control, memory, and spatial abilities (Hollis, 2014).

Play can also influence social development and interaction. Generally, a play community develops a lasting bond between its members and becomes permanent even after the game is over (Huizinga, 1949). Research by Sullivan (2003) examines the effect of mothers' and fathers' differing play styles on children's social development. They discovered that playing with parents can reduce children's anxiety and help them be more socially adaptable at school or when they play with other peers (Sullivan. C, 2013).

The play has a variety of developmental effects and benefits. Numerous studies have been conducted on the effects of various forms of play and how the subject of play affects the life of an individual, whether a child or an adult. Each type of play has the potential to influence an individual's abilities, cognitive thinking, emotional development, and personal growth.

My examination of 'play' as a fundamental and universal behaviour observed in children and adults leads to a discussion of games in the following section.

2.2 Games

In this section, the research of games from various angles is explored. It is an essential factor that leads to consideration of the cultural significance and preservation of traditional games. Barwick (2012), in his research on the preservation of digital games, stated that to consider the implications of preservation, it is necessary to understand the elements that make up a game. (Salen & Zimmerman, 2004) argued and stated that a game is a subset of play, and the play concept always exists within games. In continuation of the significance of play previously mentioned, we now focus on one form of play that is more structured, which is known by the term 'game'. Generally, the term 'game' would be defined as any activity that brings pleasure and amusement, which includes and is not limited to dancing, playing musical instruments, acting in plays, and playing with dolls and toys (Wolfgang Kramer, 2000). The format of a game is too broad and can take a variety of forms, from board games to tabletop games, competitive sports, video games, and etcetera.

There are numerous types of games that are widely known throughout the world. The term 'games' is also interpreted differently in the modern world, as games are typically perceived as digital entertainment, in contrast to their physical counterparts, which are typically referred to as sports, despite the fact that both forms essentially adhere to the term stated above.

2.2.1 Defining Games

Defining a 'game' is not an easy task, as the meaning and specific definition of games as a form of play can be quite ambiguous and broad. A simple definition of the term 'game' is an activity that people engage in for pleasure and enjoyment. Wolfgang Kramer (2000) stated that the modern definition of a game is based on Juhan Huizinga's (*Homo Ludens*, 1938) and Friedrich Georg Jünger's work (*Die Spiele*, 1959). However, this is an overly broad statement, and thus this research will focus on games that are specifically associated with a cluster of traditional Malaysian games and sports. Unfortunately, these games have been referred to in Malaysia under a variety of names, including 'local society games,' 'traditional games,' and 'village games,' which adds to the confusion. So, to define

these types of games for this research, we must first investigate the game's criteria and components.

2.2.2 Criteria of a game

Barwick (2012) stated that while the definition of a game varies, there are some characteristics that all theorists share, despite their criticisms and disagreements. This section discusses some of those common characteristics, criteria elements, and structures.

A work by Kramer (2000) stated that a game consists of rules and components; both can exist independently, but if they are not combined, the game is not a game. Analogically, he stated that components are analogous to hardware, whereas rules are analogous to software.

Jesper Juul; presents a useful deconstruction of game definitions to introduce his new 'classic game model' (Juul, 2005). This model, he claims, is a way to "*understand the properties of the games themselves*" (Juul, 2005, p.27). There are three key components consisting of:

"1, The game as a formal system. 2, the relation between the game and the player of the game, and 3, the relation between the playing of the game and the rest of the world" (Juul, 2005, p.28).

As a result, the suggested definition of a game by Juul is *"...a rule-based system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort to influence the outcome; the player feels emotionally attached to the outcome, and the consequences of the activity are negotiable."* (Juul 2005, p.36).

Juul (2005) compared several definitions made by scholars such as Huizinga (1950), Roger Caillois (1961), Bernard Suits (1978), E. M. Avedon and Brian Sutton-Smith (1971), Cris Crawford (1982), David Kelley (1998), and Katie Salen and Eric Zimmerman (2004). He analysed the work of each of these researchers and compiled a list of what he dubbed "common features of a game." These common characteristics are expanded upon and introduced by him as a "*Classic Game Model*". Juul's "*Classic Game Model*" serves as a starting point for

determining the characteristics of TSG in this research, as well as providing insight into how we might preserve them in the future. Juul's previous model and its components are depicted in Figure 8 below.

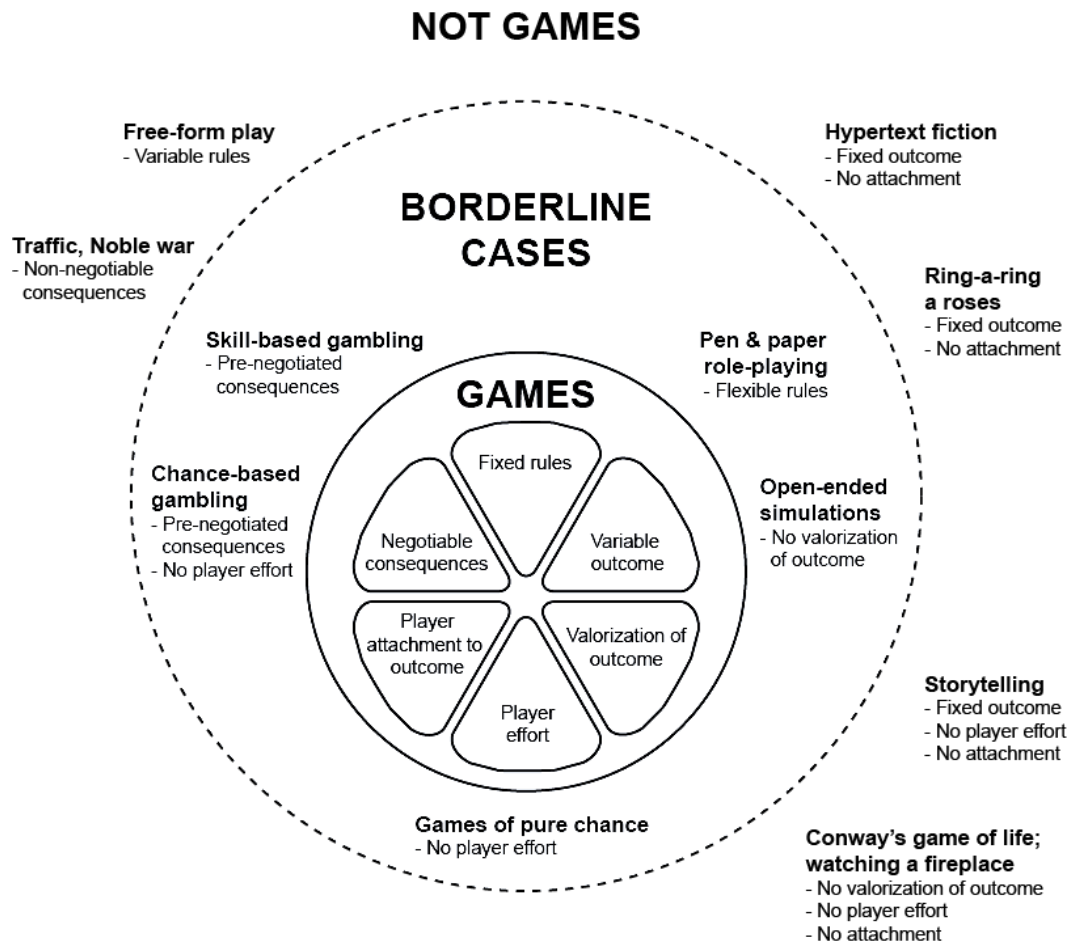


Figure 7: Juul's (2005) Illustration of "Classic Game Model."

Six characteristics that define a game are extracted from the definition and displayed in the model:

1. Rules
2. Variable, quantifiable outcome
3. Valorisation of outcome (Value)
4. Player effort
5. Player attached to the outcome
6. Negotiable consequences

According to Juul (2005), the game can give meaning to two things. Either we use the term for a static object, an artefact, or it can refer to an activity that players perform. *“The classic game model is a way of capturing what a game is by describing it in terms of the game itself, the player’s psychological relation to the game, and the relationship between playing of the game and the rest of the world”* (Juul, 2005, p .197). The model described almost all games from 3000 BC to the end of the twentieth century, and that is the reason the author called it the *“Classic Game Model”*.

2.2.3 Definition of Game in This Research

The criteria of a game by Wolfgang Kramer (2000) and Juul's classic game model provide a collective reference to be useful for the research. Both criteria, in my opinion, will be relevant for this research. In light of the research's purpose and the criteria listed above, the game in this research refers to a physical game activity that includes the following components, rules, and criteria: a goal, a variable and quantifiable outcome, negotiable consequences, equality, freedom, active player, competitive, player attached to the outcome, and valorisation of the outcome as the players engage in this activity.

While there are several studies pertaining to the models of games and game design research, the research has focused more on general design research. The research on game design learning through the perspective of local culture and the contribution to design research is still lacking in some contexts; it is missing. In the next subchapter, I will focus on games in the context of culture and heritage.

2.3 Culture and Heritage

We now have a basic understanding of how and when the concept of play can be interpreted as a game and vice versa. Additionally, we have noted that this research will focus on physical types of games rather than the other types previously mentioned. This sub-chapter examines the concept of games concerning culture and heritage. A careful review of traditional games leads us to the term 'culture'. Thus, to gain a fundamental understanding of the TSG, the research delves into the concepts of culture, tradition, and heritage.

Various definitions of culture have been addressed by different scholars in previous publications. The Centre for Advanced Research on Language Acquisition (CARLA) has compiled a list of several scholars who have referred to cultural definitions in their repository (CARLA, 2019). Below are listed a few 'culture' definitions found in the CARLA repository.

Tylor E (1974), a prominent anthropologist, defined culture as a complex phenomenon consisting of a web of relationships between knowledge, belief, art, morals, law, custom, and any other capabilities and habits of an individual as a member of society. P. James et al. (2015, p.53) took a much more recent approach, defining culture as *"a social domain that emphasises the practices, discourses and material expressions, which over time, express the continuities and discontinuities of the social meaning of a life held in common."*

Another definition by Hofstede G. (1984, p. 51) posits that *"Culture is the collective programming of the mind which distinguishes the members of one category of people from another."*

While Damen, L. (1987, p. 367), stated that *"Culture: learned and shared human patterns or models for living; day-to-day living patterns. These patterns and models pervade all aspects of human social interaction. Culture is mankind's primary adaptive mechanism"*.

All human societies share cultural universals. Cultural universals include communication technologies, social practices, gender, marriage, expressive

forms such as art, music, dance, ritual, and religion, as well as technologies such as cooking, shelter, and clothing (Macionis et al., 2010).

Macionis et al. (2010) also mentioned the concept of material culture (physical expression) and immaterial culture (intangible expression). The physical expression of culture includes technology, architecture, and art, while the immaterial cultural aspects are such as principles of social practices, folklore, philosophy, literature, and science.

Williams (1987) believes that culture is “*one of the two or three most complicated words in the English language*” (1987, p. 87). However, he tried to simplify the definition by outlining three different meanings (Williams, 1987, p.90):

1. A broad intellectual, spiritual, and aesthetic development process.
2. A way of life, whether it is specific to a period, a group, or humanity in general.
3. The products and practices of intellectual and artistic creations.

While the definitions outlined above do not specifically mention the game activity, it is related to them because it can be portrayed as a group practice or activities involving the community represented. Additionally, Salen & Zimmerman (2004) stated that games contributed as a result of design and material culture.

While a variety of cultural definitions have been explained and presented, I am more interested in the CARLA (2019) definition, as mentioned by Kim Ann Zimmermann (2017), which states that culture is defined as shared patterns of socialisation-learned behaviours and experiences, cognitive processes and understandings, which can be thought of as the development of a group identity fostered by group-specific social patterns.

Thus, the connection between games and culture was intertwined in this research as a shared pattern of socialisation, as the taught and learned behaviour, whether formally or informally. Relating the subject of games to the culture, Salen & Zimmerman (2004) stated that:

“As a product of human culture, games fulfil a range of needs, desires, pleasures, and uses. As a product of design culture, games reflect a host of technological, material, formal, and economic concerns” (p.4).

2.3.1 Tradition

‘Tradition’ can be observed within ‘culture’. Tradition can be common to a certain ethnic group, culture, community or even a family. (Graburn, 2000), stated, *“Tradition was both the means of making a living and the symbols, stories, and memories which gave one both identity and status... that stays from generation to generation...something pretty central or important” (p.7)*

There are a variety of definitions of ‘tradition’, and the concept encompasses several interrelated ideas. However, the broader understanding is that ‘tradition’ refers to beliefs, objects, or customs that were performed or believed in the past, originated in it, were transmitted through time by being taught from generation to generation, and are still performed or believed in the present (Edward Shils, 2006; Thomas A. Green, 1997). In the context of traditional games, the research views tradition as a subset of culture in which the content of culture is transmitted to future generations or as a heritage; tradition is, in fact, a subset of culture.

In general, the term ‘heritage’ refers to the research of everything that has been inherited and recovered, with the intent of preserving it through archaeology, art, tradition, religion, and culture. Cultural heritage is one of the most valuable assets that must be preserved and protected for future generations (Noh et al., 2009). Rather than contradicting modernity, it may actually strengthen it due to its richness and provision of one of its essential sources of meaning in life (Graburn, 2000).

2.3.2 Effort to Preserve Cultural Heritage

In a literal sense, the term 'preservation' refers to the act or process of preserving something valuable in its original state, alive and unharmed by decay or damage. Preservation can take on any meaning, but in the context of heritage and conservation, it refers to the act or process of extending the useful life of a record, book, or object through minimal modification.

Preservation, in the context of this research, is best defined similarly to cultural preservation, as described by (Marilena Alivizatou, 2016), citing (Lowenthal 1985, 1998; Nora 1989; Smith 2006), as an effort to safeguard and conserve the subject of the past for future generations, whether in the form of buildings, objects, or oral expression manifestations from the past.

As a result of the constant pressures of urbanisation and industrialisation, the culture of decline posed a fundamental threat to social memory in the field of heritage studies (Holtorf & Kristensen, 2015), emphasising the importance of cultural heritage preservation efforts.

Due to the importance of cultural heritage, governments, non-governmental organisations, and academics have made numerous efforts to preserve and enhance knowledge transfer in society (Shelby Blackjack, 2011). Cultural heritage preservation is critical for tracing the evolution of diverse cultures and preserving them to connect the present with a vibrant past. Arts and crafts are one such significant category of cultural heritage resources because they contain priceless information about a population's way of life (Kreps, 2013; Silverman & Ruggles, 2007). Various techniques for preserving cultural heritage have been proposed in academic papers, but design-related approaches remain lacking.

Luo & Chen (2016) followed a specific concept in their cultural translation approach to preserve and enhance the design of the Meishan Cultural Park. Through their research on the preservation of China's Meishan Cultural Park, they introduced a method for preserving the cultural value and enhancing the specified cultural park. They believed that the first step toward attracting visitors to cultural heritage is authenticity. The second objective is to 'stage' authentic

cultural heritage in order to cater to the modern tourist society's needs. In other words, their strategy was to first replicate the indigenous culture and then modify it to meet the needs of modern society. They concluded that successful cultural translation requires close collaboration between stakeholders and the design team in order to protect and develop indigenous cultures in other regions (Luo & Chen, 2016).

Another strategy for preserving cultural heritage is to incorporate new technology. Digital preservation is one of the most frequently suggested approaches because it is deemed feasible to store vast amounts of information in a variety of formats and to make the information easily accessible to the public (Webb, 2003).

The feasibility of digital preservation has prompted researchers to advocate for the establishment of large repository systems for cultural institutions. A digital library, at the very least, would be a necessary first step toward preserving the assets and value of cultural heritage. Cleveland (1998) states that digital libraries are similar to traditional libraries in terms of purpose, framework, functions, and goals, including management, collection development, indexing, creation, provision of access, referencing work, and preservation (Cleveland, 1998). Another example of technology being integrated into cultural heritage preservation is the strengthening of Malaysia's National Digital Cultural Heritage Repository Centre (NDCHR) (Abd Manaf, 2008).

The advancement of technology has expanded the possibilities for documenting cultural heritage beyond text, audio, photography, and video. Digitization of cultural heritage assets in three dimensions is a common practice nowadays because it allows for the acquisition of highly precise shapes and textures, allowing for the storage and dissemination of information to the public while protecting the assets' visual value from damage caused by accidents or natural causes (Comes et al., 2014).

Recently, advocates for cultural heritage preservation have pushed for the use of virtual reality (VR) and augmented reality (AR). Virtual reality and augmented reality research have advanced significantly in recent years, owing to

the development of much more interactive computer technology and sophisticated 3D modelling rendering (Noh et al., 2009). By manipulating VR and AR technologies, it is possible to create a 'virtual heritage' system. Virtual heritage, also known as cultural heritage and technology, refers to works that deal with information and communication technologies and their applications to cultural heritage, such as virtual archaeology (Bawaya, 2010). Figure 8 illustrates how virtual reality technology is used in virtual archaeology. The figure depicts a group of visitors experiencing *TourCAVE*, a virtual reality display system installed in Florence's Palazzo Vecchio, the city's town hall.



Figure 8: A 3D tour of a historical site in a virtual room of Florence's Palazzo Vecchio.

Virtual reality and augmented reality enable the accurate recreation of heritage sites, and the data can be published in a variety of digital formats. With the technology, virtual replicas of castles, caves, natural environments, monuments, and archaeological elements can be created. Archaeologists can use the technology to recreate historical conditions and simulate ancient battles (Bawaya, 2010).

Certain technological advantages may appear to be an effective method of preserving specific cultural elements. However, can technology aid in the preservation of intangible elements such as the act of play or cultural experience?

Can play culture be ingrained in society in order to ensure the activity's longevity?
Can play as a culture be cultivated? The following section will attempt to deconstruct the connotations associated with culture and play.

2.3.3 Culture, Play and Folk Games

As a component of social and individual identity, culture is essential to every living human being, and every society has a responsibility to communicate cultural values to everyone, especially children. Social systems would be unstable without the continuity of events and beliefs (cultural practice), and cultures would lack strength and cease to function without the meaningful refinement of human behaviour, according to (Swick et al., 1985). Consistent efforts and practices are required to ensure a culture's survival, and society should be prepared for any significant changes in cultural practices that do not contradict the first statement.

To ensure the survival of cultural values and practices, society must educate and nurture its youth. The subject of the play is not limited to children; it is critical to include adults to guide the transfer of skills, cultural values, and knowledge about play. As (Swick et al., 1985) mention, children need to develop a sense of self-worth and an understanding of people from diverse cultures. Additionally, he points out that cultural influences on children come from a variety of sources, including the family, neighbourhood, childcare centre, and the media. Children may become perplexed by diverse ideas about culture, which is why society must educate and nurture them about cultural differences and acceptance (Matiella, 1991).

We cannot teach children about the culture by handing them a textbook; rather, play is the most appropriate medium for children to learn about a society's cultural norms and values (Rettig, 1995). Rettig (1995) notes that the games children play and the objects they use are frequently connected to the local culture and help children develop the skills they will need as adults. Additionally, he stated that play is vital for enculturation. According to Ivic and Marjanovic (1986), traditional games, particularly those with rules, are fundamentally an integral part of a culture; they serve as a means of communication for social

norms, aiding in group assimilation and allowing differentiation among group members.

Besides that, Rettig (1995) examined several cases involving culture and play relationships. He referred to a 1987 article by Swick (1987) in which he discussed a type of game played by New Guinean children in which there is no winner or loser. Only when both sides achieve equality would the game be over. According to Rettig (1995), American games are typically competitive and oriented around winning. According to research conducted by Shigaki (1991), Japanese day-care providers communicate cultural values to children differently than American day-care providers do. He observes that caregivers in Japan act in such a way that the child is included in shared or group experiences. According to Rettig (1995), the Shigaki (1991) research emphasises the importance of the group and member interdependence over independence and self-expression.

Rettig (1995) also cited research by Cliff (1990) on the relationship between games, religion, myths, and ceremonies in Navajo culture. According to Rettig (1995), many games and the use of toys in play activities are connected to or based on religious beliefs.

Play is not only being treated as a foundation for culture. As culture is dynamic and changes over time, so too does the way people play. Play behaviour may also vary from culture to culture as it might be a way for young children to practice the roles and skills needed as adults (Rettig, 1995).

Rettig (1995) also mentioned some culture-play examples written by Fortes. Fortes (1976) discussed the 'play' by children of the North African *Tallensi* people, where the children in that society tended to reflect the culture as a whole. She mentioned that farming and hunting were important parts of the culture and that the boys would usually play hunting games as well as practice their bow skills as a way of mastering the necessary skill as an adult. Fortes also added that some play behaviours are common, like in any other place where children were observed jumping, running, engaging in parallel play, and showing signs that their play is egocentric.

Rettig (1995) cites another example of the culture-play relationship in reference to a 1966 book written by Fraser. Fraser discussed the history of toys and described how toys and playthings reflect the culture in which children live. Fraser observes that toys and playthings for children are often associated with religious values and are frequently associated with the materials or skills of indigenous people, which reflect the era in which children live. For instance, *Inuits* (indigenous people who live in Canada's Arctic region) made ivory toys due to the material's availability. People who lived near water frequently constructed toy boats. In the United States, astronaut toys were not available until the late 1950s, with the advancement of space travel, whereas other types of play material, such as toy animals or balls, are ubiquitous among children worldwide (Fraser, A. 1966).

'Culture' and 'tradition' are usually associated concepts that refer to the practices of distinct social groups. While the definitions of the terms are quite similar, they are not synonymous and cannot be used interchangeably. The distinction between these two terms is that 'culture' refers to a group's or society's ideas, customs, and social behaviour, whereas 'tradition' refers to the transmission of customs and beliefs from one generation to the next within that society. As we can see, traditions are also an integral part of the culture.

Recalling Huizinga (1938), he stated that the subject of 'play' predates culture, implying that 'play' existed before cultures and civilizations. However, Salen and Zimmerman (2004) refer to a more contemporary form of 'play' as a 'game'. This means that games not only reflect and reinforce cultural values and ideologies but also contribute to the strengthening of a culture's value system. On another note, it is stated that 'play' is a part of 'culture'. Whichever statement is more precise, what is critical to note in this research is the existence of relationships between culture and games. It can aid in our understanding of traditional sports and games.

Culture's existence is paramount for human social connectivity, survival, and diversity. The correlations between culture, tradition, and play are mutually exclusive; it is irrelevant which came first if both subjects contribute to the development of society. 'play' serves as a 'vehicle' for culture by conveying

information about a society's cultural values, and physical objects such as toys or playthings serve as artefacts and tangible heritage of the society. Play can disseminate culture's content, or culture can disseminate play's content; both affect social development, and folk games are the example of the activity that linked the culture and played together.

Folk games are also regarded as classic games or sometimes referred to as traditional games. The term is commonly associated with children's activity and has been passed down from generation to generation (Sallabaş, Muhammed Eyyüp, 2020). Folk games hold not only the historical tradition of culture but also portray unique cultural attributes and provide educational value and function (Wei X, 2016). Contrary to popular belief, some of the folk games are actively being played by adults too. However, considering that the frequency of mutual interaction happened due to the surrounding environment during childhood time, the effect of the experienced games becomes more pronounced (Sallabaş, Muhammed Eyyüp, 2020). The significance of folk games sometimes has been compared to modern games and sports. Modern sports appear to be viewed as physical and social activities that lead to the affluent growth of a community; nevertheless, folk games may also play unique roles in this social reconstruction, cultural development of the society, and self-development (Nayak, A. K. Nayak, A. K., et al., 2010).

Folk games have been acknowledged to nurture positive values, especially in children's development. The unique educational value delivered by folk games can boost young children's fine motor development. Additionally, folk games also empower the children to improve their sense of social sensitiveness, as most of the games require active interaction among the players (*Ralibi. R* (2018). According to an article, deviant behaviour in children is caused by a lack of psycho-emotional experience and psychophysiological preconditioning, and folk games can serve to build a developmental, disciplinary, and preventative environment for aberrant behaviour (Teplova, A.B., Chernushevich, V.A. 2017). Given the existence of guides and rules in folk games, the process enables an excellent opportunity for the player to learn social rules, adhere to the rules and develop self-control related to the rules (Sallabaş, Muhammed Eyyüp, 2020).

Sallabas.M (2020) mentioned in his research findings on the function of local folk games that folk games or traditional games have a significant role in imparting a variety of skills that can affect the social and educational lives of children. Some of the notable functions stated in his research are the source of entertainment, social learning skill, development of verbal and auditory skills, and improvement in collaborative activities (Sallabaş, Muhammed Eyyüp, 2020). Folk games are valuable as a unique cultural heritage since there is still much information on the cultural aspect retrievable from the game itself, so focusing on the preservation of the subject is essential.

As discussed above, the preservation of a community's culture is critical, and through this research, the culture will be concentrated on the TSG, or more precisely, the MTSG. The output from the research will aim to preserve the local culture; thus, a structured research framework on the subject of MTSG may serve as the 'vehicle' for transporting the meaning and values of the indigenous culture into the modern era. The following chapter will delve deeper into MTSG's research mission.

2.4 Malaysia as the scope of research

It is customary for us to explain the research scope because it focuses on the preservation of a specific country's cultural products. As a Malaysian, I believe there is a need to investigate the MTSG and its value within the Malaysian context.

Malaysia is home to a diverse population of 31.2 million people, including Malay, Chinese, Indians, and over 200 indigenous ethnic groups. Malaysians are ethnically Bumiputera (68.6 % of the time), followed by Chinese (23.4%), Indians (7.0%), and Others (1.0 %). In 2016, the percentage of non-Malaysian citizens in Malaysia's population had a median age of 28 years. Malaysian Statistics Department, 2016. 80% of the population lives in Peninsular Malaysia, while 20% live in Sabah and Sarawak. Over two-thirds of Malaysia's population lives in cities. Following independence in 1957, the country's ambitions for change grew through a series of economic and social development programmes and policies that catalysed the country's transformation from an agricultural economy to an upper-middle-income economy that maintained solid growth rates. Malaysia has overcome numerous obstacles and difficulties en route to achieving a prosperous environment. Due to Malaysia's diverse races, religions, and cultures, the unification of all races is not an easy task. Tolerance of religion and culture has been important to the welfare of the people, and this is a key issue in a multiracial country. (Cheah, 2002; Katarzyna Pawelczyk et al., 2014).

Malaysian culture is colourful and diverse. Despite Malaysia's multicultural and multilingual nature, many ethnic groups maintain distinct cultural identities (Joel S. Kahn, 1998). Malaysia stands out because of its tolerance and integration of different cultures. Various cultural differences can be seen in architecture, traditional attire, festivals, handicrafts, arts, and traditional games.

2.4.1 Defining the Malaysia Traditional Sport and Games (MTSG)

Malaysia is a nation with a plethora of cultural traditions inherited from people of diverse racial origins. Malaysian heritage includes various kinds of traditional games, and pastimes enjoyed not only by children but also by adults (Mohd. Yusof Abdullah & Mohd. Noor Ismail, 2006). Children and adults of all ages and communities engage in these games and pastimes, making them a shared heritage of Malaysians.

Prior to the advent of computer games in Malaysia, the only forms of entertainment available to local community games were *Wau*, *Congkak*, and *Konda-Kondi*. These games can be easily played by using any item that people might find around them. During the old days, Malay ancestors had special events after the harvesting season to fill their time before entering a new season. During this occasion, there were activities such as playing games and cultural dance (Perpustakaan Negara Malaysia, 2000). The same context of Navajo culture can be observed here (refer to section 2.3.2); in the early days, MTSG was celebrated as part of a cultural ritual after the harvesting season, but it was not as far as being treated as a religious belief. However, the details of MTSG from the literature are only limited to the knowledge of MTSG as part of a certain occasion.

As previously stated, TSG is defined as "*indigenous, regional (folk) or national forms of culture of physical movement related to certain bodily traditions that are part of human heritage, and transmit cultural and universal values, regardless of their geographical locations, socio-cultural status, and despite political influences, as they are passed from one generation to the next by physical actions (performances and competitions) such as everyday life habitual/working activities, local festivals, national tournaments*" by Bronikowska & Groll (2013, p.2). The same definition structure is used in this research to define MTSG.

Previously, Abdullah and Ismail's (2006, p.4) definition of traditional games in Malaysia was generally defined as any game activity that requires either higher or lower-order thinking and is played according to a set of rules agreed upon by the players. However, the statement is too broad, as it omits the Malaysian

context from the definition. Thus, the definition of MTSG is revised in this research to be more precise.

We can allocate the MTSG definition for this study based on this understanding. In this research, Malaysian traditional sports and games (MTSG) are defined as physical and mental-based cultural games and sports activities that provide entertainment and competition among players that existed in Malaysia and were known to Malaysians as they were passed down verbally or physically through action from one generation to the next before the introduction of digital entertainment (e.g., video games).

The clear definition of local traditional games and sports for this research enables us to look forward to the context of MTSG activity values, as these values will provide us with the key elements of the criteria for the preservation of reference in the next chapter.

2.4.2 Value of TSG and MTSG

The investigation into the values was focused on the play in the previous chapter (see Chapter 2.1.1). While the element of play is central to both TSG and MTSG, it is only natural that we see resemblances in the values portrayed. As a result, the focus of this chapter will be on determining TSG and, eventually, MTSG values.

TSG is more than just another entertainment in the past. They were also a carrier of universal social values and symbolic function of a community, which is of utmost importance to the educational dimension of physical culture and the inherited living arts, enhancing collective well-being (Guy Jaouen & Joël Guibert, 2005). TSG's knowledge and information are a priceless resource for the present and future. While each has its own set of goals, objectives, players, structure, philosophy, and strategy, TSGs are suitable for both children and adults, fostering interaction between generations and facilitating the transfer of cultural value, skill, and knowledge. TSG is intended to help players develop character, express themselves, and improve their performance; in addition to strengthening social and physical skills, it can be used as a learning aid (Bronikowska & Groll, 2013; Tudu, 2016).

TSG promotes regional and local lifestyles and fosters a sense of community. Additionally, they may promote communication between regions, thereby preserving a sense of local, regional, or even national identity (Jarvie, 2006). Through practice, the local, regional, or national identity associated with TSG will grow and evolve, becoming more powerful culturally and sociologically (Renson, R. 2004). TSG's value is not limited to serving as a reflection of a particular culture and society; it also serves as a reflection of local communities, neighbourhoods, and even individuals (Lavega et al., 2014). TSG's social connectivity can literally serve as a 'vehicle' for strengthening regional social bonds and identities.

Almost identical to what has been mentioned about TSG, MTSG instils positive values in the Malaysian local community. Mohd. Yusof Abdullah and Mohd. Noor Ismail (2006) stated in a previous publication that while the MTSG provides physical practice for its players, it also incorporates a high-level education philosophy.

According to Abdullah and Ismail (2006, p.5), MTSGs are more than entertainment; they foster community bonds through cooperation, leadership development, camaraderie, and neighbourliness. Additionally, positive values include developing physical and mental competence, expressing emotions, and preparing players through a socialisation process that includes communication and interaction.

2.4.3 Types and classification of MTSG in Malaysia

Malaysia has a wide range of traditional games that exist. It was estimated that there were over 200 different kinds of traditional games observable in the past. Heavy games, light games, and creative games are the three categories of MTSG noted in the publication by Mohd. Noor et al. (2006). Each cluster has its own set of game features and attributes (Mohd. Yusof Abdullah & Mohd. Noor Ismail, 2006).

Heavy games

Heavy games are those that demand a great deal of energy from the players due to the game's emphasis on aggressive physical movement (Mohd. Yusof Abdullah & Mohd. Noor Ismail, 2006). The majority of games require a large playing area. Abdullah & Ismail (2006) mention the following MTSGs as examples of this cluster: *Galah Panjang*, *Baling Selipar* (also known as *Bola selipar*, *Bola Kaki Tiga*, *Tuju Kasut*), *Konda-Kondi*, *Kejar-kejar* (or known as *Polis sentry*) translated from police and thief. Generally, these games require players to run, jump or use specialised equipment in order to accomplish their objective. Commonly, the game is fast-paced and involves physical contact (Harith Zulkefly & Hanif Omar Yazid, 2018). The following list contains examples and brief descriptions of each of the heavy game types.

Galah Panjang

Galah Panjang is an outdoor MTSG game that is played in a grassy yard with lines drawn on it. The number of players determines the number of lines drawn. If there are eight players in the game, for example, three lines will be drawn. This game is typically played with eight players divided into two teams of four. Both sexes can participate in this game. *Galah Panjang* is a game in which players must pass through the play area quickly and efficiently while avoiding another team. (Harith Zulkefly & Hanif Omar Yazid, 2018; Mohd. Yusof Abdullah & Mohd. Noor Ismail, 2006). *Galah Panjang* games can be observed in Figure 9.



Figure 9: A game of Galah Panjang (Harith Zulkefly & Hanif Omar Yazid, 2018).

Galah Panjang is an aggressive style of game that requires the player to move and frequently results in direct contact between the players. The *Galah Panjang* game requires no special equipment other than the lines put on the playing ground to guide the participant. The defensive team must stay within the designated boundaries and can only move within those lines. The attacking squad must avoid getting tagged by the defensive team while passing through the playfield. The points are awarded based on the number of attacking players who survived the round, with the roles reversed. The duration of the gameplay for each round is not specified in the references.

Baling Selipar

Baling Selipar is another heavy game that was traditionally played outside. *Baling Selipar*'s gameplay requires two opposing teams to compete for the game's highest score. This game is typically played by boys, even though its rules make no mention of a gender restriction.

The game requires only two pairs of flip-flops. The flip-flops used in the game should not be excessively heavy or thick, as this could result in injury to the players. The flip-flop must be incorporated into the pyramid structure, and one flip-flop will be used as a thrower. Figure 10 illustrates an attack by a member of the attacking team on the flip-flop structure.



Figure 10: A game of Baling Selipar (Maizatul Asma, 2011).

One team will be the attacking team, and another team will be the defending team, and the roles change each turn. A team usually consists of three or more players, and the game starts with the vote of attacking and defending roles.

The game begins with the first player in the attacking team throwing stacked flip-flops. Each player in the attacking team can throw three times to knock down the stacked flip-flops. If the throw does not hit the target, it is the opponent's turn to make the following throw.

Say any attacking team members successfully destroy the flip-flops' structure; the game round will start. The defending team must reconstruct the flip-flops' structure. Meanwhile, the attacking team must prevent it from being rebuilt again. To eliminate the defending team members, the attacking team will wield the flip-flop used to knock down the structure as a weapon. Points are awarded based on the defending team's successful attempt to reconstruct the flip-flops' structure or the assaulting team's total elimination. When all of the defending team members eliminate in the game, the game round ends. With the role reversal, the game resumes. Like most MTSGs, there seems to be no time limit for each round mentioned in the literature (Khalilah Gusti, 2013; Putra et al., 2014).

Konda-Kondi

Konda-Kondi, or “*Kaunda-Kaundi*”, is an outdoor game played in groups. The equipment used in the game is a pair of sticks with different lengths and a hole as a starting platform. In another variation, the hole was substituted with pairs of bricks as a platform for the shorter stick.

The objective of the game is to flick the shorter stick with the longer one as far as they can without being caught by the defending team. There are three attempts per person in a group, and each attempt will provide points for them. Figure 12 below shows the visual of the player attempting to flick and throw the short stick in the game of *Konda-Kondi*.



Figure 11: A game of Konda-Kondi (Abang Syafiezzan, 2013).

The game was repeated by taking turns with each group member. Usually, the final game point and the total number of rounds are decided by the players. (Iswan Shafiq Mat Isa, 2012; JWN, 2016)

Tarik Upih

Tarik Upih was the name given to the game in which players needed to use the midrib of the coconut frond or *areca nut* palm as the equipment. In a non-competitive setting, they usually play around with friends as transport around the village or compete in a racing-like format. The game is usually played in pairs and seldomly in a grouping. The figure below shows an example of the game in a competitive setting.



Figure 12: A game of Tarik Upih (Lokman Ismail, 2017).

One person will pull the midrib in this game, and the load can include multiple players. They will occasionally increase the total number of players that the lead player can carry while sitting on the midrib. While finding a coconut tree or areca nut palm in their area is relatively easy, the disadvantage is that they must wait for the midrib to fall before selecting an appropriate one to use as their equipment (Amirah Ishadi, 2010; JWN, 2016).

Light Games

Light games require less physical energy consumption and have less aggressive movement compared to the heavy games category (Mohd. Yusof Abdullah & Mohd. Noor Ismail, 2006). The games are usually played indoors. *Congkak*, *Selambut*, *Dam*, *Ceper*, and *Tepuk gambar* are some of the games. These games can be compared quite similarly to playing board games, but with a lot more physical movement. The act of throwing, juggling, grabbing, catching, and using specific equipment is observable in these types of games (Mohd. Yusof Abdullah & Mohd. Noor Ismail, 2006).

Congkak

Congkak, perhaps, is one of the most notable traditional games not only in Malaysia but in the Southeast Asian region. Usually, *Congkak* is considered a game for girls, although there is no restriction on gender. Most of the time, the game has been played indoors due to the nature of the games that require minimal movement and can be played in one sitting.

The equipment of *Congkak* in the past was the wooden board, designed with several pockets and some marbles. The name of *Congkak* in the local setting was derived from the Malay word of *Congak*, which means mental calculation, appropriate to the gameplay of this activity. To win the game, the players must outsmart another player by predicting the moves through the arithmetic calculation of the marbles. Figure 13 shows the game of *Congkak* being played by two girls using the specific *Congkak* board.



Figure 13: A Congkak game (Harith Zulkefly & Hanif Omar Yazid, 2018).

The *Congkak* game objective is to be the one with the most marbles collected at the end of the round. While there are no set regulations concerning the number of rounds per game, the total number of rounds is entirely up to the players (Harith Zulkefly & Hanif Omar Yazid, 2018; JWN, 2016).

Batu Seremban

Batu Seremban is a light game that can be played by two or more people. The player must toss and grab the stones or pebbles according to the sequences provided in the games. With each successful toss and grab sequence, the points are calculated. The player with the most points at the end of each round is declared the winner. Figure 14 depicts a group of females participating in the *Batu Seremban* game.



Figure 14: Selambut or Batu Seremban game. (Harith Zulkefly & Hanif Omar Yazid, 2018).

The reason that this game was more popular with females than boys in the past is due to the socio-cultural norms of the time, which stated that girls were not normally allowed to play outside of the house without their parents' permission (Harith Zulkefly & Hanif Omar Yazid, 2018; JWN, 2016; Mohd. Yusof Abdullah & Mohd. Noor Ismail, 2006)

Ceper

The game was popular from the late 70s until the mid-90s. The game could be observed being played during breaktime at schools among boys. The game equipment relies on the use of five bottle caps, which can be found easily at that time. The example of the game is displayed in Figure 15 below.



Figure 15: The Cepergame. (Harith Zulkefly & Hanif Omar Yazid, 2018)

The game involves participants flicking the caps as directed by another player, and they must successfully strike the target. If they succeed, they will be able to grab the caps, toss them, and grab them for the points. Each successful capture of the tossed caps earns you two points. The player with the most points at the end of the game rounds will be declared the winner (Harith Zulkefly & Hanif Omar Yazid, 2018; JWN, 2016)

Dam Haji

The final example of this type of light game is the *Dam Haji*. This is a board game similar to checkers. In comparison to other MTSGs, adults are more familiar with the game than children. The game is usually played with two players. They'll take turns only moving their pieces straight or diagonally, depending on the colour of the pieces they've chosen. At any point during the game, players' pieces can be captured and collected. The game is over when one of the players collects all of their opponent's pieces. Figure 16 depicts a *Dam Haji* game competition for adults.



Figure 16: Dam Haji game. (Norhaspida Yatim,2019).

A similar game was discovered to be played by different parts of the world and countries, such as the Dutch game of *Dammen*. Since Malaya (the previous name for Malaysia) was colonised by the Dutch in 1641, it is probably that the game has been adopted from the game in the past. The colonisation itself may have had an impact on the local traditional game (Harith Zulkefly & Hanif Omar Yazid, 2018; JWN, 2016; Lokman Ismail, 2020).

Creative Games

Finally, whether building the tools for the games or playing the game itself, the creative game category necessitates innovative and analytical thinking (Abdullah & Ismail, 2006). This type of game includes *Kipas Buah Getah*, *Wau*, *Gasing*, and *Lastik*. These games are comparable to the act of playing Lego, in which the players need to make their piece using any scavenged materials and then compete with the creation they have built (Mohd. Yusof Abdullah & Mohd. Noor Ismail, 2006).

Wau

Wau, as identified by Mohd. Yusof Abdullah and Mohd. Noor Ismail is a form of the creative game (2006). The *Wau* is not only the name of the game but also the equipment, and the player must construct his own. The gameplay is similar to flying kites, but the *Wau* relied on their technical design and decoration talents to make the equipment. The decoration on the *Wau* was typically made up of Malay designs and patterns. The villagers used to assume that the decorations represented the ideals of local men and women (Harith Zulkefly & Hanif Omar Yazid, 2018).

The game is particularly popular on Malaysia's east coast and is frequently observed following harvesting season as a way for farmers to unwind after a long day in the field. The game is typically played by male adults, and there are no specific limits on the number of players unless otherwise specified by the local community at an event. The figure below depicts a local preparing to fly the *Wau* (JWN, 2016).



Figure 17: The Wau being held by locals. (Harith Zulkefly & Hanif Omar Yazid, 2018).

If according to Juul's model (see Chapter 2.2.2), *Wau* is hardly a game; however, when specific criteria of the activity are altered and made competitive, *Wau* unambiguously becomes a game. For instance, competitive elements such as the highest-flying *Wau*, the most skilled players flying the *Wau*, and the most decorative *Wau* could be incorporated into the activity, resulting in the creation of a game (Harith Zulkefly & Hanif Omar Yazid, 2018).

Gasing

The game, as well as the equipment used in it, is called *Gasing*. While *Gasing* is similar to other countries' spinning top games, it has a long history in Malaysia, having originated in the Kelantan state. *Gasing* previously used solid-wood equipment with a variety of top designs, including plate-shaped, heart-shaped, hat-shaped, and *Berembang*-shaped tops, as well as a strip of yarn to boost the spinning mechanism. (Harith Zulkefly & Hanif Omar Yazid, 2018; JWN, 2016). Four children are shown in Figure 18 below, playing the *Gasing*.



Figure 18: Four children displaying their skills at the Gasing game. (Harith Zulkefly & Hanif Omar Yazid, 2018).

There are several modes and scoring options in the *Gasing* game. *Gasing*, like *Wau*, used to require the player to build their equipment, and the skill of creating the best *Gasing* model was also a competition. Other game modes may appear, such as the longest spinning *Gasing*, the most durable *Gasing*, and battle-royale duel, in which the player attempts to evict another player's gas by hitting it outside of the game area. *Gasing* is in the creative games because the player must create their version of *Gasing* that can outperform others visually and technically (JWN, 2016; Mohd. Yusof Abdullah & Mohd. Noor Ismail, 2006).

Kipas Buah Getah

Rubber trees have been a commodity in Malaysia since the early days, which may be one of the reasons why the game of *Kipas Buah Getah* is so prevalent in rural areas. *Buah Getah* translates as rubber seed in Malay, and the game's name refers to the use of rubber seed to create a launcher that resembles a propeller. The player will punch a hole in the centre of the rubber seed and use a wooden stick and an ice cream stick to devise a propeller. Later, insert the propeller into the rubber seed hole and attach the yarn to the propeller stick. Finally, the player will quickly pull the yarn to cause the propeller to launch from the rubber seed. There is little information available about this game, but videos demonstrate how the game's equipment is made. Figure 19 depicts a screenshot captured from a video of a *Kipas Buah Getah* game (Amar, 2019; Budak jitra, 2011).



Figure 19: Constructing Kipas Getah; video showing the making of the equipment. (Amar, 2019).

These are only a few of the many lists of MTSG games that have been noted in Malaysia. Even if the names are different, some of the MTSG forms and gameplay are comparable in other regions of Malaysia. The differences might be due to several factors, such as the local community, the environment, or the geographical location. The type of MTSG played by the agricultural community is

different from the community that resides by the beach (Mohd. Yusof Abdullah & Mohd. Noor Ismail, 2006).

2.4.4 Criteria of MTSG

These are only a few of the many lists of MTSG games that have been played in Malaysia. Even if the names are different, some of the MTSG forms and gameplay are comparable in different regions of Malaysia. The differences might be due to several factors, such as the local community, the environment, or geographical location. The type of MTSG being played by the agricultural community is different from the community that resides by the beach. The criteria that are stated are:

1. The game was passed down from generation to generation, even though the rules and guidelines of the game changed along the way.
2. The game is being played in the player's free time.
3. The rules and guides of the game are simple and easy to understand.
4. The player must be creative and imaginative. Sometimes, the player needs to have certain skills to be able to play the game successfully.
5. The game sometimes requires high consumption of energy, concentration, and speed from the player.
6. It can be played anywhere without having a fixed spot.
7. The tools or equipment of the game are simple and easy to get.
8. Suitable for all ages.
9. The games have their own philosophy and educational value in etiquette, morals, and team building.
10. The games should be entertaining and amusing to the players.
11. Some of the games don't need a referee.

The criteria of this MTSG are related to the values portrayed in the gameplay. Not only that, the intrinsic knowledge and skills are part of the notable values. These are significant points in the research.

2.4.5 Challenges and Threats

TSG faces the most significant challenges and threats because of globalisation and other relevant factors. Many TSGs are already lost, and the remaining ones that survive are struggling to exist (Linaza et al., 2013a).

Even though we could occasionally observe the TSG making an appearance, for example, through some exhibitions, events, or festivals, however, this means that TSG is no longer playing frequently (Japanese Culture Now, 2005). TSG are disappearing, but they continue to exist in collective social memory, even though they have never been well documented (Bronikowska & Groll, 2013). Some of the MTSG might have disappeared totally, but older generations still remember the knowledge (Putra et al., 2014).

With the advancement of technology and the existence of modern entertainment and digital games, the younger generation does not seem to care much about MTSG. They are more familiar and preferably engaged with contemporary entertainment such as console games, electronic games, etcetera. (Chepa et al., 2014). MTSGs cannot promote themselves; they need support to survive and develop into modern times, and without that support, a considerable loss of cultural variation will occur (Hazelton et al., 1995).

The challenges of the TSG and MTSG are related to the globalisation issue. Growing globalisation has affected many aspects of human culture and society. Globalisation is viewed as a complex and multifaceted phenomenon ascertained from interaction and integration among people, society, culture, companies, and governments worldwide. Over the past few years, the term has been widely used to describe various economic, cultural, social, and political transformations that have shaped the world (Aminuddin & Parilah, 2008; Guttal, 2007). Even though globalisation is frequently assumed to have negative implications for developing societies (Tomlinson, 1996), it has become apparent that it also has positive effects on the transition. The accessibility to knowledge, information, and communication is spreading faster than before (Suárez-Orozco, 2015).

Globalisation, as previously stated, is not solely an economic phenomenon; it also occurs in cultural and social contexts. Sport is one of the cultures and social contexts. According to Aminuddin and Parilah (2008), sport is "affected by and participates in the process of globalisation" in various ways. This issue includes how globalisation internationalises sport as a vehicle for cultural exchange between countries and helps shape the nation's cultural, political, and economic identity. In Malaysia, foreign sports have affected local culture; local elites have adopted British sporting culture and imitated the systems used by governing sports associations (Aminuddin & Parilah, 2008). Globalisation may appear to be an excellent opportunity to introduce local sports and activities to a broader audience; however, it appears as though foreign sports and activities from developed countries dominate the scene. Internationalised sports are gaining popularity due to advancements in communication and satellite broadcasting technology (Aminuddin & Parilah, 2008), threatening the existence of local sports and games.

Globalisation's impact on specific aspects of local culture and activity has been viewed as a threat, particularly in this area of TSG. In today's world, the sports and games that survive the effects of globalisation are those with "the most adaptable variables to changing environmental conditions," as Pierre Parlebas (Guy Jaouen & Jol Guibert, 2005) stated. According to Parlebas (2005), the internationalised sport has dominated the activity because it was deemed superior. It has benefited from a dominant appeal among the young to the adult population, whereas the traditional game is merely a secondary physical activity.

2.4.6 Status and Preservation Effort of TSG and MTSG

The globalisation of media culture aided by technology and tools means MTSG are slowly being forgotten. The popularity of MTSG is declining, this issue has caught the attention of some academicians and institutions, and various efforts have been made to keep MTSG alive. However, most of the efforts only focus on children and the young generation with diverse methods, including publishing books, e-books, blogs, social media, and web-portal (Chepa et al., 2014).

Some of TSG related organisations, such as The Association for International Sport for All (TAFISA, 2015), work tirelessly to promote participation and preservation in the TSG activities. Even academics in various fields such as information technology, sociology, psychology, and design have previously come out with suggestions to enhance the experience of playing TSG in this modern society, thus enticing people to engage in the activity.

For instance, *Congkak*, one of the recognised games in the East Asian region, has been developed to suit modern society by digitising the game into a mobile application. The developer has modified the game to enhance the player experience despite using the original game rules, concepts, and equipment. The developer's main objective was to make it available for mobile phones as well as to extend the games' functionality (Akpanobong & Baker, 2009)

Mat Sah et al. (2014) implemented the same approach by focusing on mobile applications and augmented reality (AR) technology as an engaging platform for promoting traditional Malaysian games. They had developed an art book for the traditional Malaysian games, which is the medium for the mobile application to trace the marker from the book. A virtual three-dimensional (3D) animation will prompt out on the mobile display using the developed application, and the user will have complete control in interacting with the virtual 3D model. They concluded that AR is usable in many other fields, not only for tourism but also for education and advertisement. With the aid of AR, the user will have a good visualisation of a phenomenon and provide a better understanding (Shahrul Badariah binti Mat Sah et al., 2014)

Another effort was made previously by my team and me in 2014 by focusing on design as a tool to re-create a traditional game. A case study about a specific Malaysian traditional game has worked on the game rules, guidelines, and equipment throughout our research. The concept was then reviewed, and we concluded that it was possible to re-create original traditional games to preserve them (Putra et al., 2014).

In some countries, preserving TSG is being done by integrating TSG into the educational content in schools. For example, the school system has introduced the integrated research concept in Japan, where elderly neighbours are invited to interact with students through traditional games (The Japan Forum, 2010). Traditional games can be enjoyed across generations and allow interaction, thus fostering a sense of local community.

The article also mentioned that "some traditional toys have been revamped by toy manufacturers to appeal to children of today" (The Japan Forum, 2010, p.4). Traditional games have been reinvented to have spectacular appearances and are popular among children due to tie-ins with comics, video games, and anime. Even while the current version of traditional toys and games is losing appeal, the emergence of innovation has led to a renewed interest in their original traditional games (The Japan Forum, 2010).

Moreno et al. (2015) show that it is possible to enhance and attract players to be socially and actively involved in a game of tag by integrating augmented technology with the traditional playground. They discussed how the provided Interactive Tag Playground (ITP) can enhance the traditional tag game experience while preserving the value of playing the traditional game itself (Moreno et al., 2015).

The involvement of UNESCO in a recent partnership with Tencent, China's leading IT company, to create a digital library of traditional games strengthens efforts to preserve the subject. Nie Zhiming, the vice-general manager for Tencent research and development, mentioned that the project is to build an interactive digital library as a repository of traditional games by using the utmost advanced somatosensory and multidimensional experience technologies. (Wang

Kaihao, 2015). UNESCO also had a partnership with several other organisations with the means to preserve and promote traditional sports and games from around the world.

In 2014, a collaborative effort by TAFISA, UNESCO and other twelve organisations initiated a project entitled “Project Recall: Games of the Past-Sports for Today” to reintroduce TSG into daily lives to increase social connection, sports and physical activity participation (TAFISA e.V, 2016). In 2016, the Recall project result was published on a website built solely for the project, which comprises the collection of TSG information, toolkits, and practical advice to help the teachers, coaches, and volunteers reintroduce TSG and gather scientific publications about TSG (TAFISA, 2015).

Various publications and approaches to the issue of MTSG in Malaysia were identified in the literature search. Table 1 depicts a review of some MTSG-related publications and initiatives in Malaysia. The publication title, the type of research output, the product of their research, the research focuses, and finally, the author and publication year are all grouped in the table.

Publication Related to the MTSG					
No	Title	Type	Output	Focus	Author
1.	Mobile gadgets among teens as social media integration and entertainment preservation of traditional games	Publication (Exploratory article) (Digital Product)	Digital re-creation of MTSG.	Social Media integration as a means for MTSG preservation	Mohd Haizra Hashim et.al (2017)
2.	Reproducing a traditional <i>Wau</i> as a potential commercialized product	Publication, Exploration of product innovation (Physical Product)	New improvisation of the <i>Wau</i> design.	Commercialization of <i>Wau</i> using the potential of printing technology and new technique	Rosiah Md. Noor and Mohd. Azhar Abd. Manan, (2012)
3.	The effect of the traditional games intervention programme in the enhancement of school-age children’s motor skills: preliminary research	Publication, Exploration of MTSG effect on children’s motor skill (Exploration using the physical product)	Verification of school-age children’s motor skill enhancement affected by the MTSG programme intervention.	Using MTSG as a medium to explore the enhancement of children’s motor skills.	Md. Alli Gipit” Charles et.al, (2017)

4.	Towards game engagement: usability evaluation of digital Malaysian traditional games	Publication, An empirical investigation of digital MTSG. (Investigative research on the digital product)	Usability evaluation of MTSG using Usability heuristic table	Identifying usability issues on the MTSG for the use in developing digital MTSG	Nur Azzah Abu Bakar and Noraziah ChePa, (2016)
5.	Digital <i>Congkak</i> : the art, play and experience framework	Publication, Development and experience evaluation) (Digital product)	Interactive Digital <i>Congkak</i>	Digital <i>Congkak</i> development and experience evaluation	Ahmad Fahmi Hj. Mohamad et.al, (2016)
6.	Interactive augmented reality artbook to promote Malaysia's Traditional Game	Publication, Verification of AR MTSG application (Digital Product - documentation)	Interactive Digital MTSG (AR) Art Book	Develop an AR-based digital artbook for MTSG as means of reintroducing MTSG.	Shahrul Badariah binti Mat Sah, et.al (2014)
7.	Box of traditional games: a matching of tourism and Malaysian culture	Publication, Product development (Physical product)	A product of a specific MTSG set.	Developing and producing a set of MTSG as a means for tourism and commercialization	Mohd Fadly bin Lamri et al., (2016)
8.	The development of the dam haji traditional game using java	Thesis, Product development (Digital Product)	A specific MTSG product digital development	Developing a digital version of <i>Dam Haji</i> to gain youngsters' interest	Mohammad Fairuz Rosli, (2006)
9.	<i>Wayang</i> fighters: preserving the art of <i>wayang kulit</i> (shadow puppet) through game application	Publication, Product development (Digital Product)	A game design entitles <i>wayang fighter</i>	Developing a digital game based on <i>wayang kulit</i> and testing the usability.	Dahlan bin Abdul Ghani (2015)

Table 1: The list of publications and approaches related to the MTSG in Malaysia.

Other efforts include integrating the MTSG with available technology. A recent effort to preserve and reintroduce MTSG was made by Chepa et al. (2014) by proposing digitization as an approach to preserving cultural games. In their research, they focused on a specific MTSG, the *Congkak* game in their case, and produced a digital version of the game named *e-Congkak*.

In the previous study, my team and I recreated a *Baling Selipar* game by redesigning the whole game, including the tools from the original game. Before we recreated the game, we analysed the game rules, tools, and equipment and re-created the original MTSG into a modern depiction of the game through a design approach without changing the original value and experience of the game.

Both of the MTSG preservation efforts described above can be represented by the model illustrated in Figure 21. In this case, we refer to the design approach of transforming the original MTSG structure into the new MTSG structure. Even though both samples above use different methods and outcomes, they eventually serve the purpose of preserving the value and experience of playing that MTSG. The process can be viewed as changing the outer structure without destroying the game value. The idea was to maintain the values and experiences of the MTSG through design intervention as a means to develop the MTSG.

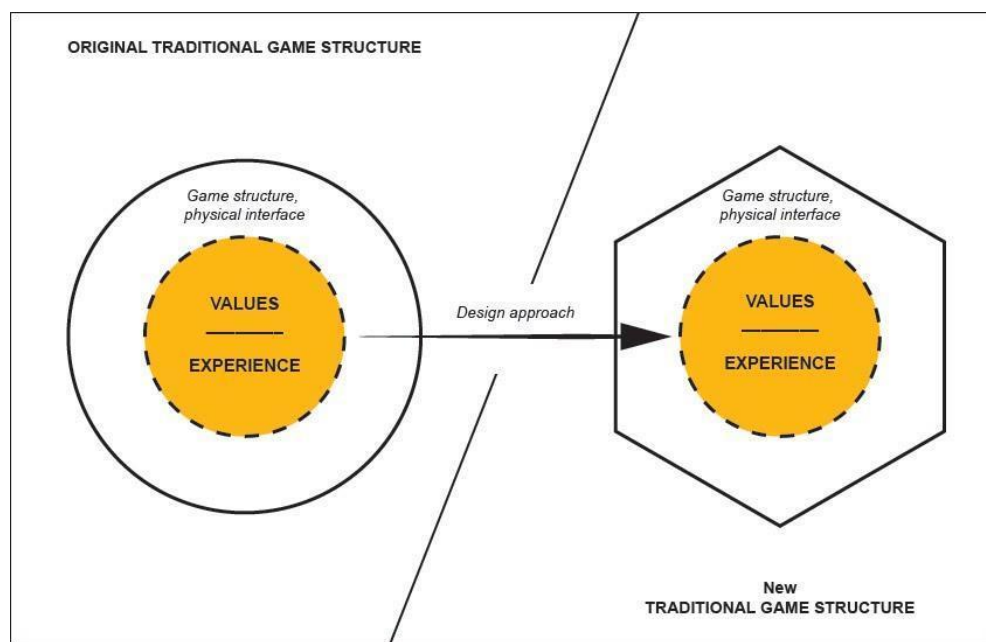


Figure 20: Visual representation of the design approach on the MTSG model based on the work by (Putra et al., 2014).

2.5 Design research and Culture

When dealing with a cultural issue, there are not many existing cultural models that provide extensive information on the meaningful knowledge of a culture that applies to the design of products (H.H.C.M. Christiaans & Diehl, 2007). There is also a lack of research and appropriate methods to assist designers in integrating culture and product design (Moalosi et al., 2010). Thus far, studies on MTSG show either an educational approach, direct conversion of MTSG activity through digitalisation, or a rather simplistic approach to commercialising the game artefacts (see Table 1). Less emphasis has been placed on investigating fundamental understanding, gameplay values, player behaviour, and the structure of specific MTSG.

Design can be linked to culture by incorporating cultural values into the product. Cultural values may be incorporated into the product by designing suitable signs or features representing those values. The challenge is to identify which parts of the cultural elements and values can be used in the design (Moalosi et al., 2010).

Design is an agent of change, and designers must consider how they can weaken or endorse society's indigenous cultural framework (Popovic, 2002). Design can be an essential mediator where the values of the cultural framework can be expressed, communicated, and serve the functions (Moalosi et al., 2010).

Technically, the definition of design is vast and differs from one perspective to another. Salen & Zimmerman (2003) made a comparative list of the definitions of design from previous scholars and formalised design as making, the artificial, action, visual appearances, communication, a reflective process, thought, and transformation. These definitions provide a valid and helpful path for interpreting design practice by focusing on specific attributes or characteristics. However, for this research, I am inclined to refer to the definition by Salen & Zimmerman (2003), stating that "design is the process by which a designer creates a context to be encountered by a participant, from which meaning emerges," as it is more straightforward and more related to the MTSG research.

Previously, I have mentioned that one of the identifiable challenges of this kind of research is that game design learning and contribution to the cultural perspective through design research are still lacking (see chapter 2.4.6). Furthermore, the challenges and threats to the MTSG addressed in chapter 2.4.5 would be able to be intervened upon using appropriate methodologies. Thus, based on the discussion above, design-based research is intended to address the problem with several elements and components in the MTSG and provide a solution for preservation.

The cultural issues, or the MTSG, are examined within this design-based research. There are various research strategies available, but what is the best method for these games and cultural practices? In his writing, (Aarseth, 2003) mentions three possible ways to acquire knowledge. Firstly, from the game's design, rules, and mechanics research. Secondly, through the observation of the gameplay or the previous reports and reviews by previous researchers. Thirdly, we experience the game for ourselves (simulation). While the third option is the most appropriate way of addressing the game, the much better method is to combine them (Aarseth, 2003).

According to the Design Research Society, 'design research' implies a work basis focused on contributing to a body of knowledge (J. Zimmerman et al., 2007). This research adheres to the conviction expressed in the preceding term as the focus. Its contribution is to generate knowledge through the design process rather than through the physical output of the commercial product. Researchers generate new knowledge through design by first comprehending the current state and then proposing an improved future state in a design. It entails in-depth reflection to iteratively comprehend the people, issues, and context surrounding a situation that researchers believe can be improved. The distinctiveness of this type of approach is that it stresses the design artefact as an output that can transform the world into a preferable state (J. Zimmerman et al., 2007).

Before implementing the methodologies, it is necessary to determine how design can contribute to the MTSG's preservation, with input from stakeholders who may have valuable insight into the research (Aarseth, 2003).

2.5.1 Identifying the MTSG Stakeholders

We can structure our literature search by identifying the stakeholders for this research. Stakeholders can be defined as target groups or institutions involved in the research of MTSG, such as children, adolescents, adults, and the elderly, who can transmit to us the knowledge, skills, and value of previous generations of MTSG.

Children and youth are critical to transmitting knowledge, skills, and cultural values in Malaysia. According to statistics, children and youth (0–24 years) account for 46 per cent of Malaysia's total population of 29.9 million in 2013. There are around 10.6 million children under the age of 19. Males account for around 52 per cent of the entire child and juvenile population, while females account for 48 per cent (Katarzyna Pawelczyk et al., 2014)

Malaysia implemented a National Youth Development Policy in 1997 intending to foster Malaysian youth with a holistic approach, embedded with strong spiritual, harmonious, high moral values, responsible, independent, and patriotic values, thus serving as a catalyst to the nation's development and prosperity in parallel with Vision 2020 (Kementerian Sukan dan Belia Malaysia, 2007).

While the policy defines youth as those aged 15 to 40, it also states that youth development programmes and activities will be targeted at 18 to 25. The government amended the definition of 'youth' in 2011 to include individuals aged 18 to 25, in accordance with international standards. (Lim Wey Wen, 2011).

One of the MTSG issues is a lack of knowledge access through academic publications or books (see Chapter 1.4). Therefore, retrieving information from the collective social mind could be valuable. Figure 21 depicts the global links between non-governmental organisations (NGOs) and the corresponding links to Malaysian government institutions.

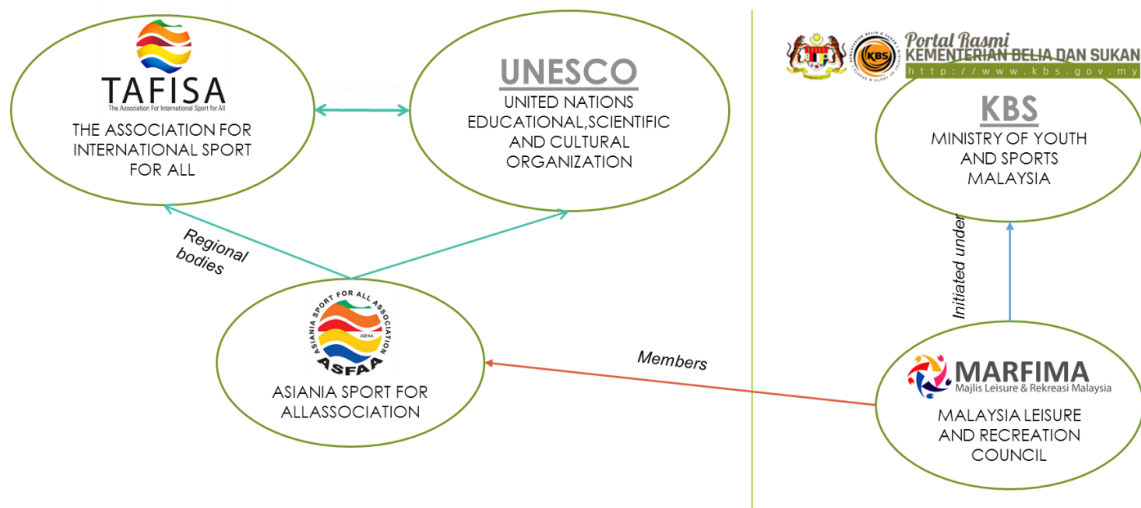


Figure 21: Connection of Malaysian institutions with global institutions related to TSG.

Institutional stakeholders include schools, universities and non-governmental organisations that can provide this research with relevant information. The institutions are active in areas of heritage and culture and include:

1. The Malaysian Youth Council
2. Department of Heritage, Malaysia
3. The Ministry of Youth and Sport
4. Malaysia Leisure and Recreation Council (MARFIMA)

Malaysian designers are also involved in the research. Designers' involvement is crucial in answering the core research question since their perspectives are necessary to provide us with the 'bridge' that connects and transfers the elements of MTSG. (Simon, 1988) mentioned that the designer would provide an attempt to alter existing situations to preferred ones. Meanwhile, Horst Rittel and Melvin Webber (1973) noted that designers reframe things through the conception of several preferred situations rather than framing a problem and solving it (Koskinen et al., 2011). These statements prove that the designers can be a mediator that provides preferable transformation of the issues as the research outcome into real-world designs.

2.6 Chapter Summary

TSG activities have lost much of their attention and appeal to society in recent years. Despite the cultural and social values provided through the activities, the present generation lives in an era of vast technological advancement and globalised culture; the MTSG may soon disappear. The core concept of this MTSG research has been visualised in Figure 6, which comprises the subjects explored within this literature review.

While TSG is usually viewed as a form of play, which is also a fundamental behaviour of humans, previous studies show that play has various features and effects that benefit human development regardless of age, race, and gender. Contrary to popular belief that play is unproductive behaviour, play enables cognitive thinking, creativity, motivation, management, productivity, social interaction, emotion, personal development, and physical attribution and skills (C. Pearce, 2006; Bateson et al., 2013; Sheed, 1995; Lawrence Robinson et al., 2016; Gao & Mandryk, 2012; Sullivan. C, 2013). The MTSG is a significant focus as it preceded physical activities and cultural appreciation.

The TSG has been identified as a type of game activity, a subset of play and can be perceived as a static object or the activity itself. The TSG met the criteria for games in this research. Technically, the MTSG is being treated as a game, which seems fair as it has a structure similar to that presented in the classic games model by Juul (2005) and game criteria by Wolfgang Kramer (2000).

The significance of this research arises as the subject of play (games) contributes to culture (heritage). While culture is vital to every living person as a social, individual, and regional identity component, the game is viewed as a shared form of amusement and socialisation activity. In contrast, acquired behaviour is taught and learned formally or informally in a community. For a culture to survive, consistent efforts and practices must be maintained, and society should be prepared for any substantial changes in cultural practices. Nevertheless, cultures would lack the strength and cease to exist if significant refinement of human behaviour did not occur. Thus, preserving a particular cultural theme in a specific society is critical. In this research, organised play,

referring to traditional games, could be a 'vehicle' to carry the meaning and values of the culture into the modern years.

In this research, the MTSG is being investigated within the context of Malaysia. Several articles and publications noted concerns over the loss of interest in the TSG and MTSG. While the TSG and MTSG activities are declining, knowledge is still present in the collective social memory of past generations but is not well documented and practised (Bronikowska & Groll, 2013; Putra et al., 2014). One of the apparent problems with the MTSG is the lack of academic resources such as publications and research, as mentioned previously (see chapter 1.4).

Some scholars agree that challenges to the TSG and MTSG subjects are globalisation, the advancement of technology, and digital entertainment (see Chapter 2.4.5). The preferences for everyday activities dominate the TSG because they are regarded as superior by the young to the adult population. They represent a significant social and economic accomplishment compared to the TSG, which is typically perceived as outdated child's play.

The decline in MTSG is visible in activity preferences and the increased interest in the subject in various research. The decline will result in the loss of valuable skills, values, knowledge, and cultural heritage. However, it cannot be said that no effort is made to note the MTSG. Prior efforts to raise awareness of MTSG have primarily focused on documentation, digital conversion, education, and design development, as outlined in Table 1 (chapter 2.3.6).

Based on the literature review, the preceding Figure 3 (see chapter 1.4) demonstrated the feasibility of exploring design approaches within the MTSG game structure, involving the collaborative effort of stakeholders and designers by providing shared information and employing design approaches that ultimately result in the preservation of the MTSG.

In this literature review section, I have identified a few clusters of information that help organise the data. It is found that the information from this chapter can be segmented into five clusters:

1. The knowledge of TSG and MTSG
2. The activity's values
3. Issues of the MTSG
4. Status of the MTSG
5. Previous preservation strategies.

The next chapter will explain the methodology used in answering the research questions for this research, guided by the structure of the research presented in chapter 1.

CHAPTER THREE

Chapter 3: Research Methodology

This chapter describes this research methodology to answer the main research question; “How can design help preserve MTSG?”. It describes the proposed methodology and a narrative for each stage explaining the motives for the decision. This research primarily relies on the qualitative methods; hence it needs to be flexible to accommodate the objectives of this research (see chapter 1.4) inspired by Rowley (2012) and Braun and Clarke (2006).

The explanation will also cover how the research question was formulated, the literature review process, and how appropriate methodologies were selected to address the research question and the implications of this decision.

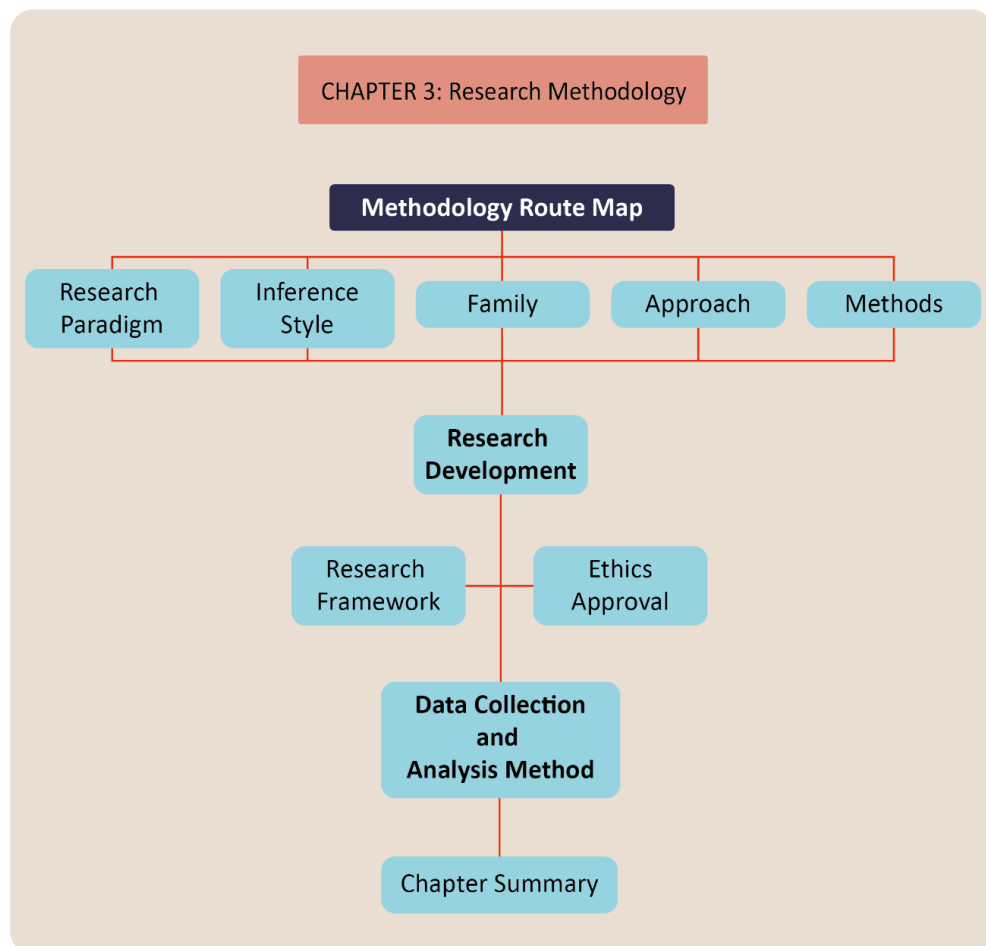


Figure 22: Chapter 3 structure topic overview.

3.1 Methodology Route Map

Many possible methodology choices have been considered for this research. It is hard to identify an appropriate methodology by relying on the literature review. Hence, the methodology routes were visualised in Figure 23 below. The diagram highlights the potential benefits of the research:

- 1) It provides appropriate and realistic research design options.
- 2) It shows the list of the options where the most general idea of the research design is in the left column.
- 3) Each segment was proposed to determine how the decision was made.
- 4) It will aid in explaining and justifying the research decision.

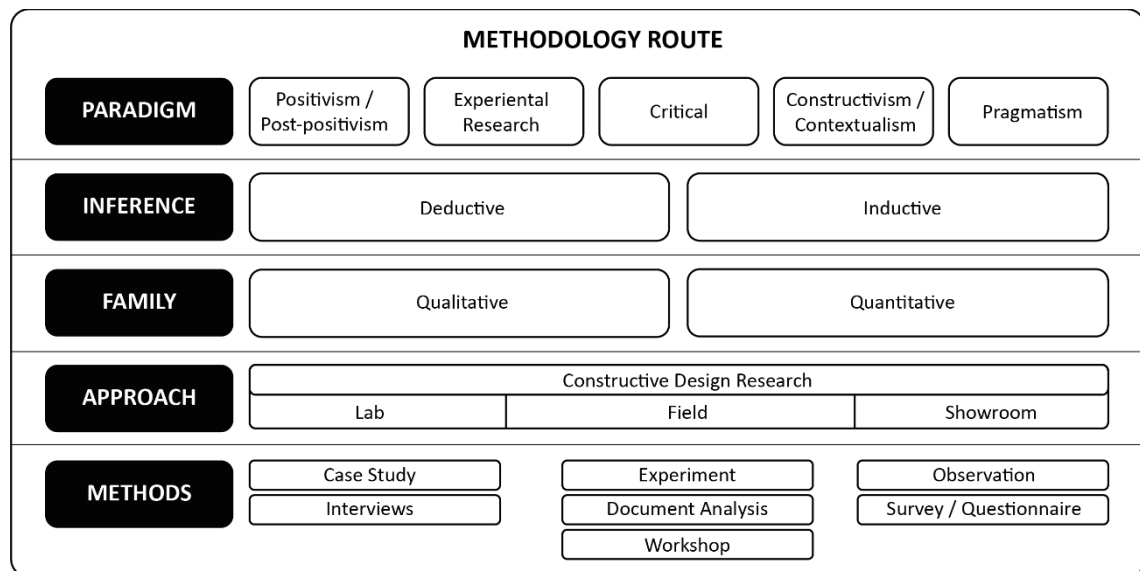


Figure 23: The methodology routes and their available options.

The chart above is analysed to understand the options suitable for this research. In section 3.2, the research development will highlight the chosen methodology options. The chosen methodology will help develop the conceptual research framework with a constructive design approach.

3.1.1 Research Paradigm

Research paradigms represent an essential foundation of an investigation, and those who stick to the appropriate paradigm understand how to approach reality, beliefs, knowledge, and world perspectives (Blaxter et al. 2006). There is a significant body of literature about research paradigms, and quoting each one would be confusing. To avoid this, I have reviewed the prominent research paradigms from several authors that relate to this research, as per table 2 below.

Research Paradigm	
Paradigm	Description
Positivism / Post-positivism	The context is neutralised by distancing the researcher from the object of inquiry and employing established scientific procedures associated with quantitative research in order to achieve predictability. As a result, it contradicts the qualitative research that this study requires. While post-positivism acknowledges context, it strives for an absolute truth. (Blaxter et al. 2006 and Braun & Clarke, 2013).
Experientialism / Realism	The worth of a subject is frequently used to evaluate research, and the researcher typically has a distinct worldview defined by cultural experiences and upbringing, as well as theorised that the worldview is generated directly from people's experiences (Bryman, 2008; Dudovskiy, 2018). According to the researchers, this paradigm is appropriate for the pilot study, as we are dealing with participants' experiences during interviews (explained later in this research development), because the participants' perspectives are organised, acknowledged, and focused on (Braun & Clarke, 2013).
Critical	In contrast to the Experientialism, the Critical paradigm disregards the opinions of others. It describes a reality through the way a person speaks about it (Braun & Clarke, 2013), which may be beneficial when analysing the specific type of data required for this research. It is described as a paradigm that "confronts and adopts a vision of conflict and oppression" (Crotty, 1998 in Blaxter et al. 2006: 61), which inappropriate for this study.
Constructivism/ contextualism	Constructivism views reality as a mental construct created by humans; thus, reality is deemed subjective (Dudovskiy, 2018), and it is frequently associated with the study of the social world. Knowledge is a social construct, just as the interviewer and respondent shared one (Bryman, 2008; Braun & Clarke, 2006; 2013) Because reality is viewed in relation to its social context, various truths are constantly being recognised. As a result, this paradigm would incorporate critical elements of this research, most notably stakeholder characterisation.
Pragmatism	The research question is vital for pragmatic research philosophy because it directs the investigation's approach. A single study can incorporate a variety of pragmatic research approaches and strategies (Dudovskiy, 2018). The study's questions appear to be best addressed through a combination of qualitative, quantitative, and action research methodologies.

Table 2: Brief description of the available research paradigm.

This research focuses on the design and implementation of research on the MTSG subject as a means of preservation. I am aware of the need to gather information from stakeholders to offer research insight. Hence, generalising the stakeholders' context is unsuitable since each stakeholder's response is a critical aspect that contributes to an understanding of the issues and should not be neutralised.

This research is a fusion of constructivism and experimentalism, with a general adoption of pragmatism. This research investigates the MTSG information by paying attention to stakeholders' views, attitudes, and experiences and then uses that data to develop a meaningful interaction focused on preserving the MTSG.

3.1.2 Inference style

Deductive and inductive reasoning is frequently used to refer to the two types of research inferences or modes of reasoning. The deductive theory is used to guide an investigation, allowing for generalisation and the generation of hypotheses, whereas the inductive approach is generated through practice. There is no formal requirement that research is conducted in a particular style, and in most cases, research can be guided by a combination of the two (Trochim, 2006). Figure 25 exhibits the inference style in action.

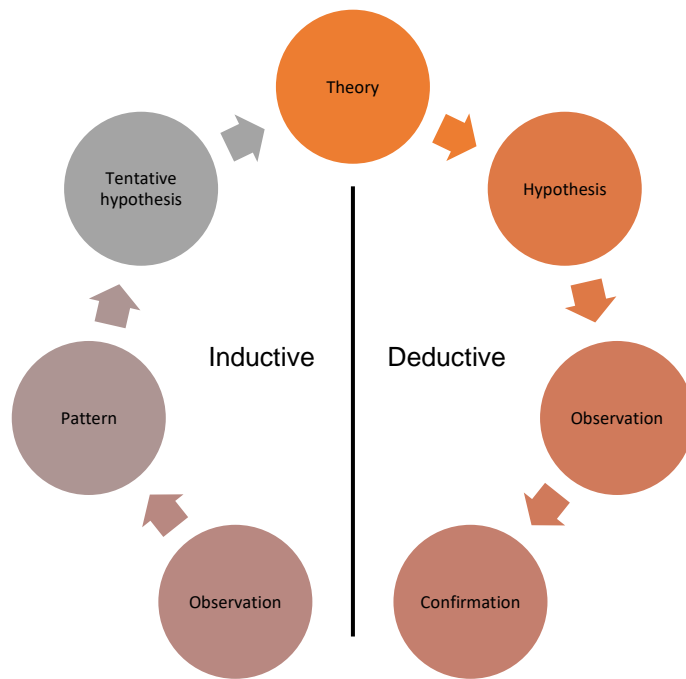


Figure 24: Inference style diagram adapted from Knowledge Base (Trochim,2006) and Burney, S.M.A; Saleem, H., (2008)

This research makes use of both deductive and inductive reasoning, as the preliminary description of the current state of MTSG necessitates an exploratory approach. As this research progresses, the information gleaned from inductive reasoning will assist in confirming the preservation concept through investigations using the constructive design research approach.

3.1.3 Family

By citing Blaxter et al., J.P. Armellini (2017) introduced the term ‘family’ as a division in research design that corresponds to qualitative and quantitative techniques (2006). I believe that categorising this research into the appropriate "family" is advantageous because it enables me to determine the most appropriate approach and methodologies. The identified ‘family’ are as follows:

1. As John W. Cresswell (2009) noted, various types of research problems necessitate distinct approaches. Qualitative research is typically exploratory in nature and is advantageous when the research topic is novel, has not been addressed by a particular group of people (e.g.,

community, society), or when existing theories do not apply to the particular group of people under research. Qualitative research is also advantageous for identifying intangible variables in fields such as human psychology, anthropology of institutions, beliefs and relationships, and cultural semiotics (Mark, 2000). Qualitative research can be challenging, depending on the researcher's level of experience. The technique entails the examination of human behaviour norms during the data collection and evaluation processes (Welman et al., 2005).

2. Quantitative research emphasises logical and rational approaches to data analysis, relying on complex and organised approaches to evaluate research data and accept or reject theories. If the purpose of the research is to determine the factors that influence an outcome and the utility of an intervention or to identify the best predictors of outcomes, a quantitative approach is acceptable (John W. Creswell, 2009). The procedures that underpin this approach frequently involve a large number of samples and issues, with the results analysed statistically (Welman et al., 2005).
3. Meanwhile, mixed methods can be used to combine the best features of qualitative and quantitative research. It entails collecting data concurrently or sequentially in order to gain a better understanding of research problems. Additionally, data collection progresses toward the goal of incorporating both numerical and textual data into the final database, ensuring that it contains both qualitative and quantitative information (John W. Creswell, 2009).

In this research, while reviewing the qualitative data, a minor portion of the quantitative approach was used in the analysis process to highlight the most pertinent information from the qualitative data collection.

3.1.4 Approach

The following stage is to determine the most appropriate approach for this research. After confirming the appropriate 'family' for this research, I have been able to focus on the best option. However, there are numerous research design approaches, and selecting the most appropriate one is critical for this research.

Thus, I begin by referencing Christopher Frayling's (1993) segmentation of approaches to design research. Frayling identified three types of design research in 1993: 'research into art and design', 'research for art and design', and 'research through art and design' (Christopher Frayling, 1993, p.5).

'Research into art and design' and 'research for art and design'; Frayling (1993) asserts that the first is more easily identified due to the abundance of examples and models that serve as a guide for the research rules and procedures. The second path is also straightforward, but it includes research into the discipline of visual, icon, or 'imagistic communication' artefacts or knowledge (Christopher Frayling, 1993, p.6). The second path is also straightforward, but it includes research into the discipline of visual, icon, or 'imagistic communication' artefacts or knowledge (Christopher Frayling, 1993, p.6). To summarize, both design research approaches are centred on the question "what is" and include the design's informational past and present (Wensveen, 2018).

The third, termed 'research through design', is a less straightforward approach but one that is identifiable and visible (Christopher Frayling, 1993). This subset of design research includes material research, developmental work, and action research, in which the knowledge dissemination focus is not on the product but on the research process itself. On the other hand, it is far safer to assert that in research through design, the design process becomes an integral part of the research process, during which knowledge is generated and communicated through the designed artefact (Wensveen, 2018).

To answer the research questions presented earlier (see chapter 1.4), the 'research through design' type of approach is most appropriate as it allows exploration of the subject of MTSG through design. The 'research through design' approach is too broad, but further investigation into the subject has led me to a

specific 'research through design' approach called the 'constructive design research' introduced by Ilpo Koskinen et al. in 2011.

3.1.4.1 Constructive Design Research

Constructive design research (note this differs from constructivism) is defined as "*design research in which construction—be it product, system, space, or media—takes centre place and becomes the key means of constructing knowledge*" (Koskinen et al., 2011, p.25).

Ilpo Koskinen observed that while there are hundreds of design research methodologies available, only a few are ideal for designers (Koskinen et al., 2011). As a result, he and his team conducted research into the most effective methods for design research, which culminated in the publication of the book *Design Research Through Practice: From the Lab, Field, and Showroom*.

The book is primarily aimed at design research, as Koskinen et al. (2011) discovered that because the design is a rapidly growing academic field, it is critical to have a broad perspective, or guidelines, on the design process, particularly for students and academics. Additionally, Koskinen et al. (2011) believed that, unlike other approaches to field research, the designer possesses 'indescribable sensitivities', implying that academics in the design field should incorporate design into their research. The benchmark for best practice (in design research) is the integration and connection of theoretical thinking and studio work with the actual design, backed up by a community (Wensveen, 2018, p.13). Finally, they mentioned that because designers may lack familiarity with a variety of methods and scientific approaches, there is a need to incorporate some flexibility and freedom when it comes to addressing methods and methodologies in design (Koskinen et al., 2011)

The book has introduced three types of approaches that fit the nature of 'research through design'. Eventually, the term 'constructive design research' was chosen to avoid confusion with the use of 'research through design' (Wensveen, 2018). The three approaches stated in the constructive design research have been summarised as per the table below.

Constructive Design Research Approach		
LAB	FIELD	SHOWROOM
<p>The "Lab" approach is characterised by an optimised design process, in which concepts are viewed as physical hypotheses. Controlled laboratory studies are used to examine systemic changes to the prototypes, with quantitative data and statistics used to demonstrate causality.</p> <p>The objective is to generalise knowledge about design, frameworks, and theoretical foundations.</p>	<p>The term "Field" refers to the fact that design is studied in its natural habitat of uncontrollable environments. It is based on design ethnography, is motivated by comprehension rather than causation, and is concerned with how people develop meaning in response to new designs introduced into their context.</p> <p>The objective is to facilitate the development of contextualised knowledge and comprehension.</p>	<p>When research meets design and art, it is referred to as the "Showroom" approach. Design, on the other hand, can be more realistic than art. The term "showroom" refers to a critical and speculative design study in which the objective is to think outside the box and to pose unique, difficult, but pertinent questions rather than to provide reassuring answers.</p> <p>It is research and design for debate; with the goal of deviating from established practises through design.</p>
Characteristic		
<p>i) The study of a hypothesis is the foundation of the design process.</p> <p>ii) The designs are the physical theories of the researcher.</p> <p>iii) Prototypes are tested in a series of well-controlled laboratory trials.</p> <p>iv) To demonstrate causality, quantitative data and statistics were used.</p> <p>v) Typically, the goal is to generalise frameworks, theory, and design knowledge.</p>	<p>i) Design is the context explored in a natural and uncontrollable situation.</p> <p>ii) Rely on the design ethnography.</p> <p>iii) Driven by context awareness rather than reason.</p> <p>iv) Pay attention to how people create meaning with the new designs.</p> <p>v) The goal is to produce contextualised knowledge and understanding.</p>	<p>i) Exhibition is as important as authoring books and articles.</p> <p>ii) The purpose is to transform beyond knowledge.</p> <p>iii) The showroom's establishment is research and design for debate.</p> <p>iv) Research meets art and design</p>

Table 3: Brief description of the approach mentioned in the Constructive Design Research as mentioned by Koskinen et al., 2011

Constructive design research enables the observation of phenomena such as social interaction and the establishment of connections to other disciplines and forms of culture, thereby deepening research and design (Koskinen et al., 2011). Additionally, this type of research allows for the interchangeability of theoretical concepts, studio work, and workshops, as well as who can plan and work with materials and technologies.

The 'research by design' approach appears to be consistent with this research strategy. Understanding 'constructive design research' is critical for developing the research design and methods for this research. Inspired by the constructive design research approach, this research sought to elicit detailed information about the MTSG from stakeholders in order to determine how design can contribute to the MTSG's preservation through the use of a constructive design research approach.

3.1.5 Methods

Generally, in doing research, there is a vast array of methods available to be used for gathering the necessary information. The methods in this section can also be referred to as key techniques or 'equipment' that would assist with the research. There are too many primary and secondary methods identified in the literature, and instead of explaining each one, only the most relevant and prominent ones will be described, analysed, and paired up with the 'family' and approach mentioned in previous sections. Table 3.2 shows the description of available methods and the association of the method with the appropriate family, and the suitable approach that can be analysed for use in this research.

Methods	Description	Family	Suitable approach
Interviews	Interviews are a sort of qualitative research in which a small group of people are asked about their thoughts on a specific topic, concept, or circumstance (C. Boyce and P. Neale, 2006). Structured, semi-structured, and unstructured interviews are the most common interview formats.	Qualitative	General
Case Research	Case studies delve at unique difficulties within the context of a certain region, circumstance, or society.	Qualitative	Field
Experiment	Experiment research entails tinkering with an independent variable to see what influence it has on dependent variables. Experiments are used in most causal investigations.	Quantitative	Lab
Survey/ Questionnaire	A survey, often known as a questionnaire, is a procedure that can be quantified by asking a series of questions to elicit specific data from a specified stakeholder. It's commonly used to assess one's thoughts, feelings, and opinions (J. Shaughnessy, E. Zechmeister, and Z. Jeanne, 2011). Telephone, mail, online, and face-to-face interviews are just a few of the survey methods accessible.	Quantitative	Showroom
Observation	The recording and analysis of the behaviour and interactions of samples of the population of events, activities, and experiences are possible through observation. This technique is appropriate because it is applicable to determine public perceptions of MTSG and its associated behaviours, which involve diverse stakeholders.	Qualitative	Field
Document analysis	The evaluation of existing documents such as news articles, government records, promotional materials, conference minutes, or personal documents such as diaries or photographs is known as document analysis. This method is applicable in studies that involve the history of events, experience, and studies that involve written communications (Hammersly and Atkinson, cited in Ritchie (2003).	Qualitative	General
Workshop	The workshop will often include both qualitative and quantitative components, such as brainstorming and problem-solving. A group of people may attend a workshop, each with its own moderator or facilitator.	Qualitative / Quantitative	Lab / Field

Table 4: Description of available methods and their family and approaches.

In research methods, families and procedures are usually associated but do not necessarily fix one another; rather, the researcher can often focus on their specific approaches or mix them together to suit the nature of the research (Blaxter et al., 2006:65-67). As a result, based on the research development sub-chapter and the collections of facts, I have highlighted the relevant methods chosen for this research.

3.2 Research Development

This section outlines how the research was developed as the research strives for rich and deep information, from identifying MTSG to finding the appropriate preservation method through design using qualitative data collection. The research, through a design approach, to be specific, constructive design research, has provided a range of methods that enable the qualitative data to be captured systematically. The selected approach within this research has provided the collection of data through mixed methods.

The research started by examining the collection of literature reviews. The reviews lead to a discussion of the specific aims and objectives of this research and the development of the research methodology. According to Creswell, "the strongest and most scholarly rationale for a research...comes from the scholarly literature: a need exists to add to or fill a gap in the literature" (John W. Creswell, 2009, p. 102).

From the collected literature related to MTSG, it was revealed that despite there is interest in the MTSG, there has been a lack of publication and investigation into the basic knowledge, status, and issues of the MTSG. At this stage, despite not being able to rely on formal sources such as academic journals, it recognised that the literature search would need to involve the use of different informal sources (for example, weblogs and websites). It became apparent that the research of MTSG was a multi-disciplinary research topic, and the literature search would need to reflect this with the use of different search terms and a wider range of search tools.

Due to the lack of formal literature on MTSGs, it was essential to break the topic into parts and analyse them separately by identifying the general concept or theme, which would provide early information and exploration of MTSGs more generally. These concepts or themes revolve around the subjects of play, games, traditional games, MTSG, and preservation. This procedure for bringing together previously unrelated material to create a framework for the review is referred to by Bryman as "synthesised coherence," whereby "connections are forged between established theories" (Bryman, 2005, p. 532). There was no apparent

way in which the literature should be organized, but by using mind mapping to order the identified categories, a "clear and compelling framework around which the writing is planned" (Bryman 2005, p. 532).

The process of formulating research questions is a portion of the stage referred to by Phillips and Pugh as the "focal theory" stage, in which "you spell out in great detail precisely what you are researching and why" (Phillips and Pugh, 2005, p. 58). The literature review highlighted three major themes which were of interest: the status of MTSG and the value of preserving them; existing design solutions, methods, or strategies to preserve MTSG; and the role of design in preserving MTSG. These themes were used to develop research questions and refine the aims and objectives of the research.

While literature reviews are important for the early development of the research design, conducting interviews to probe for current information, particularly on the personal values and status of the MTSG through the participant's perspectives, is required to collect the best data in a 'real-time' manner.

The research design is also influenced by replies from a sample of participants or stakeholders. The engagement of participants in the designed research phases generates the information required for each phase. In this example, it was a mixed-methods approach that included an interview session during the pilot phase of the research, as well as interaction with the original MTSG field simulation, design workshop, and design evaluation workshop using prototypes.

The research was designed not only to answer the research questions portrayed in the previous chapter but also to pragmatically lay a foundation from one phase to the other. Previously, the available methodology route has been presented as a guide to designing the research. Figure 26 below shows a summary of the chosen methodology route that is relevant to the research.

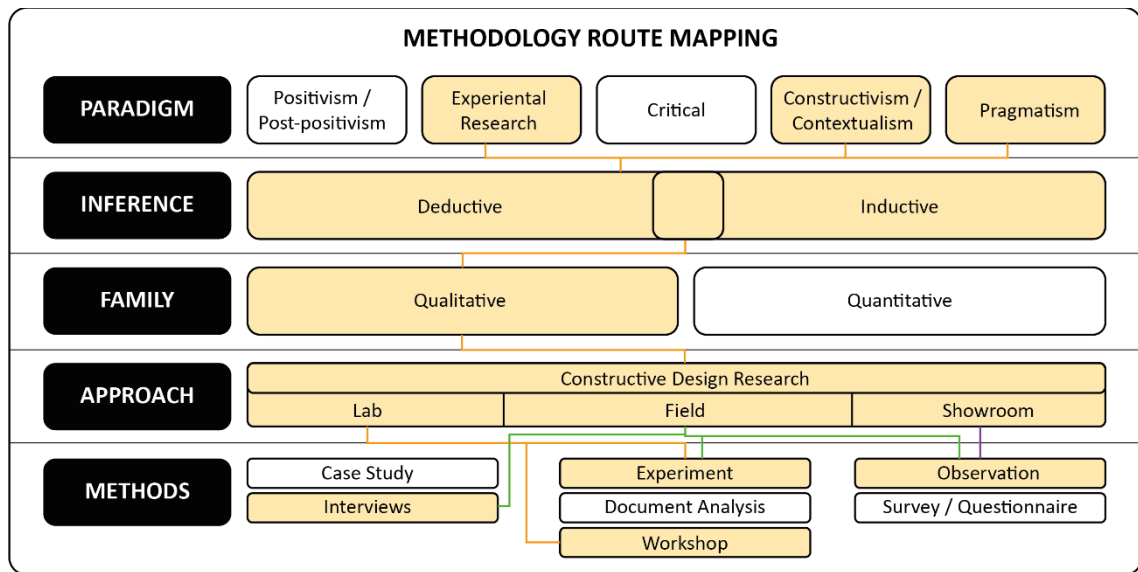


Figure 25: Methodology route that has been chosen for this research. The lined colour indicates the flow of each segment.

3.2.1 Research framework

Following the identification of approaches and techniques through the research methodology, the next step is to manage them appropriately so that each method meets the demands of collecting specific data. As indicated in figure 26, I established a research framework that integrates mixed methods and manages them into phases.

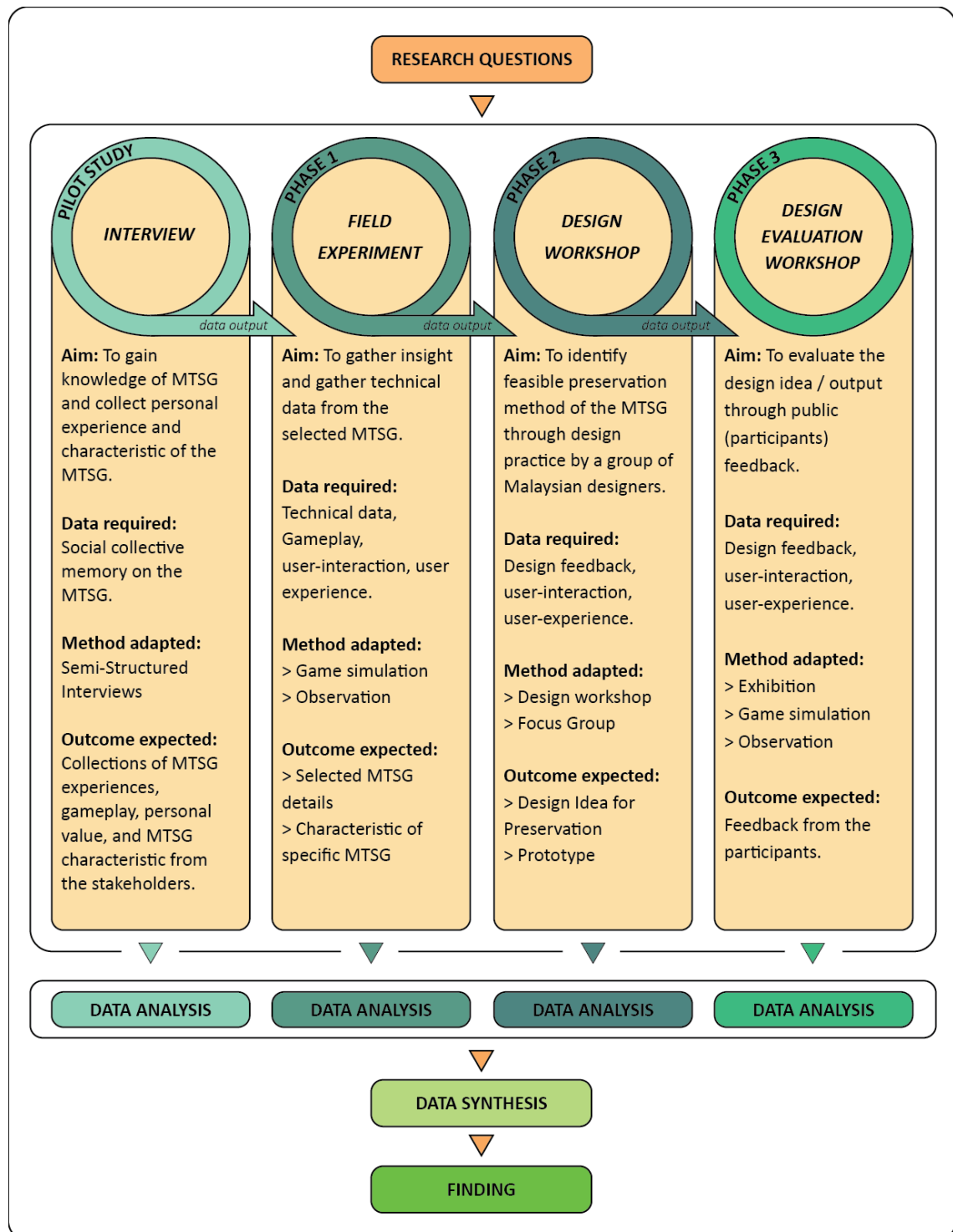


Figure 26: Details of the research framework.

The framework demonstrates the adoption of structured methods to elicit missing data from the literature reviews. Each phase will generate data that will assist in organising subsequent research phases. Simultaneously, data from each research phase will be analysed separately and then synthesised to capture the overall findings in response to research questions.

According to the research framework outlined above, the phases will be conducted sequentially with specific aims, methods, and expected outcomes. Each research phase will generate two types of data. Firstly, it will serve as a reference for the subsequent research phase. Secondly, it will provide chunks of specific data that are usable in the data synthesis process to generate the findings that will aid in answering the research questions.

Thematic Analysis

Most of the phases of this research employ thematic analysis as a data analysis technique. Thematic Analysis is one of the qualitative approaches that has gained widespread recognition due to its accessibility and flexibility. This approach enables me to collect and identify novel insights derived from datasets, as well as to make sense of collective phenomena (such as shared meanings or experiences) in a variety of ways (Braun & Clarke, 2012; Delve, n.d.).

The thematic analysis is suitable for this research since I am new to this type of research, and it provides a way into qualitative research that guides the mechanics of coding and analysing qualitative data systematically, which later is significant in linking with a broader conceptual issue (Braun & Clarke, 2012).

This research was structured using mixed methods to collect specific datasets that may be necessary for answering the research questions. The combination of thematic analysis with the multi-methods presented in the research framework above enables me to identify significant connections between the particular topic and the research questions (Braun & Clarke, 2012), which may become apparent after data synthesis.

Because most of the data in this research were not numerical, thematic coding is the most efficient method of organising it. Unstructured data or semi-structured data, such as transcripts from in-depth interviews, reports on field experiment observation, and design evaluation in a workshop context, for example, can be organised into themes and patterns for analysis. According to Braun and Clarke (2012), there are six basic processes in doing thematic analysis, and this research used these steps to provide the analysis data. The steps entail the following:

1. Become familiar with the data.
2. Create your first set of codes.
3. Compile a list of codes and supporting data.
4. Sort codes into categories based on their themes.
5. Conduct a topic evaluation and revision.
6. Construct a narrative.

While the idea of thematic analysis is nearly identical for each phase of this research, the details and data collected for each method are different. Because the data is abundant and cluttered, software like Microsoft Excel and ATLAS.ti can expedite the coding and analysis process.

The research design includes the specifications for each method (see chapter 3.3). Because this research involves stakeholders and the general public, all personal information is sensitive, and the identity of participants remains anonymous at all times.

3.2.2 Ethics approval

The research process has considered the ethical part as one of the important aspects of this research, especially when it comes to the data collection process. Since the data collection processes such as the pilot research, the field experiment, the design workshop, and the design evaluation workshop required contributions from the human stakeholders, the ethical application and clearance were 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. The ethical application was part of the requirement of the university's code of practice before carrying out the data collection process. The application has been approved prior to the data collection process and can be referred to in Appendix 3.

3.3 Research Design and data collection

This sub-chapter discusses the research design and details the data collection and analysis processes, all of which are based on the research framework presented previously. (see Chapter 3.2.1).

3.3.1 Sampling

The selection of individuals from the population who should be included as sources of insight during primary data gathering is referred to as sampling. The identification and selection of research samples are critical components of social research, and the sample must be defined as part of the research design. In this research, the sample is also referred to as 'stakeholders'.

According to Robson and Hernández Pardo (2012), various factors must be considered when selecting a sample from a population, including sample size, member availability, and the location of the research. These characteristics are linked to the extra component of research resources, which encompasses time horizon, cost, and mobility. As a result, the sample decision is based on the best research setting depending on the available resources. In this research, two separate samples were recruited to complete each stage.

3.3.1.1 Pilot research sampling

Interviews were chosen as the method for the pilot research at this point. The stakeholders for this stage were chosen based on the two types of sample methodologies described by Berg (2009), Robson (2011), and Saunders et al. (2016): probability sampling and non-probability sampling. The distinction between these methods is that probability sampling uses some type of random selection among every member of the population, whereas non-probability sampling selects members selectively and hence does not include every member of the population.

For this research, probability sampling was unsuited for this purpose because it was necessary to identify people who had experience and/or appropriate knowledge of the MTSG. Therefore, for this stage, non-probability sampling was chosen because, as Creswell states, it is important to "select individuals because they can purposefully inform an understanding of the research problem and central phenomenon of research" (Creswell, 2007, p. 125). In non-probability sampling, there are four identifiable types of samples such as dimensional, quota, convenience, and snowball (Berg, 2009; Robson, 2011). It was decided then that the purposive sampling and snowball sampling could help me to gain the intended information at this pilot research stage.

The purposive sampling method also allows my knowledge and expertise in selecting the suitable informant or stakeholders who would represent the intended population (Berg, 2009). Due to the nature of this research design and aim, only a limited number of people would suffice as a primary data source (Berg, 2009).

A combination of purposive sampling and snowball sampling was used in this phase. Potential informants or stakeholders were identified through various sources, either online or offline. Online sources include official government websites, while offline sources include newspapers and magazines. The two potential stakeholders were recruited. First the users of MTSG (experienced players or users) and those responsible for the preservation of heritage (expert

personnel). As there has been a lack of information on the MTSG details, this sampling method was highly appropriate for the pilot research.

In relation to interview participants, there were various ethical considerations. These were: informed consent, confidentiality, and consequences (Kvale 1996). All participants in this research were asked to complete an informed consent form. This form outlined the purpose and details of the research, and permission to record the interviews was sought. It also included a statement about confidentiality: whether participants were willing to have their names disclosed in publications and who would have access to the data. It has benefited this research that all participants agreed to recordings and to the use of their names in subsequent analyses. Participants were informed at this stage about any consequences of the research and how the data would be used. They were also asked whether they were interested in feedback and the outcomes of the research.

The actual number of interviewees ranges from 1 to 325 (Creswell 2007, p. 126), while Polkinghorne (1989) advises 5 to 25 individuals (Creswell 2007, p. 126). Kvale notes how there is a tendency to believe that "*the more interviews, the more scientific*" (Kvale 1996, p. 103). However, it was decided that the emphasis in this research should be on the quality of the interview rather than the quantity. As there were two specific interview groups, it was hoped that between 5-10 interviews would be held within each category. This has been achieved, although there has had to be a great deal of flexibility in relation to the arrangement of interviews. In total, 21 interviews were carried out with the following groups.

1) Experienced user – In this research, an experienced user is a group of persons who were invited to participate in the interviews, field experiment, and design evaluation workshop via purposive sampling. The experienced user may or may not have witnessed the MTSG first-hand, but they are aware of its presence and have heard about it. The major goal is to acquire MTSG insight from their perspective, which might fill in the gaps in the literature research, such as relevant experiences and values of playing MTSG.

2) Expert personnel – Expert personnel in this research refers to a group of people who works with several governmental institutions that are related to the topic of MTSG, such National Department of Culture and Arts, Malaysia (JKKN), National Department of Heritage, Malaysia (JWN), and several stakeholders from the academic institution.

3.3.1.2 Field experiment and Design Evaluation sampling

These two phases require the informant, or at this stage, what we refer to as the participant, to be actively involved in the simulation/activity. Therefore, for these phases of sampling, I have decided to recruit the participant through a combination of probability sampling, which focuses on cluster sampling, and non-probability sampling, which is also known as convenience sampling. Cluster sampling is a technique in which the participants from a cluster are identified and represent the intended population (Jackson, S.L., 2011). Since the research requires specific Malaysian participants, establishing a cluster of Malaysians in the Lancaster area was chosen as the best and most effective way to conduct the phases. Due to the time-efficiency, cost-effectiveness, and availability of these selected Malaysian participants, they are sufficient to represent the intended demographic.

The participants were recruited through online and offline methods, where the social media community page and the Malaysian community in Lancaster were informed about the simulation and the evaluation session.

3.3.2 Pilot Research

In this pilot research, I have chosen the semi-structured interview as the main method to capture the information about MTSG from the stakeholders. Interviews were conducted with two groups of stakeholders: experienced users and expert personnel. The experienced user is defined as someone who knows or has experience playing Malaysian traditional sports and games before, on the assumption that they could give us insight from their knowledge and memory about playing any MTSG. The expert personnel interviewed in this research are people who represent local authorities, governments, or organisations that could provide additional information regarding the collective effort by their respective institutions related to the MTSG topic. In this research, I have managed to get representatives from three organisations that are experts in their own fields: the National Department for Culture and Arts, Malaysia (*JKKN*), the Department of Museum, Malaysia (*JMM*), and academicians representing their own institutions.

The information was transcribed and clustered into several codes that provided keys to answering the research questions. The information comprises the feedback captured from the 'experienced user' group and the 'expert personnel' group.

3.3.2.1 Pilot Research: Rationale

In this research, the pilot research is about investigating the MTSG knowledge, experience, and understanding from the perspective of experienced users and experts. There are various methods that can be used in this type of qualitative research. There are focus groups, observations, case studies, and interviews. At first, it seemed that focus group interviews would be useful for this research to collect information from various people at the same time. However, this method was deemed inappropriate as there is a limit to the number of details that can be gained from every one. Using observation and case studies for this phase is not suitable as the focus is to investigate personal experiences and knowledge of playing MTSG. Thus, the decision to undertake an interview investigation in this phase is necessary to gain insights from the experienced user

or player regarding traditional Malaysian games and sports issues. The purpose of this first phase has been to explore the reality of MTSG, its value, status, and significance from an individual point of view. Interviews are a significant method for gaining details, especially about an individual's perceptions and views on a specific subject. As mentioned by Kvale, "*if you want to know how people understand their world and their lives, why not talk with them?*" (2007, p.1). Interviews were known as a suitable method to obtain insights and views from stakeholders in a real-time situation during this phase.

3.3.2.2 Pilot Research: Preparing the Interview.

Referring to Kvale's requirements for quality interviews, I am assured I have a thorough comprehension of the issues surrounding MTSG and that the interview framework had been carefully studied before conducting any interviews. Throughout the interviews, I have used an open yet critical manner that allowed participants to openly voice their perspectives while investigating what they had stated. This openness has also included information regarding the research's goals and objectives, as well as the background of the interviewer.

The validity of the research is directly linked to its quality. Quality is an important issue in interview research and is related to the skill of the interviewing researcher. Kvale states that the "*quality of the original interview is decisive for the quality of the analysis, verification and reporting of the interview*" (2007, p. 90).

Designing the interview strategy was an important stage because, as Gillham (2000) suggests, I must consider the following issue: "*what questions for the purpose of the research can only be answered by asking people?*" (Gillham, 2000, p. 20). For this research, it was vital to explore how to format an interview so that I could extract the meanings of what people say when they talk about games and the values they attach to them.

Indeed, for this research, a semi-structured format with open-ended questions was used. This allowed the interviews to remain focused, as it is crucial for the interviewer to maintain control of the conversation, but it also allowed the

participants to speak freely about their experiences and allowed the interviewer to let the subject wander in any new direction of interest. The advantage of the semi-structured interview is that “*it facilitates a strong element of discovery, whilst its structured element allows an analysis of commonalities*” (Gillham 2005, p.72).

Knowing how questions are “*most efficiently posed or presented*” (Gillham 2000, p.20) is one of the challenges of the interview process. The aims and objectives of the research were used as the basis for developing appropriate questions, and understanding how to ask the right questions was helped through a pilot interview. The interview was an excellent opportunity for me to practice the skills of prompting and probing and to refine the interview questions. These stages lead to the development of the interview framework.

An interview framework should consist of four stages: an introductory phase, the opening development of the interview, the central core of the interview and a closing phase (Gillham, 2000). The introductory phase, which began with the original contact email, was used as a way for me to explain the context of the interview. Participants were comfortable talking about familiar things, and these answers gave me a fuller appreciation of the background of the participants and prompted a more focused discussion. The topics of cultural significance and preservation were the central themes of the interview.

Using the knowledge acquired in the opening phase, I was able to probe for answers relating to the research questions through an understanding of the participants’ field of interest. The closing stage of the interview gave the participants an opportunity to ask questions, provide any further opinions, and for me to ask permission to use the information in subsequent reports. It was also used to identify any further potential participants for the research through a discussion of the participants’ contacts. This basic framework was used in all the interviews, although the questions were adapted to the responses of individuals and the order of questions was altered to allow the interview to flow freely. This need for flexibility is common in interview research.

The purpose of responsive interviewing is “*to generate depth of understanding*” (Rubin and Rubin 2005, p. 30), and to achieve this, Rubin and Rubin suggest that:

“Design must remain flexible. Each major new discovery may require a redesign, figuring anew whom to talk to, where to carry out the research, or what concepts and themes to focus on” (2005, p. 35)

I have been conscious of this need for flexibility and have continually reconsidered the focus of the questions in relation to previous data collected. However, it is important to “*prioritise topics you want to talk about*” (Gillham 2000, p. 20) to avoid inconsistency. It is very easy for interviewees to be distracted by the overexcitement of a participant on an unrelated topic. In this research, the topics that were prioritised were: the participant’s personal experience of MTSG, the perceived cultural significance and value of MTSG and opinions on modern activities and MTSG.

Locating and enlisting the cooperation of participants was one of the biggest challenges of this research. As discussed above, various organisations declined or failed to respond to requests to participate in interviews. This was extremely frustrating and has hindered the overall development of this research. Even after people agreed to be interviewed, it was then necessary to negotiate an appropriate time for an interview. This process was often slow and time-consuming as it took six months to arrange and complete five interviews. It was also complicated, as participants would agree on a date and then cancel at short notice. These experiences highlighted a need for flexibility and to adapt the approach taken. It was for this reason that online video interviews were conducted as an alternative to face-to-face interviews in some circumstances.

Face-to-face interviews were the preferred method in this research, as they present the best opportunity for the interviewer to engage with the participants. However, online video call interviews have been used in most cases. Typically, the advantage of online video call advantage is similar to its predecessor, the telephone interview. Telephone interviews are used for survey research in which quick responses to structured questions are elicited: there are

limitations to this approach. On the telephone, there are “*no visual clues such as eye contact, smiling, puzzled looks between you and the interviewee*” (Walliman 2006, p. 92). However, with the advancement of technology, the online video call has been possible to provide much similar experience and feedback as the conventional interviews had been used. In particular, they have been used with some of the international participants due to a lack of funding to travel to all locations. They have also been used as a bargaining tool with some participants. When approached to take part in this research, some interviewees were reluctant to commit to dates for meetings but were more willing to agree to the online video call interviews. All interviews, both face-to-face and online video calls, were recorded.

Recordings were made of all the interviews in this research. Digital recordings were made at the face-to-face meetings, and telephone interviews were recorded using a telephone recorder. Making recordings allowed the interviewer to focus on the topics and direction of the interview. It also meant that the interviewer did not have to rely merely on notes taken during the interview and memory when analysing the data. This would potentially have meant that important themes may have been missed and/or forgotten, or there could have been issues of selective memory.

3.3.2.3 Pilot Research: Analysis Method

The captured information from this process has then been analysed using the thematic analysis method. The information collected through the interviews was then clustered into specific themes based on the research questions presented at the beginning of this thesis. The themes, or codes, were constructed based on information extracted from interviews and literature reviews. These transcribing processes have been aided by an assistive software, *ATLAS.ti*, which enables me to manage and organise the qualitative data effectively.

3.3.3 Field Experiment

This field experiment phase enabled me to observe first-hand the participants' experience of playing selected MTSG. Observing the occurrence of Malaysians playing MTSG, even if the research was conducted in Malaysia, is deemed ineffective and time-consuming since the occasion is very rare nowadays. Sometimes the activity can only be observed being played during several local or national events, thus our decision to set up the simulation based on the original gameplay. The cluster of Malaysian participants' involvement in the field experiment phase would suffice for this phase as an exploratory stage. A similar cluster of participants was also invited for the design evaluation phase. The expected information from this phase was then used in the next phase as a reference and guide for the focus group.

3.3.3.1 Field Experiment: Rationale

The second phase of the research was the field experiment, which was a series of selected MTSG gameplay simulations with the guidelines provided by the literature reviews and pilot research. The aim of this field experiment was to observe the gameplay of the original MTSG, the characteristics of the selected game, and the behaviour of the participants during the gameplay.

The MTSG activity was identified through the available collection in the literature reviews and the pilot research, where four popular activities were selected. These four activities represent the two types of indoor games and outdoor MTSG.

These four activities were also selected based on the availability of the game structure, clear guidelines, suitability of the location, and access to the equipment. The simulation experience might be different from the original gameplay experience due to the geographical, weather, and location settings, but this is not our main focus since we are observing the technical context of the activity, gameplay, and social behaviour of the participant.

Prior to the field experiment or simulation, a poster for the event has been placed on display. Seventeen participants ($n = 17$) have been recruited, and the event itinerary has been distributed (see appendix 4).

Video recordings were made for the field experiment sessions in this research. The recordings allowed me to revisit the simulation and view the details of the gameplay. It also meant that I did not have to rely solely on memory and notes taken during the simulation when analysing the data. This would potentially have meant that important observations may have been missed and/or forgotten, or there could have been issues with selective memory.

3.3.3.2 Field Experiment: Analysis Method

This phase of the field experiment is mainly dependent on the observation method. The activity's recorded observations and comments from the participants were then documented. The document is then analysed using thematic content analysis, which categorises the information and is subsequently classified, summarised, and tabulated using an excel spreadsheet and *ATLAS.ti*.

3.3.4 Design Workshop

The design workshop phase focused on the designers' contributions through a collaborative effort in proposing and developing a sample of MTSG as a means of preservation. During this step, I presented the information obtained in earlier phases of the workshop to the designers, and they could use the offered information to identify a plausible model for preserving MTSG activity through the given sample. The group is additionally directed by a content analysis method influenced by the SWOT and WINQS analysis models (Kathleen Mercury, n.d.) to assist them in identifying the elements of the chosen MTSG. At the end of the workshop, the designers propose their findings and construct the conceptual prototype of the selected MTSG activity as a sample to be evaluated in the next design evaluation workshop in phase 3 of the research.

3.3.4.1 Design Workshop: Rationale

The research structure has been built with the intention of providing a solution for MTSG preservation through the adaptation of the design thinking process. Design thinking is one of the research methodologies that use cognitive, strategic, and practical processes to tackle ill-defined problems (Visser, W. 2006; Rikke Dam & Teo Siang, 2018). Design thinking is usually associated with the establishment of a design concept developed by designers and/or design teams (Visser, W. 2006).

Influenced by the design thinking process, the method that will complement this research would be the design workshop. It is believed that the collaboration of a group of people, especially designers, in this research would stipulate a better solution to the issue. It is an opportunity for a team of designers to solve a problem together by going through a series of iterative processes and exercises to achieve a specific outcome (Cindy Chang, 2018). In this research phase, a focus group comprising a group of Malaysian designers was invited to contribute to the workshop activity.

The Design Workshop was introduced in this phase with the aim of identifying, proposing, and building a specific solution for the preservation of the MTSG with the information provided from literature reviews, pilot studies, and field experiments. I have provided the MTSG information combined from the literature reviews, the pilot research, and the field experiment. This information could help the designers lay out a foundation for identifying the MTSG elements, thus proposing a suitable design approach. Prior to the design workshop phase, 6 Malaysian designers were invited through emails, and the itinerary for the whole session was distributed (see appendix 5).

3.3.4.2 Design Workshop: Analysis Method

The design workshop in phase 2 relies on the information provided by me for the designers' reference. The designer synthesised the information through a series of design thinking practices and proposed the feasible output for the research. The session recorded and documented the designers' responses to the activity. The document was then analysed using the thematic content analysis method, where the information is categorised, which is later classified, summarised, and organized with the aid of an excel spreadsheet and *ATLAS.ti*. Apart from that, the designers were required to build the conceptual prototype based on the workshop as a proof of concept and to be tested in the next research phase.

3.3.5 Design Evaluation

This final phase was planned to gain feedback from the participants. As the participant has been involved with the field experiment phase previously, they will provide a good insight as a matter of comparison between their previous experience and the new one. With this, I could identify the information and draw a conclusion for the model framework as per the suggestion in the previous phase.

3.3.5.1 Design Evaluation: Rationale

This was the final phase of this research. This design evaluation phase aims to introduce and test the designer's proof of concept, the prototype produced during the previous design workshop phase, with the participant recruited as mentioned in chapter 3.3.4.

Prior to the design evaluation phase, seventeen participants ($n = 17$) who had been recruited previously in the field experiment phase were invited again for this session, and the itinerary for the workshop has been distributed (see Appendix 6).

This workshop introduces three different sessions, which are the exhibition, the presentation, and the game simulation. These three sessions were observed, recorded, and documented. The first exhibition session recorded participants' social behaviour when being presented with limited information and collected feedback from the participants. In this session, the MTSG equipment prototype is exhibited within an isolated pedestal box so that the observation for each participating group is clear and controlled.

The second session in this phase is the presentation of the MTSG game concept and how-to-play instruction by me, as proposed by the designers in the previous workshop. This session provides the participants with an introduction and knowledge of the new MTSG game concept and prototype.

The third session requires the participant to test and engage in the activity with the new MTSG game concept and provide feedback for the sessions. A competition was conducted among the participants for me to observe and identify the feedback on the new MTSG activity from the participants.

3.3.5.2 Design Evaluation: Analysis Method

This phase provides insight and feedback from the MTSG stakeholders, specifically the workshop participants. Observation is one of the methods used in this phase to research the behaviour of the participant when provided with something new. To analyse the observation, the content analysis would provide the research with good details. On the other hand, towards the end of the session, the participants were required to fill in an open-ended feedback form. This is one of the methods used in this phase. To analyse this, thematic analysis was used to identify and cluster the feedback from the participants, thus providing us with the preliminary feedback towards the solution provided.

3.4 Chapter 3 summary

Chapter 3 has shown the direction and process of this research. This chapter has explored possible research flows by investigating available research methodologies and using the methodological route map to justify the chosen methodology decision.

The route map serves as a guideline, while the research is more focused on the exploratory. Important strategic planning helps me to organise the qualitative data effectively.

The constructive design research provided in chapter 3.1.4.1 might be regarded as a positivist approach in research through design, whereas this research is more experiential and constructivist. The approaches adapted, on the other hand, serve as inspiration for the research to form the research framework and utilise techniques appropriate to this research.

The methods selected from this research have been pragmatically organised into a few phases: the pilot research, the field experiment (Phase 1), the design workshop (Phase 2), and the design evaluation workshop (Phase 3). Each of these phases contributes to the other by providing related information as references.

For the pilot research, semi-structured interviews have been chosen as the appropriate method. Open-ended questions were asked, and the contexts are regarding the participant's experience playing the MTSG, play environment in the past, the technical aspect of specific games, the meaning of these games to them and their opinions on the declination of the activity. These questions will prompt the information to be used for answering research questions 1 and 2 of the research. The participant has been contacted and informed through emails and phone calls. Because of the research's limitations, the session was conducted via video conference.

The field experiment helped in getting an understanding of the specific MTSG gameplay, player behaviours, technical aspects, and participants'

feedback on the simulated games. The data from the pilot research and works of literature were used to create the outline of the game simulation.

With the collaborative efforts of a group of designers, the design workshop would cater for the design-based approach. The workshop was divided into two sessions, each of which allowed the researcher to brainstorm and use the design process to come up with a possible method for preserving MTSG. The workshop will focus on developing a specific type of MTSG as a preliminary example for the research. This method will also help people understand the role of designers in cultural preservation.

The research's final phase focused on evaluating the developed MTSG from the previous research phase. This phase includes involvement with public participants from the field experiments participants, who have taken part in the new MTSG simulation and provided personal feedback via distributed forms. The forms are the assessments of the workshop's activities, such as their preferences for the games presented and how they would like the development of the game.

The finding from all these research phases was analysed, triangulated, and discussed, eventually providing the core research questions with justifiable answers, which is how design can help to preserve the MTSG. The recommendations about the finding and results were made in the final chapter.

The collection, identification, and linking of the information based on the research framework provided (see figure 26, chapter 3.2.1), are presented in the next chapter. The following chapter discusses the specific details of the result and findings for each phase, as well as how they relate to answering the research questions.

CHAPTER FOUR

Chapter 4: Analysis and Finding

This chapter includes the analysis of each research phase according to the research design described in chapter 3. Each of these analyses provides insightful research findings that are useful in answering the research questions in the next chapter and enable additional information captured to be used in the subsequent phases.

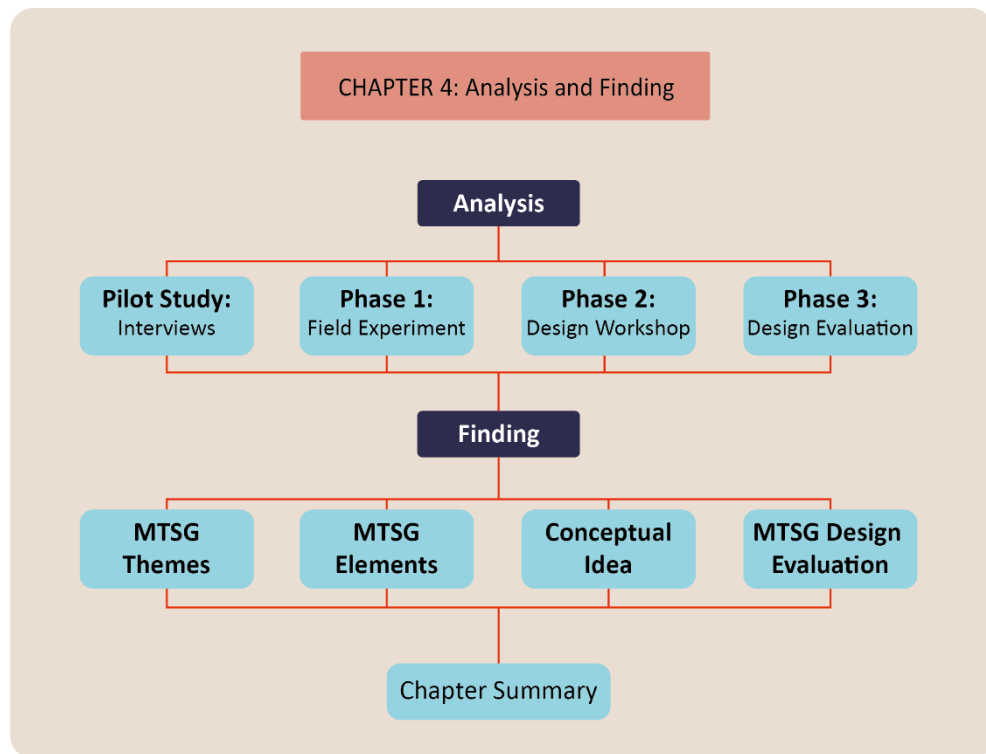


Figure 27: Chapter 4 structure topic overview.

4.1 The Pilot Research Analysis and Finding

Semi-structured interviews have been conducted during this phase to gather first-hand information on MTSG from the perceptions of experienced users and expert personnel.

The information gathered from these two groups of stakeholders was transcribed and organised into several codes and themes that hint at the answers to the research questions. The data comprises the feedback captured from fourteen ($n = 14$) participants from the 'experienced user' group (coded as EU) and seven ($n = 7$) participants from the 'expert personnel' (coded as EX) group. The experienced user participants are selected randomly from Malaysians who have participated in or are familiar with the MTSG activity. Meanwhile, the expert personnel participants are the people who have worked in governmental institutions related to the subject of MTSG.

The codes and themes were developed using information gathered through the pilot research data and literature reviews. These transcriptions were completed with the help of assistive software (*ATLAS.ti*), which enables me to manage and organise the qualitative data effectively. The interview information has established five general themes, as depicted in Table 5 below.



























































































MTSG GENERAL THEME																					
Theme / Participant	EU01	EU02	EU03	EU04	EU05	EU06	EU07	EU08	EU09	EU10	EU11	EU12	EU13	EU 14	EX01	EX02	EX03	EX04	EX05	EX06	EX07
MTSG Knowledge																					
MTSG Values																					
MTSG Status																					
MTSG Issues																					
Preservation Strategies																					

Table 5: Emerged themes based on codes extracted from the participants.

The marked boxes indicate the notation of the contents relating to the themes mentioned by the participants in the interview session. Preliminary process of transcribing the interviews and data analysis from each participant, the keywords and notes have been clustered into codes. These codes were then analysed and segmented into each general theme. The distribution of codes for each data theme shows in the table below.

	THEME				
CODES	MTSG Knowledge	MTSG Values	MTSG Status	MTSG Issues	Preservation Strategies
	Experience	Creativity	Current situation	Accessibility	Current strategy
	Understanding	Lifestyle	Developed game	Documentation	General suggestion
	Player age	Networking		Exposure	
	Activity time	Identity		Formalisation	
	Reason playing	Interaction		Infrastructure	
	Version	Personal development		Knowledge	
	Networking			Popularity	
				Safety	
				Tournament	
				Uncertainty	
				Alternative activity	
Technology					

Table 6: The collection of codes segmented under the general themes found in the semi-structured interview analyses.

The information gathered from the ‘experienced user’ and ‘expert personnel’ was used to develop each theme and code explored in this chapter.

4.1.1 Malaysian Traditional Sport and Game (MTSG) knowledge

One of the early questions during the interview session was asking the participants about their understanding, knowledge, and experiences of playing Malaysian traditional sports and games (MTSG). This is one of the important aspects as it will enlighten the research about the information contained in MTSG from the perspective of the public and experts, which is then to be cross-referenced with available articles to produce strong and sufficient data. Both interview cluster participants, the experienced user and the expert personnel shared their perspectives on the MTSG, and the code segmentation is as follows.

THEME: MTSG KNOWLEDGE																					
Code/ Participant	EU01	EU02	EU03	EU04	EU05	EU06	EU07	EU08	EU09	EU10	EU11	EU12	EU13	EU14	EX01	EX02	EX03	EX04	EX05	EX06	EX07
Activity time																					
Experience																					
Networking																					
Player age																					
Reason playing																					
Type																					
Understanding																					
Version																					

Table 7: Codes segmentation and notation from the experienced user and expert personnel for MTSG knowledge themes.

MTSG understanding

Ten out of fourteen experienced users and five out of seven expert personnel mentioned the contents related to the understanding of MTSG in general. This code is the fundamental key to exploring the general understanding of the MTSG context among the participants. From the interviews, the participants stated that MTSG is an activity that they usually do during their childhood (EU02, EU06, EU14).

"Kids usually played the games after they went back from school." (EU02)

"In the past, it was not the same as now. Nowadays, there are lots of gadgets and kids tend to invest their time playing indoors. In the past, it was the only way we could gather to play..." (EU06)

"Traditional games, games that we've played during our childhood" (EU14)

Some of them mentioned that the activity of playing MTSG had been passed down through generations and was part of their cultural essence.

"Traditional games, games that have been played by past society using used items..." (EU02)

"OK, first of all, the traditional games are about Malay culture" (EU04)

"Malaysia traditional sport is a; since it called traditional, it has been played long ago, from our grandparents." (EU12)

"For me, the traditional game is a game that has been passed down from our ancestors that are played individually or in groups" (EU13).

The participants added that the MTSG is being played by children by scavenging any equipment nearest to them and creating a game that they might know from their parents or schoolmates and that usually doesn't require any cost.

"...the games are using anything that can be found lying around the area...the traditional games are easy to build (equipment) and play...the equipment can be built by ourselves." (EU11)

"...in the past, it's the only way for us to gather and play...that's the only thing that is available for us, which doesn't require a cost. Anything that is available at that time that is possible to be constructed as a game, we will use it. Even only using a stick or flip-flops." (EU06)

"...Traditional games, games that have been played by past society using used items, available item, easily to be found and doesn't require lots of money." (EU02)

MTSG experience

The narration of an experience by the participants seems to be a suitable medium for conveying one's own experience to others, as a result, and a process, in such a way that both the participants and the researcher can reconstruct this experience and thereby mutually understand them (Bryan Jenner, 2004). In this theme, the participants may narrate about the MTSG freely and, for instance, reveal thoughts and information that they could not express in the articles. The questions about the experience of playing MTSG jolted the memory of the participants. They have shared their personal experiences, and some of them showed their excitement while telling us their stories.

Generally, the participants mentioned that most of their MTSG experiences started from their childhood days. They will meet up with friends or family members either after school or during the weekends and play any MTSG together.

“Kids usually played the games after they went back from school.” (EU02)

“...in the past, children and adults would play Galah Panjang. I still remember that the whole village will play (Galah Panjang). Not just the siblings but the parents would also join the game, and it was lively. (EU02)

“...and usually, the games will be played together with friends...” (EU14)

Some of the MTSG were mentioned, and the participants even shared how do they play the games during the interviews. The participants also tried to remember the events and made the game gesture to emphasise how they played the said games. Some of the MTSG need special equipment to play the game, and the participants shared how required to craft the game equipment in the past.

“...one of the preferable traditional games I would play is the Tuju Punqoq Ayam or Tuju Kasut. Among the 8 or 10 of us, we divided into two teams, so each team would have about 4 or 5 members. We would arrange the shoes; slippers in the form of a pyramid; we have like four slippers, and we started to play”. (EU01)

“...in the past, children and adults would play Galah Panjang. I still remember that the whole village will play (Galah Panjang). Not just the siblings but the parents would also join the game, and it was lively. I also still remember that once, the ‘Galah Panjang’ field border was constructed from the nylon strings.” (EU02)

“Some of the traditional games that have been played is ‘Galah Panjang’, Baling Selipar. Both are the usual games that I would play during my childhood...Ting-ting, that games that require us to jump on one leg. There are many more, but I’ve forgotten. Then, we have Takraw, Chapteh, and I couldn’t remember what’s more...” (EU04)

“How to play...for example, in the marble game, we will draw a circle on the ground, and let's say we have five players, and each player will put their marbles in the circle; for example, each player contributes five marbles, there will be twenty-five marbles in the circle. Each person will stand at about 15 meters, and they will throw marbles in their hands toward the inside of the circle. The ousted marbles will be counted as the thrower's property. If the marbles are inside the circle, so do their turn. The game's turn will be taken by another player. The game will be continued until all the marbles inside the circle are finished (ousted)” (EU09)

Unaware of other MTSG, one participant mentioned that she had heard about the games but that they were mostly played in the suburbs. One of the participants stated that he was only aware of certain games and frequently encountered them when returning to the village.

“...I only played Congkak before. That is the only traditional game that I know...I hadn't played lots of traditional games before; I only have a few experiences of staying in a village, so that's maybe the reason. In my opinion, most of the traditional games are usually played in the village.” (EU10)

Many of the participants also briefly shared the specific rules and guides for playing certain MTSGs and embodied their emotions during the gameplay. The popular MTSG, as such *Galah Panjang*, *Main Guli*, *Baling Selipar* and others, were also constantly mentioned; but they only can remember some of the guides and rules and their versions of the gameplay of the same game were inconsistent. However, the fundamental gameplay of a specific type of MTSG remains similar to the participants' experience.

“...like the game of Baling Selipar, we need to prepare the cans and the flip-flop and required to throw them at that can structure. We'd win if the can structure was knocked down...” (EU14)

“For the Baling Selipar game, the player needs to throw the flip-flop and knock down the arranged flip-flop structure. Next, the structure needs to be rearranged back while surviving the opponent attack...” (EU13)

“The flip-flop is going to be used for the game, so we are going to draw a square, player can range from 2 people and are not limited to that. The flip-flop structure will be raised by using three flip-flops inside the drawn square. The opponent team will throw a flip-flop at the structure, and if the structure is knocked down, the opponent team will get out of the square area. Another team will use another flip-flop for hunting the opponent team and striking them. The opponent team member that got hit by the flip-flop is ousted from the round. Meanwhile, the opponent team will try to get inside the square area to rebuild the flip-flop structure. If the structure were successfully rebuilt, it would get points. The game is the repeated...” (EU06)

Galah Panjang required two teams, for example, team A and team B. Team A will be defending the square area that has been drawn on the ground. Team A will stay on the squared lines inside the game area. Team B will start from the outside of the area, and they will be needed to go through the square area to the by avoiding Team A's obstacles; they will need to go from front to back and return to the front again. For the game, in the past, we will play it either on a sandy ground or grassy field, so usually, the villagers do not wear shoes, even the flip-flop...to calculate the game point...I can't remember the score points, and even the gameplay is quite hazy. I think the last person remaining during the game is the winner.” (EU02)

“ I'm Playing Galah Panjang because, since my school days, I've played this game. In the past, the game can be played quite easily since most of the house got wide sandy courtyard for us to draw lines for the game space” (EU08)

“ Galah Panjang...I can't remember well. If I'm not mistaken, there will be a team that will obstruct another team's path. We (the attacking team) will try to go through the designated square space, and the opponent team will stay at the centre of the area to restrain us from passing through. The opponent team will tease us, and if we can get through them and reach our objective, we will win.” (EU11)

MTSG types

Within this code, the information about various MTSG gameplay and types was analysed. When the participants shared their experiences playing MTSG, at the same time, they also shared some type of activity or game details during their childhood. This enabled us to cross-reference available literature and create documentation on some of the games to be used as case research in phase 2 of this research. This provides us with clear and detailed information on the specific games to be run as a simulation to meet the need for insight into the behaviour of MTSG players.

During the interviews, the participants mentioned several types of games, which consist of indoor and outdoor games, similar to what has been mentioned in the literature. One of the available works of literature is a book published in 2006 by Yusof Abdullah, Mohd. And Noor Ismail, Mohd., consists of several MTSG details that are usually being played, in which some of the games have a connection with what has been mentioned by the participants.

“... Galah Panjang... Tuju Kasut...Tuju Punkoq Ayam...Sorok Menyorok”, and then...aaa...Konda-Kondi...Main Guli...Polis Sentri, I think that’s all, most of it maybe...Congkak...” (EU01)

“...Playing Baling Tin, Golek Tin. This Baling Tin game needs us to arrange our illustrated picture card on the cans, and we need to strike the cans. Then, we’ve got Bola Selipar, Batu Seremban, Lompat Getah ...aaa...and Galah Panjang. Galah Panjang, in the past me and my cousins stay near to each other, many will play the game, and it is lively...” (EU02)

“There were games of Tingting, Congkak, Batu Seremban; some of the games that I’ve played before.” (EU03)

“Congkak, Dam Haji, Batu Seremban, Galah Panjang, Wau, Gasing...I can’t remember well.” (EU04)

“Another example is such as, Lat Talilat Tamplom, Rejam Selipar, Konda-Kondi ...the one where we need to strike a stick. There are lots more, but I can’t remember it.” (EU05)

“...One of it are such Baling Selipar, Gasing, Konda-Kondi, Laga Biji Getah, Congkak...” (EU06)

“...Some of it were, Congkak, Baling Selipar, and Batu Seremban...” (EU13)

However, some of the games were not mentioned in the book, nor did they have detailed rules or guidelines available. The loophole in previous documentation can be covered through investigative research, and this research provides simple interviews that enable us to gain more insight into several overlooked facts regarding MTSG. Some of the MTSG types, names and versions gathered through the interviews can be referred to in the appendixes section.

Some of the games can be cross-checked with the available literature, while some others are not mentioned in any available documentation. This is one of the issues and challenges of the MTSG where the lack of information and documentation causes limitations for this research to gather reliable data. Even though the interviews enable us to collect valuable information through experienced user memory, some of the information relying on the memory of the user is seldomly inconsistent, blurred, or even incomplete. This is proven in the interviews, where some of the participants took some time trying to remember the experience, and some of them said that they had forgotten certain details as time went by.

“...I can’t remember well...” (EU04)

“...the game that we need to jump with one foot. So, there were lots...but I have forgotten already...” (EU04)

“...the one where we need to strike a stick. There are lots more, but I can’t remember it.” (EU05)

“...so usually the villagers do not wear shoes, even the flip-flop...to calculate the game point...I can't remember the score points, even the gameplay is quite hazy...” (EU02)

“... there are various old games. Guli, Gasing, Lastik, and it was some of the games that I could remember.” (EU09)

Thus, we must make use of any remaining information and cross-check it with available sources, even informal sources such as internet websites or personal blogs.

MTSG player age

Based on the interviews, the users mentioned that they'd played MTSG during their childhood days. It was also normal for the children to be seen playing MTSG with their friends.

“I'm sharing this based on my past experiences because the games were played during my childhood.” (EU01)

“We played the games when we were small kids...” (EU02)

“I've played these traditional games during I was four until eight years old...” (EU03)

However, based on participants' EU02 and EU04 statements, they said that player age is not only limited to toddlers and children but young adults have also been observed playing MTSG in said years.

“These traditional games, in my opinion, are not limited to kids and children only, but also suitable for adults too.” (EU02)

“If we take this into the local cultural context, these (traditional games) usually focus on children's activities because they really love this kind of activity. But there are also adults who play these games too.” (EU04)

MTSG activity time

According to participant EU03, there are no specific times to play any MTSG activities. Other participants, however, stated that the activity is typically observed in the evening, following the school day.

“Usually, if I go out (to play) at 5 in the evening, I will get back home before 7. That is the usual time given (by parents); if not, there is no limitation” (EU01).

“The games are usually played in the evening. There is no specific time. Even at night, it is still playable. But usually, games like Ting-ting are played in the evening, outdoors, because we need to draw the boxy lines. We will invite our friends during the school hours and have decided to gather at the specified venue and time. Such games as Congkakcan be played indoors because the games only require the player to sit. They can be played during the daytime or night, as long as they’ve got free time” (EU03).

“During my childhood, we normally knew each other and had groups. We will play various traditional games, such as “Main Guli”. Even during the school period, we will play Main Guli” (EU05).

There is also an opinion by participant EU04 that says that the MTSG activity "occurs seasonally".

“Our culture has our own season (play). For example, during the kite playing season, most of the local children will buy kites. There is also a season of playing “Baling Tin” or Baling Selipar, and this activity can be observed frequently during the season.” (EU04)

Networking factor

Participants EU01, EU02, and EU07 mentioned that networking was different back then than it is now. EU01 said that most of the networking during MTSG is limited to their resident location.

"From the perspective of networking, it's different. In the past, in terms of making friends, if we were living in zone A, our friends would be from the same A zone. The other zones, such as B and C, we didn't even know about them." (EU01)

Their networking during the MTSG activity includes families, close relatives and the residential community and the connection among the residential community is often established during MTSG activity.

"... 'Galah Panjang', in the past me and my cousins stayed near each other. Many would play the game, and it is lively..." (EU02)

"...I can still remember, in the past everyone in the village played (traditional games). Not only my siblings but even my mom and dad will also play together, it is very lively..." (EU02)

"It is very fun to play together. We also get the opportunity to get to know each other well since we've played the game together." (EU07)

Reason playing MTSG

The participants eventually shared their motivations for participating in such MTSG activities during the conversations. EU01 shared that in 1990 the influence of the internet and technology was not as intense as it is today. Thus, the majority of children would play outside, and indeed, it is one of the few activities available to them. Additionally, he mentioned that these MTSG games impart an indescribable sense of joy, excitement, and concern for safety throughout the activity.

"OK, during my childhood, in the early '90s, the internet was not a phenomenon that was available at that time, so most kids played lots of outdoor games and did outdoor activities." (EU01)

"...It was a fun situation because it gave a feeling that...people were excited about rebuilding the pyramid structure (referring to the Baling Selipar game). That is one thing, and then there is also an insecure feeling during the

game because we are afraid of getting hit with the flip-flop. That's from the perspective of the team that needs to rebuild the flip-flop structure. As for the opponent team, there was an excited feeling of targeting and hitting players with another flip-flop..." (EU01)

Meanwhile, participant EU02's reason is that the MTSG activity enables him to gather with his peers, not only to show off their skills and win those MTSG activities.

"Usually, playing the traditional games, our objective is to win. That is the reason we played the game. We've got teams that play the game together. That is also one of the activities that allow us to meet with our friends. It's fun. " (EU02)

MTSG version

From the conversations with the participants, it appears that there is more than one version of the same type of MTSG activity available. It was either the version of the game name or the equipment used to play that specific game. For example, for a specific game of Baling Selipar, participant EU01 mentioned that in his hometown, the game was not called Baling Selipar, but rather they called it *Tuju Kasut* or some called it *Tuju Punkoq Ayam*. He stated that the gameplay is still the same, but the name is different in that region.

"...So, Tuju Kasut has also been played by us, and at that time, we didn't call it Tuju Kasut; it was known by the other name of Tuju Punkoq Ayam... I don't know, but Penangites in the past called it Tuju Punkoq Ayam." (EU01)

Meanwhile, another participant, EU02, in a different region, stated that there is another game similar to Baling Selipar, but the game uses a set of cans and a ball as opposed to flippers as its equipment.

"The Baling Selipar game is similar to the Golek Tin game; the difference is the flip-flop as the equipment. The flip-flops, such as Selipar Jepun, were arranged in a triangular form, and then we struck them using a ball. Sometimes they will use the flip-flop as an alternative to the ball. " (EU02)

Participant EU08 believed that most Malaysians who lived in the '70s and '80s knew about MTSG, but different regions might have different names as well.

"In my opinion, the traditional games, whether a person has played them or only heard about them, sometimes the names of each game are different depending on the region. But most of the society that was born around the 70s and 80's still knows about these traditional games. I'm from Negeri Sembilan (states), and I think Kelantan also knows about the traditional games, but maybe they have different names. " (EU08)

4.1.2 Malaysia Traditional Sport and Game (MTSG) values

The interview session was also used to ascertain the participants' perceptions of the means and values of MTSG activity, as this relates to the topic's significance. This theme compiled a number of codes that encapsulate the MTSG values of lifestyle, creativity, identity, interaction, networking, entertainment, and personal development. Each of these codes was analysed individually for each participant, as shown in the tables below.

THEME: MTSG VALUES																											
Code/ Participant	EU01	EU02	EU03	EU04	EU05	EU06	EU07	EU08	EU09	EU10	EU11	EU12	EU13	EU14	EX01	EX02	EX03	EX04	EX05	EX06	EX07						
Creativity																											
Entertainment																											
Identity																											
Interaction																											
Lifestyle																											
Network																											
Personal Development																											

Table 8: Codes segmentation and notation from the experienced user and expert personnel for the MTSG values theme.

MTSG Value: Creativity

Creativity is one of the values mentioned in this value theme. The term 'creativity' is defined by Oxford Dictionary as "the act of using one's imagination or original ideas to create something" (Creativity, Oxford Dictionaries, 2018). As a result, this code discussed the creativity demonstrated by the MTSG activity.

Unlike other modern sports, the activity of playing MTSG originated locally in the early days, from an individual or a community's idea. The topic's creativity is divided into two segments. The first is the ingenuity of a former Malaysian community in devising the MTSG concept. The second is the ingenuity of a past Malaysian community in constructing the activities' equipment.

The past Malaysian community's creativity in establishing MTSG activities may have stemmed from their desire to entertain themselves, as perceived by EU06 and EX02.

"That is the only thing that is available for us to play with without involving any cost. At that time, we will use anything that is available and useful as a game item. Even only using sticks and flip-flops. " (EU06)

"In the past, there were no such as this thing (referring to a smart phone), so past children were bored, so they do not know what to do at home; thus they create various games. That is why there were lots of traditional games." (EX02)

Both participants compare the lifestyle of the past community with today's community, whereas today's community are blessed with an abundance of technology and entertainment from all over the world. They added that in the past, the community needed entertainment, and so they were pushing their creative minds to keep them occupied. The type of the MTSG activities created is also depending on the socio-economy and their surroundings.

The discussion about MTSG activities and surroundings brings us to the second segment of the 'creativity' value in this topic. Participants EU01, EU06, and EX07 shared that most of the equipment for any MTSG activities were made from local resources and their local surrounding. Some of them use little cost or no cost at all, such as from the scrap items.

"From the manufacturing side, in the old days, everything was d-i-y, do it yourself. It wasn't sold" (EU01)

"Was played in the village area, using the equipment that available around them." (EX07)

"Most of the game equipment was made from recycled items. The recycled item has been modified and also decorated to make it look beautiful, so it can attract the public's interest, such as in the Wau competition or kites. " (EX07)

Participant EX07 added that the player would not only use scrap and easy-to-find materials but also give decoration to the visual of the equipment by implementing local art elements such as carving. The decorated equipment is likely to interest the general community in playing the MTSG activity; the competition of *Wau* for an example.

These two segments fill in the understanding of the value of creativity in the MTSG. The creative minds of past communities created a variety of MTSG activities that have been passed down to generations until now.

MTSG Value: Identity

Through the interviews, I have extracted the element of identity, which was quoted by the participants during the discussion of the MTSG. Identity is literally defined as "the characteristics determining who or what a person or thing is" (Oxford Dictionary, 2018). The analyses of this code are also related to the 'lifestyle' code, and so it is obvious that some of the quotes from the participants belong to both codes.

EU01 explicitly viewed MTSG as a valuable part of Malaysian identity; MTSG activities are linked to a child and define early childhood memories, particularly for the past community.

"Malaysia traditional games and sport is like our precious identity, precious element. Something that connected us since we were young and can be defined as our early childhood life." (EU01)

Participants EU08, EX02, EX04, EX05, and EX07 have mentioned the connection between MTSG and the identity of various Malaysian cultures.

"The appearance or gameplay of the traditional games can present and introduce our national culture." (EU08)

"If we talk about Malaysian traditional games and sports, it's not only the Malays but also the Indians, Chinese, Sabahan and Sarawakians... At the same time, we would like to introduce Malaysians too... The traditional game is a depiction, idea, and social culture of a society." (EX04)

"There are lots of values and norms in the traditional games that are related to the identity and uniqueness of traditional society in the past, and some of the traditional games are also symbolised as the Malaysian identity." (EX05)

Malaysia consisted of a variety of cultures and races, not only the major race, Malays, but also other races in Malaysia as well. Even some of the MTSG activities are the symbol of tradition to specific races. This makes Malaysia unique, and because of that, the appearance and gameplay for each MTSG activity are diverse as the national culture itself.

As Participant EX02 explained, the MTSG activities are like accents; the name of a type of MTSG activity may vary from one region to another, but the gameplay is still familiar to one another, thus giving each type of MTSG its own identity.

"The traditional games are similar to the dialect, some of the dialects are different from one region to the others. Same with the traditional games, different area, got different gameplay." (EX02)

On the other hand, lifestyle is also part of identity. Participant EU04 stated that most of the renowned MTSG is based on Malay culture and that various positive values such as morals, attitudes, and discipline relate to the Malay culture. He gave an example of past socio-culture or lifestyle that related to the MTSG played; as such, the games of *Congkak*, where the players, who are mostly female, will sit down with their legs crossed to the side, showing the feminine side of the players and a norm for a Malay female in the past society. A lifestyle is related to the identity of a community portrayed in culture.

"Various values, such as morale, attitude, discipline, and some of the games are related to Malay culture...This is because, in the past, women normally wore "*kain*" (type of long skirt) and stayed at home. One of the reasons

why Congkak was played on the floor was because women of the past would be sitting cross-legged (politely). The game is also not aggressive. The traditional games also showed the socio-cultural elements of the past. " (EU04)

As suggested by participant EU10 in the report, the MTSG discussed in this code is an important aspect of Malaysian culture and serves as an indispensable identity value.

"It is important for us to be proud of our culture; be it a traditional game, as it is part of our identity" (EU10)

MTSG Value: Interaction

Interaction value is one of the codes captured within this theme. Interaction is defined as "*reciprocal action or influence*" (Oxford, 2018), or in simpler words, it's about communication with someone or something. The value of interaction is acknowledged by the participants, who agreed that MTSG activities provide a medium of interaction for them with their families and friends. Participants EU01, EU02, EU03, EU05, and EX07 stated that they were able to spend time with their friends in real life and get to know them better through MTSG activities.

"This means that you know the traditional games, and from there we get to know our friends, we play with our neighbours. Even though the networking is not big, we get to know people well." (EU01)

"So, that was the activity that allowed us to meet with our friends. It's fun." (EU02)

"The traditional games have a positive benefit for the children's mental development, especially for the physical and mental attribute, adding the spiritual knowledge where they can mingle with friends in real life." (EX07)

Participant EU04 added that they would mingle and socialise in the activity, and it eventually taught them to learn about teamwork.

"But, aside from that, these games will also make the player more socially adept. For example, there was this game; it was about grouping and togetherness." (EU04)

Through MTSG, the community's bond is strengthened. According to participants EU08 and EX03, the MTSG activity can serve as a vehicle for communication and interaction with the former Malaysian community, thereby strengthening ties between them.

"When I was in the village, I saw that the traditional games could strengthen the bonding, and the creating good atmosphere where we do not need to worry when we are outside from our house." (EU08)

"The traditional games are able to unite...people said...strengthen the cooperation among the society, especially in the past." (EX03)

MTSG: Lifestyle

The code was derived from participant perspectives that connect the activity of playing MTSG to the Malaysian way of life. A lifestyle is defined as a way of life, the activities that a person or a group of people engage in on a regular basis (Cambridge, 2018). Participant EX04 states that MTSG is representative of a culture or a society's intelligence at the time.

"...The traditional game is a depiction, idea, and social culture of a society." (EX04)

EU01, EU04, EU08, and EX07 all stated that the value of MTSG is not only as a form of entertainment but also as an intangible cultural norm. EU01, EU04, and EX07, for example, stated that traditionally, the game of Congkak was played by females wearing long skirts and seated on the floor with both legs folded to the side, revealing the players' feminine side.

"So, each of the traditional games has its own elements that are interesting. For example, the game of Congkak symbolised the feminism in the girls; the ones that played Sepak Raga showed the masculinity, and the ones that

played Main Guli were the kids who loved to count, while those who played Main Tol or Tuju Punkoq Ayam loved the cooperative and teamwork-based game." (EU01)

"...This is because, in the past, women normally wore kain (a type of long skirt) and stayed at home. Women of the past will be sitting cross-legged (politely), and one of the reasons why Congkak was played on the floor. " (EU04)

"The traditional game got the local social elements during the gameplay. As such, the men will sit cross-legged while playing Ceper, and the women will sit politely when they are playing Congkakor Batu Seremban, and many more." (EX07)

Ceper is another type of MTSG that has been mentioned. Even though it is an indoor game, it requires much more movement and is typically associated with male children who sit cross-legged, an impolite gesture for a female at the time. Male adolescents were also enthusiastic about playing *Sepak Raga*, a more aggressive outdoor game that requires active physical contact.

EU04 added that the various moral, attitude, and discipline values found in each MTSG are culturally relevant. Thus, it was once considered normal in Malaysian culture for a male to be tough and active, while a female should be protected, gentle, and polite; this explains why males and females engage in different types of activity.

Generally, as stated by EX05, the MTSG was viewed in the past as a source of entertainment, competitive events, and in some cases, a symbol of a specific tribal tradition.

"In general, the traditional society played this game for entertainment, competition, and as a symbol of the specific ethnic culture at the time."(EX05)

So, there were a lot of annual activities that involved MTSG as part of the events. Eventually, these activities become the norm for the local society, thus becoming part of their lifestyle. Because it was part of their lifestyle and was recognised by the past society, MTSG were able to provide a strong bond with society in the past.

"The traditional games are able to unite...people said...strengthen the cooperation among the people, especially in the past. " (EX03)

MTSG Value: Networking

The value of 'interaction' that has been discussed before leads to another MTSG value that has been captured within this theme; the value of 'networking'. The interaction among MTSG players creates a network among them. Even though the network was not as wide as we could achieve today, it still counted, and they could get to know people better, as stated by participant EU01 in the interview report.

"Even though the networking is not big, we get to know other people well." (EU01)

"...We gather and play together with friends, and we can strengthen the bonds with our friends." (EU05)

"It was fun because we played together. Then, we were able to learn about each other because we played together." (EU07)

"The traditional game roles are more than that, especially among the society consisting of various races today. So, it became a medium towards the development of social interaction, unity, and so on." (EX04)

"The traditional games have a positive benefit for the children's mental development, especially for the physical and mental attributes, adding the spiritual knowledge where they can mingle with friends in real life." (EX07)

MTSG Value: Personal development

Like any other activity, MTSG also provides positive development for its players. The value of personal development has been captured in the interviews with the participants. As defined in this context, personal development is the state

in which a person grows and learns as a result of their participation in the MTSG activity.

One of the examples stated by participant EU04 was that the MTSG activity teaches them how to socialize, work in a group, and how to organise, and not only that, the MTSG activity itself works as a medium for the development of a society.

"Besides socialising, the traditional games also teach us how to collaborate in a group. The roles of leader and follower have been adapted through the games and teach the player how to organise." (EU04)

In another example given by participant EX02, the game of *Galah Panjang* not only focuses on physical movement but also teaches the players to be calm in making decisions, waiting for opportunities, and when to take action. Participant EX03 added that the MTSG had a positive impact on the intra-personal connection.

"Example, in the game of Galah Panjang. We can't rust things. We need to take the opportunity. When the opponent is distracted, we take the chance to slide to another side. Galah Panjang also teaches us...when we need to take action...we need to think." (EX02)

"The traditional games have a positive impact, especially on the inter-personal relationship." (EX03)

On another note, the value of personal development was also found through the effect of MTSG activity on the youngster's mental growth. Based on participants' EX02 and EX07 statements, they mentioned that the MTSG activity is able to nurture cognitive and physical development, especially in children when they are doing outdoor MTSG activities.

"The children's cognitive development will expand when they are involved with traditional games actively outside, compared to passive game activity inside the house." (EX02)

"The traditional games have a positive benefit for the children's mental development, especially for the physical and mental attributes, adding the spiritual knowledge where they can mingle with friends in real life." (EX07)

4.1.3 Malaysia Traditional Sport and Games (MTSG) status

This theme was generated by participants' perceptions of the status of MTSG activity in Malaysia. The data for this theme is comprised of two codes that correspond to the present state of MTSG activity. 'MTSG activity frequency' and 'Developed MTSG game' are the codes.

THEME: MTSG STATUS																											
Code/ Participant	EU01	EU02	EU03	EU04	EU05	EU06	EU07	EU08	EU09	EU10	EU11	EU12	EU13	EU14	EX01	EX02	EX03	EX04	EX05	EX06	EX07						
MTSG activity frequency	☞	☞	☞	☞		☞		☞	☞		☞	☞	☞	☞	☞	☞	☞	☞	☞	☞	☞						
Developed MTSG	☞			☞						☞										☞							

Table 9: Codes segmentation and notation from the experienced user and expert personnel for the MTSG status theme.

MTSG Activity Frequency

This code collected the information from the participants based on their personal observations and views regarding the occurrence of people playing any MTSG activity.

Out of fourteen participants, six stated that they've never seen anyone play any MTSG anymore, and seven participants occasionally saw the MTSG activity being played. Only one participant mentioned that he observed MTSG still being played sometimes, while all the participants agreed that the MTSG activity is not a regular activity occurrence.

There might be some causes for this situation, and from the view of participant EU01, he mentioned that,

"...there is nobody taking serious action and preparing the platform for MTSG ". (EU01)

He added that the only observed MTSG that is recognised even in the Asean region is the *Sepak Takraw*. Participants shared that the preferences towards MTSG might be declining since today's generation is easily entertained by gadgets, computers, the internet, and smartphones.

"I never see the traditional games ever-existing anymore. Because the current era is more about the use of gadgets and computers, I haven't yet seen how the traditional games are played." (EU06)

"I only saw the games being played in the past. Now I haven't seen them yet. I believe most of it has been extinct due to the influence of the internet. With the extensive use of the internet, the kids preferred to play online using their mobile phones. " (EU09)

"The preference for traditional gaming activities is declining due to the fact that the current generation is more attracted by the use of gadgets and new technology." (EU13)

"...I think the reason why (the traditional game) is decreasing is the use of gadgets and the internet, which are more attractive to youngsters." (EU14).

"The (preference) traditional games are hard to interpret. It's because there are so many (types), and some of them are still being played, but not many, and in my opinion, nowadays it is hard to observe people playing them." (EX06)

"Nowadays, traditional games are no longer played widely..." (EX07)

While the participants agreed that the MTSG activity is declining and getting extinct, there is a certain MTSG that is still being played occasionally. As an example, participant EU02 mentioned that the game of *Wau* can still be observed being played on the East Coast of Malaysia during certain seasons. He also mentioned that some of the MTSG can still be observed during certain departments' sports days or events. Participant EU04 stated that there are still other MTSGs that can be observed, but only in the suburban area. Participant

EU14 stated that he was once able to watch *Congkak* being aired on television and that it can be found at any cultural venue.

"The Wau games in Terengganu (states) can be still observed here. For example, in Chendering (district), there is still someone playing the game...emm...and it is usually seasonal. " (EU02)

"For example, the other type of traditional game can be still found being played, but not to the extent it is being competed in seriously. If there is a competition, it is only a local event in the village." (EU04)

"...but the game like Congkak, I see it still available from the TV and cultural places, I think..." (EU14)

The expert personnel also agreed that, despite the declination of the MTSG activity, it still exists on an irregular basis and can usually be found as a school activity, local events, or at occasional festivities. On the other hand, the MTSG can also be observed through documentation in a museum or archive.

"Like currently, we can only manage to see the traditional games through some ad-hoc programmes, such as at the festival and carnival." (EX03)

"It is applied to the traditional Malaysian games as well. Observing this game we can only do that at the gallery or the national museum... At the archive...we can only see the documentation of the game. " (EX04)

"Currently, the traditional games can be found played at lower-level schools during physical education class." (EX06)

Developed MTSG activity

Three participants mentioned a traditional game that has been developed and is even professionally played in the Southeast Asian region. Participants EU01, EU04, and EU10 gave an example of the MTSG game, namely *Sepak Takraw*, one of the recognisable types of MTSG that have been developed and

played not only in Malaysia but also in Indonesia, Thailand, and Vietnam. *Sepak Takraw* is also occasionally aired on the television channel.

"But right now, we can see the Sepak Takraw game in Asia. We saw that the game is also being played in Indonesia, Thailand, Malaysia, and Vietnam." (EU01)

"Some of the game is being competed at a higher level, for example, the Sepak Takraw game." (EU04)

"The only traditional game that I'm aware of is the Sepak Takraw. The only game that has been featured through the television." (EU10)

The established activity tends to gain popularity among the locals, especially when the game is made competitive.

4.1.4 Malaysia Traditional Sport and Game (MTSG) Issues

Additionally, the interviews were conducted to ascertain the MTSG's issues and challenges. The issues raised in the interviews represent the participants' perceptions of the MTSG topic. The issues obtained from the interviews are then classified using a few codes. These codes will serve as a guide for the next phase of the investigation.

THEME: MTSG ISSUES																					
Code/ Participant	EU01	EU02	EU03	EU04	EU05	EU06	EU07	EU08	EU09	EU10	EU11	EU12	EU13	EU14	EX01	EX02	EX03	EX04	EX05	EX06	EX07
Accessibility																					
Development																					
Documentation																					
Education																					
Exposure																					
Focus																					
Formalisation and organisation																					
Infrastructure																					
Knowledge																					
Popularity																					
Safety																					
Tournament / Competition																					
Uncertainty																					
Technology																					
Alternative activity preference																					

Table 10: Codes segmentation and notation from the experienced user and expert personnel for the MTSG Issue theme.

The tables above demonstrate that the issues for this MTSG vary in importance, with some being more critical than others. The list of issues has been taken down and divided into reference codes. Both experienced users and expert personnel expressed their perspectives on MTSG issues from their respective viewpoints.

MTSG Issue: Accessibility

Accessibility is one of the issues that has been mentioned by three participants from both sides. In the report, EU03 mentioned that the reason why MTSG activity is declining is because of the hassle of finding the game equipment. Accessing the MSTG equipment is rather harder than finding modern activity equipment.

"It's because the game is hard to find played or the equipment for the game is not being sold anywhere." (EU03)

EU08 added that, despite the equipment, some of the activities need suitable space for the player to execute the activity.

"Suitability of the traditional games in this age also becomes an issue. For example, the game of Galah Panjang, which needs a wide and large area, the game of tag, and the main Nyorok-Nyorok. Some of the games require specific equipment, but some others don't. As such, in the residential area, if there is an open field, it is OK then. The lack of infrastructure and accessibility are also factors that lead to the declination of traditional gaming activity. " (EU08)

The expert personnel, EX07, agreed that the accessibility of playing spaces is one of the factors for the activity to be executed.

"This is not only in regard to the exposure of the traditional games, but it also includes the factor of area and space to play the game..." (EX07)

MTSG Issue: Development

The development code in this theme differs from the previous code. In this theme, the development code is identified as the issue for the MTSG declination. MTSG activity has been known to exist in Malaysia for a long time. However, one of the issues faced by the activities is that they stayed that way without any development. According to participants EU01 and EU02, the current MTSG has made no significant progress.

"No one wants to provide a platform for our (traditional) game, and no one wants to bring the issues forward."(EU01)

"There wasn't any effort to develop the traditional games and sports to make it easy to access (the game)." (EU02)

The MTSG activity has been said to be not widely acknowledged, such as futsal, and there has been no effort to upgrade the activity to make it easily accessible. The lack of development on the MTSG product aesthetic, attraction, exposure, and promotion, according to participant EX07, could be a contributing factor to the decline in MTSG activity.

"We also need to be concerned that the traditional games have remained unchanged since they were played in the past, less appealing, less attractive, no exposure, and lack of promotion, maybe." (EX07)

MTSG Issue: Documentation

In any domain of knowledge, documentation is critical because it serves as a repository for and archive of information. According to the Oxford Dictionary online (2018), documentation is *"material that contains official information or serves as a record."* There is a paucity of information and documentation in the MTSG case. EU01 stated that there is a general absence of scholars conducting research on MTSG and documenting the MTSG.

"There is a lack of scholars who discuss the traditional games, and there wasn't much written in books." (EU01)

The expert personnel participants, EX01 and EX02, stated that in the educational field, teachers do not have the necessary knowledge about the MTSG. Even in their department, there are no official references for this MTSG subject. They also added that even if there are official rules and guidelines for certain MTSG, they may not have been introduced or exposed properly.

"As for right now, the teachers only know how to play the game vaguely and don't know about the game's (detailed) rules. This includes me as well. " (EX01)

"But even in our official office, we didn't have any references to (traditional games). So, for the references, we had to Google, but it wasn't much. We do not know where to find the rules and conditions to play some of the games. " (EX01)

"...in the education office or department, we don't have a unit specifically for the traditional games." (EX01)

"We also didn't have the reference...An example of the official rules...official laws... as such game of Congkak, which got the black and white

(for the game) ... aaa...I don't know... Maybe if there were rules and guides, we wouldn't have been exposed and informed. " (EX02)

"I've heard about the effort to uphold (traditional games), but there wasn't any action taken." (EX02)

The educators teach about MTSG from their experience and search for the information through the website, but it is still lacking.

"...to learn about the traditional games, it was based on personal experiences and some references from the internet." (EX02)

Other expert personnel participants that were involved directly with the MTSG, EX03 and EX04, mentioned that there was a publication of certain MTSG that had been done under the supervision of their department, but it was in the past.

"For information, under our department, JKKN, we've published; not as detailed as in academic research, but more towards the dissemination of knowledge and info to the public. But the publication of the book has been done for quite some time previously." (EX03)

"You might find information about our traditional games in the library, but there are not many... We didn't collect any data or statistics about the activity before. We have never done research on how far the declination of the traditional games, the active involvement of the public, how far the local public knows about the traditional games or the concept of the games." (EX04)

EX04 added that the publication might be found in a local library, but there are not many MTSG publications. They also said that even though their department had managed several MTSG events in the past, they did not thoroughly research the events, their exposure impact on the community, and the turn-up statistics of the events.

This shows that the MTSG research and documentation are in dire need of attention and proves that the lack of attention in academic studies to support

this cultural heritage is similar to what has been mentioned in the literature review previously.

MTSG Issue: Education

Education is one means of disseminating information and knowledge. Education is a critical tool for disseminating new information to the community, particularly to children. However, there is a lack of formal and informal education about the MTSG activity in the MTSG case.

As explained in the previous topic, the issue could be related to a lack of documentation and references. Participants EU02 and EU08 stated that while they believe that MTSG education is essential, they are unsure whether or not young people are still taught about MTSG in schools today.

"...There is nobody that exposed them (youngsters) to the traditional games before." (EU02)

"I'm not quite sure whether the culture of playing traditional games in school or through competition has still been maintained." (EU08)

Participant EU08 added that education is the foundation of knowledge sharing, but at the same time, they also need ample reference in the educational system.

"For me, everything started with education, and education will be the steppingstone in the knowledge transfer. But we also need solid references to be used in the educational system. " (EU08)

Participants EX01 and EX02, who work in the education system, shared their views. They mentioned that the MTSG activities are not in the education syllabus, and the Malaysian education syllabus is more oriented toward current technology and development.

"...because it is not in their teaching and learning syllabus." (EX01)

"...current education syllabus is more focused on the progress that is available to us right now." (EX02)

Participant EX02 added that the games and sports that are included in the educational system were chosen based on the acknowledgement by the Ministry of Education, Malaysia. The scheme is known as PGSK, and under the scheme, the MTSG is not mentioned or included.

"The games and sports that have been selected (for the school) are based on the system that has been issued by the KPM (ministry of education), under the PGSK scheme, in which the scheme has never been included with the subject of traditional games and has never been introduced as well." (EX02)

Even in the context of education, it appears as though the MTSG is not a primary focus of the Malaysian educational syllabus. In comparison to the modern curriculum, it has been treated as a secondary club activity. While proper education is the best way for children to acquire cultural knowledge, a lack of documentation, resources on MTSG, and the educational board's direction in Malaysia may be challenges that must be overcome.

MTSG Issue: Exposure

It is natural for a society to share and transmit cultural knowledge and information to the next generation. At the moment, knowledge about MTSG is also diminishing, as the current generation is unaware of the activity's existence and has never been exposed to it. According to participant EU03's statement, the MTSG were once a common occurrence in their daily lives.

"...it is hard to observe the traditional games in this time as it has not been exposed." (EU03)

Participants EU04, EU10, and EU11 believed that the first exposure to MTSG should come from the parents.

"...mom and dad are too busy with their own work and didn't know how to spend their time, so they bought gadgets for their kids." (EU04)

"If the parents didn't introduce the traditional games to their children, of course, they will not know of the games." (EU10)

"I never see the adults encourage their kids to play the traditional games, so it is quite hard for the game to survive." (EU11)

As EU04 stated, today's parents are overly reliant on technology to accompany their children. EU10 added that if parents do not teach or expose their children to MTSG, knowledge of these activities will inevitably vanish. Despite this, EU10 mentioned that television was one of the primary ways he learned about a particular MTSG in the past.

"The only traditional game that I'm aware of is the Sepak Takraw. The only game that has been featured through the television." (EU10)

"The traditional games are lacking publicity and exposure." (EU10)

The exposure to the MTSG is believed to be due to the previous generation's failure to pass on information to the younger generation. This may also be connected to a variety of other factors, such as the influence of new technology. Exposure may also be related to the local community's and media's efforts to promote the activity.

MTSG Issues: Focus

One of the codes captured during the interviews is the focus on the MTSG subject. Focus refers to paying close attention to the MTSG activity on this topic. Five participants believe that the MTSG activity's subject is out of focus, which exposes it to vulnerability. According to EU04 and EU08 participants, MTSG activities are not as popular as modern activities; indeed, the majority of available events and competitions today are oriented toward modern activities. To the community, focusing on MTSG activities is irrelevant because they are not as well-established as modern activities.

"The Malaysia traditional games are not as popular as modern sports, so the public will not focus on the activity." (EU04)

"The traditional games have not been focused on...even current competition right now, did not focus on the traditional games as well." (EU08)

According to participant EX07, the majority of MTSG activities remain unchanged and unfocused, rendering them dull and lacking in attraction, exposure, and promotion.

"We also need to be concerned that the traditional games have remained unchanged since they were played in the past, less appealing, less attractive, no exposure, and lack of promotion, maybe." (EX07)

As for the education system in Malaysia, based on participants EX01 and EX02, the student activity system is more oriented and focused on activities that are established and competitive. The subject of MTSG in the education system itself is not a focus.

"We are more focused on the games and sports that we can win and get trophies." (EX01)

"It's because we do not have the competition. So, when there wasn't any competition (the traditional games), usually it'd be out of focus." (EX01)

"The games and sports that have been selected (for the school) are based on the system that has been issued by the KPM (ministry of education) under the PGSK scheme, in which the scheme has never been included with the subject of traditional games and has never been introduced as well." (EX02)

Participant EX01 added that there is no specific syllabus for MTSG to be taught in school, not even in PE classes. Participant EX02 mentioned that the PGSK system was introduced by the Ministry of Education, Malaysia. The system is a guideline and a reference for school-based activities and sports, but it never mentioned MTSG as part of its contents.

Participant EX03 shared his view through an effort made by the Department of Art and Culture, Malaysia. He stated that most of the events

related to MTSG activity done by the department have their own focus and target, and usually, it is limited to the local region or specific group.

MTSG issue: Formalisation and Organisation

To our knowledge, MTSG activities are a subset of sports or games that have been passed down through generations, with the majority of games remaining visually, physically, and metaphorically unchanged. Not to mention that the majority of games are poorly maintained and have a small following.

In comparison to modern activities, MTSG activities lack established guidelines and rules and are also poorly organised. As per participant EU08, this could be because the MTSG activity has never been promoted as a professional competitive activity, and thus no effort has been made to formalise and organise the activity.

"This, in my opinion, is due to the fact that they (traditional games) were not being competed in professionally."(EU08)

Participant EX02 stated that the MTSG activity does not have a strong organisation or well-planned association that could bring the MTSG level to a professional stage. The only example of a well-organized and formalised MTSG, he added, is the "Sepak Takraw", which is now even competing in ASEAN.

"... we did not have a specific, solid organisation for our traditional games to be brought up to the next level, except for the Sepak Takraw. We also know that Sepak Takraw has been gazetted as Malaysia's traditional sport. " (EX02)

While official departments such as the Department of Art and Culture Malaysia and the Department of Heritage are responsible for preserving and introducing MTSG activities, participant EX03 stated that the community should not only rely on them but also assist and collaborate with them.

"...but can't only rely on this department; we do need a collaborative effort with other agencies as well." (EX03)

MTSG Issue: Infrastructure

Infrastructure is one of the codes captured in the interviews. Three participants shared their views on the relationship between MTSG activity and infrastructure. Participant EU01 said that some of the modern infrastructures somehow prevent the community from having spaces to do the MTSG activity by comparing it to the past infrastructure.

"...right now, there are lots of apartment types of houses. The construction and development of roads are widespread. So, for instance, let's say you stayed in an apartment. What kind of game is available for you to play? It's hard. It's hard to run around because of the cemented floor. People want to play on an open field of flat ground, not on cemented flooring. " (EU01)

Participant EU02 added that, mostly in urban and city areas, modern activities such as futsal have been provided with their own spaces and play areas, so it's easy to see the community enjoying that kind of activity compared to MTSG in the city.

"...As such, the futsal activity has been provided with a synthetic field, but for the traditional games, there wasn't any space provided. (EU02)

Participant EU08 mentioned that the compatibility of today's infrastructure would be a problem, as such activities as *Galah Panjang*, Hide-and-seek, and *Kejar-kejar* need wide spaces. Some of the other MTSG activities also need special equipment. He concluded that the infrastructure and access to the MTSG were one of the factors that led to the declination of MTSG activity.

"... infrastructure and accessibility are also important factors in the decline of traditional game activity."(EU08)

MTSG Issue: Knowledge

Through the interview session, the issue of knowledge of MTSG was also captured. The knowledge issue is defined in this topic as an issue related to the

current situation where the knowledge of MTSG is depleting due to the lack of continuity and knowledge transfer.

Participant EU01 shared his experience of teaching a class where some of his students were not even aware of the existence of the MTSG activity. He added that most of the community today do not have knowledge about MTSG activity, and the only way for them to acquire that knowledge is by asking their parents about it.

"...In fact, in my previous class, some of the students didn't know about the existence of the games." (EU01)

"...so, to know about the details (traditional games), we need to ask the previous generation..." (EU01)

However, another problem arises when the parents or family members are not familiar with the MTSG activity itself. Participants EU04, EU11, EX01, and EX04 stated that most parents nowadays do not teach their children about MTSG activities. They prefer to feed their children with gadgets to distract them from bothering them.

"...There is nobody that exposed them (youngsters) to the traditional games before." (EU02)

"...mom and dad were too busy with their own work and didn't know how to spend their time, so they bought gadgets for their kids." (EU04)

"I never see the adults encourage their kids to play the traditional games, so it is quite hard for the game to survive." (EU11)

"...most parents do not do that (teach about traditional games), not even my children" (EX01)

Participant EU10 added that if the parents do not play their role in introducing and encouraging their children to play MTSG, for sure, the knowledge transfer will not happen.

"If the parents didn't introduce the traditional games to their children, of course, they would not know about them." (EU10)

Informal teaching from parents is one factor of knowledge transfer. The other is that, as stated by EU08, formal education is essential for knowledge sharing. However, the education system also needs enough references to be used in the system as well.

"For me, everything started with education, and education will be the steppingstone in the knowledge transfer. But we also need solid references to be used in the educational system. " (EU08)

MTSG Issue: Popularity

In previous decades, MTSG activity was one of the entertainments that coloured the diverse community in Malaysia. However, as years go by, with the existence of new technology and gadgets, the MTSG activities are not inviting anymore. The popularity of MTSG activity is declining as new activities have been introduced.

Participant EU04 shared that the MTSG activity is not as popular as the modern activity, and there is no further development in playing MTSG.

"The traditional Malaysian games are not as popular as modern sports, so for them, focusing on playing the traditional games will not bring them to any professional level." (EU04)

As the MTSG was popular during the childhood times of the past community, as mentioned by participant EX02, today's generation is keener on being involved in modern activities and gadgets, as said by participant EU13.

"The preference for traditional gaming activities is declining due to the fact that the current generation is more attracted by the use of gadgets and new technology." (EU13)

One participant also mentioned that, even though there are some innovations to bring back the popularity of MTSG activities, the innovations receive a bleak welcome.

"The innovation of expanding the traditional games activities has existed, but maybe, the response from the local community itself is quite discouraging." (EX03)

MTSG Issue: Tournament and Competition

Tournaments and competitions are the fundamental structures of any competitive sport or activity, and it is a concept that appeals to a wide range of audiences and spectators. In the case of MTSG activity, the lack of events, specifically in the competition and tournament, keeps them out of the spotlight.

Based on the information gathered from participants EU04, EU08, EX01, EX02, and EX04, MTSG activities in Malaysia do not attract the community due to a lack of competition and tournaments.

"The traditional Malaysian games did not have a higher-level competition, and they can only be focused on Malaysia." (EU04)

"There was no national competition (on traditional games) focused on Malaysians, even in Malaysia." (EU08)

"It's because we do not have competitions. So, when there is no competitive activity, usually it'll be out of focus. " (EX01)

The community is more interested in being involved in an activity that provides skill development, competition, and recognition. These are the things that give them reasons to engage in these modern activities. Participant EX02 mentioned as a teacher that when this kind of MTSG activity is being completed, the students suddenly have an interest in learning and getting to know the activity.

Participant EX04 stated that some of the MTSG activities have also been turned into competitive events even though they are not as grand as the other

sports. He gave the example of *Gasing* and *Sepak Takraw*, where the games have been played in ASEAN countries.

MTSG Issue: Uncertainty

Uncertainty has also been identified as a factor in the MTSG issue, as I observed in the interviews. The majority of experienced user participants have difficulty recalling and describing the games. For instance, when asked about specific MTSG activities, participants EU01, EU02, EU03, EU04, EU05, EU06, EU11, and EU12 were unable to confirm in detail the MTSG activities they had participated in.

"But that's it. As far as I know, the game doesn't have any winners. (EU01)

"...I'm not sure how the points were calculated in the game. I can vaguely remember." (EU02)

"In the Congkak game, it has its own container, and I couldn't remember how many holes in that container..." (EU03)

"There are so many (traditional games) that I don't even remember them anymore." (EU05)

"It has been a long time since I've played traditional games...It's hard for me to remember it. Because it has been a while. " (EU11)

"Well, like the Congkak game, I will play it using marbles, but I'm not sure about the rules." (EU12)

MTSG Issue: Technology

Fourteen (n = 14) interview participants believe that the declination of MTSG activity has to do with the rapid expansion of new technology. As mentioned by participants, EU01, EU02, EU03, EU05, EU06, EU07, EU09, EU12, EU13, EU14, EX02, EX03, EX06, and EX07, the influence of new technology such as digital and virtual elements have influenced the preferences

on the MTSG. They stated that the exposure of technology to today's generation, which is exciting and becoming more common these days, is preferable to them.

"Nowadays, the game is hardly seen as the effect of the development and technology, while there is no modernisation towards the games." (EX06)

"...they are more inclined to the E-sport currently. E-sport is more like online gaming." (EX02)

"...the games (traditional games) are facing great challenges from the online-based gaming activity". (EX03)

MTSG Issue: Alternative activity preferences

One of the challenges faced by the MTSG activity is the preference for alternative activities or modern activities. The alternative activities perceived in this research are common activities that can be observed nowadays, such as futsal, badminton, extreme games, paintball, basketball, e-sport et cetera. The interviews managed to access the content of these preferences and analysed within this topic.

The participants in EU03, EU04, EU11, EX02, EX03, and EX07 believed that the current generations, in particular, are more attracted to digital entertainment such as electronic games through console gaming and PC or smartphones. Participants EX02 and EX03 added that, as a result of the exposure of today's society to gadgets and technology, the interest in e-sport has become excessively overwhelming.

"...it is due to modernisation and the introduction of various high-tech games, which are easily accessible and more entertaining. (EX07)

"...they are more inclined to e-sports currently. E-sport is more like online gaming. " (EX02)

Alternative activities such as futsal, jogging, and bowling, on the other hand, become the preferences of EU04 and EU11 participants during their leisure

time. Participant EU13 shared that, during her childhood, she was more into sports such as field sports, netball, and handball. Participant EX07 viewed that current society is more attracted to activities that are deemed famous and popular.

“...the modernisation which has introduced various electronic games, and also popular and trendy sports in their opinion.” (EX07)

The interviews also captured insights into the reasons for choosing alternative activities over the MTSG activities. The information showed that the reasons are accessibility, community, competition, influence, infrastructure, skill development, networking, popularity, presentation, and trend. Those were the codes extracted from the alternative activity preferences.

Code: Alternative Activity Preferences														
Code/ Participant	EU01	EU02	EU03	EU04	EU05	EU06	EU07	EU08	EU09	EU10	EU11	EU12	EU13	EU 14
Accessibility			🗣️			🗣️		🗣️						
Community		🗣️	🗣️					🗣️			🗣️			
Competition				🗣️	🗣️			🗣️						
Personal Influence	🗣️	🗣️	🗣️			🗣️		🗣️			🗣️			
Skill Development			🗣️	🗣️				🗣️						
Wider Networking	🗣️													
Popularity and Trend	🗣️			🗣️				🗣️						

Table 11: Codes segmentation and notation from the experienced user for the alternative activity preference.

Accessibility

Participants EU02, EU06 and EU08 shared their views about the accessibility factor that leads to alternative activity preferences. Sports such as futsal, badminton, bowling, futsal, and swimming have been acknowledged and well organised, so it is easier for the community to access the activity.

“...the futsal is a sport that has been recognised, so there must be teams. Meanwhile, the traditional games don’t have any movement or groups...” (EU02)

“...Badminton, Badminton is easily accessible, it’s just enough to have the court...” (EU08)

Plus, it is also easier to access digital entertainment nowadays due to the technology advancements mentioned by participants EU13, EX02, EX03, EX06, and EX07.

Accessibility to infrastructure also leads to the preference for modern activity. Participants EU02 and EU08 stated that activities such as futsal and badminton have their own infrastructure that the community can easily access.

Community

The established community of a certain activity is also a factor. As mentioned by participants, games such as futsal have their own team and community.

"...the futsal is a sport that has been recognised, so there must be teams. Meanwhile, the traditional games don't have any movement or groups..." (EU02)

"In the past, the settlements in the village have been planned...the settlement got lots of youngsters, so we've got lots of teams. So, we usually compete, and that has indirectly influenced us to play a particular sport or game. " (EU08)

"To be frank, I also love to play Badminton, Ping-Pong...these activities usually played with friends." (EU11)

This community will then organise and make the activity easily accessible, thus indirectly influencing more people to join the activity and expand the community.

Competition

Participant EU04 said that most people are interested in joining modern activities because of the chances for them to compete from one level to a higher level.

"Why do people choose to play modern sports? It's because there are lots of opportunities. It is because of the competition and the chances to develop the skills for competing at a much higher level. " (EU04)

Participant EU05 mentioned that in the past, she joined an activity because she wanted recognition and was hopeful to enter as many competitions as possible in the activity.

"It's because I could master the sports and be hoping that, at that time, the teacher would pick the skilful students to compete in available competitions. (EU05)

In a more detailed explanation, participant EU08 added that in the past, each village or settlement had a young community that used to handle inter-village sports and games competitions. The competition events indirectly influenced the village youngsters to take up the sport.

"In the past, there were lots of competitive events held in the village, such as the Sepak Takraw, and Badminton..." (EU08)

Personal Influence

Individual preference is most commonly influenced by the influence exposed to them. Personal influence by family and friends is one of the main contributors to the individual activity preferences based on the interviews. Participant EU06 mentioned that, during his childhood, his late father influenced him to play football as he watched his father playing in the national league.

"I'm more inclined to play football since my late father was one of the state's football players in the past, so the interest might naturally come from the family lineage." (EU06)

Participant EU11 said that his interest in bowling started when his children asked him to join them in a session, and since then, he has played bowling with his friends.

"...even the Bowling has been introduced by my daughter..." (EU11)

Another participant, EU08, stated that their preference for sports and games was influenced by their peers.

"...it can be said that the interest in playing sports is influenced by peers..."
(EU08)

Skill development

Based on the interview participants' opinions, activities that give chances for the player to develop their skills further are the most preferable. Participants shared their opinions and gave some explanations for the statement.

"...the sport is interesting as it requires a set of skills and technical..."
(EU03)

"Why do people choose to play modern sports? It's because there are lots of opportunities. It is because of the competition and the chances to develop the skills for competing at a much higher level. " (EU04)

Participant EU03 said that she was interested in joining the softball sports club in her school because the sport looks interesting and requires skills and technical understanding. Not only that, but participant EU04 stated that most people prefer modern games and sports due to the chances they could get by honing their skills in particular sports and games. This allows them to strive for the next level and strive for the highest achievements. Participants EU04 and EU08 added that activities like futsal and badminton are easy to get into because they have a variety of competitions and tournaments from different regions and levels, which require them to constantly hone their skills in order to compete with others.

Wider networking

One of the observable things is that current activity has wider networking compared to past MTSG activity. Participant EU01 stated that today's technology enables the player to connect with others locally and globally.

"Nowadays, we are in a different time because of the internet. You are able to play games with people from Russia, Lebanon, and etcetera." (EU01)

"The technology has given an advantage in networking." (EU01)

Popularity and trend

Among other things that have been mentioned in the interviews are the popularity and trend. People are inclined to follow and join the activities that are familiar, recognisable, and acceptable in those years. As mentioned by participants in EU04 and EU08, futsal and badminton are amongst the activities that are popular. The activities are even recognisable globally.

"People are choosing to play futsal because the game allows the players to move forward until they reach the international level. It's a popular sport. (EU04)

Participant EU08 added that the popularity of activities like badminton, also boosted by other mediums such as television, comic books, and film, indirectly influenced youngsters to keep interested in the activity.

"...the television was one of the influences when we could watch the greatness of sports shows. Like football, everyone likes to watch football. There are even cartoon series being made to commemorate the game. So, these media will make the sport become more popular...." (EU08)

Participant EU01 mentioned that the trend of activity preference is also changing with time and technology. Currently, people are more into activities such as bodybuilding, cycling, ping pong, badminton, and others. He added that as people grow older, the trend of activity preferences is also changing.

"It's obvious that, influenced by technology, people tend to play video games, ride bicycles, go to the gym, play Ping-Pong and Badminton. Adults tend to change their preferences. " (EU01)

4.1.5 Preservation Strategy

From the perspectives of the interviewed participants, this theme gathered information about efforts and available strategies for introducing or preserving MTSG activity. There are several codes examined within this theme, and each code is mentioned by the interview participants.

THEME: PRESERVATION STRATEGY																					
Code/Participant	EU01	EU02	EU03	EU04	EU05	EU06	EU07	EU08	EU09	EU10	EU11	EU12	EU13	EU14	EX01	EX02	EX03	EX04	EX05	EX06	EX07
Campaign and Events	🗣️	🗣️	🗣️	🗣️		🗣️		🗣️	🗣️		🗣️	🗣️	🗣️	🗣️	🗣️	🗣️	🗣️	🗣️	🗣️	🗣️	🗣️
Innovation	💡			💡						💡											
Education	🎓			🎓				🎓	🎓						🎓	🎓	🎓				
General Suggestion	💬							💬	💬	💬	💬	💬	💬	💬							

Table 12: Codes segmentation and notation from the experienced user and expert personnel for MTSG preservation strategy.

This code was extracted from the interviews, and one of the research's primary objectives is to examine existing efforts made by any member of society or responsible organisation. According to the interviews, efforts to promote MTSG activities include organised cultural events and campaigns, documentation, MTSG competitions among targeted groups, MTSG product innovation, and student assignments.

Campaign and events

Participant EX03, a representative from the Department of Art and Culture, Malaysia, has shared the organisation's past and current efforts regarding MTSG activity. He mentioned the department had organised a cultural festival in a selected region, including MTSG activity, and this year it is the fifth time they have handled such events. He added that even though the events are currently held only on the west coast of Malaysia, the department has the intention of spreading them to the whole of Malaysia.

“...this is the effort made by the department, in which we can approach the uniformed institution. There are twelves or ten uniformed body, where we’ve had these games competitions among them, in which focusing on the traditional games’ activity.” (EX03)

Participant EX04, another representative in the same department, added they have also handled the same type of cultural event in the east coast region named *Pesta Angin Timur*, and MTSG is part of the event activity. She added

that most big cultural events handled by their department would include MTSG activity as part of their event contents.

“...Pesta Angin Timur...and most of the events will insert the element of traditional games...it became part of the activities that being introduced in any big cultural events, which has been hosted, not only by the JKN but any festival or cultural activities by others.” (EX04)

Participant EX05, a representative from the Department of National Heritage, Malaysia, stated that the department is also involved in promoting MTSG activity through various events in Malaysia.

“Currently, there are various development programmes and promotion of the traditional games being conducted by the government at schools, universities, carnival programme, temporary exhibition and others; to revive the cultural values in each traditional game.” (EX05)

Participants EX03 and EX04 also added that their department also had launched an MTSG activity competitive event targeting the local government sector in Kuala Lumpur. They said the campaign targeted the private sector in the next series.



Figure 28: Web advertisement of MTSG event in 2017 by Department of Art and Culture Malaysia.

Participants EX04 and EX05 mentioned that even though MTSG is not played regularly but it can be found occasionally played during events in schools or any institution.

Other than organising a cultural event, the Department of Art and Culture Malaysia has also collaborated in publishing documentation of MTSG activities. Participants EX03 and EX04 mentioned that their department had also published several articles and books. However, they added, it was quite a long time ago, and they were unsure when and where the books could be referred to.

Innovation

On another note, participant EX03 mentioned that there was also an effort to innovate on the MTSG product itself. He gave an example by referring to an attempt by one of Malaysia's local universities, namely UPM, to innovate on a game of *Gasing* by creating a mobile platform for the game and also changing the common material of the game equipment to the polymer.

"...I could see even now that there are visible efforts to develop and innovate the games by certain associations. For example, UPM they have innovated the Gasing game..." (EX03)

He added that another game, namely "*Congkak*", has also been innovated and commercialised in Malaysia by changing the appearance and equipment material.

Education

In terms of education, several schools and educators are making efforts to educate students about MTSG. EU01 shared that he once assigned a project to his students on the subject of MTSG as part of a culturally-based course. He added that students were required to conduct research on Malaysian cultural games and to present and manage a small event at the conclusion of the courses. Another educator, participant EX01, stated that the subject of MTSG is typically

introduced in her school through a school club as part of the club's curriculum. Meanwhile, participant EX02 stated that he organised an MTSG competition between classes during a 'National Sports Day'. Prior to the event, students will attempt to learn about and participate in MTSG activities during their physical education classes.

"So, during National Sports Day, I preferred to introduce the traditional games to the students. During the 'National Sports Day', I hosted a competition...I introduced the traditional games in the physical exercise class, which means a day before the event takes place. " (EX02)

Currently, there are various development programmes and promotions of the traditional games being conducted by the government at schools, universities, carnivals, temporary exhibitions, and others to revive the cultural values of each traditional game." (EX05)

General Suggestions

Apart from identifying current efforts to introduce and preserve MTSG activity, the research also analyses the suggestions from the participants' perspectives. The suggestions mentioned by the participants include things such as the development of MTSG, its introduction into the education system, and formalisation.

"This opinion is based on reading and my own observation; let's look at the Japanese industry. They've made a game similar to "Gasing" and explored it to the extent of an animated series, and they can even sell the product. Later, they've become a big industry by focusing on that game product production." (EU08)

"Responsible governance could use popular mass media to promote traditional games and sports." I think there would be no problem with the games being developed into new forms of games, either through video games or new equipment, as long as we could protect the heritage and bring positive meaning to the cultural heritage. " (EU10)

"By taking the initiative to incorporate technology in the MTSG game, we can instil interest in playing traditional games in the younger generation."(EU13)

"There are lots of governmental bodies that play roles, not only for schools. For example, the various departments, such as the immigration department and police department, can host the traditional game competition among their departments or practice the activities once every five months, which would be good too. (EU09)

"So, how can we see the traditional games brought back to life? By assigning them to one specific organisation or association that will preserve the games. (EU11)

4.1.6 The Pilot Research Conclusion

The pilot research analyses provided us with abundant information about the MTSG that could not be obtained in the literature review before. The rich first-hand information is based on the perspectives of the experienced user (coded with EU) and the expert personnel (coded with EX). The 'code' is a component identified within the interview transcription and belonged to a 'theme' in this research. The 'theme' helps the research to categorise the codes and reference points for subsequent phases and use the information to answer the research questions. The figure below shows the visual representation of the five general themes and codes grouped identified from the interview session.

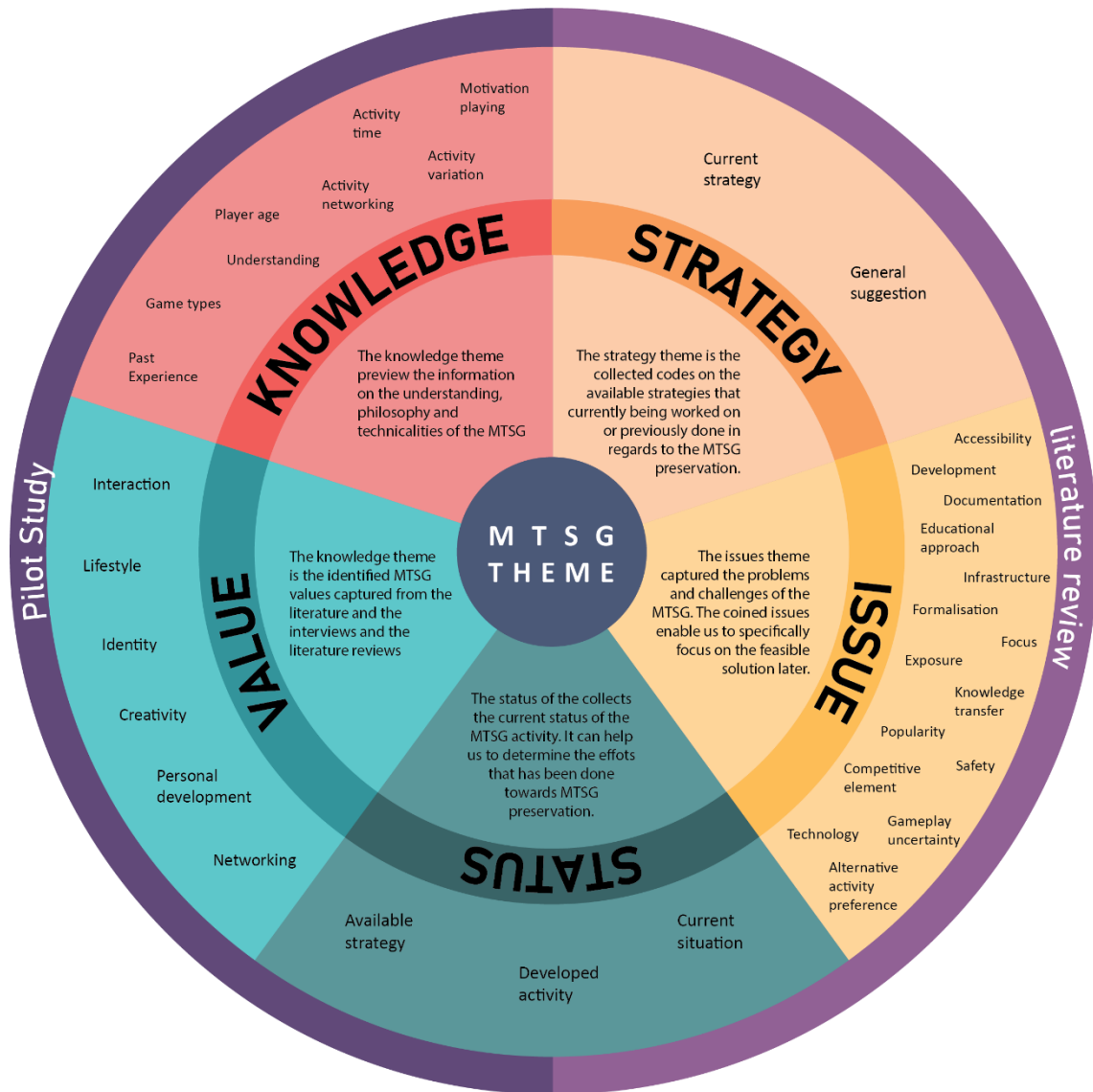


Figure 29: The MTSG Theme model results from the triangulation of the pilot research and literature reviews.

This MTSG Theme model was constructed using a combination of data from the pilot research and literature reviews. The contents and contexts from recorded interviews in the pilot research were analysed to create this cluster of codes. These themes were created by referencing the literature review chapter (see chapter 2.6) and consist of the research's main keywords. By cross-referencing the information, I can identify and confirm important themes regarding the MTSG, resulting in more reliable data. During the thematic analysis, some of the codes within the theme correspond with other themes as well, as the themes are interrelated to each other. For example, the codes within the 'issues' theme also appear within the 'status' theme and look similar, but the context is different.

The redundancy in the codes might prove that each theme is interrelated. This pilot research also allows me to learn more about the MTSG gameplay and game title variations that were not covered in the literature section. These themes are also crucial for me to focus on specific themes for the designer to use as a guide and reference during the field experiment (Phase 1) and the design workshop phase (Phase 2).

The knowledge: provided data on general understanding and experience with the MTSG and probes for specific information on game structure and gameplay.

This theme allows us to select specific MTSG to be tested in the next phase (*Ceperand Batu Seremban* for indoor activity, *Galah Panjang* and *Baling Selipar* for outdoor activity). This activity was chosen because many respondents mentioned the games and provided some insight into those games in the pilot research. Although many respondents in the pilot research were unable to provide details on the specific MTSG gameplay, the convergence with the information captured in the literature review (see chapter 2.4.3) provides guidelines for the field simulation phase (Phase 1).

The values: I am expecting to capture the personal value of the MTSG from the perspectives of the participants. The codes presented within the theme are also interrelated with the general values found in the literature in chapter 2.4.2. The theme is presented to the designer as part of the process in the design workshop phase (Phase 2).

The Issues: This theme has identified the issues faced by the MTSG in Malaysia. There are interconnected issues that have been coded through the pilot research. Some issues also correspond with the issue that has been presented in the literature review section (see chapter 2.4.5). This detailed information about the codes within this theme is then presented in the design workshop phase as a reference for the designer (phase 2).

The status: This theme captures the current state of the MTSG status at the current time the pilot research was commenced. The codes in this theme informed me of the respondent's personal observation of the occurrence of MTSG

activity and the existing development of the MTSG. These codes are also converged with the literature in chapter 2.4.6. The significance of this theme is read altogether with the next theme for reference in the design workshop (phase 2).

The strategy: In the literature review section (see chapter 2.4.6), the previous preservation strategy has been explored through various documentation. In order to get first-hand information on additionally available strategies, the expert personnel (EX) shared the current and past strategies for preserving the MTSG through their respective institutional efforts. This data is then combined to offer information in the design workshop phase.

The triangulation of the data analysed from this pilot research phase and from the literature is significant as it helps me to plan and execute the next phase of this research. The next phase will present the analysis of the field experiment (phase 1), which will investigate the selected MTSG gameplay through collected resources.

4.2 Phase 1 Analysis and Finding (Field Experiment)

The observation of the specific MTSG activities through field simulation has been introduced in this research to capture visual information about the activity in a real-time setting by following the guides from the collected data previously. Due to the constraints of this research, such as time, location, and the fact that it is hard to find people playing MTSG in Malaysia, the field simulation is our best bet to research the nature of MTSG gameplay, the action, and the reactions of the players during the simulation.

The focus group for the game simulation has been established through participant recruitment at Lancaster University. Since the focus is to get an insight into the MTSG activity from Malaysians, the best option is to have a focus group consisting of Malaysian community members participate in the simulation, as the subject of MTSG is related, and they can comprehend the subject.

The simulation commenced at Lancaster University, and there were about twenty ($n = 20$) players who participated in the field experiment. There were four games that were simulated, which were comprised of indoor-type games and outdoor-type games. The games were selected from the response that we have identified in the literature reviews (see chapter 2.4.3) and pilot research (see chapter 4.1.1), and the selected games were deemed suitable for the research since it is not time-consuming; the game guide and rules are accessible; it is easy to obtain the games' equipment or artefacts, and the games represent their own group of MTSG types.

The selected MTSG activity for this field experiment has been clustered into two types of games, which are the indoor type (light games) and the outdoor type (heavy games), as stated in the literature reviews (see chapter 2.4.3)

4.2.1 Indoor Games (Light games)

The first simulation focuses on two types of MTSG activities that had been identified in the previous phase. The activities selected are well presented as light games or indoor games that do not require excessive use of physical interaction. The MTSG activities that have been chosen for this simulation are *Batu Seremban* and *Ceper*. Most of the guides and rules for the activities have been gathered from the interview sessions in phase 1, literature and blogs. The challenges arose during the collection of available references for the selected activity, as the information was incomplete, had lots of variation, and was not well-explained by the authors. To address this issue, I have had to triangulate the information and form a gameplay manual (see Appendix 4) to be used for the simulations. The table below shows the list of formats planned for the indoor game simulation.

No.	Item / MTSG	<i>Batu Seremban</i>	<i>Ceper</i>
1.	Player	Individual	Individual
2.	Equipment	5 to 7 pebbles	5 bottle caps
3.	Playing surface	On the floor	On the table
4.	Win condition	Players achieve 100 marks or the highest mark within the time frame.	Players achieve 100 marks or the highest mark within the time frame.
5.	Gameplay	<ul style="list-style-type: none"> • Players need to throw and catch the pebbles sequentially. • Each perfect sequence will be given 20 marks. • Each pebble saved during a sequence will earn 4 marks. 	<ul style="list-style-type: none"> • Players need to flick and shoot the bottle caps as instructed by the opponent. • Each successful instruction enables the player to throw and grab the caps. • Each cap earns 2 marks for a successful grab.

Table 13: List of formats for simulation 1 observation.

The session has been devised into a few segments, which are: introduction, demonstration, practice, and competitive session. Due to time constraints, the segments were given time allocation for each MTSG as follows:

No.	Segment	Time allocation
1.	Introduction	10 minutes
2.	Demonstration	10 minutes
3.	Practice	20 minutes
4.	Competition	40 minutes

Table 14: The time allocation for each segment in the workshop.

The simulation participants had been introduced and briefed about all the sessions beforehand. I also took an opportunity to ask several questions regarding the MTSG experiences to all participants, and the feedback was welcoming. According to my observations, each participant has a different level of knowledge about how to play the games. Some of the participants had no idea how to play the games that were chosen, while others were well-versed in the games and shared their perspectives on the alternate versions of the games.



Figure 30: Briefing on the MTSG simulations activity.

During the simulation day, there were twenty ($n = 20$) participants, including designers, who had taken part in the activities provided. The sessions

were advertised and pre-registered for on social media, and the majority of the participants were Malaysian undergraduate and post-graduate students.

4.2.1.1 Batu Seremban Observation

The simulation started off with the announcement of the first activity of *Batu Seremban*. The simulation phase is intended to observe and gain insight first-hand into the selected MTSG activities' interactions, flaws, and discussions. The participants were asked about their experiences with the activity, and during the introduction session, some of the participants said that there were several versions of the gameplay in different regions in Malaysia.

The version gathered from the collections of literature mostly mentioned gameplay using five pebbles, whereas the other version mentioned by the participant used seven pebbles. From the demonstration presented by one of the participants, the actions of throwing, grabbing, picking, and balancing the pebbles are still the same. The difference is in the number of pebbles they should choose for each sequential throw.

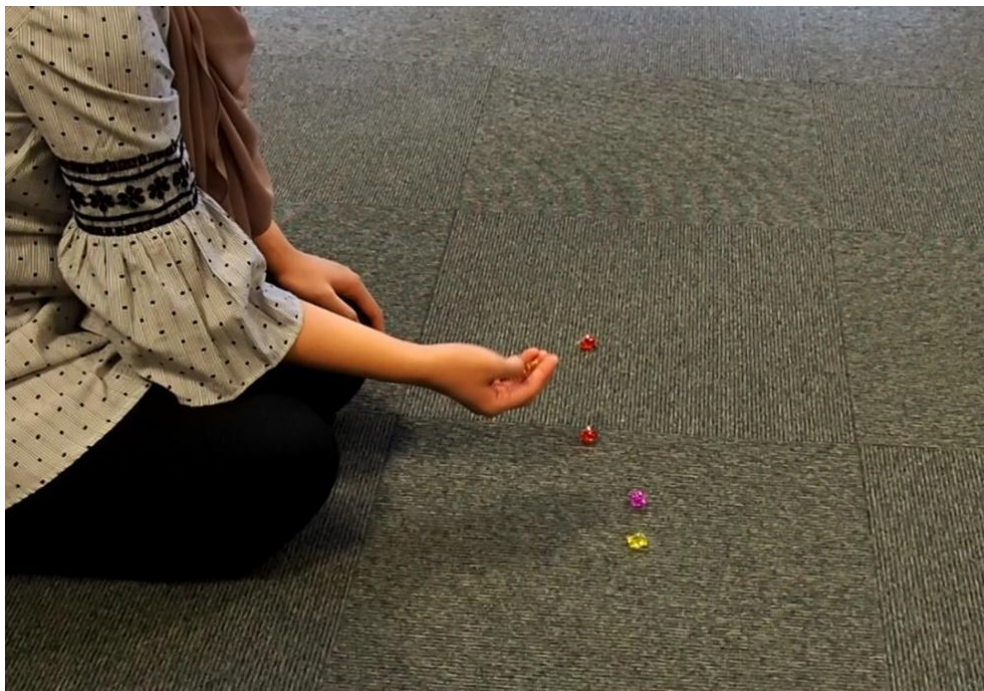


Figure 31: Demonstration clip of different Batu Seremban versions by one of the experienced participants.

During the demonstration, there are exchanges of views and experiences among the participants, showing a gesture of reminiscing moments of their childhood. The participants also commented on the prepared equipment, which is the five coloured plastic pebbles, saying that the pebbles are smaller and lighter compared to what they had used to play with before.

The session was then continued by separating the participants into two gender-based groups. The reason was to provide them with a comfortable environment to practice the activity as requested by the participants. According to my observations and experience in group activities, the Malaysian community prefers to be grouped with people of the same gender because it is more comfortable and less awkward for them, especially in activities that require physical interaction.



Figure 32: Observing the female group practising Batu Seremban.

The group participants were then given the task of practising the *Batu Seremban* activity for about 20 minutes. Later, they were tasked with competing in their respective groups until there was only one winner in each group. During the practices, it was observed that there was more than one activity occurred within the core activity. The participants were seen interacting with each other, taunting other players, and exchanging ideas on the moves in a controllable

manner. Note that the simulation has been improvised from the original idea to suit the group's team-play. The improvisation was as shown below:

No.	Batu Seremban game guides		
1.	Format Gameplay	Original	Improvvised
2.	Mode	1 versus 1.	Deathmatch.
3.	Time	Not Mentioned.	2 minutes per person.
4.	Point counts	Not mentioned.	<ul style="list-style-type: none"> • Maximum 100 marks. • 4 marks per captured pebble.
5.	Winning condition	Successfully finished all designated sequences.	Achieve 100 marks. Or Highest points within the time allocated.
6.	Specific rules	<ul style="list-style-type: none"> • Must catch-all pebbles thrown while on air. • Must follow the designated sequence. • Must use only one hand for tossing, grabbing, picking, and balancing. • While picking up a pebble on the floor, you cannot touch or move other pebbles. • Pebbles balanced on the backside of the hand must be tossed and grabbed. Only each successful pebble grabbed will be accounted for. 	<ul style="list-style-type: none"> • Must catch-all pebbles thrown while on air. • Must follow the designated sequence. • Must use only one hand for tossing, grabbing, picking, and balancing. • While picking up a pebble on the floor, you cannot touch or move other pebbles. • Pebbles balanced on the backside of the hand must be tossed and grabbed. Only each successful pebble grabbed will be accounted for.
7.	Equipment	Stone pebbles	Plastic-based coloured pebbles

Table 15: Comparison table of Batu Seremban's original gameplay and improvised gameplay for the simulation.

The competitive element of the session was to observe the participants' motivation to win the game. Even though the duration of practice time was short, the participants seemed to get better at the games.

The competition was held between the two groups of men and women. A referee was appointed by me to each group to screen the gameplay and marks the score. Both winners from the men's group and women's group had then faced each other for the final stage of the competition. The competition was then won by the participant from the women's group.



Figure 33: Final stage of the *Batu Seremban* competition where both winners from the men's group and women's group compete.

4.2.1.2 *Batu Seremban* Game Finding

The *Batu Seremban* game is easy to learn and takes a short time to fully master. Even though the game is usually played by women, during the session, men also showed good control and understanding of the game.

To master the *Batu Seremban* game, the player needs to have good control of hand-eye coordination and the hand agility to toss, pick, balance, and grab the pebbles successfully. The game does not require the player to use their whole body and is usually played in one sitting. To understand and play *Batu Seremban* was relatively easy, and the tasks were repetitive. Games tend to get boring over time if there is no specific challenge embedded in the gameplay.

During the *Batu Seremban* simulation, it was observed that different playing surfaces and player positions would affect the player's performance. As an example, playing on a smooth surface will make it harder for the player to pick up and grab the specified pebbles as it will knock other pebbles and result in disqualification. Another example is that playing on the table while sitting on a chair will limit the movement of the player's arm. Different conditions and setups

for the games will affect the gameplay experience. However, the *Batu Seremban* is also flexible. There is no problem improvising the rules and conditions as long as the basic rules of toss, pick, grab, and balance are applied.

As for the materials, the game also allows flexibility in choosing the materials for the game equipment as well. In fact, there are also several other materials that have been used for the pebbles in the past, such as fabric (beanbag) and polymer-based materials.

4.2.1.3 The *Ceper* observation

The *Ceper* is another type of indoor-based MTSG activity that requires small spaces and minimal physical interaction and movement. The simulation was handled the same as the *Batu Seremban* simulation before. Before starting off with the session, the participants were asked about their experiences with the *Ceper* game. The experience-sharing session enables the information on the *Ceper* game to be updated.

Due to the lack of written documentation for the game, the simulation refers to video content on *YouTube* as part of the information. One of the videos that provide clear information about the game has been accessed from the leaderonomics.com website.

The basic gameplay of the *Ceper* game is to flick and shoot an appointed bottle cap toward the other bottle caps dispersed on the surface. The game uses five aluminium bottle caps that have been scattered by the player. Usually, the activity is played by two people in a versus mode. The game has been quite popular among boys in the past. The *Ceper* simulation was demonstrated by one of the participants who were familiar with the game.



Figure 34: The demonstrator shows how is the game played on a table.

During the demonstration, there are exchanges of experiences and views among the participants. The competition session format was planned based on the information gathered from the website and input from the demonstration session.

Basically, the *Ceper* activity will involve two people who will compete against each other by collecting points. The game will start with the voting round to decide the first player to start the game. The first player will start to take all the caps in his/her hand and toss them onto the table or any flat surface. Later, the first player will choose one out of five caps to be taken away, and the second player will choose the pair that need to be matched together. The first player must follow the pairing instructions and try to flick and shoot the dedicated pairing without touching other unrelated caps. The successful move will enable the first player to toss and grab all five caps to capture the points. Each bottle cap will be entitled to a point, and the game is repeated until an agreed point condition is met by both players.

In the *Ceper* game session, the participants were given the option to pair up and choose their game area. Tables have been prepared for them as their playing surface, although some of the versions state that the game can be played

on the floor. The participants were then given chances to practice the *Ceper* game for about 20 minutes. Later, they were asked to compete against each other based on the rules and guidelines that had been briefed to them. The *Ceper* game has been improvised to suit the time limitation for the competition. The Improvisations were as follows:

No.	Ceper game guides		
	Format / Gameplay	Original (based on literature)	Improvvised
1.	Mode	1 versus 1.	1 Versus 1.
2.	Time	Not Mentioned.	2 minutes per person.
3.	Point counts	Not mentioned.	<ul style="list-style-type: none"> Maximum 100 marks. 4 marks per cap obtained.
4.	Winning condition	Highest points.	Achieve 100 marks. Or Highest points within the time allocated.
5.	Specific rules	<ul style="list-style-type: none"> The bottle caps must be tossed/thrown to the playing surface. The player must pick one cap to be excluded from the play each round. A penalty/challenge round will be applied for each round in which the caps overlap. After each successful round, the player needs to toss all the caps, catch them with the back of their hand, toss them again and grab them to accumulate the points. 	<ul style="list-style-type: none"> The bottle caps must be tossed/thrown to the playing surface. The player must pick one cap to be excluded from the play each round. A penalty/challenge round will be applied for each round in which the caps overlap. After each successful round, the player needs to toss all the bottle caps, catch them with the back of the hand, toss them again and grab them to accumulate the points.
6.	Equipment	5 aluminium bottle caps	5 aluminium bottle caps

Table 16: Comparison table of Ceperoriginal gameplay and improvised gameplay for the simulation.

Similar to what has been done for the *Batu Seremban* simulation, the competitive element within this *Ceper* session was to observe the participants' actions and motivation to compete in the activity.

The participants were separated into pairs and given their own tables. The marking process is done by each player by noting their own points and being aware of game violations; this follows the original gameplay of *Ceper*.

During the session, it was observed that some of the participants rolled up their sleeves to avoid the obstruction of the attacking bottle cap trajectory. Some others use various hand techniques to complete the game objective.



Figure 35: The participants play against their competitors in the dedicated play area.

The winners from each table were then advanced to the semi-final stage and later to the final stage. The *Ceper* competition was then won by a participant from the men's group.

4.2.1.4 *Ceper* Game Finding

Ceper is another type of indoor MTSG activity that is relatively easy to understand and learn. The need for space is quite similar to the game of *Batu Seremban*, which only requires an optimum space to conduct the activity.

Understanding the *Ceper* game is quite easy. The player needs to have a good perception of trajectory and hand-eye coordination to complete the rounds. The game does not require aggressive movement or the whole body; usually, it can be played in one sitting. The objectives and tasks in this *Ceper* activity are repetitive over time.

The play area during the session was predetermined. A table with a smooth surface has been provided. Based on the feedback from the participants, in the past, the game was not only played on the table but also on the floor, which had an uneven surface. They added that playing on an uneven surface is much more challenging as the trajectory will go haywire. Sitting on the floor, too, will make their body position awkward and limit their movement. Different environments and setups in the *Ceper* game will affect the gameplay and experience.

The rules of the *Ceper* game are also flexible. Even considering that the basic rules of flicking, tossing, and grabbing are applied, the improvisation of the game will still be acceptable and recognisable. The same goes for the flexibility of game equipment. Although most of the participants are familiar with the use of aluminium bottle caps as the main game equipment, any similar form and size object that is playable can be used to run the activity.

4.2.2 Outdoor Games (Heavy Games)

The next two types of heavy games, or outdoor types of games, have been focused on the *Galah Panjang* and *Baling Selipar*. These two types of outdoor MTSG activities have been chosen due to the accessibility of the equipment, location, and gameplay guide. It is also a suitable example of a team-based MTSG activity. Table 17 below shows the brief format of the conducted simulation:

No.	Item / MTSG	<i>Galah Panjang</i>	<i>Baling Selipar</i>
1.	Player	Group	Group
2.	Equipment	Line tape	3-unit flipflops
3.	Playing surface	Open space / field	Open space / field
4.	Win condition	<ul style="list-style-type: none"> Attacking players must survive. The defending player must oust all attacking players. 	<ul style="list-style-type: none"> The attacking player must rebuild the flip-flop structure. The defending player must oust all attacking players.
5.	Gameplay	<ul style="list-style-type: none"> The players will be divided into groups. Each group will take a turn attacking and defending. The game must be played on the specified area that has been marked with line tape. An attacking group must go through the area from front to rear and make a U-turn without being tagged/ ousted by the defending group. The defending group must prevent the attacking group members from completing the objectives. The ousted leader will cause an automatic loss of the attacking group for that round. The mark will be given to the remaining survivor of the attacking group for that round. The game will last for five rounds. 	<ul style="list-style-type: none"> The players will be divided into groups. Each group will take turns attacking and defending. A game can be played in the specified area. Attacking group members must take turns throwing a flip-flop at the structure of flip-flops until they are destroyed. In the event of a successful attempt, the attacking group's objective is to rebuild the flip-flop structure. The defending group will try to eliminate the members of the attacking group before they achieve the objective. If the attacking group succeeds, even if one member only remains, marks will be given. If not, the round was concluded. The game re-started with the change of group roles. The game will last for five rounds.

Table 17: List of formats for simulation 2 observation.

The session has been devised into a few segments, which are: introduction, demonstration, practice, and competitive session. Due to time constraints, the segments were given the following time allocation for each MTSG:

No.	Segment	Time allocation
1.	Introduction	10 minutes
2.	Demonstration	10 minutes
3.	Practice	20 minutes
4.	Competition	40 minutes

Table 18: The time allocation for each segment in the simulation.

The simulation's participants had already been introduced and briefed about the gameplay. After the session, I took the opportunity to interview all participants and ask several questions about their MTSG experiences. According to the observations, each participant has a different level of knowledge about how to play the games. Some of the participants had no idea how to play the games that were chosen, while others were well-versed in the games and shared their insights into the alternative versions of the games.

4.2.2.1 The *Galah Panjang* Observation

One type of heavy game within this research is the *Galah Panjang*. It is an outdoor activity that requires a flat, large space with no obstructions. The *Galah Panjang* game was mentioned by the interview participants in the previous phase, which shows that this type of MTSG activity is familiar to them. Contrary to indoor types of activity, these outdoor types were mentioned in the interviews as requiring a lot of physical interaction, movement, and player energy.

The information about the rules, guidelines, and gameplay has been collected through various sources, mainly literature reviews, experienced user interviews, and video collections from the online database. The content was planned based on these references, and the simulation was recreated to get first-hand observation and feedback from the experiment participants about the activity.

The basic gameplay objective of *Galah Panjang* is that each member of the participating group needs to successfully evade through a specified game area without being touched by another defending group. Each evading member that has been touched by any defending team member will cause them to be ousted, and the remaining members must finish the round to enable them to capture points. The roles of evading and defending will be rotated each round. The overview of the gameplay can be observed in the figure below.

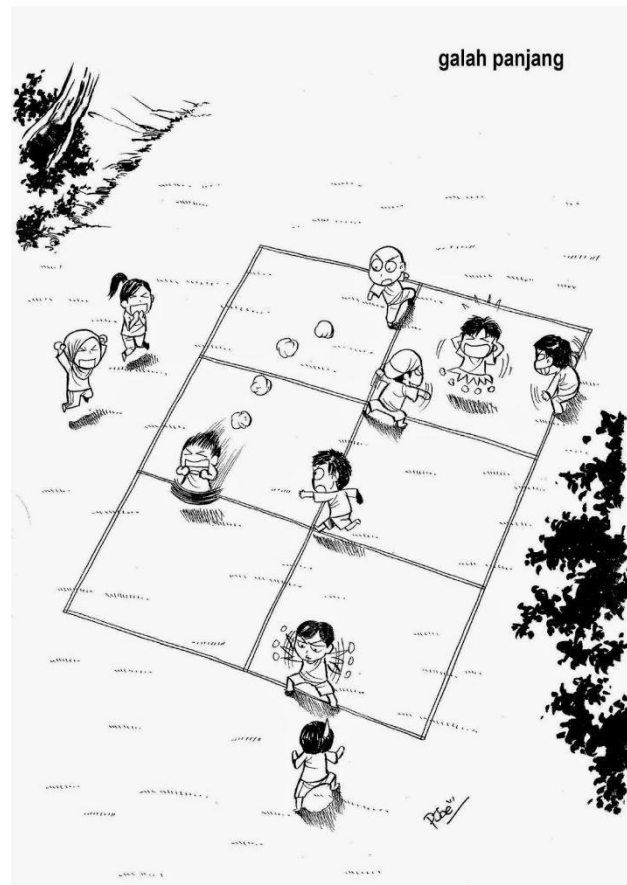


Figure 36: The illustration of the Galah Panjang game (Permainan Traditional Blogspot, 2014)

The *Galah Panjang* simulation took place at Lancaster University's open space near LICA (*Lancaster Institute of Contemporary Arts*). Twenty volunteers ($n = 20$) volunteered to participate in the simulation, with ten men and ten women. The participants were instructed on the rules of the game to ensure that they all understood the rules. They were then divided into two groups, one for men and one for women. They sought the separation because they preferred to engage in physical activity with people of their own gender. The moderator began the discussion with an explanation and a demonstration.



Figure 37: Two representatives from the men's team played 'Rock-Paper-Scissor' to decide their team role.

During the first demonstration, there are exchanges of opinions and experiences by the participants about the game. This is treated as a pre-test before running the actual game research to make sure the gameplay is smooth and without obstruction. During the pre-test, it was identified that the specified activity area that had been marked with black tape was too narrow and tight. So, it was easy for the defending team to block and touch the defending team. The dispute of the activity area was notified, and due to a lack of information about the game's technical requirements, the dimensions of the original marked area was only based on my personal experiences and assumption.

Later, after the discussion and feedback from the participants, the marked area was adjusted to the proportional size suitable for the activity. The activity was then tested and ran smoothly as per plan. The *Galah Panjang* activity was so fast that it only took about three to four minutes to complete a round. The evading group relentlessly tried to get to the goal line while the defending team aggressively tried to block them.



Figure 38: A member of defending team tried to block and touch a member from evading the team while remaining on his defending line.

The activity was so intense that participants were observed catching their breath between rounds. While the game is straightforward, completing the game objectives was quite challenging. This game also included a tactical element, as the evading group attempted to use distraction to allow other members to cross the goal line.



Figure 39: While being cornered by the defending team, one of the evading team members tried to sacrifice himself and create an opening for his teammates (in red).

The simulation of the *Galah Panjang* game format has been improvised from the original idea to suit the simulation timeframe and environment. The improvisation was as follows:

No.	<i>Galah Panjang</i> Gameplay Format		
1.	Format / Gameplay	Original	Improvvised
2.	Mode	Team versus.	Team versus.
3.	Time	Not Mentioned.	5 minutes per round / 3 rounds.
4.	Space requirement	Not specified / Varies.	16' x 24'
5.	Point counts	Not mentioned.	1 point per successful member.
6.	Winning condition	Team members successfully cross the goal line.	Highest points accumulated per group.
7.	Specific rules	<ul style="list-style-type: none"> Each round begins when the evading team's leader slaps or taps the defender team's leader. Each defender can only defend from their fixed position. When a member of the evading team was tagged by a member of the defending team, they were considered "ousted." To earn a point, the evading team must cross the game area from front to rear of the play area and then return to the front again without being "ousted." Any evading team member crossing the game area outside the side-line is disqualified from the round. 	<ul style="list-style-type: none"> Each round begins when the evading team's leader slaps or taps the defender team's leader. Each defender can only defend from their fixed position. When a member of the evading team was tagged by a member of the defending team, they were considered "ousted." To earn a point, the evading team must cross the game area from front to back without being "ousted." Any evading team member crossing the game area outside the side-line is disqualified from the round. The evading team must cross the goal line within the time limit given. A point is given to any member of an evading team that successfully crosses the goal line. A point is given to the defending team if all the evading team members are ousted.
8.	Equipment	Marked area: <ul style="list-style-type: none"> Using paint if played on a grass field. Draw on dirt/sandy fields. 	Marked areas are using black tape to mask the pavement.

Table 19: The original *Galah Panjang* game and the modified game structure comparison table.

The competitive element within this session is to motivate the teams to win the challenge and to observe their behaviour during the gameplay. It showed that the members of the team were more focused and serious during the competition than during the demonstration session.

The competition was divided into two categories: men and women. The women's group receives no benefit or adjustment in the regulations. The participants have requested that the group be divided since they prefer to play with members of their own gender. Both the men's and women's groups were allowed five minutes for each round, for a total of three rounds to accomplish the task. In a competition scenario, the men's group was reported to be faster, more aggressive, and more devious than the women's group.



Figure 40: The defending women's group are cornering the evading women's group from passing through the last line.

4.2.2.2 Galah Panjang Finding

The *Galah Panjang* game is a type of outdoor MTSG activity that requires a large space and shows active and aggressive interaction among players. Understanding the guide and rules is simple, but successfully playing the game is quite challenging. The fast-paced action during the game makes it hard to observe the whole activity. It is also becoming a challenge to observe as it is hard to differentiate between the defending team and the attacking team as the player outfits are all the same colours. There is no indicator to differentiate between both teams. Not only that, but the ousted member is also hard to observe manually.

Through my observations, the *Galah Panjang* players must have good team coordination and strategy rather than relying solely on individual physical agility or speed. The evading team must be aware of the trap and any movement by the defending team. Meanwhile, the defending team should prevent any evading team members from slipping off their guard. Both teams will use any necessary strategy, such as flanking, taunting, and faking their movements to achieve their objectives.

From the simulation, there were a few technical problems, such as determining the right dimension for the playing area, the marking tape not sticking to the ground, regulating the rules during gameplay, and identifying the ousted player during mid-play. These are some of the problems that obstruct the simulation and the gameplay from running smoothly. Despite these issues, the participants appeared to be happy and engaged in lots of interactions with one another during the activity.

The gender division was not intended to distinguish the level of the games, but it was requested by the participants. This could be due to the nature and culture of many Malaysians, who will feel much more comfortable performing a physical activity with their own gender.

However, if the game is to be played without gender division, it is possible. Like any other observable physical activity, the *Galah Panjang* game is quite

aggressive, and the players must pay proper attention during the activity. This is to avoid any accidents or injuries that may occur during the activity.

4.2.2.3 The *Baling Selipar* Observation

Another MTSG activity simulation that has been observed is a game called the *Baling Selipar*. Based on the title of the activity, it is understandable that the game involves the action of "throwing the slipper," as mentioned by Addy et al. (2014). Like the previous activity *Galah Panjang*, this activity requires a flat, large space with no obstruction. The simulation participants mentioned that, in the past, they usually played the game in their home yard or field. The participants added that the *Baling Selipar* is one of the memorable MTSG activities that require a lot of physical movement, interaction, and player energy.

The *Baling Selipar* activity has been properly introduced in one of the articles previously by me (Putra et al., 2014). So, the information for the game is useful for us to prepare for the simulation. Despite that, other literature references, videos, and the previously experienced user interviews have helped us in collecting and triangulating the information for the *Baling Selipar* gameplay and rules.

The basic idea of the *Baling Selipar* is that there will be two opposing teams in the activity that will fight for the highest score by throwing a dedicated slipper or flip-flop to the 'structure of flip-flops' or 'tower' that has been built. One team is considered an attacking team, while the other is the defending team. The attacking team members will take turns throwing a dedicated flip-flop towards a 'tower', a structure consisting of three flip-flops that will cause them to collapse. After the 'tower' collapses, the defending team will take the dedicated flipflop for throwing and throw it to the attacking team members. The attacking team will try to successfully rebuild the 'tower' while evading the defending team's slipper throws. The defending team must prevent the attacking team from rebuilding the 'tower' structure. Each member of the attacking team who has been tagged with the defending team slipper is ousted and cannot continue the respective round. The roles of attacking and defending are rotated for each round.



Figure 41: The image of a structure of flip-flops and the player aiming for the structure (Azrie Lim, 2012).

The simulation of the activity took place right after the previous *Galah Panjang* activity. The activity drew a total of twenty ($n = 20$) participants, both men and women. The activity was briefed to the participants, and most of them were familiar with the game rules and guidelines. The participants were then separated into four teams. Like the previous simulations that had been conducted, this activity started with an explanation and demonstration by the moderator.

As the game is familiar to the participants, it is easy to demonstrate and explain the activity flow to them. There is also an exchange of information with the participants regarding their alternate versions of the activity name and gameplay. Unlike *Galah Panjang*, the *Baling Selipar* activity area doesn't have a space limitation. The only things to mark are the 'tower' position and the attacking team's throwing position. There are several opinions about the distance between the 'tower' and the thrower position; so, in the simulation, we decided to use three meters as the base distance.



Figure 42: A member of the attacking team throws a flip-flop toward the 'tower' structure while being observed by the defending team.

The distance decided was perfect for the activity. It was not too hard for the attacking team to throw the flip-flop and provide a spacious area for the participants to run around in. The first step is quite easy and simple, but the challenge comes when the 'tower' collapses.

The next stage of the game requires the attacking team to rebuild the 'tower' while evading the defending team's flip-flop throws. The attacking team seemed to scatter around, creating a distraction while one of their members tried to rebuild the structure. It might seem easier said than done, but during the simulation, the 'tower' was successfully rebuilt only once out of six rounds. Most of the time, the defending team was successful in preventing the attacking team from rebuilding the 'tower'.



Figure 43: One of the attacking team members tried to evade the slipper that was being thrown at him.

As with the *Galah Panjang* game, the *Baling Selipar* game was observably intense, with participants catching their breath after each round. The players agreed that the game requires a great deal of stamina and strategy. Additionally, there were some loopholes during the simulation, such as the dimension of the play area, time, and duration of a complete round. Because several of the original rules and guidelines were ambiguous, I have had to improvise the gameplay to meet the simulation's objectives. The table below contains the comparison of the original *Baling Selipar* game structure versus an updated version of the *Baling Selipar* gameplay used in the simulation.

No.	Baling Selipar Gameplay Guide		
1.	Format / Gameplay	Original	Improvised
2.	Mode	Team versus.	Team versus.
3.	Time	Not Mentioned.	5 minutes per round / 3 rounds.
4.	Space requirement	Not specified / Varies	No limitation
5.	Point counts	Not mentioned.	10 points per successful rebuild attempt of the 'tower.'
6.	Winning condition	Successful attempt to rebuild the 'tower.'	Highest points accumulated per group.
7.	Specific rules	<ul style="list-style-type: none"> Both teams will decide their turns to attack and defend by a "rock-paper-scissor" vote. During an attacking turn, each member of the corresponding team will have 3 chances to throw the slipper at the "tower" structure. If there is no successful throw made by the attacking team, the round ends, and the roles are switched. The "tower" structure must be rebuilt by the attacking team member. Each member tagged by the defending team's slipper throw is ousted from the round. The roles are switched in the next round. 	<ul style="list-style-type: none"> Both teams will decide their turns to attack and defend by a "rock-paper-scissor" vote. During an attacking turn, each member of the corresponding team will have 3 chances to throw the slipper at the "tower" structure. If there is no successful throw made by the attacking team, the round ends, and the roles are switched. The "tower" structure must be rebuilt by the attacking team member. Each member tagged by the defending team's slipper throw is ousted from the round. The roles are switched in the next round.
8.	Equipment	<ul style="list-style-type: none"> 2 pairs of slippers. Spacious area. 	<ul style="list-style-type: none"> 2 pairs of slippers. Spacious area.

Table 20: The comparison of the original 'Baling Selipar' game structure versus the improvised game structure.

The demonstration session helped the participants recap the gameplay of the *Baling Selipar* game during their childhood. Later, the participants were divided into groups and tasked with competing in the activity. The competitive element introduced within this activity is to observe the natural behaviour of the participants during the activity.

Similar to the game *Galah Panjang*, the activity was divided into male and female groups. This is in accordance with the participants' request. Each round lasted five minutes, for a total of three rounds per game. In this competitive environment, the men's team demonstrated more aggressive, quick, and strong manoeuvres than the women's team. The women's team was more composed and steadier but still managed to complete the rounds.



Figure 44: The attacking women's team tries to hit the 'tower' of flip-flops.

4.2.2.4 *Baling Selipar* Finding

The *Baling Selipar* is another example of an outdoor MTSG that has never been observed in Malaysia for quite some time. The activity demands a wide play area as well as intense player engagement. The adoption of flip-flops as game equipment demonstrated that players in the past used whatever was available to play. Due to the fast-paced action, observing the entire gameplay was incredibly challenging; thus, the video recording came in handy.

The observation showed that the participants were familiar with the activity, although some of them were said to have forgotten the *Baling Selipar* rules and guides. While other participants shared their interpretations of the rules and guides based on their own experiences, it was easier to guide them through the *Baling Selipar* gameplay.

During the simulation, I encountered several technical problems due to a lack of references. The issues observed were such as determining the optimum distance for the attacking team from the flip-flops' structure, the boundary of the play area, identifying the foul play or ousted players during the game, and keeping aware of the score. Thus, the improvisation of the *Baling Selipar* technical aspect for the simulation was inspired by general information about modern game activity and 'trial-and-error' approaches.

Like any other simulation done previously, the participants gave their commitment and support during the activity. There was no foul play or harmful behaviour during the session. However, there were several manoeuvres and interactions during the aggressive game activity, and the players needed to be cautious.

As for the game equipment, the selected flip-flops seemed too light for the activity, and it was challenging for the players to throw them accurately. The feedback from the participants said that previously they would choose a heavier, much bigger size made of rubber as the throwing slipper.

4.2.3 Field Experiment (Phase 1) Conclusion

This field experiment provided the research with first-hand observation and information about four activities that represent the indoor type and the outdoor type of the MTSG activities. The simulation was not only to observe the behaviour of the player but also meant to record the natural setting of the original MTSG activity gameplay and to test the gathered MTSG rules and guidelines from the literature reviews and pilot research.

Even though there was a loophole in the original gameplay gathered from the literature and the interviews, the participants did a great job of sharing additional information about the specific gameplay, rules, and variations from their knowledge. This practice of knowledge sharing is one of the most important aspects of gathering information, cross-referencing, and conforming to insufficient data. This issue also demonstrates that the current MTSG lacks good data collection, which is in line with the issues raised in Chapter 4.1.4 regarding the MTSG's documentation, knowledge, and formalisation.

Meanwhile, the elements of the games are confirmed by observations made during the field experiment. When these elements of the MTSG are met, the value of the MTSG as a whole is generated. The player, rules and guidelines, objectives, equipment, and play space are among the MTSG elements that have been identified. Figure 45 shows an illustration of the MTSG game elements.

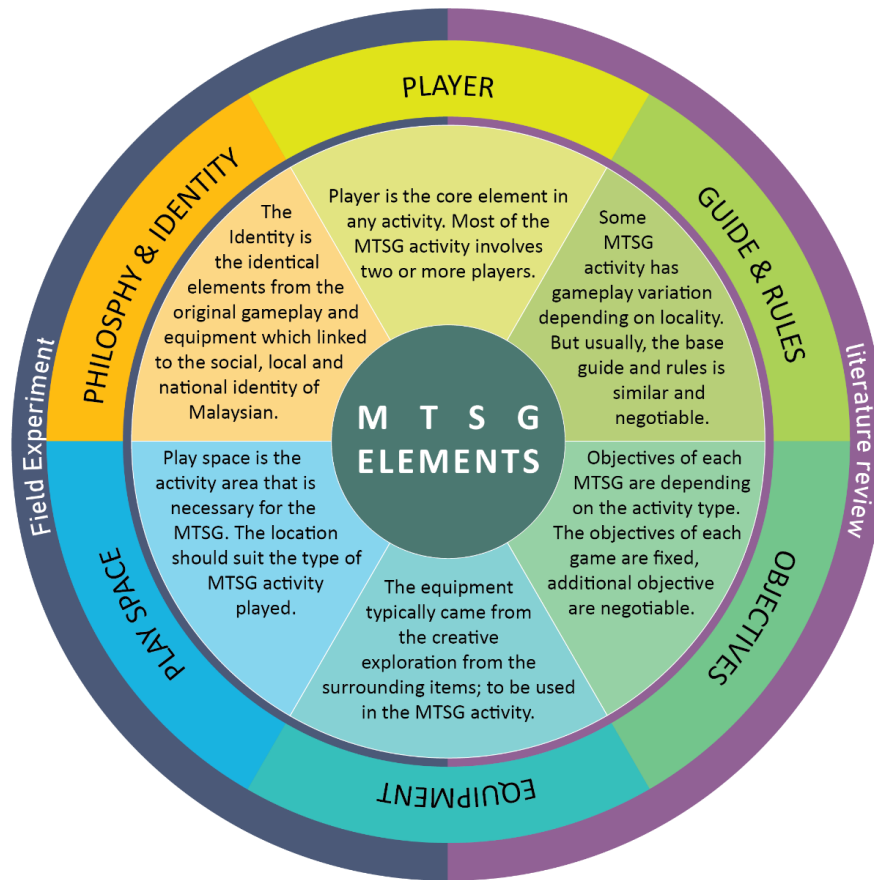


Figure 45: The diagram of the MTSG elements identified during the field experiment.

Each of these elements is linked to the others and is observable in MTSG's gameplay. The presence of these elements in a single MTSG activity would provide the players with experience and value.

The next phase will use the compiled data from the literature reviews, pilot research and field experiment as references for the designers to tackle the specific design-related issue.

4.3 Phase 2 Analysis and Finding (Design Workshop)

Phase 2 is a design workshop that aims to involve the designers in the process of exploring feasible ways to preserve the MTSG with the information supported by the previous phases. The design process is part of the research objective as it helps answer the main research question.

Six designers have been recruited to support this design workshop phase. They were invited personally and were given brief information about the session through email. Participants' sizes are limited for several reasons, such as being in the focus of the MTSG issues, having better crowd and time control, and optimising information sharing.

The session has been conducted based on the design-thinking-based workshop. As an iterative development process, design thinking methods and tools are useful innovation tools, and they are very useful in tackling the MTSG problems, which are still vague. The method enables the designers and the public respondents to reframe the problem and work collaboratively, especially in user experience design.

The session started by presenting the brief of the MTSG information gathered in the pilot research: the interviews and phase 1 of the field experiments. The findings in previous phases are important as they help the designers and the public respondents get an initial idea of the current MTSG information, issues, and status. The 15-minute brief on the MTSG information gathered through the literature reviews, pilot research in phase 1, and a field experiment in phase 2 was commenced.

4.3.1 The Design Workshop for MTSG (1st Session)

The session started with a warm-up activity to provide a positive kick-start for the session as it will create a rapport among the workshop participants, making them more comfortable and rejuvenating their focus.



Figure 46: The warm-up activity with the designers.

Following that, a briefing about the workshop session was held to inform workshop participants about the duration of the session and the tasks they would be assigned. They were briefed on the session during the invitation period to allow for mental and physical preparation prior to the workshop.

Next, the session continued with the brainstorming. The moderator presented to the workshop participant on the summary of information gathered from the Pilot Research (interviews) and Phase 1 (field experiment). The information consisted of the introduction of MTSG, the values, the challenges with MTSG, and the previous strategy for preserving MTSG. The workshop participants seem quite aware of the information given.

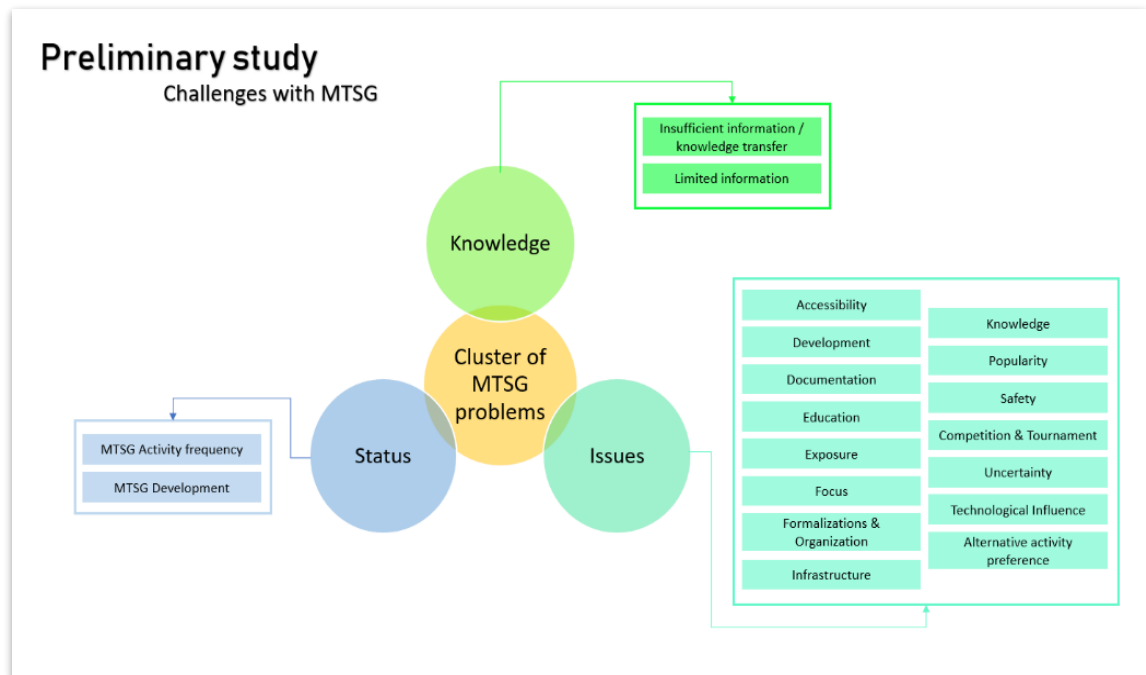


Figure 47: a slide from the design workshop briefing that depicts the previous phase's theme and code segmentation.

The designers were divided into two groups and were given five minutes to share their experiences playing any MTSG in the past within their groups. It was observed that the workshop participants' behaviour was similar to what was observed during phase 1 of the research (see chapter 4.2), where the participants tried to reminisce their experiences through storytelling. The facial expressions and physical gestures were visible during the session as they tried to remember certain MTSG activities.

They enthusiastically shared their MTSG experiences, and the other group members added some context to the MTSG that they could relate to. In the sharing session, they had to also express their opinions and personal observations regarding the current MTSG status, which relates to the information captured from the pilot research (see chapter 4.1) and phase 1 (see chapter 4.2). The experience-sharing session leads to ideation and motivation for the brainstorming session next.



Figure 48: The MTSG play experiences shared by the designers.

The brainstorming session was initiated with the goal of identifying the problems, verifying the information from the previous phase, and reintroducing selected MTSG through the roles and interventions of the design and the designers. There were two groups in the workshop, and each group was responsible for developing two types of MTSG activities. The workshop participants were given approximately 20 minutes to discuss among themselves, and the moderator provided them with the direction and templates for the WINQ (what works, things to improve, new ideas, and new questions) analysis model, as inspired by one of the available game workshop guidelines.

This workshop has been using an adapted version of game evaluation and analysis. The WINQ was originally a template for game evaluation created by Kathleen Mercury (n.d), a game design instructor. Although there are lots of game evaluation models available, the WINQ model would be sufficient to be adapted in this workshop as it is quite like the SWOT analysis model, which most of the designers are familiar with. The evaluation is similar to a SWOT analysis, which is a strategic planning tool used to assist an organisation in identifying four clusters of points on a specific subject as part of the decision-making process

(*History of SWOT Analysis*, n.d.). The simplicity and suitability of the game-based content inspired the research to adapt both templates for the design workshop.

The groups then presented the idea, watched by the other groups, and later the feedback from others was notified. The other group wrote their feedback on the post-it and pasted it on the presentation. This step allows the original idea to be expanded, and information from others adds value to the idea, not to mention that it caters to the need for an exploratory and creative solution in a limited time frame.



Figure 49: the brainstorming session using the WINQ analysis template.

The analysis model has provided the workshop participants with initial outlines for the improvisation of the selected MTSG. The participants were tasked with working on the structure and visual ideation of the selected MTSG; assisted with the information provided in the early stage. They were given approximately 30 minutes to sketch and build their idea.



Figure 50: The designers visualising the ideas based on the WINQ analysis.

The groups later presented their visualised ideas, and the other groups gave feedback on the presented ideas. All the groups posted their assigned MTSG ideas on the wall, and later, both groups elaborated and improvised the ideas on the MTSG that had not been assigned to them. This practice enabled more ideas to be explored through the sharing of information from both groups, which made the idea more refined and feasible.



Figure 51: The designers referred to each other's presentations and offered new ideas based on the previous data.

Based on both groups' input, there are several suggestions pertaining to the collection and dissemination of MTSG that have been made previously. Some other suggestions have not been explored yet, including involving the subject in governmental policy.

4.3.3 Design Workshop Finding

The designers collaborated to outline each MTSG activity selected during the workshop. Inspired by the WINQ analysis model, each MTSG activity has been asked four distinct questions, with the output resulting in keywords that can be used to identify the MTSG's preservation technique in general.

Similar to the interview techniques, the designers' keywords were clustered under their respective themes, and these themes will serve as one of the criteria for the next step. The analysis table that follows is a compilation of keywords extracted from the workshop session.

WINQ TABLE			
WHAT WORKS	THINGS TO IMPROVE	NEW IDEA	NEW QUESTIONS
Strategy	Activity rules and guidelines	Reintroduction	Promotion and marketing
Entertainment	Standardisation and formalisation	Technology Intervention	The values of the game
Competitiveness	Promotion	Branding	Audience
Interaction	Information	Gameplay improvisation	Safety
Technical	Technology adaptation	Equipment design improvisation	Feasibility of technology intervention
Personal value	Activity equipment	Specialized play area	
	Trend		

Table 21: The compilation of keywords from the WINQ game analysis during the design workshop.

The table shows the themes, or keywords, provided by the designers in order to address the general overview of the MTSG. These keywords are crucial as they lay out a foundation as a criterium that is useful in improvising the current MTSG and searching for a feasible preservation method.

The keywords were also beneficial during the workshop's ideation process, serving as guides and references for the designer. Throughout the ideation process, the group of designers generated a variety of visual concepts centred on the specific type of MTSG to serve as a proof of concept. As illustrated in the figure below, the ideation process is illustrated.

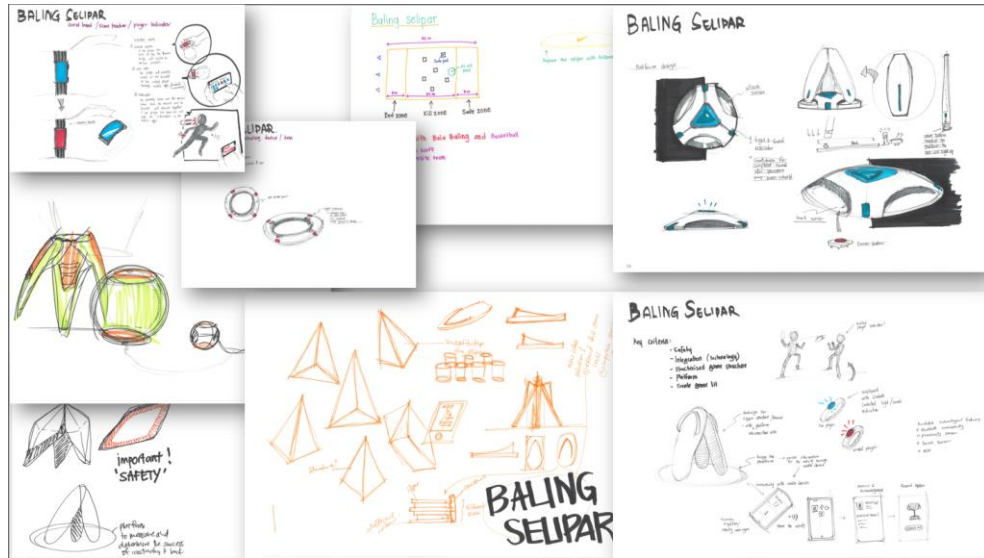


Figure 53: The designers' conceptual ideation for the MTSG.

The feasible MTSG concept from the design workshop was chosen based on the fabrication feasibility before the design evaluation session. After that, the conceptual sketches were converted into a 3D digital visualisation. Comparing the sketches to the 3D visualisation, the latter offers more detailed visual and technical features. The physical prototype of the selected MTSG was constructed as part of the MTSG conceptual ideation process. During this workshop, the games *Baling Selipar* and *Ceper* were chosen to be developed. The 3D concept visual and prototype of the game *Baling Selipar* are shown in Figure 54. Meanwhile, Figure 55 shows the visualisation of an improvised *Ceper* game.

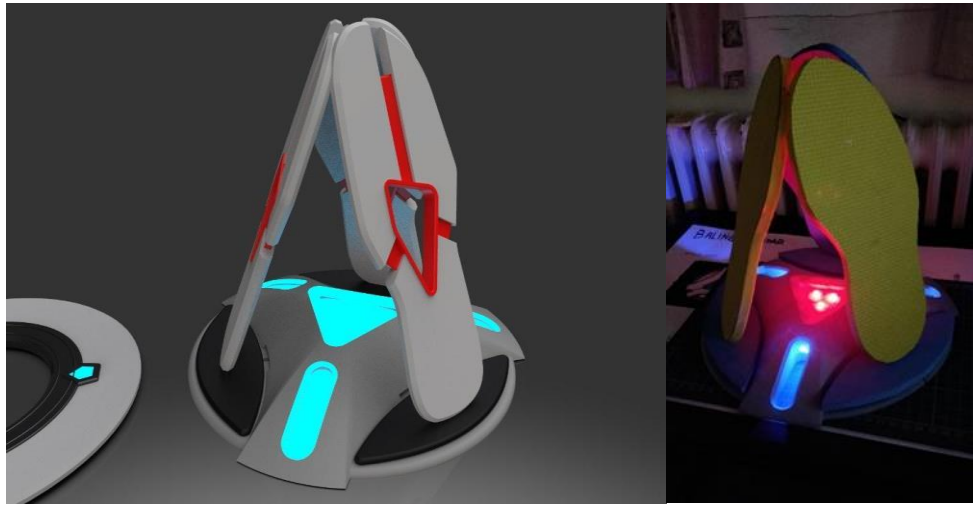


Figure 54: The 3D computer-generated image (left) and the working prototype (right) of the Baling Selipar game.



Figure 55: The 3D computer-generated image of the new concept of the Cepergame.

The prototype design of the recreated MTSG is the output of the collaborative design process with the designers. The design process workflow in the workshop is as follows:

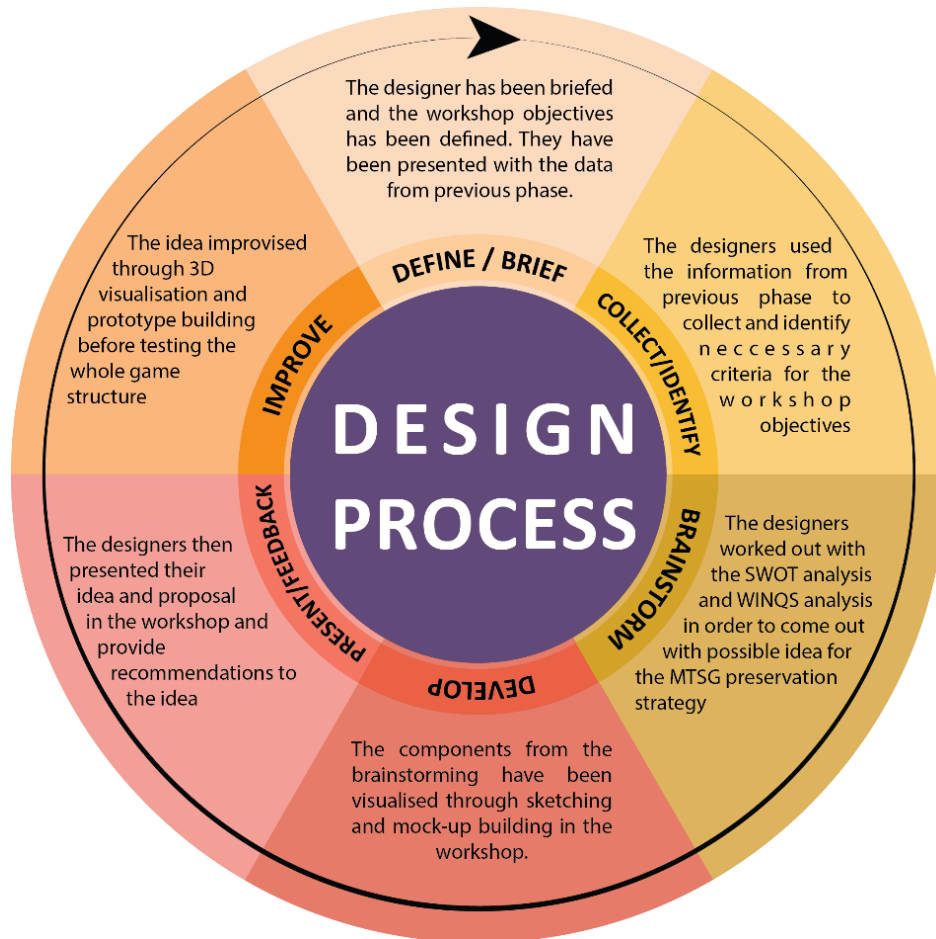


Figure 55: Design Process

The MTSG's conceptual idea was born from an examination of the elements of the original games, as well as the adaptation of new technology that the designers and I believe will suit the current trend.

The use of a mobile application to integrate an MTSG digital database would allow for interactive communication among players while also storing personal scores.

The conceptual idea creation not only focuses on the recreation of the physical prototype but also on the whole ecosystem of the MTSG, where the integration of digital technology would help the players access the activity, stream the game live and track the active gameplay area so they can join in. Similar to the approach of the current digital game platform, the MTSG application can enable the player to connect the game equipment to the digital platform so that they can automatically upload the live score data and other interactions. The selected MTSG equipment was designed with the integration of electronic sensors as part of the features, which enable the auto calculation of points and scores, as well as the connection to the MTSG digital apps. The framework of the new MTSG structure, equipment ecosystem, and development of the MTSG digital mobile application is shown below:

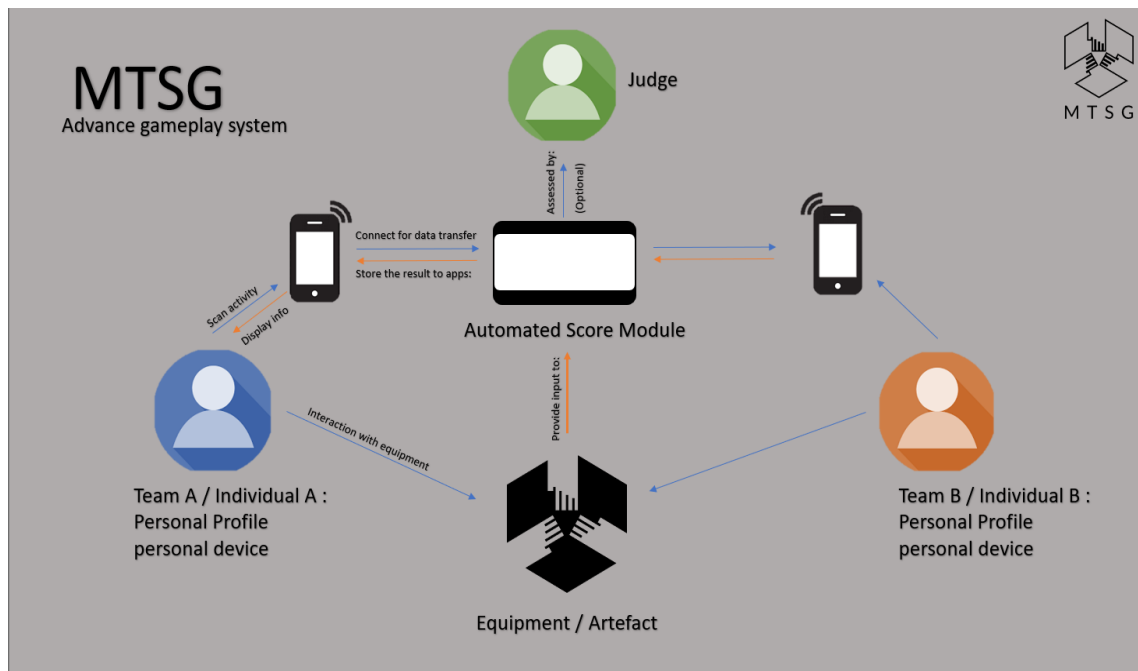


Figure 56: The proposed structure and ecosystem of the recreated MTSG by adapting the new technology.

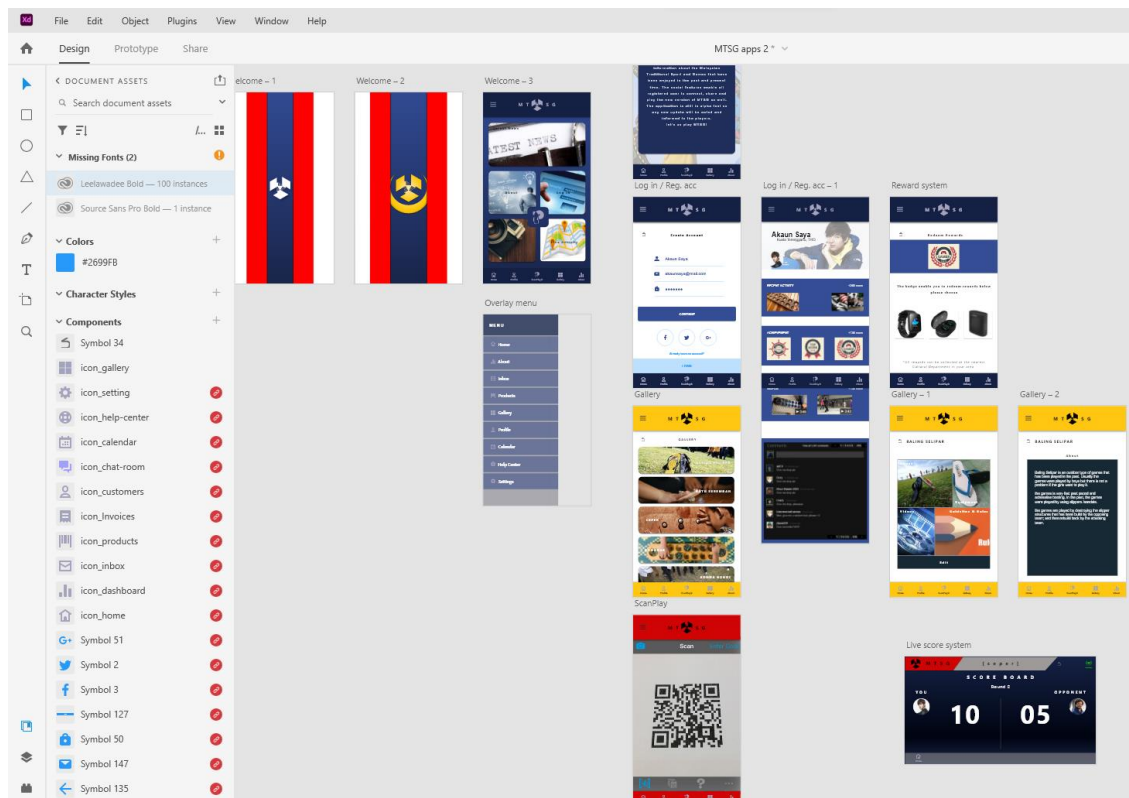


Figure 57: Development of the digital (mobile) MTSG mobile application using Adobe XD.

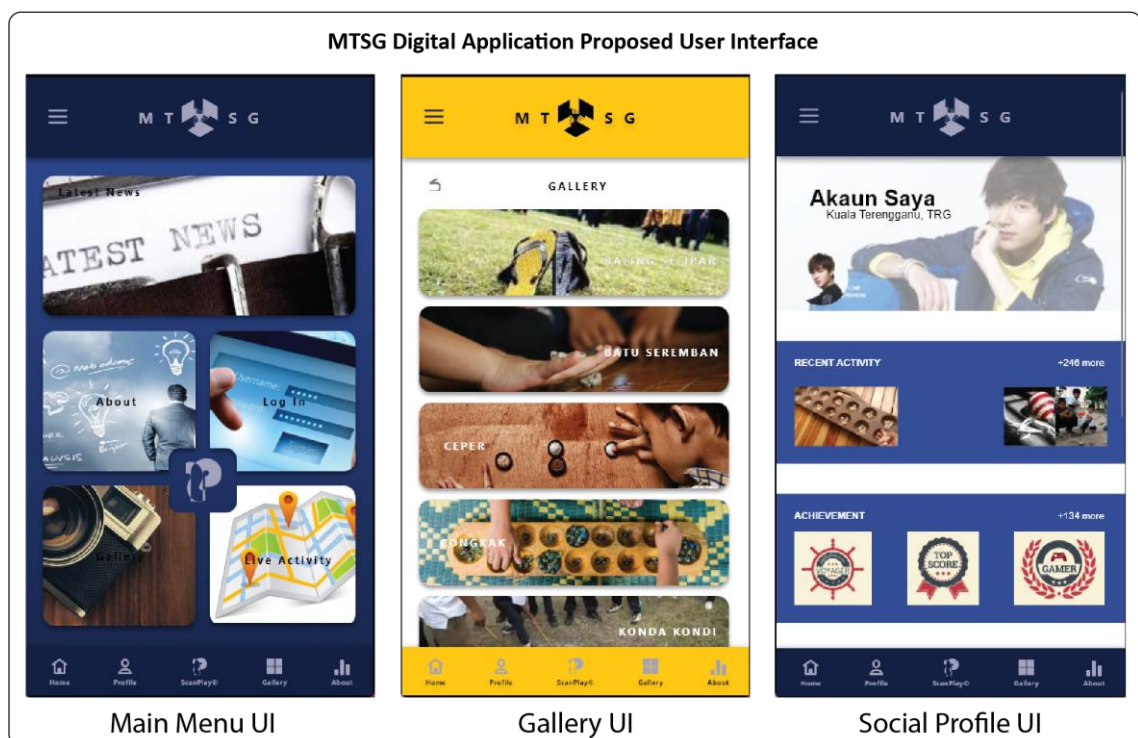


Figure 58: Proposed MTSG digital mobile application user interface.

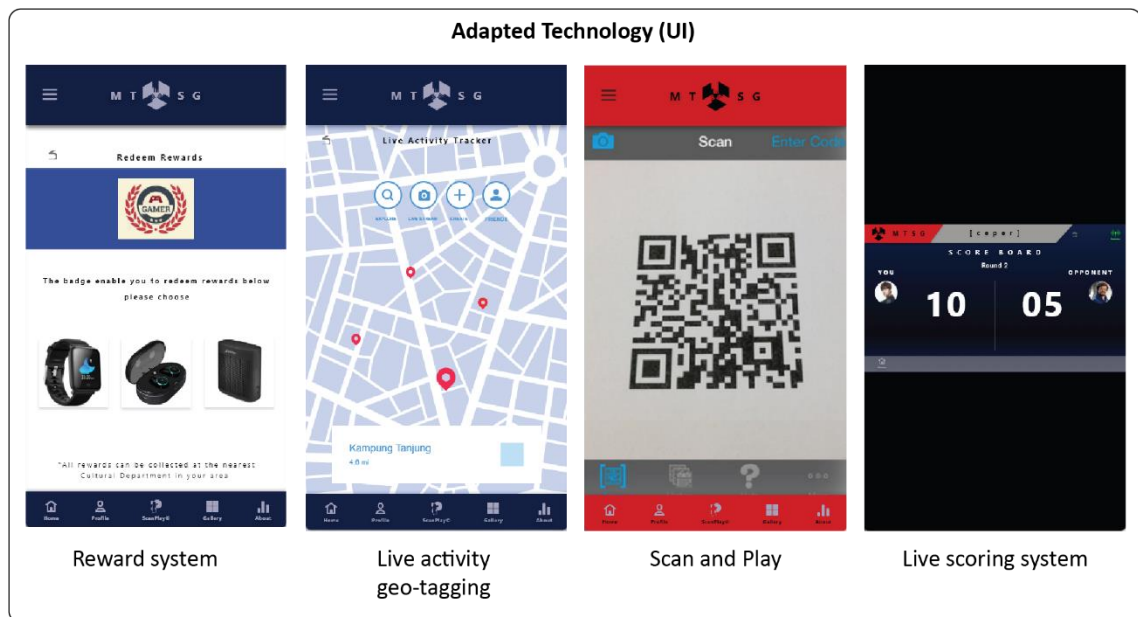


Figure 59: Adapted technology for the MTSG activity.

The proposed mobile application has interactive features introduced as follows:

1. The MTSG database has been centralised, allowing all of the original game design structures to be gathered and referred to.
2. Game experience sharing and game promotion are made possible by social media profiles and activities.
3. Live activity geo-tagging allows players to broadcast their current location while playing, inviting nearby players to join the game.
4. A live scoring system calculates score points, which can be done automatically using the equipment's sensor or inserted manually and then linked to the social media profile.
5. The reward system allows players to accumulate game points by scanning the game with the application each time they play, and supporting stakeholders provide rewards based on the accumulated points.

These new features and structures have resulted from the identification of MTSG issues and values, and the designers used this information to cater for the problem raised on the status of the original MTSG.

The challenges identified by the designers through literature and observation in the original game are not only due to access to equipment but also to the overall structure of the MTSG itself. As a result, the designers proposed improving the equipment's visual design while retaining its original playability and adding automatic scoring as part of the new features. Later, the designers realised that incorporating sensors and technology would allow for the centralisation of the entire MTSG activity, as well as motivating users through a reward system, which was part of the pilot research's identified theme. The table below shows the changes made during this workshop:

No.	Items	Original MTSG	Recreated MTSG
1.	Equipment	Use surrounding materials, e.g., Flip flops for the <i>Baling Selipar</i> game or bottle cap for the <i>Ceper</i> game.	Development on the visualisation of the game equipment while considering the identity of the MTSG. Adapting technological integration such as electronic components and sensors for scoring and points calculation. Connectivity to the MTSG mobile application.
2.	Rules	Unclear and incomplete rules and guides. Such as the missing information on-time duration of a round, the score counts and the winning condition of a game.	The original rules and guidelines from various sources were identified and restructured to have a clear gameplay structure. The rules and guides were documented and embedded in the MTSG digital application.
3.	Accessibility	Easy to find materials in the past, but currently hard nowadays due to the changes of lifestyle. E.g., bottle caps are hard to find due to the use of drinks can.	The recreated MTSG is predicted to have better accessibility in acquiring the game information, equipment, and social connection through the build of MTSG digital /mobile application , well-planned equipment manufacturing capability, and active promotion and dissemination of the new MTSG.
4.	Technology	Not available	Technology was embedded in the equipment of the selected MTSG , such as electronic sensors, connectivity to MTSG digital applications and interactive design features.

5.	Material	The type of material used for the game equipment is determined by the item they discovered and used.	The equipment of the selected MTSG game is proposed with the use of durable and safer materials , such as polypropylene (PP) and Polylactic Acid (PLA).
6.	Reward	Self-satisfaction: reward based on the level of play and organiser, competitive or non-competitive.	By implementing the MTSG digital/mobile application, the system enables the collaboration of stakeholders for sponsorship and rewards system based on points accumulated by playing MTSG.
7.	Manageability	The information on various MTSGs is scattered and scarce. Efforts in collecting and managing various sources of the MTSG are needed.	The game would be manageable with centralised data collection and dissemination via the MTSG digital/mobile application , and the data logs from the application could be analysed for future references.

Table 22: The comparison of the changes in MTSG components in the workshop.

As a result of the challenges presented earlier, changes were made to the original MTSG. The game must be reimagined and redesigned to fit the current trend by adapting technological integration to entice and motivate the public to play MTSG. The game must be accessible not only to the equipment but also to the player base. Thus, the MTSG application would serve as the mediator for the social interaction to create a prolonged MTSG interaction. Not only that, the MTSG application is suggested to be the real-time database for MTSG so the public can access the knowledge about any MTSG, the equipment and related contents easily. This database would also enable the user to share any information about MTSG among them.

The construction of the new MTSG system has been made with the values of the original MTSG in check. The adjustment to the game has been made without destroying the values identified in the previous chapter. At the same time, the reconstructed MTSG system would enhance certain values, such as the social value; through the wider and easier connectivity of the game, and the technical value, incorporated by the use of suitable materials for the game equipment while retaining the original game identity, rules and structure.

4.3.4 Phase 2 Conclusion

Phase 2 is a design workshop session with the goal of observing the design thinking process while aided by the previous phase information. Triangulation has been used to combine data from literature reviews, pilot studies, and field experiments.

The previously captured knowledge of the MTSG enabled the designers to verify a set of clear data, assisting them in reconstructing the MTSG concept during the design workshop.

The designers focused on the selected games (*Ceper*, *Batu Seremban*, *Galah Panjang*, and *Baling Selipar*) and evaluated them collaboratively in the workshop. Each game was dissected, and the designer used design to generate every possible solution.

It assists designers in visualising their ideas clearly by guiding them through the design thinking process, such as brainstorming and using the game evaluation template to break down the information contained in the specific MTSG. The designers' conceptual idea is based on the breakdown of previous phases' themes and elements, as illustrated in the figure below:

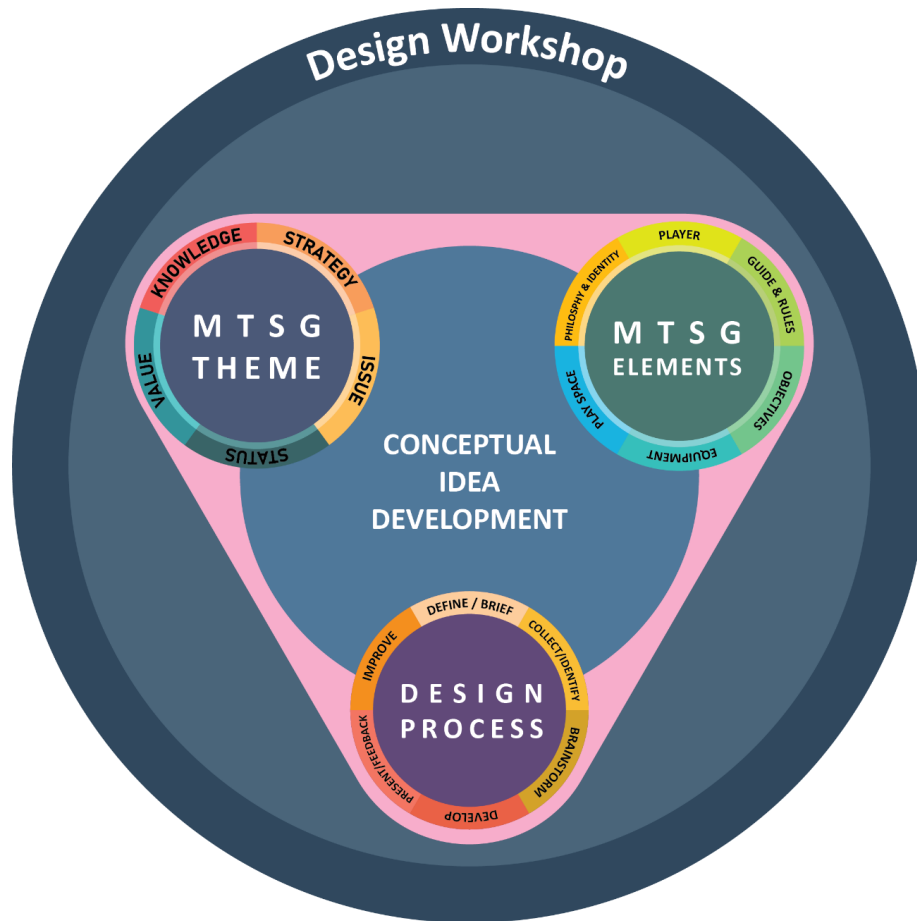


Figure 60: The themes and elements collected in previous phases as the designer's guideline for the conceptual idea development framework for the new MTSG concept.

The designer proposed re-creating the MTSG by revamping the visual and technological features of the game equipment, formalising the game rules and guidelines without changing the original gameplay, and adapting technological features in the selected MTSG. The idea came from the careful inspection of the information provided by me, based on the pilot research MTSG theme model (see chapter 4.1.6) and Elements of MTSG (see chapter 4.2.3) from phase 1.

The concept for the game must be developed as a proof of concept, and the prototypes must be validated in the subsequent phase. It was to validate the concept and gather feedback for subsequent iterations. Phase 3 will include a design validation workshop as part of the evaluation process to validate the re-created MTSG for the public.

4.4 Phase 3 Analysis and Finding (Design Evaluation Workshop)

In this workshop session, the workshop participants were given a chance to view and play with the prototype that had been produced by the designers in the previous phase. The workshop was attended by fifteen participants (n = 15).

The workshop participants are required to play and review the re-created MTSG. This session provided the designers with an observation of the player's behaviour and feedback on the newly improvised MTSG.

Phase 3 has been designed to inform and test the re-created MTSG based on the previous phase (Phase 2) and to capture the feedback from the workshop participants. Three activities have already begun during this workshop. The activities and their objectives are as in the table below.

Design Evaluation Workshop		
No	Activity	Objective
1.	Visual Exhibition	To observe the participant's behaviour when presented with visual information about the new MTSG equipment exhibition.
2.	New MTSG concept Presentation	To introduce the new MTSG improvisation and educate participants about the game.
3.	New MTSG simulation	To demonstrate and simulate the new MTSG for participants and evaluate the results based on their feedback.

Table 23: The activities and its objective in the design evaluation workshop.

Additionally, the participant was given a consent form and a feedback form for each activity during the workshop. The feedback form was created with open-ended questions in order to collect unrestricted responses without influencing them. This allows me to ascertain the participant's true feelings about the activities and facilitates the elicitation of a wide variety of unexpected responses (Michael R Hyman & Jeremy J. Sierra, 2016).

The feedback form consists of four open-ended questions for each activity during the design evaluation workshop. They were expected to answer each question during the breaks between each activity to get better feedback on the specific activity. The segmentation of each question is as in the table below.

Design Evaluation Workshop Participants' Feedback		
No.	Activity	Feedback Questions
1.	Visual Exhibition	What do you think this is?
2.		Do you have any idea how to operate/play this? Can you guess?
3.		Does it remind you of anything? Why?
4.		What do you think about the prototype's visual and physical appearance?
5.	New MTSG concept Presentation	What do you think about the new game prototype concept?
6.		Would you be interested in playing and recommending this game based on the concept and design?
7.		Compared to the original game concept and gameplay, which do you prefer? Why?
8.		What do you like about the improvised game?
9.	New MTSG concept Simulation	What works?
10.		Things to improve?
11.		New ideas?
12.		New question?

Table 24: Design evaluation workshop participants' feedback cluster and questions.

The contents and context of each response are segmented using thematic analysis, considering the size of the sample and the complexity of each participant's feedback. Each participant's code has been designated DE, which stands for Design Evaluation phase. The following subchapter analyses the evaluation and details each activity.

4.4.1 Visual Exhibition

The visual exhibition is a straightforward exhibition space with limited information. The 'showroom' is an approach inspired and adapted by Koskinen et al. (2011) in which activities are based on debate rather than statistics and my attempts to observe participants' behaviour when confronted with limited information. This activity will enable them to communicate with one another and determine whether the re-created MTSG can jog the participant's memory of the original gameplay in the absence of contextual information.

Throughout the session, only a limited number of participants are permitted to visit the exhibition booth at any given time. This is to ensure an unobtrusive viewing experience and allow me to record the participants' conversations. Additionally, the exhibition space's optimal configuration enables group viewing and interaction. The exhibition was set up as shown below.



Figure 61: The visual exhibition setup with two types of improvised MTSG games with limited information.

The discussion that took place during the session demonstrates the participants' ability to communicate and perceive one another. Simultaneously, they interacted with the prototype and discussed their observations with their group members. The participants' behaviour while interacting with the prototype is depicted in Figure 62, and their deductions about the prototype are depicted in Figure 63.



Figure 62: The participants interact with the prototype to understand and relate the gameplay with the original MTSG.



Figure 63: One of the participants explained her deduction toward the prototype to the other participants.

The process was repeated several times with different groups to elicit general feedback on the new game's visuals and form.

According to the first question about the visual exhibition, ten (n =10) of seventeen (n =17) participants expressed their opinion about the game's resemblance to the original, while five (n =5) others gave a generic description of the game or guessed a different type of MTSG game. The remaining two (n = 2) have no concept of how to relate to the original MTSG game. The graph below illustrates the distribution of responses:

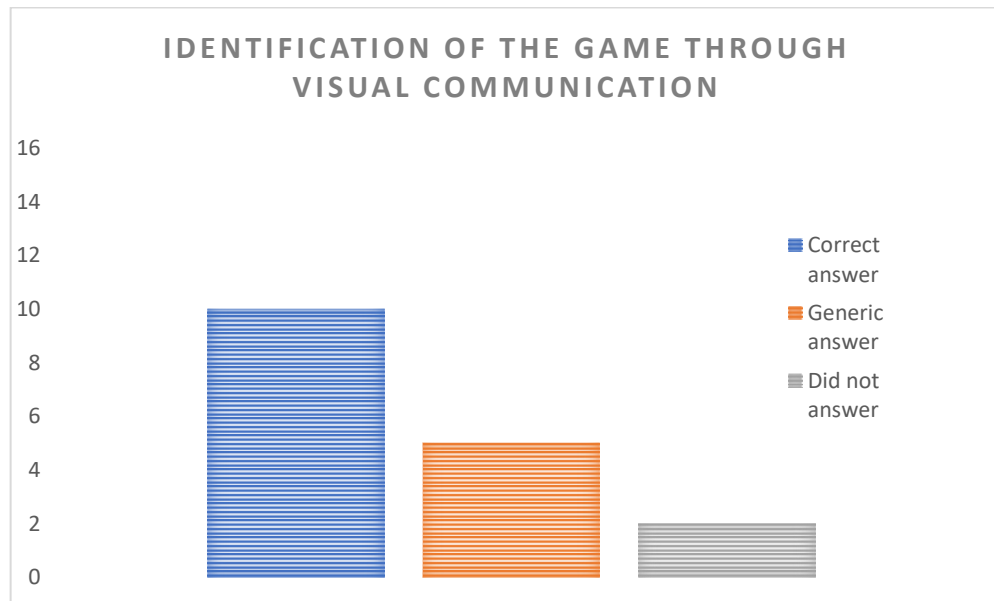


Figure 64: The visual perspective of the participants on the re-created MTSG exhibition.

The bar chart above shows the distribution of 3 types of answers for the first question. It shows the feedback from the participants regarding the visual identification of the recreated MTSG based on a visual attribute (the exhibition). The distributions show how many of the participants could guess the game concerning the original MTSG, thus, providing the research with the information on the visual attribution of the MTSG.

The interaction among the participants was captured, and some of the conversations were regarding how the shape resembles the original game. Below is the translation of some examples of the captured conversation.

“This one looks like the Batu Seremban game, but what does this do?”
(DE01).

“I think this is the Baling Selipar- like game. It’s interesting to see how we can play this game” (DE02).

“I think this one is the one we throw... like the flipflop” (DE03).

The first question demonstrates that the majority of participants grasped the concept of the prototype due to the visual similarity, while others were triggered during group communication and sharing.

Additionally, in the second question, participants were asked to make an educated guess about the new game's gameplay based on the provided prototype. Despite their straightforward explanation, twelve of the seventeen participants were able to describe the gameplay in technical terms. The distribution of responses is shown in the following chart.

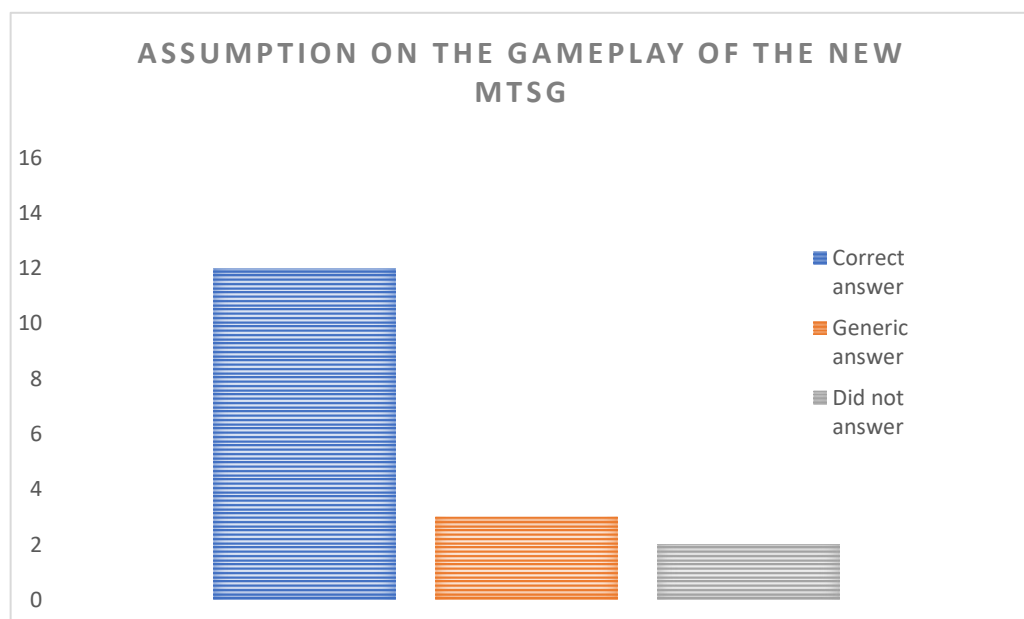


Figure 65: Chart showing the participants' distribution answer in the assumption on the adaptation of the MTSG concept.

The graph above depicts the distribution of responses to questions about the participants' assumptions about the recreated MTSG gameplay in comparison to the original MTSG. Even though the exhibition session only provided limited information, the distribution shows that the majority of the participants could relate the gameplay to the original MTSG. During the

exhibition, the participants discussed and shared their knowledge, confirming their assumptions and providing relevant answers. It's important to note this because the new MTSG's visual design could be one of the most important elements of preservation value. Some of them provide such an answer below:

"For the Baling Selipar game, we have to form a 'selipar-house' on the platform and throw the disc from a distance to hit the slipper 'house', then throw the slippers to the opponents once the house is down" (DE05).

"Throwing object to shoes - stabilise the shoes. Ceper- know the target" (DE03).

"You try to arrange the slippers into a pyramid and try to get the 'disc' onto the pyramid. The scoreboard game is like Batu Seremban, and if the 'Batu' lands on a different number, you can get different points" (DE16).

The remaining five ($n = 5$) participants were either unsure about the gameplay or did not have any idea of how to play the game and required further information:

"Quite hard to grasp the correct way to play the game" (DE04).

"...have a hazy idea" (DE12).

"Hard to guess, needs guidance" (DE07).

It is hard to assume the technical details and gameplay of the prototype by only relying on the visuals, but the majority of the participants could assume the technical aspect of the game based on question number 1, which was triggered by the recollection of the original MTSG gameplay based on the visual similarities of the equipment.

In the feedback form, question 3 asked about the participant's recollection of the game based on their experiences to corroborate questions 1 and 2. The figure below depicts the cluster of participants' recollections of the games.

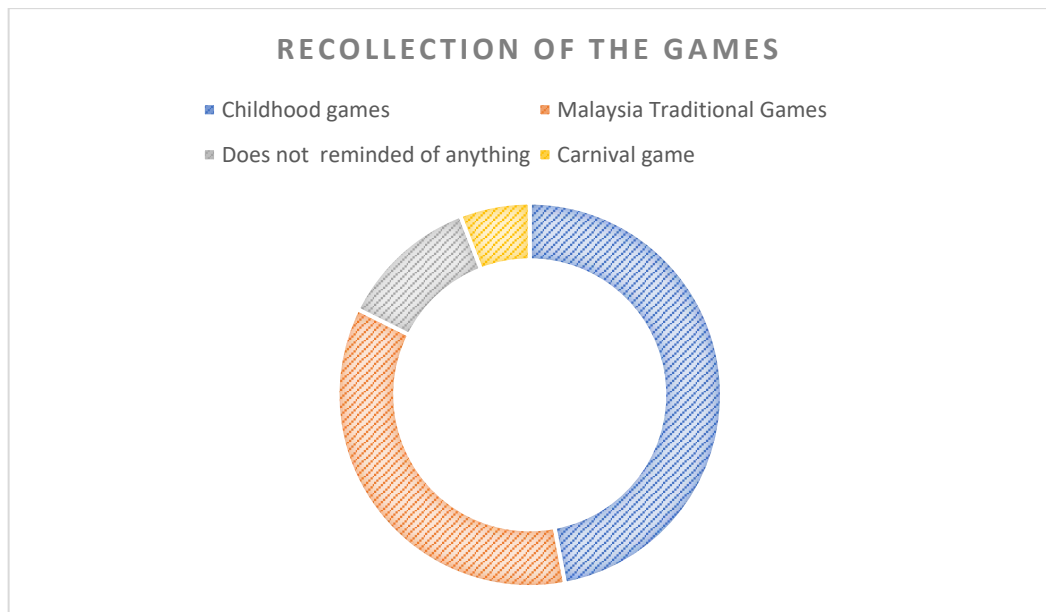


Figure 66: The pie chart above shows the distribution of the key themes in memory recollection of the MTSG.

Eight ($n = 8$) participants stated that the prototype's visual reminded them of childhood games, which could refer to a specific MTSG.

"My childhood memory" (DE01).

"Childhood games" (DE04).

"My childhood" (DE06).

Six ($n = 6$) participants directly mentioned the relationship to the traditional Malaysian games.

"Malaysian Traditional Game; Ceper and Tuju" (DE07).

"Remind me of the baling slipper in Malaysia" (DE09).

"The scoreboard game reminds me of the Batu Seremban game because it has a small item to use to throw and catch it in the air" (DE16).

One ($n = 1$) participant mentioned that it is similar to the carnival games (DE08). While the remaining two ($n = 2$) did not have any recollection of anything as they had never played the MTSG before.

"It' doesn't remind me of anything because I've never played it" (DE05).

"Not so much, because I've never played it before" (DE17).

The third question demonstrates that using the prototype's visual, the participants attempted to make a connection between the new game and their previous experience playing MTSG.

The final question in this session inquired about the participants' perceptions of the prototype's visual and physical appearance. Eleven participants stated that the game appears to be modernised, while others stated that the visual and physical prototypes are reminiscent of previous MTSGs.

"The visual looks modern and contemporary, yet the physical appearance bears a resemblance to the old, traditional ones as well" (DE16).

"Modernised without letting go of the traditional essence of the game" (DE02).

However, some of them disagreed with the statement and mentioned that modernisation had not provided the sentimental value:

"Very modern look, but less sentimental value" (DE04).

"Could be improved, modern-like. It feels like a modern board game. It feels less like traditional "(DE07).

One of the participants also mentioned that without personal experience of playing MTSG, relying only on the visuals of the game would make him unable to understand and play the game.

"If I had never played the games before, I would not have any idea how to play them" (DE15).

Visual Exhibition Summary

The visual exhibition showed that their deductions about the type of game and gameplay were valid, as they were familiar with similar variants of the game. Knowledge of the new games was formed not only through recognition and interaction with the MTSG's equipment but also through the recall of previous experiences, which were shared among participants and aided their perception during the visual exhibition session. The figure below illustrates the elements extracted from the responses to the questions posed to participants during this session.

Participants PERCEPTION towards the new MTSG concept through EXHIBITION session.

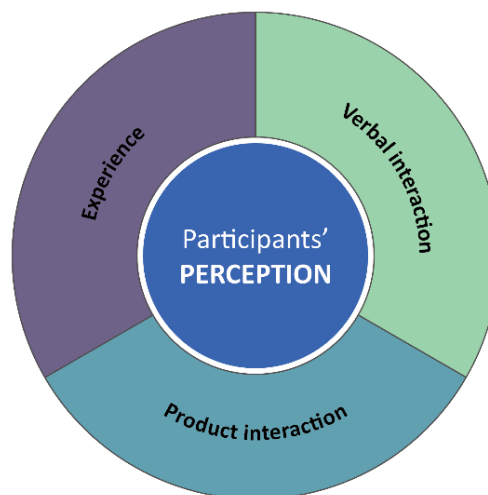


Figure 67: The elements captured towards the participants' perception of the new MTSG concept through the visual exhibition.

The next session was then continued with a slides presentation on the details of the new MTSG concept to the participants.

4.4.2 New MTSG Concept Presentation

The participants were then presented with information about the improvised MTSG during the second session of this phase. The explanation includes the equipment used in the game, the structure of the gameplay, the integration of technology, and the mobile applications.



Figure 68: The participants were presented with the new MTSG game concept by the researcher.

The presentation is a component of the knowledge dissemination practice, as it informs and educates the participant about the improvised game. This will educate them about the game's structure rather than simply allowing them to inspect the equipment and prototype during the exhibition session (see chapter 4.4.1).

The explanation discussed the newly improvised system for the selected MTSG, including gameplay, scoring, and additional equipment, in comparison to the previous MTSG. The visuals in Figure 69 depict the improvised equipment and gameplay for the *Cepergame*.

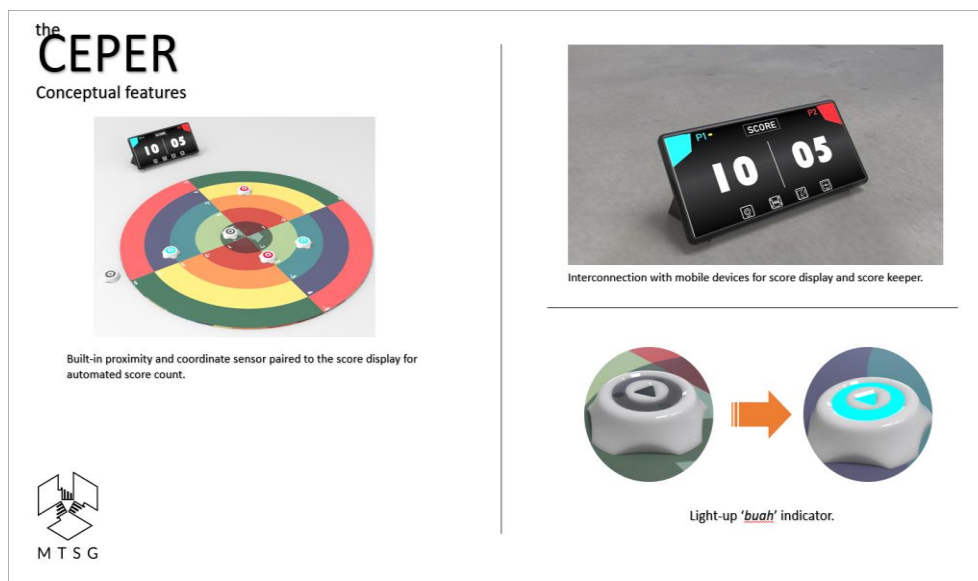


Figure 69: The presentation slides that showed a computer-generated rendering of the re-created Cepergame.

Not only that, but the MTSG's improvisation also included the games' overall ecosystem. The introduction of a dedicated mobile device application and the MTSG database piques the participant's interest. The MTSG advanced gameplay system, as the application is named, is a type of online game database that stores the player's personal information and enables them to access any guide about MTSG, the active location of people playing improvised MTSG, a social media platform for those with a similar interest group, a score tracker, and a reward system.

The designers proposed the application based on the findings from the previous chapter's design workshop, which emphasised the importance of better accessibility, documentation, education, knowledge, competition, technology integration, and a reward system (refers to chapter 4.1.4), all of which enabled the idea to be developed into an improvised MTSG eco-system. The proposed ecosystem for the MTSG is depicted in Figure 56 (see page 202).

Before the presentation session, the participants had been provided with a set of feedback questions. The questions asked during this session are as follows:

1. What do you think about the new game prototype concept?

2. Would you be interested in playing and recommending this game based on the concept and design?
3. Compared to the original game concept and gameplay, which do you prefer? Why?
4. What do you like about the improvised game?

The previous visual exhibition session had served as a foundation for the participant's preliminary knowledge of the game. The second set of questions relates to the opinions of the participants after the new game concept has been explained. Below is the response of the participants to each question asked.

The first question for this session shows that twelve ($n = 12$) participants approved of the early concept of the games as presented in the session. Two ($n = 2$) others gave a neutral reaction, while the remaining three ($n = 3$) participants were disinclined toward the concept for a few stated reasons. The segments of the answers to the first question are shown in the table below.

No.	Segment	Participant counts	Key answer
1.	Approval	12	A unique concept, improvised game, new look, colourful and appealing, adjustment and improvement, appealing for non-Malaysian, blend of modern elements, interesting in a different form, fun and easy to understand,
2.	Neutral	2	Looks good but misses the traditional elements and flexible gameplay and tends to get more complicated than the original game.
3.	Disincline	3	Difficult to play. Many variables/options make it confusing.

Table 25: The key answer segmentation for question no.1 in the presentation session.

The approval received a favourable response from the participants in the first segment. Several of them noted that the preliminary concept's strength is in how the game's concept was improvised, incorporating modern elements and looking visually appealing.

“A very interesting way to improvise the game” (DE02).

“The new game is more colourful and appealing. The design of the new game is revolutionary” (DE06).

"The idea is great and makes the games look more appealing to non-Malaysian players" (DE08).

"Very interesting, especially with the blending of modern elements" (DE11).

In the neutral responses segment, participants expressed their feelings about the new concept game by contrasting it with the original. They agreed that the new concept's visuals are impressive, but the gameplay is quite complex and lacks a "traditional" feel.

"Everything is flexible, but the improvised concept requires a few things to be more complex than the actual traditional game" (DE09).

"It looks cool, but like visually. I think it should have something that says, 'traditional Malaysia games'" (DE17).

Even though most participants approved of the new game concept, there was also a negative reaction to the game. Their opinions ranged from the difficulty of playing the game owing to the prototype design to the variety of game rules.

"A bit difficult to play" (DE03).

"It was very difficult as I had never played the game. The bottle caps are too big compared to the size of the normal bottle caps, so people with small hands are at a disadvantage" (DE05).

"The Ceper game was very difficult, simply because there were many variable options, which made it somewhat confusing and more difficult." (DE16).

This session's second question is a straightforward recommendation question. The participant was asked if they would be interested in playing and recommending the new game concept to their social circle. Fourteen ($n = 14$) participants said they would play and suggest the game, while the remaining three said they would recommend the game to someone who has already played the original game and make some technical adjustments to the prototype equipment.

"I would only recommend it to someone who is playing the old traditional one" (DE16).

"Yes, but the rules are way too hard. Especially for the balancing bit- I mean, there's a skill, but there are also other factors like hand size. Bigger palms = more balance " (DE17).

The third question for this session compares the original games and the new game concept to ascertain participant preferences. The charts below show the number of participants who indicated their preference for the game version.

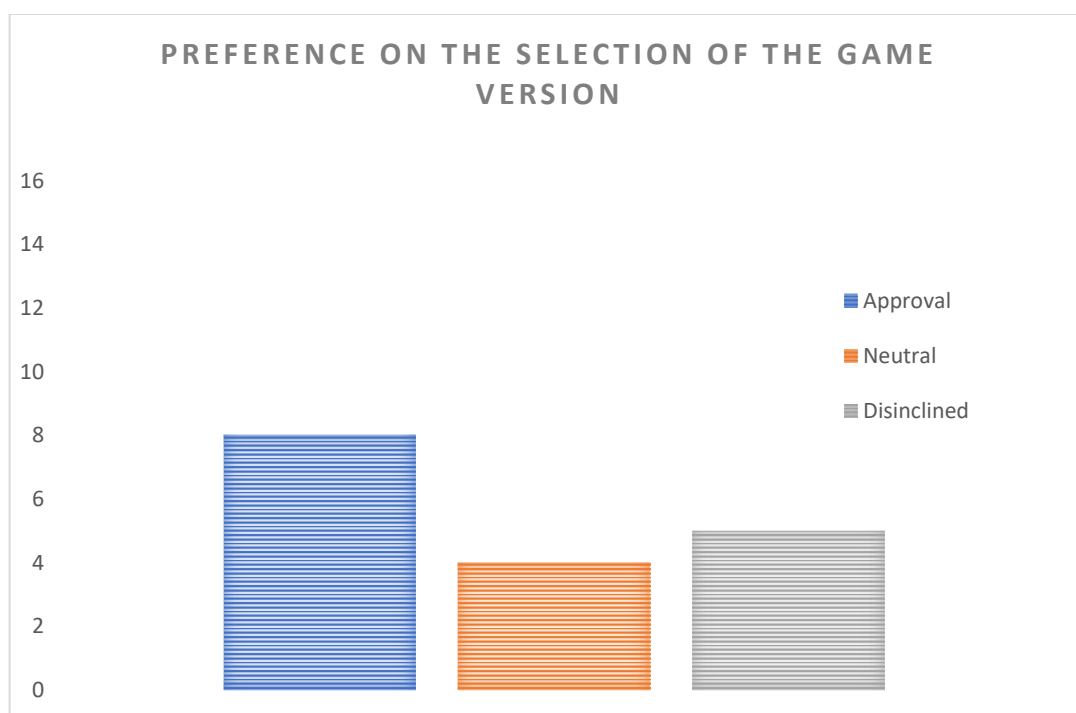


Figure 70: The preference in the selection of the game version between the original game and the new game concept.

From the charts, it is observed that eight ($n = 8$) participants approved of the game concept and preferred to play it over the original games. Several factors were mentioned by the participant, including a fairer scoring system, a more comprehensive scoring system, reduced cheating, and the possibility of being marketed. Some of the participant's answers can be observed as below:

"I prefer the new/improvised version because it helps reduce cheats and ensure smoothness in the game" (DE02).

"I would prefer the new game concept and gameplay because it is fairer in keeping track of scores" (DE16).

"The new game would give a more systematic approach to the game. With the more developed version, I believe it can be marketed well to the current culture" (DE15).

Additionally, there was a participant who provided a neutral response. They stated that they were unable to provide preferences immediately because they had only recently been introduced to the new game concept (visually and verbally), and they had never played (or experienced) this game before.

"I have never played, so I can't compare" (DE05).

"I can only tell when I personally experience playing the new concept" (DE11).

"I have never played the original games, so I have no opinion on this" (DE17).

The remaining five participants ($n = 5$) were averse to the new game concept for a variety of reasons detailed in the form. They stated that they preferred the original game because it is easier to play and includes clear instructions. Additionally, one of them mentioned that the new game concept lacks an element (skills).

"Original. It is easier to play and gives clear instruction" (DE04).

"I would prefer the original game because of the complexity. The new games make the game looks harder" (DE09).

"I would prefer the original as there are missing elements which I believe are important, (i.e., the ability to 'songket' (a skill of flicking the equipment at a certain angle))" (DE13).

The final question for this session asked the participants about the new game concept's preferred features based on the presentation delivered earlier. The features mentioned by the participants have been segmented and are shown in the table below

No.	Features	Participant's responses
1.	Proper rules and scoring	<ul style="list-style-type: none"> Fair rules and more involvement from others. Flexible rules (DE01) The scoring type (DE02) There is a scoreboard, so it is easy to calculate scores, and it gives a sense of order. (DE05) Proper rules. (DE07) The score is calculated automatically. (DE09) better scoring mechanism. Better accountability for scorekeeping too. (DE13) I like the concept of having a score on the board... (DE16) The score is accurate. (DE17)
2.	Visual / Technical design	<ul style="list-style-type: none"> It's easy to pack and take anywhere. Nice Design. (DE04) I like the new disc for the <i>Baling Selipar</i> game because it is easier to throw. (DE08) For the <i>selipar</i> game, the platform is useful to know if the <i>selipar</i> is able to stand properly (DE14) The lights are cool. (DE17)
3.	Technology integration	<ul style="list-style-type: none"> The score is calculated automatically. (DE09) Interactivity with gadgets (DE12) I like the concept of having a score on the board and the hole in the middle of the small chip to figure out which score the chip has mostly landed on. (DE16) The scoring is accurate, and the lights are cool. (DE17)
4.	Maintained original game value/gameplay	<ul style="list-style-type: none"> It maintained the traditional game even with a new design. (DE06) It remains the essence of the game. The nostalgic effect is there. Sentimental value is strong, especially among Malaysians. (DE15)

Table 26: The segmentation of user responses for question no.4 in the presentation session.

The table above shows the segment of context that has been extracted in the final question of the 'New Game Presentation' session. Based on their statements, the participants' responses were positive toward these four features. These four features would be some of the factors that would lead to the successful re-introduction of the MTSG.

New MTSG concept Presentation summary

I have identified several scenarios in this MTSG concept presentation that appear to contribute to the new concept's acceptance. As mentioned previously, the purpose of this session is to familiarise participants with the detailed concept of the game via verbal and visual presentations. In comparison to the first session, which was limited to a visual poster, the second session covered all aspects of the designer's new MTSG game concept, including gameplay, new equipment design, and the overall system.

This informative session has been found to increase participants' understanding of the new game concept, which then triggers their understanding of the prototype displayed previously. The responses to the sets of questions indicate that the participants' inclination and acceptance of the new MTSG concept are a result of the previous session's confirmation of their perception, which was aided by the presentation session. The designers' proposed features for the new MTSG concept have been incorporated into the acceptance factors, as depicted in the figure below.

Participants ACCEPTANCE towards the new MTSG concept through PRESENTATION session.



Figure 71: Chart showing the participant acceptance theme evaluated from the feedback context.

The following session will expose participants to live testing and simulation of the new game concept. The final session will focus on evaluating the new game concept's technical aspects.

4.4.3 New MTSG concept simulation

The final session of this phase 3 simulates the improvised *Ceper* and *Baling Selipar* games. The participant was instructed to conduct a test of both games using the pre-arranged game format. At the conclusion of the simulation, participants were given a series of questions about the session in order to assess the technical details of the game design concept.

The first game was an improvised version of *Ceper*. In the previous original game simulation (see chapter 4.2.1.4), the designers identified and overcame technical details and challenges during phase 2 (the design workshop). It is the purpose of this session to determine the feasibility of the improvised equipment design and gameplay structure.

In comparison to the previous version of the *Ceper* game, the new point system features a visible indicator (the points are displayed on the game platform), and it is designed to be automatically registered via the MTSG advanced game system (with the help of a sensor). This eliminates the possibility of miscalculation, and the game mode can be easily adjusted to increase the difficulty. Figure 69 below illustrates the design of the improvised *Ceper*.

The point system fosters competition among the players, and as a result, they will continue to compete for the highest possible score. Despite the fact that participants were awarded points, some believe the new version is overcomplicated in comparison to the original.



Figure 72: Re-created Cepergame with the new equipment added; the platform with score point indicator.

With the assistance of this platform equipment, the *Ceper* game can now be played on the floor without regard to the rough surface or obstruction. Additionally, it is nearly identical to the original game setting, in which the player must sit on the floor to play. The figure below depicts a group of participants having fun with the *Ceper* game playing on the floor.



Figure 73: A group of participants trying the re-created Ceper on the floor.

Baling Selipar is another game that has been improvised during the design workshop phase. Even though the original setting of the *Baling Selipar* was meant to be played outdoors, during the session, the weather was not good. So, the simulation was later transferred to the indoor hall.

The changes to the plan did not affect the objective of the simulation; thus, the game was continued. For this improvised *Baling Selipar* game, the concept of the original game was fully adapted; the only changes were made to the equipment of the game itself. Additional equipment for scoring and player life indicators. The new game concept was also proposed to be interconnected with the 'MTSG advanced game system application'.

The game equipment was tested by the participants, and unlike the original game, the throwing equipment is much more stable and easier to throw. There is also a platform for the 'tower' structure, and it provides a stand for the tower and score indicator. The platform was also supposed to be designed with sensors that would register all the scoring data to the application in real-time.

As for the players, there will be a wearable indicator that they need to wear to indicate their 'lives'. This will make it easier for the judge to identify the ousted players during the game. These technical adjustments were made as a response to the previous pilot research phase and the field experiment phase. The visual of the *Baling Selipar* new game concept simulation can be observed in the following figures.



Figure 74: The participant tested out the re-created thrower.



Figure 75: One of the participants is trying to reassemble the structure on the platform.

The new Baling Selipar game concept simulation ended successfully. The participants were then given time to fill in the set of questions for this session. The questions are as below:

1. What works.
2. Things to improve.
3. New ideas.
4. New question.

The questions module has been referred to from the previous design workshop phase, where the designers used the same set of questions to come up with the criteria for the new MTSG game concept. The responses from the participants have been captured, and the simplified data are in the table below:

What works?	Things to Improve?
<ul style="list-style-type: none"> • The new gameplay concepts. • The scoreboard. • The new equipment. • The mobile application. • Integration of Technology. • Portability. 	<ul style="list-style-type: none"> • Material of the equipment. • Space to play the game. • The flexibility of game rules.
New Ideas?	New Question?
<ul style="list-style-type: none"> • Automated scoring system. • Increase the number of equipment (<i>Baling Selipar</i>). • The area limits for attacking/defending teams. • Variable of gameplay modes. • Adding sensors to the game. 	<ul style="list-style-type: none"> • How to market the game? • The capability of the game to be played in any condition. • How can the game reach the public economically?

Table 27: Extracted participants' responses from the set of questions provided.

The table above has been compiled from the feedback provided by the participants after the simulation session. The extracted feedback from the participants will be useful in future iterations of the game. However, for this research, this design evaluation session is the final stage of this research just to show the proof of concept of the research workflow.

New MTSG concept simulation Summary

The following Figure 73 illustrates the preferences for the new MTSG concept's features and the equipment prototype. It is necessary for the research to capture feedback following the simulation so that it can be used in future design iterations to improve the design. It is also to determine the feasibility of reintroducing the new concept based on the preferred elements.

Participants' PREFERENCE towards the new MTSG concept through GAME SIMULATION session.

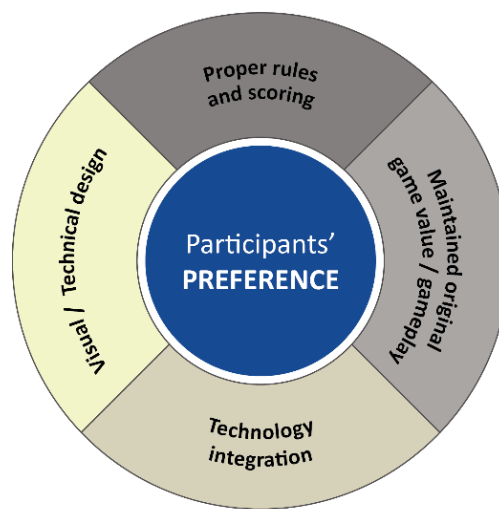


Figure 76: The pie chart showing the four elements preferred by the workshop participants as having been extracted from the game evaluation analysis

The chart indicates that there are four elements that are preferable. The elements include the scoring system, the integration of technology, the visual design, and the original gameplay value.

The automated scoring system formalises the game and makes it easier to count the points, resulting in a much more fluid gameplay experience that eliminates doubt and unfair judgement. This forces the player to focus on the game rather than the points accumulated. Additionally, it makes it easier to run the game competitively.

The scoring system and point indicator demonstrate the game's technological integration. Through the integration of sensors into the equipment

and the mobile application, the activity of the games can be tracked, and the user can digitally store their accomplishments and continue developing their skills while also building connections via the mobile application.

Additionally, participants preferred the visual development of the new MTSG concept; while it has been reconstructed, the equipment's familiar shape is still distinguishable. This also applies to gameplay value, as the new MTSG concept does not obliterate the existing gameplay structure. Moreover, it allows the player to select the mode of gameplay in the new MTSG concept. This session's participation and feedback bring the design evaluation phase to a conclusion.

4.4.4 Phase 3 Conclusion

Phase 3 is the concluding stage of this research, and it is intended to evaluate the designer's concept and prototype. This phase involves public participation in curated sessions with the goal of eliciting feedback on the new game concept. The feedback data from this design evaluation phase is significant because it contains the building blocks for the MTSG's reintroduction. The figure below summarises the steps taken for each phase that culminates in the collection of Phase 3 data.

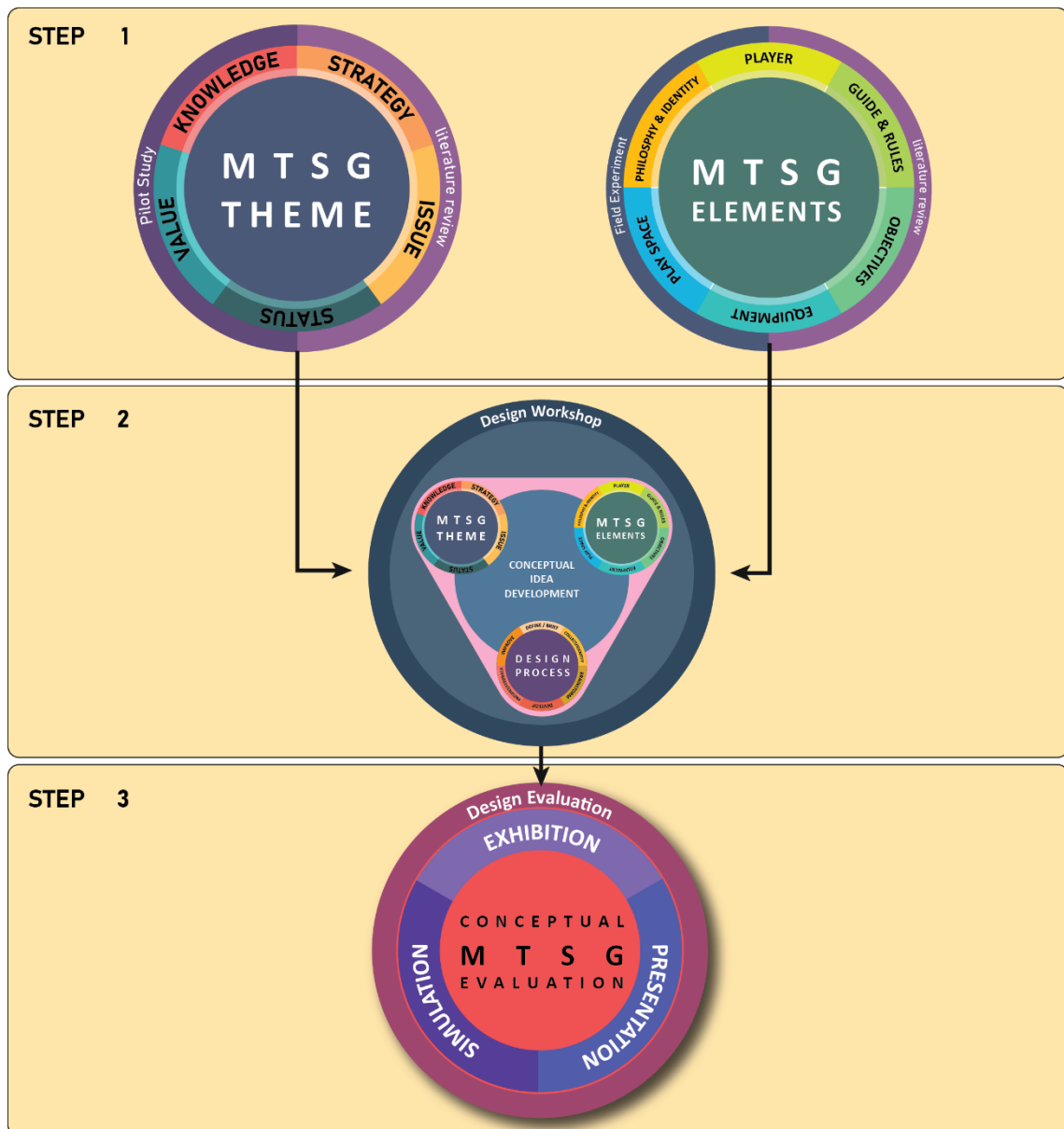


Figure 77: Overview of the steps of phases in this research that contains analysed data leading to the design evaluation session.

As presented in Figure 77, step 1 of the preliminary phases collected and analysed data from the original MTSG and the game simulation. The data was then used as a reference for the designers in step 2, where the designers incorporated the data identified in step 1 into their design process. Designers create novel integrations of design research in an attempt to propose a product development and system that transforms from its current state to the desired state while adhering to the research objective through design.

In the final phase, design evaluation, evaluate the artefact or output from the design workshop stage. For this final phase, a series of activities were conducted, and feedback was gathered and analysed. The key elements identified from the conceptual MTSG through the data presented in Chapters 4.4.1 through 4.4.3 are depicted in Figure 78.

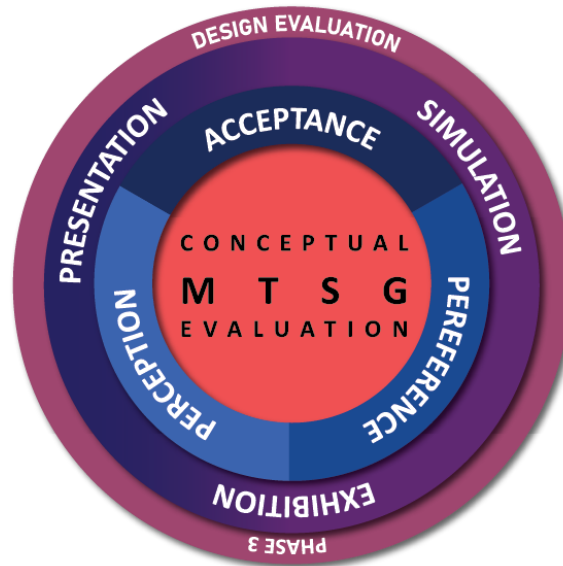


Figure 78: Key elements identified from the design evaluation workshop

The data from three evaluation activities have been extracted and clustered into three major key elements as depicted in the figure above perception, acceptance, and preference. These three critical elements are critical to the MTSG's successful reintroduction, as they will serve as an indicator and criterion for design iteration.

The perception: This key element was identified through a review of feedback from the visual exhibition activity. With limited information and relying solely on visual and prototype representations of the equipment, participants generate a variety of ideas and hypotheses about the subject based on their own experiences and information sharing. This incites an awareness of the new game as a result of the visual exhibition.

The acceptance: This key element is the result of feedback from the workshop's second activity. The second activity includes a verbal presentation that explains the new MSTG concept and how-to. This formal dissemination of

information is vital because it will reinforce existing perceptions of the new game with the appropriate information. As a result of the session, the new MTSG concept was accepted based on data gathered through participant feedback.

The preference: Clearly, one of the issues with the current MTSG is the disinclination of game activity in favour of more desirable alternative activities. Thus, preference is another key element that I have attempted to elicit from participants, and the best way to do so is through concept simulation. A concept simulation is an activity in which participants are required to play a new game concept in order to gain real-world technical experience and sensations. Their feedback on the simulation would be their forthright assessment of the new concepts, which could be incorporated into future reforms and design iterations based on their (public) preferences. This allows for the realisation and proposal for future development of the final and approved version of the new MTSG concept.

The conceptual MTSG evaluation provided feedback from the stakeholders based on their perception, acceptance, and preferences of the new concept. The feedback will provide any additional information from these three elements to be used in the reiteration of the design concept. The process of design reiteration and evaluation will yield the final design of the game, which will then be ready to enter the distribution stage and be used to reintroduce the MTSG activity.

The research's primary objective is to examine how design can aid in the development of an alternative solution to the MTSG issues rather than to focus on the game's final tangible design. Thus, phase 3 of this research was concluded with the notation of the key elements captured in the final phase.

4.5 Chapter Summary

Chapter 4 presents the analyses and the findings from each phase as structured in this research (see chapter 3.2.1). Starting from the pilot research, the analysis and findings from this phase have highlighted the general themes extracted from the codes for the MTSG in this research. The themes from the literature have been triangulated with the general themes in the pilot research and have produced five main themes of the MTSG (see chapter 4.1.6) for references in the field experiment and design simulation phase.

The field experiment has been conducted with the information from the literature review and pilot research. The gameplay of the selected MTSG has been simulated by using the game rules and guidelines based on the compilation from the previous phase. The observations from the field experiment have been analysed using contextual analyses, which have produced the elements of MTSG activity (see chapter 4.2.3). The MTSG themes from the pilot research and MTSG elements from the field experiment have been later referred to as the design workshop phase.

The design workshop was conducted with the collaboration of six Malaysian designers. The data from the previous phases have been presented to the designers in this workshop series. The MTSG themes (see figure 29) and MTSG elements (see figure 44) have been explored by the designer during the design thinking process, which involved using design tools such as brainstorming, game evaluation tools, sketching, and visualisation to propose a suitable approach for preserving the MTSG. The workshop concluded with the proposition of the new concept of MTSG as part of the re-introduction of MTSG to the community. The new MTSG concept was then evaluated in the design evaluation workshop phase (see chapter 4.4).

The objective of the design evaluation workshop is to gain feedback from Malaysians about the new concept of the MTSG. There were three activities conducted during the design evaluation workshop. The activities consist of the visual and prototype exhibition, the presentation, and the play simulation of the new concept of the MTSG. Each of the activities collected the participants'

responses through observation and an open-ended survey form. The open-ended survey has been analysed using contextual analysis and thematic analysis. The result from these conceptual evaluation activities portrayed the level of perception, acceptance, and preference of the new MTSG concept, thus concluding the design research.

The careful planning of the research structure has enabled the research through design activity to be conducted successfully. The overall results of the research will be useful in answering the research questions provided in this research. The framework provided enables the reconstruction of the new MTSG concept for the reintroduction purpose. The next chapter will discuss the main findings of this research.

CHAPTER FIVE

Chapter 5: Discussion

This chapter will discuss the findings of the research. The analysis of the findings has been done by linking together the research phases.

As was mentioned in chapter one, the core question in this research is how design can help to preserve MTSG. To answer the question, supplementary research questions provide the details for constructing a deeper understanding of the MTSG as follows:

1. What are the status, issues, and values of MTSG?
2. What is the available strategy and efforts to preserve MTSG?

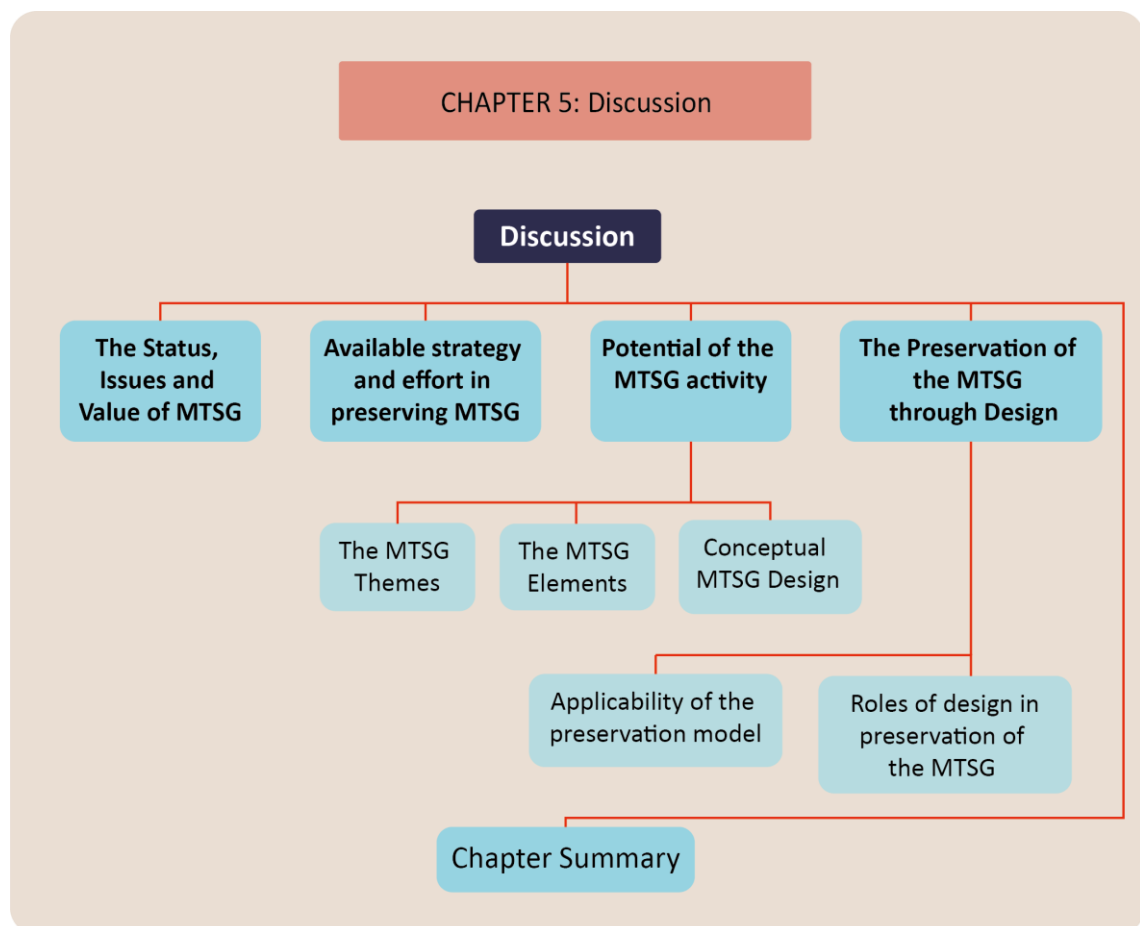


Figure 79: Chapter 5 structure topic overview.

The research was structured to answer the supplementary questions first, and thus, the first part reviewed literature in the context of the general knowledge, status, issues, and values of TSG and MTSG. Relying on the literature data was

not sufficient since the information on the MTSG is very limited, so further investigation was carried out through the pilot research.

The semi-structured interviews were conducted with twenty-one ($n = 21$) respondents in two groups: experienced users ($n = 14$) and expert personnel ($n = 7$). The results from these provided answers to the supplementary research questions and led to the next phase of the research, which took the form of field simulation.

The field simulation was conducted with twenty respondents ($n = 20$). The field simulation provided the research with details on specific MTSG activity structure, behaviour observation, and feedback that were not mentioned in any literature previously.

The second phase of the research was the design workshop, in which a series of design activities were done with six designers ($n = 6$), addressing the MTSG issues. Triangulated information from literature, the pilot research, and the field experiment was shared with the designer to aid them with the design process. This design workshop phase observed the design process as a collaborative effort by the designers with the given information. The output from this phase is the new MTSG concept.

The final phase is the design evaluation workshop, where the new MTSG concept as proposed in the design workshop is tested by the invited participants. This design evaluation phase examined the participants' feedback on the conceptual MTSG proposition.

The research framework was implemented pragmatically in order to accomplish the research objectives and contribute to the resolution of the main research questions. The findings from all of these phases will be discussed in this chapter in relation to the previously mentioned research questions.

5.1 Research Finding 1: The Status, Issues and Value of MTSG

The collective results of the literature review analysis and the pilot research indicate that the themes of knowledge, strategy, status, issues, and values are significant elements associated with MTSG among Malaysians.

From the pilot research findings, I have segmented the themes captured from the analysis of the semi-structured interviews and produced the MTSG Theme model (see Figure 29, page 159). The model is useful for this research as it serves as a reference in answering the research questions and for use in subsequent phases. The MTSG theme model is helpful in identifying specific content related to cultural preservation, especially for the MTSG. However, other similar research that would use the MTSG model might find it challenging to construct the information pragmatically. Hence, I have analysed the MTSG theme model and reconstructed it into the MTSG preservation identification model, as shown in figure 76 below.

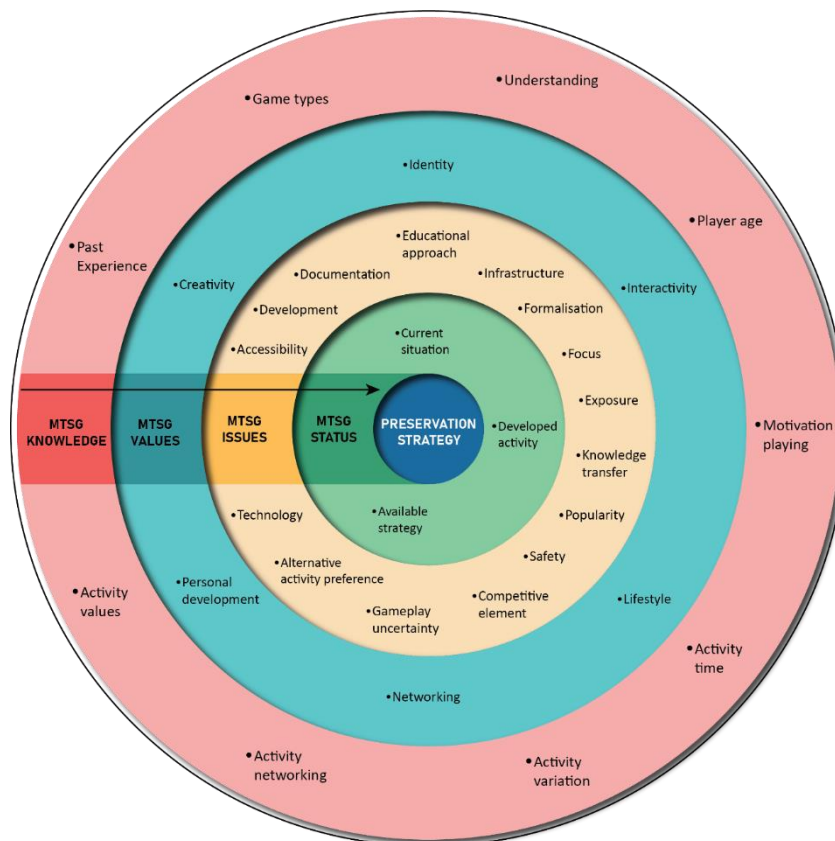


Figure 76: The MTSG preservation identification model is the pragmatic approach to identifying possible approaches to come out with a preservation strategy.

The MTSG preservation identification model was constructed by using the concentric approach. The outer circle represents the general theme of the MTSG, which is the MTSG knowledge. The stakeholders and researcher can select any of the codes provided in the model as the starting point and move along to the next circle until the centre circle. The codes selected will act as the criteria and guidelines for developing a suitable preservation strategy for their subject.

The model might be incomplete and lacking in some subjects. However, given the flexibility of the model, the codes can be expanded upon further research. But the current model structure is good enough for the research to move forward and provide answers to the questions. As mentioned above, this MTSG preservation identification model could be the preliminary approach in outlining a project or research relating to cultural preservation and conservation.

These themes were also cross-referenced with the literature review to identify specific MTSG activities and gameplay for the field experiment. This MTSG theme model is the result of categorising the interviews after they were extracted. The designer can use this collection of themes as a guide and reference during the design workshop phase. I then focused on these elements to answer the first research question, using the MTSG theme model as a guide.

5.1.1 The status of MTSG

I found out that efforts have been made to preserve the MTSG either directly or indirectly through various methods, from the academic viewpoint and the responsible stakeholders. Currently, most of the effort is focused on children and the younger generation with diverse methods and media, including the publication of books, e-books, blogs, social media, and web portals (Chepa et al., 2014).

Referring to Table 1 in Chapter Two, it is found that the interest in MTSG preservation is increasing year on year, which indicates that the MTSG topic is significant to the community. However, it is also observed that the focus is more on converting the MTSG to digital content.

From the interviews, the findings show that the MTSG has been seen playing occasionally but not regularly, and the activity is mostly observed in the suburbs. This shows that even though there is a rise in academic interest in the MTSG, the actual MTSG activity is still left behind.

While some MTSG activities are being left behind, there are some MTSG that have been developed well. For example, the *Sepak Takraw* has regular competitions in Southeast Asia, which shows that proper management of MTSG could be a strategy to keep the games being played.

On the other hand, there are also views from the interview participants that the preferences towards MTSG might be declining since today's generation is more easily entertained by gadgets, computers, the internet, and smartphones. Their views supported articles claiming that new generations are more familiar and preferably engaged with contemporary entertainment such as console games, electronic games, etc. (Chepa et al., 2014).

In addition to the challenges posed by new technology, globalisation is another of the notified factors for the decline in MTSG activity. Apart from recreational activities, MTSG is also viewed as a sport for the past generation as it also competed locally. However, due to globalisation and the constant attention given to internationalised sports, they have become increasingly popular (Aminuddin & Parilah, 2008). Internationalized sports dominate as they are deemed superior and represent a notable social and economic accomplishment. They benefit from the dominant attraction of young to adult populations (Parlebas, 2005), whereas traditional sports are viewed as merely secondary physical activities. In the interviews, the alternative activity preferences, referring to modern sports activities, are being selected because they are more popular, as well as for other reasons such as accessibility, community, competition, influence, infrastructure, skill development, networking, popularity, presentation, and trend (Chapter 4.1.4).

In a nutshell, even though the MTSG is gaining attention in research and academic fields and some of the efforts have been made by the respective governmental organisations, the engagement of the MTSG activities by the local

society is still low due to several factors, including the preferences towards current entertainment technology and modern sports activities.

5.1.2 The Issues with Preserving MTSG

In the findings from the pilot research, there are several indicators of the current MTSG issues. These issues are reflected by the current declination status of the MTSG. The chart below shows the list of MTSG key issues identified in the pilot research.

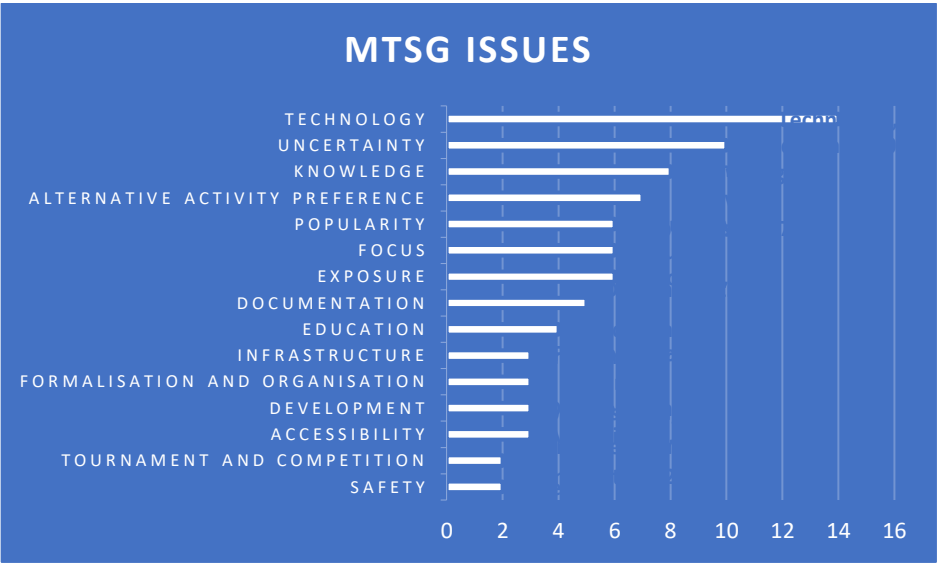


Figure 80: The bar chart listed the MTSG issues identified in the pilot research.

Preliminary MTSG issues have been identified in the literature chapter under the theme of MTSG challenges and threats (see chapter 2.4.5). The preceding list of identified issues fills in the gaps in the literature review. The list of MTSG issues mentioned by the interview participant during the pilot research is depicted in the bar chart above. The list consists of 15 issues raised by participants, arranged in order of most to least mentioned. The most frequently mentioned issue by participants is the technological challenge.

The MTSG issues listed in the chart above may be ranked from most important to least important. But in this research, the rank is insignificant since all of the identified MTSG issues are interconnected. According to the triangulated data from the literature and pilot research, the real MTSG issues causes by the chain effects of globalisation.

For example, globalisation has introduced many 'alternative activity preferences' that have attracted the local society. The preference for 'alternative activities' is due to several factors, including the incorporation of new 'technology'. Constant 'exposure' to the 'alternative activity' increases the 'popularity' of the activity itself, resulting in 'focus' on the activity. The constant 'focus' on the 'alternative activity' will create a community, making the activity alive through the engagement of 'tournament and competition'. These are some examples of the chain effects that emerged within the MTSG issue. However, this is not the case with MSTG activity.

The MTSG's activity is disappearing due to several issues, including the previously mentioned lack of 'focus' on the MTSG, which has resulted in a lack of 'documentation' and 'knowledge' of the MTSG. The 'uncertainty' of the MTSG's 'knowledge' was observed in the interviews, with the information remaining in the collective social memories.

These examples demonstrate how one issue is linked to another. Previous studies and publications on the MTSG have been too generic and shallow. As a result, the framework described in this research permitted the collection of detailed information about the reality of MTSG issues. With proper investigation and research, the MTSG issues can be properly tackled. The MTSG preservation identification model is an example of a practical approach to identifying issues and taking appropriate action.

5.1.3 The Values of MTSG

The research discovered several lists of TSGs and MTSGs values in chapter two, which were mentioned in several articles. The MTSG values have also been confirmed by data from pilot research and field simulation.

Contrary to popular belief that the MTSG is just another past-time activity, the values of the MTSG itself are the embodiment of physical, mental, cultural, and social elements altogether. The notion of the MTSG values as being identified in the research is as follows:

1. Creativity
2. Identity
3. Interaction
4. Lifestyle
5. Networking
6. Personal development

The field simulation in phase 1 confirmed some notified values as above. For example, during the simulation, the interaction among the participants is observable as they try to meet the game objectives, and the communication among them occurs naturally.

Furthermore, the MTSG values are not limited in the above context. From the field simulation, it was also observed that the identification of the specific MTSG by the participants not only relies on the visual and equipment of the game but also on the gameplay and the technical aspect of the game. The output from the field experiment has enabled the identification of the MTSG elements model, which serves as part of the identified MTSG values. The MTSG value model is constructed using triangulation and analysis of data captured from the literature review, pilot research, and field experiment, as shown in Figure 78.

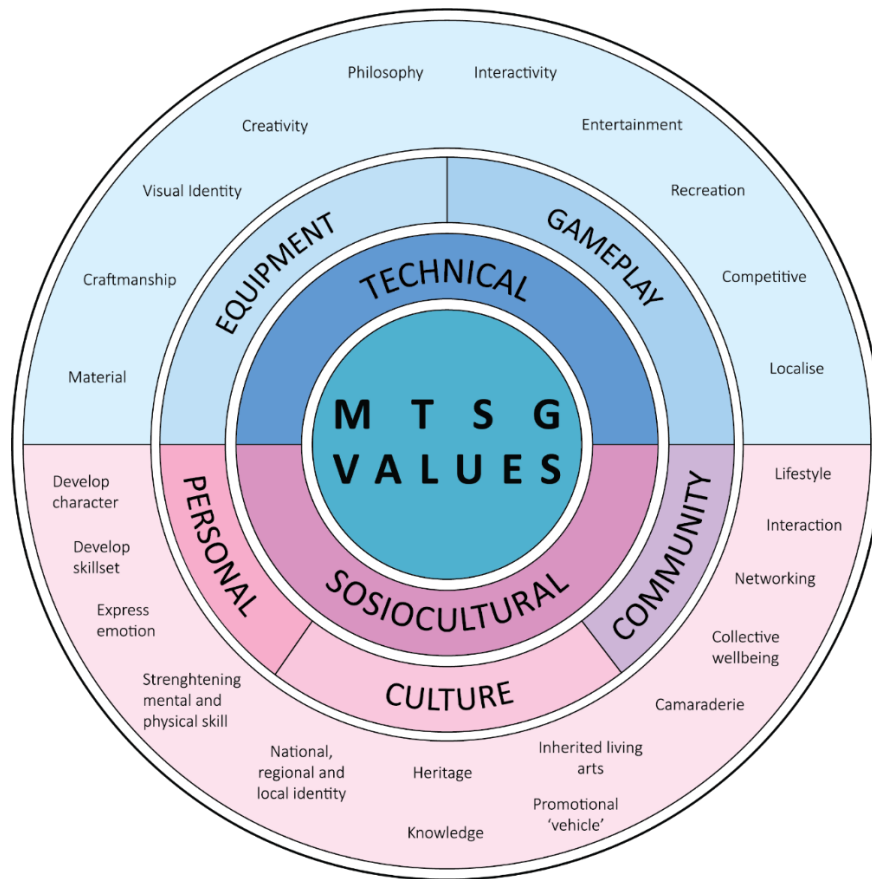


Figure 78: The MTSG Values domain and components.

The elements of the model represent the structure of an MTSG activity and, in theory, a portion of the MTSG value. The above-mentioned model can be used as a starting point for MTSG research and development. It is critical to understand the values domain, as well as its elements and components, so the efforts to preserve the MTSG do not contradict its value. The MTSG value, as shown in the model above, is made up of two main domains: technical and sociocultural. Within the model, both domains contained components and, finally, elements. Changes to any of the structure and components of the MTSG will obliterate its value and meaning of the MTSG.

However, the MTSG value is more than just a graphical model, the MTSG values transcended the symbolic function of the community, as it is also mentioned as part of inherited living art, a medium for skill and knowledge transfer, and a means for building a person's character and strengthening social and physical skills (Jaouen, 2003; Bronikowska & Groll, 2013; Tudu, 2016).

The MTSG values demonstrate that the activity is important enough to be protected, not only in terms of documentation but also in terms of public participation. Only society's active participation in MTSG activity can redeem the MTSG values.

5.2 Research Finding 2: Available strategy and effort in preserving MTSG

This question is part of the research questions that search for available effort done in focusing on the MTSG subject previously. I have analysed the information from the literature reviews and the pilot research. A list of strategies relating to the MTSG in Malaysia has been segmented by theme as per the table below:

Reference of MTSG Strategy Cluster			
No.	Strategy Cluster	Output Example	Reference
1.	Campaign and Events	<ul style="list-style-type: none">• Annual cultural events• Specific region events	Chapter 2.4.6 Chapter 4.1.5
2.	Innovation	<ul style="list-style-type: none">• Mobile application• Digital MTSG game transformation• Augmented Reality application• MTSG equipment design	Chapter 2.4.6 Chapter 4.1.5
3.	Education	<ul style="list-style-type: none">• Evaluation research on the traditional game• Using traditional games as educational tools	Chapter 2.4.6 Chapter 4.1.5
4.	Documentation	<ul style="list-style-type: none">• Web / blog documentation• Books	Chapter 2.4.6 Chapter 4.1.5

Table 28: The table shows the list of MTSG strategy clusters identified from the reference in the research chapters.

The cluster presented the segmentation of the output examples from previous efforts of academics, institutions, or individuals relating to MTSG. Their aim in these efforts may or may not be directly to preserve the MTSG, but the context of their efforts provides continuous knowledge dissemination of this cultural product.

According to the information in the table above, four clusters of strategy have previously been implemented, namely campaign and events, innovation, education, and documentation efforts. The campaign or event is a cluster of efforts that have been mentioned in the pilot research and in the literature review, as well as in the personal researcher observation previously. This effort is

typically conducted by governmental or non-governmental institutions. In the pilot research, the interviews with the experts and government personnel mentioned that the MTSG activities are one of the cultural activities conducted by the government that have been embedded in most of the cultural festivals as an attraction. However, this effort is not focused on the context of MTSG but normally as an additional activity of a much bigger cultural event, and there are lots more MTSG types that have been left out during these events. While this type of cluster can be observed and conducted annually, the appreciation of MTSG for society's daily routine is still low. The current occasional events and campaigns are not effective in encouraging continuous MTSG activity.

The innovation cluster can be considered as a strategy that is focused directly on the MTSG context. This cluster typically investigates MTSG technical issues, and the stakeholder will contribute to the subject's development. Most of the output within this cluster depends on the technology integration of the subject, such as the digitalisation of the activity itself. While the method and output in this cluster show promising effort in the preservation of the MTSG, the development and strategy are superficial and only focused on a specific type of MTSG, which usually ends with just a conceptual proposal. While there are other MTSG innovations that have successfully penetrated the market, there are only a few, and they are still not as popular as current modern activities.

The education cluster represents the output by several scholars on the use of MTSG for the educational development of youngsters. There are several academic publications that relate the use of MTSG to developing children's cognitive and motor skills. Furthermore, this cluster also noted the production of the academics' publication that relates to the context of MTSG. Even though the knowledge of the MTSG in these publications is selective, shallow, and lacking, it is the source of continuous MTSG knowledge preservation through education.

The documentation effort shows the effort that has been made by various stakeholders on the subject of the MTSG. There is an effort to document this MTSG activity through books, websites, and blogs. However, through the search in this research, it was found that much of the documentation provided is lacking in the details of the MTSG activity, and many of the MTSG references are

intended for children's reading. The games in the documentation, such as those in a book by Noh et al. (2010), only showed a few different types of MTSG with brief descriptions and technical specifics. The MTSG is only briefly mentioned on the websites of the National Department of Heritage. Technical details on specific MTSG activities could only be triangulated as references with the use of personal blogs.

Based on the preceding discussion, some effort was made to preserve the essence of the MTSG, either directly or indirectly, but the strategy and effort output were still immature and insufficient to encourage active MTSG activity engagement from society. According to the literature, despite ongoing efforts such as those mentioned above, MTSG activity is still declining.

Despite that, the accessible approach pertaining to the MTSG issue has paved the way for this research to accommodate the gap, especially by handling the issues of the MTSG through design research, which has been disregarded in the past. The goal of this research was to find a way to preserve the MTSG through design.

5.3 Potential of the MTSG activity

The core question of this research is how design can help to preserve the MTSG. The aim of this core question is to identify the role of design in the effort to preserve the MTSG. To answer this question, I have identified the MTSG issues in research question 1 and searched for available strategies and efforts that had been made in Malaysia through research question 2. While both questions' outputs have provided me with some information regarding the subject of MTSG, the technical and behavioural aspect of the specific MTSG activity is still missing.

In the pilot research, the participants shared some of their experiences and personal views on playing the MTSG. The participants mentioned that the structure of the MTSG is similar to modern sports. One of the significant issues of the MTSG is the organisation and formalisation of the activity. As mentioned in chapter 5.1.2, the issues of the MTSG are a chain reaction from one issue to another. Hence, to confront this problem, the organisation and formalisation of the MTSG activity is the first step.

For example, the observation from the field simulation has identified several problems regarding the current MTSG gameplay structure. One, there are no clear guides and rules for the specific games as the information captured from the literature, the interviews, and the participants' experiences is incomplete, different, and missing. Thus, during the simulation, several adjustments need to be made so that the gameplay is relevant. Two, the equipment and venue setting of the game might not be closed to the original games, but it is working as the game equipment. However, accessing this type of equipment is not easy, as mentioned in the literature, whereas the essence of the MTSG equipment can be accessed easily with the use of surrounding items.

The accessibility of the equipment and gameplay venue might be caused by the locality (location) and culture of the field simulation being held; for example, the game *Baling Selipar* required two sets of flip-flops as the equipment. While it is common for people of Southeast Asia to wear flip-flops on a daily basis, it is quite a challenge to find the exact type of flip-flop during the simulation in the UK.

The information captured from this simulation showed that the MTSG activities are similar to the current physical sports and recreation that we can access nowadays. However, there are several elements that MTSG is lacking, including inconsistent gameplay structure, vague game guides and rules, and the standardisation of the equipment.

The MTSG activity has the potential to be organised and formalised. But to achieve this, I need to be able to collect the scattered information on the MSTG activity, thus the creation of the research framework. The output from the research framework has provided us with the model of the MTSG themes, MTSG elements and the conceptual MTSG design, which is part of the effort to organise and formalise the activity.

5.3.1 The MTSG Themes, Elements and Conceptual MTSG design.

The MTSG theme, MTSG elements, and the conceptual MTSG design are the output resulting from the approach presented in the research framework. These models are the accumulation of information from various sources and provide a point of reference for answering the research questions. Through the models, the MTSG issues, values, and status were identified; the MTSG activity structure was organised and formalised; the conceptual design development was constructed.

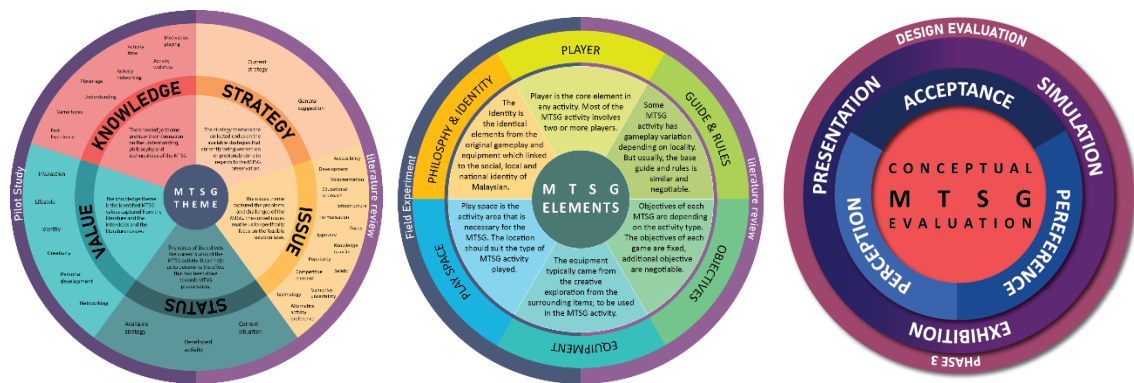


Figure 81: The MTSG Theme, Elements and Conceptual Idea models constructed from the analysed data from the research framework

Based on these models, the information has guided the designers to come up with the conceptual idea of the MTSG. The conceptual idea consisted of the formalised guideline of the MTSG, which was neglected in previous research.

With reference to these models, the designers have proposed the new MTSG concept (see chapter 4.3) using their expertise in design practice. The concept has been evaluated by the simulation participant, and the result enables future design iterations of the concept. These three models enable the construction of the conceptual idea development framework (see Figure 60, page 208), which is significant in the re-introduction of the MTSG. The framework guides the designers in proposing the new MTSG design and ecosystem for the re-introduction purpose of this research. The next sub-chapter will discuss the final main finding on the preservation of the MTSG through design.

5.4 Main Research Finding 3: The Preservation of the MTSG through Design

The framework of the MTSG facilitates the design intervention process through the design practice of the designers and the support of the information by the stakeholders. The figure below shows the flow of information sharing among designers and the stakeholders in the proposition of the new MTSG concept and the evaluation of the concept by the stakeholders. The figure is also introduced as the MTSG re-introduction model.

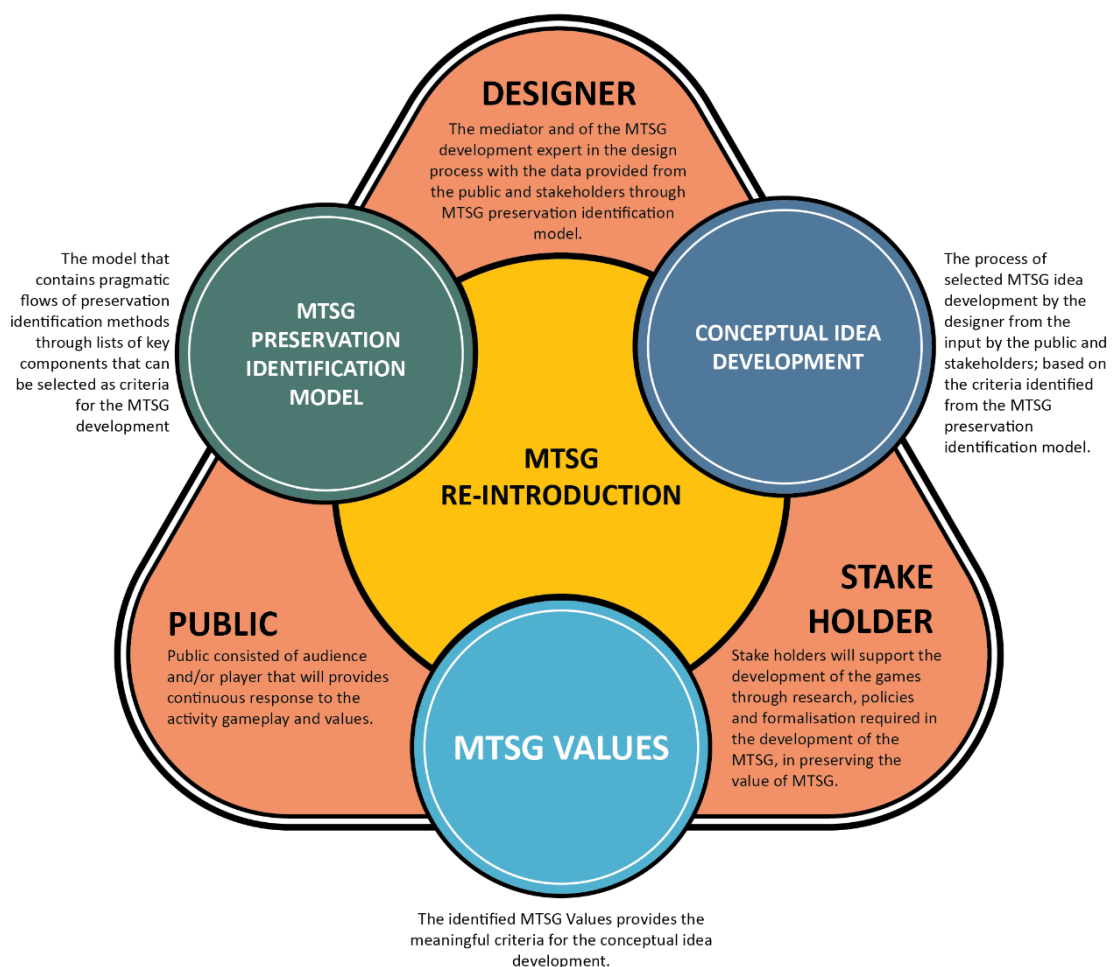


Figure 82: The MTSG re-introduction framework.

The MTSG can be re-introduced using the triangulation of information and guidelines in the MTSG preservation identification model (see figure 76, page 241), conceptual idea development framework (see Figure 60, page 208), and MTSG value model (see Figure 78, page 247), as shown in the diagram above. Precise research data can be collected, analysed, and used to propose a better approach to cultural preservation with the help of the public, stakeholders, and designers working together. The details of each model and framework have been presented in their own sub-topic.

The MTSG re-introduction framework consisted of 3 different models' establishment. The models resulted from the combination of data captured from the methods that have been planned through the research framework introduced in chapter 3 (see chapter 3.2.1). While these models are significant to be adopted as a whole ecosystem in the MTSG re-introduction framework, these models also can be used outside of the framework context. Each model can be used as a reference in conducting related MTSG research in the future.

The ideal strategy to preserve the MTSG is to keep the MTSG alive through continuous engagement in the activity. Hence, participation from the society engaging in the MTSG activity would eventually establish the community. As a result, the design intervention through conceptual idea development catering to the MTSG issue could serve as a bridge to reintroduce the MTSG to the local society.

The MTSG re-introduction framework is a two-headed spear; while the design framework is applicable as a 'vehicle' to transfer the values and meaning by reintroducing the new MTSG design to society, it also performs as a constant reminder of the original MTSG.

5.4.1 Applicability of the preservation model

Designers are not the only ones who can benefit from the models and framework presented in this research. While the focus of this research is on the use of design and the roles of designers in preserving the MTSG, the models could potentially benefit stakeholders, particularly related governance bodies, academic researchers, and non-governmental organisations (NGOs), as the first point of reference in accessing MTSG information.

This research framework consisted of a few models that are interrelated in the build-up of the components for the re-introduction of MTSG purposes. A similar approach to using this framework on other types of cultural preservation is feasible by following the themes presented and collaborative efforts by the stakeholders. This framework is also flexible where some components in the models can be expended more upon further research.

In chapter 2, I have mentioned the efforts by UNESCO the preservation of traditional games (see page 62, chapter 2.4.6), which includes global collaborative efforts with relevant companies to build a digital library for traditional games and introduce Project Recall. The efforts focus on the digital documentation of the global TSG to increase the participation of the public playing TSG, in which the creation of a website comprises guidelines and toolkits for the teachers, coaches and volunteers to introduce the TSG to the public. The centralised documentation is a great effort; however, I felt that the effort could be expended more, hence, the justification for this research.

While this research is more exploratory and localised than UNESCO's global efforts, the framework is more focused on the method of re-introduction by reconstructing a specific MTSG at a time, using technology and design adaptations; the context that the institution has not mentioned in their approach.

5.4.2 Roles of design in the re-introduction and preservation of the MTSG

The proposition of preservation in this research is through the approach to design intervention as hypothesised earlier (see Chapter 1.4, Figure 3). The process of the design intervention in this research is presented in the research framework.

Designers can perform design process activities within the scope given with the help of collaboration with the stakeholders in providing related information. The MTSG theme and elements presented will be the reference for the designer, and the expertise in design studies and practice can offer to innovate on the subject with a feasible proposal that suits current social preferences.

The main finding from this research provides potential ways for the stakeholders and designers to be strategically involved in the preservation of the MTSG. Designers can perform design activities within the MTSG elements in consideration of the MTSG reintroduction models that have been presented previously (see figure 82).

The stakeholders can provide information, feedback, and constant engagement with the MTSG activity, which will eventually preserve it. I believe that the design practice as shown in this research framework and the MTSG re-introduction model (see figure 80) can offer an effective contribution towards the re-introduction of the MTSG, creating continuous activity engagement in society thus preserving the elements of the MTSG.

CHAPTER SIX

Chapter 6: Conclusion and Recommendation

In Malaysia, the variety of different cultures makes it unique. From all the observable cultural contexts available, play culture is usually not considered. Globalisation would usually be seen as the main cause, but there are more factors to the decline of these activities. Some MTSG has survived through government and local efforts, such as the *Gasing* and *Wau*, but other types of MTSG have been lost without proper documentation and knowledge transfer.

In this final chapter, I will explain and conclude the research based on the earlier discussion. The overall context of this chapter is shown in the figure below.

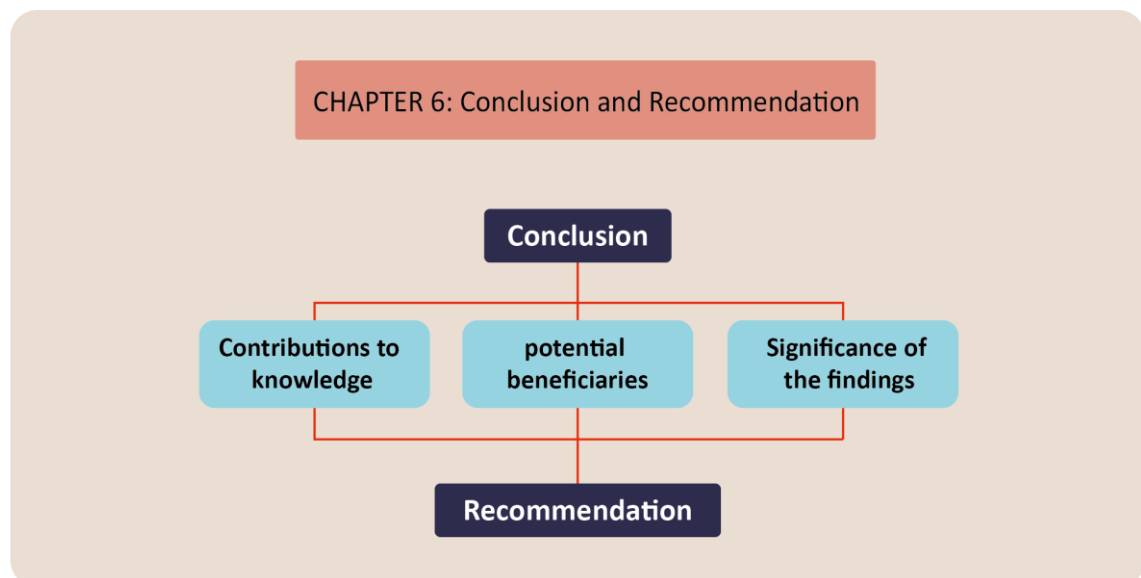


Figure 83: Chapter 6 structure topic overview.

In this structured investigation, I have explored the feasibility of preserving MTSG activity through design intervention. A pragmatic approach has been conducted to extract more information on the MTSG since there has been a lack of previous studies into the details of the MTSG. In this research, the focus on preserving the MTSG is through the design effort of re-introducing the game to society, thereby enabling constant engagement of the local society in the MTSG activity.

Through a cross-referencing of the literature and the pilot research, the research identified the status, issues, and values of the MTSG and available strategies for preserving the activity. This information helped further investigation through the next stages. The field simulation, design workshop, and design evaluation workshop were conducted to probe the technical aspects of the activities and the significance of the design roles in re-introducing the selected MTSG through the proposed research framework.

Even though some types of MTSG are still observable, most of them are being forgotten. Therefore, it is of utter importance for the activity to be preserved, not only by focusing on the documentation but also by being able to be engaged by the locals, especially youngsters.

According to the research, when compared to current sports and modern recreation, MTSG is not preferred, particularly by young people who have been influenced by the impact of modernisation and globalisation, and even adults are hesitant to introduce it to the next generation. While there were previous strategies for using the MTSG as part of educational tools and an effort to introduce the game on several occasions, the level of attention towards the activity is still low.

Thus, through the research, it is identified that the culture must be dynamic and adapt to the changes in technology to survive while also being able to keep its own values. Thus, through the identification of MTSG issues and validation from this research framework, design can be used as a strategy to re-introduce the forgotten MTSG, thus preserving the MTSG by keeping the game alive and engaging.

6.1 Contributions to knowledge and potential beneficiaries

6.1.1 Original contributions to knowledge

Several efforts have been made in previous years to preserve MTSG in a variety of fields, including through educational games. The Malaysian government has also made an attempt; through its cultural department, it hosts an annual cultural event that introduces the MTSG's activities and documents some of them. In terms of design practice in relation to MTSG, there are several approaches based on academic research that involve transferring and documenting knowledge via virtual media.

This research focuses on a different aspect of the MTSG approach to preservation, and in doing that, the framework has been designed to cater to the lack of information on the technicalities of the selected MTSG and use the information in the design process. There are also other considerations noted in the framework too, including the values of the games. Notably, from the findings of the field experiment, the value of the specific MTSG is not only dependent on the equipment used to play the game but also on the overall structure of the game, including the game structure and the player action-behaviour.

This research also noted that there is a need to further investigate MTSG, especially when the documentation and sources are lacking. Most of the popular MTSGs, such as Gasing and *Wau*, have been given attention through cultural events and even documentation. However, many MTSG are usually preserved only by word of mouth. It must be made clear that the MTSG is more than just past entertainment; it is an important part of cultural identity that should be introduced and publicised to a wider audience.

The research findings assist in identifying information gaps regarding specific MTSG game structures and technicalities, as well as in developing the MTSG as a strategy for reintroduction and promotion of the game. Through the involvement and efforts of stakeholders, the public, researchers, and the designer, it is possible to re-create and sustain the MTSG. The researcher's role in this research would be to collect lost information and document it with the assistance of public stakeholders, while the designer's role would be to connect

all of the information and sync it with a feasible solution that would meet current public preference, transforming the MTSG.

6.2 Significance of the findings - contribution of the research

Prior to this research, other related strategies focused on the MTSG were introduced. It is either concentrating on the development of specific MTSG, integrating MTSG into educational tools, or converting MTSG to digital content for preservation purposes. However, the majority of the literature on the subject of MTSG studies discovered that there was little emphasis on the design and its contribution to the MTSG's preservation. Additionally, there is no published document that identifies the MTSG technical details and issues. While the literature revealed that numerous strategies had been adapted globally for this TSG topic, identifying the best design strategies for the MTSG has been challenging due to cultural and value differences. The empirical evidence presented in this research sheds new light on the stakeholders' roles, particularly those of the designer. According to research, the designer is instrumental in bridging the gap between the new idea and the solution by reintroducing not only the equipment associated with the specific MTSG but also the entire game structure. Not only that, but the designer must also adhere to certain parameters when recreating this MTSG in order to avoid undermining the games' values while simultaneously attracting a new generation to play them. In this research, the act of preservation occurs when society actively participates, collaborates, and values the novel concept of MTSG.

In terms of this research, it is the first comprehensive examination of the role of design in re-creating and reintroducing cultural products as part of preservation strategies in the context of MTSG.

6.3 Limitations and Strengths of the Research

6.3.1 Limitations

The research successfully demonstrated a design-based approach for addressing the MTSG's issues. However, this research identified several or more limitations. The absence of formal data on the original MTSG details is a significant shortcoming of this research. There were few sources on the collection of existing MTSG, most of which were left unwritten, throughout the literature search from articles and previous documentation.

Following that, I conducted pilot research to fill in gaps in MTSG knowledge gleaned from research participants' personal experiences with MTSG. The pilot research is an initial phase in this research since it validates the gathering of earlier MTSG documentation and captures the technical aspects of numerous MTSG plays. However, some limitations observed during this phase were:

1. The participants do not recall the technical details of the MTSG.
2. The engagement and responses by each participant are inconsistent, resulting in repetitions of information per participant and unnecessary information for the research.
3. Most of the interviews were conducted via video call, so the scheduling of dates and times for the interviews took a long time to complete.

The provided data from the literature reviews and pilot studies were used in orchestrating the field experiment phase. The field experiment phase was conducted with a group of participants, simulating the original MTSG sample. The limitations observed during this phase were:

1. The compiled data from the previous phase has some gaps and contradictions from the participants' experience, so the adjustment has been made on-site.

2. The original equipment from the game is not available, so it has been substituted with similar items. The player's experience might be different.

The collected information from both phases, however, was successfully extracted and provided a set of data that is useful for the design workshop phase. As mentioned in Chapter 4, the design workshop has been curated to tackle the MTSG issues using a design approach and the collaborative efforts of the designers. The workshop concluded with the introduction of conceptual MTSG, which was later evaluated in the final phase, the design evaluation workshop. The limitations observed during these phases were:

1. The timeframe for conducting this workshop might be too short for an effective and good design approach. The output from the workshop might be incomplete or lacking.
2. During the design evaluation, the outdoor game simulation could not be successfully conducted due to the bad weather, and the venue was changed to an indoor simulation. The experience and the gameplay might be affected by this setting.

Given the limitations of each phase of this research, the overall procedure was not compromised. Despite this, this research has some strengths that make it noteworthy.

6.3.2 Strength

One of the research's advantages is that, unlike previous MTSG research, it takes a holistic approach to the topic and adapts design-based research for preservation purposes. Identifying MTSG knowledge, issues, and values through literature reviews and confirming them through the pilot research provides clear information that can help address the information gap on the MTSG.

Furthermore, utilising qualitative methodologies to conduct in-depth research and analysis on the MTSG, I was able to develop models of the MTSG theme, MTSG elements, conceptual MTSG model, and the MTSG re-introduction model (see chapter 5.3.1), which had not previously been addressed in any MTSG related research. The model is useful as a point of reference for many studies, especially design-based studies.

Finally, the overall framework of this research adopts various qualitative methodologies and is arranged in phases pragmatically. It is useful as a reference for future studies that require the identification of issues that are lacking in resources and the proposal of cultural preservation based on the design approach. The collaborative effort with stakeholders in this research framework is one of the strengths of this research, which provides rich data.

6.4 Recommendations for further works

This research is a stepping stone to the investigation of specific cultural elements that have been neglected in previous studies. The exploration of the MTSG subject opens bigger opportunities in tackling issues as presented in the research in order to preserve and appreciate cultural heritage.

While the research shows that the intervention of the MTSG issues through design proved useful in re-introducing the game to society, the focus on the design process and solid output are still fundamental. This research is only able to cover the use of the design process in providing the alternative MTSG concept, but not to the extent of disseminating and commercialising the finalised game concept, which would be the recommended subject for the future.

Furthermore, it is advisable that the same framework be adopted in future research on re-introducing cultural products into the local setting. This is because the information in the local setting (Malaysia) might improve the richness of the data and provide better views on the specific cultural issues.

The designers can use the research framework to create designs in collaboration with stakeholders. The framework enables designers to address the absence of critical elements in any given issue, and the elements can provide them with the necessary data for producing meaningful designs and solutions.

To survive and thrive in the future, MTSG activity must be able to withstand globalisation and technological challenges. To do that, it is justifiable that the MTSG must stay relevant by allowing dynamic changes to its elements. It doesn't mean that it needs to change totally. As long as the important elements are retained, and the technology can be adapted, the activity will be able to achieve preferable states, attracting the next generation to play them and the previous one to appreciate them.

In a nutshell, there may be new possibilities and opportunities for effective design strategy with additional collaborative efforts by researchers, designers, governmental institutions, and related stakeholders to preserve not only the MTSG but also other cultural sectors.

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APPENDICES

Appendix 1

Scopus - Document search results

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Lancaster University

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Chapiz, N. (6) >
Abu Bakar, N.A. (3) >
Bakar, N.A.A. (3) >
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Appendix 2

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Search > One Search

REFINE SEARCH

Search By: Keyword : permainan tradisional

SOURCE FROM:

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Refine your results:

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Publication Year

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2020	3
2019	13

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Appendix 3

3/11/2018

Mail – a.md.zulkifli@lancaster.ac.uk

Ethics approval (REC reference number FL17097-please quote this in all correspondence about this project)

Knight, Deborah

Fri 09/03/2018 11:42

To: Md. Zulkifli, Addy Putra <a.md.zulkifli@lancaster.ac.uk>;

Cc: Aryana, Bijan <b.aryana@lancaster.ac.uk>; Coulton, Paul <p.coulton@lancaster.ac.uk>;

Dear Addy

Thank you for submitting your ethics application and additional information for *Preservation of Malaysia Traditional Sport and Games (MTSG) Through Design*. The information you provided has been reviewed by member(s) of the Faculty of Arts and Social Sciences and Lancaster Management School Research Ethics Committee and I can confirm that approval has been granted for this project.

As principal investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;
- reporting any ethics-related issues that occur during the course of the research or arising from the research (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress) to the Research Ethics Officer;
- submitting details of proposed substantive amendments to the protocol to the Research Ethics Officer for approval.

Please do not hesitate to contact me if you require further information about this.

Kind regards,



Debbie Knight

Secretary, FASS-LUMS Research Ethics Committee fass.lumsethics@lancaster.ac.uk

Phone (01524) 592605 | D22 FASS Building, Lancaster University, LA1 4YT | Web: <http://www.lancaster.ac.uk/arts-and-social-sciences/research/ethics-guidance-and-ethics-review-process/> & <http://www.lancaster.ac.uk/lums/research/ethics/>



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Appendix 4

INDOOR MTSG

VENUE:
BOWLAND NORTH SEMINAR
ROOM (SR 14)

TIME:
09:00 - 12:00

DATE:
Sunday, (25.02.2018)



OUTDOOR MTSG

VENUE:
OPEN SPACE NEXT TO LICA
BUILDING

TIME:
14:00 - 17:00

DATE:
Sunday, (25.02.2018)

 **MTSG**
Malaysia Traditional Sport and Games



PLAYERS RECRUITMENT
Feb - March 2018

Batu Seremban + Ceper

Activity details

25 February 2018

9.00 a.m -12.00 a.m

Location: Bowland North Seminar Room (SR14)

Itinerary:

09:00	Players registration
09:15	Team distribution
09:20	Briefing and Demo
09:30	Batu Seremban Group Play and practice
10:00	Batu Seremban Competition
10:45	Final Batu Seremban
11:00	Ceper Group Play and practice
11:20	Ceper Competition
11:45	Final Batu Seremban
11:50	Conclusion and Prize Giving
12:00	End of activity 1

Batu Seremban Competition guide

- 1) Registered player will be placed within a group of 4 (for 15 players)
- 2) There will be 4 groups practice.
- 3) The group will compete each other until there is one sole winner in each group
- 4) The winner from each group will proceed to a semi-final and final stage.
- 5) In a group play, time given for player to collect points is 15 minutes
- 6) In the semi-final, the time allocation is 3 minutes
- 7) In the final the time allocation is 5 minutes.
- 8) All rules and gameplay are based from the original game rules.

Batu Seremban Marking scheme

- 1) Each completed toss and grab will entitle 2 and 1 points for each stone in hand depends on how they grab the stones.
- 2) 2 points will be given if they grab the stone through scooping technique and 1 point for open hand technique.
- 3) Point accumulation is based on time given.

Ceper Competition guide

- 1) Registered player will be placed within a group of 3 (for 15 players)
- 2) There will be 5 groups practice.
- 3) The group will compete each other until there is one sole winner in each group
- 4) The winner from each group will proceed to a semi-final and final stage.
- 5) In a group play, time given for player to collect points is 15 minutes
- 6) In the semi-final, the time allocation is 3 minutes
- 7) In the final the time allocation is 5 minutes.
- 8) All rules and gameplay are based from the original game rules.

Ceper Marking scheme

- 1) Each completed toss and grab will entitle 2 and 1 points for each cap in hand depends on how they grab the caps.
- 2) 2 points will be given if they grab the stone through scooping technique and 1 point for open hand technique.
- 3) Each stacking caps have their own punishment layout called 'Ayam', 'Jamban' and 'Bunga'.
- 4) Point accumulation is based on time given.

Baling Selipar + Galah Panjang

Activity details

25 February 2018

14.00 -17.00

Location: County main square

Itinerary:

14:00	Players registration
14:15	Team distribution
14:20	Briefing and Demo
14:30	Baling Selipar Group Play and practice
15:00	Baling Selipar Competition
15:45	Final Baling Selipar
16:00	Galah Panjang Group Play and practice
16:20	Galah Panjang Competition
16:45	Final Galah Panjang
16:50	Conclusion and Prize Giving
17:00	End of activity 2

Baling Selipar Competition guide

- 1) Registered player will be placed within a group of 4 (for 15 players)
- 2) There will be 4 groups.
- 3) The winner from each group will proceed to a semi-final and final stage.
- 4) In the semi-final, the time allocation is 3 minutes
- 5) In the final the time allocation is 5 minutes.
- 6) All rules and gameplay are based from the original game rules.

Selipar Marking scheme

- 1) Each completed toss and grab will entitle 2 and 1 points for each stone in hand depends on how they grab the stones.
- 2) 2 points will be given if they grab the stone through scooping technique and 1 point for open hand technique.

Galah Panjang Competition guide

- 1) Registered player will be placed within a group of 3 (for 15 players)
- 2) There will be 5 groups practice.
- 3) The group will compete each other until there is one sole winner in each group
- 4) The winner from each group will proceed to a semi-final and final stage.
- 5) In a group play, time given for player to collect points is 15 minutes
- 6) In the semi-final, the time allocation is 3 minutes
- 7) In the final the time allocation is 5 minutes.
- 8) All rules and gameplay are based from the original game rules.

Galah Panjang Marking scheme

- 1) Each completed toss and grab will entitle 2 and 1 points for each cap in hand depends on how they grab the caps.
- 2) 2 points will be given if they grab the stone through scooping technique and 1 point for open hand technique.
- 3) Each stacking caps have their own punishment layout called 'Ayam', 'Jamban' and 'Bunga'.
- 4) Point accumulation is based on time given.

Appendix 5

Workshop session:

Sunday. 16/12/2018. 10:00 – 18:00

Theme: Collaborative Design Thinking workshop.

Attendees: Designers and Experienced player

General Goal: Find out a general solution to preserve the MTSG.

Specific Goals: 1) reintroduces selected MTSG through game design improvisation.
2) design a dissemination method of the MTSG.

Activity brief:

Participants will be divided into 4 groups.

Each group will randomly select (Roulette? Dice? Paper?) one of four MTSG that have been simulated in the phase 2.

The workshop is based on three questions gathered from the previous phases finding. One, how can we collect the fragment of information on MTSG, documenting them and disseminating them effectively? How can we motivate them to play and enjoy MTSG regularly? What need to be done to improvise the MTSG to make it more accessible, proper, and inviting?

Slot 1: Effective dissemination method of the MTSG

Each of group are expected to:

- i) Discuss in the group and come out with the mind mapping of available entertainment/information collection/dissemination strategy/medium based on their knowledge and observation.
- ii) Integrate other group mind mapping into 1 big mind mapping.
- iii) Discuss the idea presented in the mind map and keep note.
- iv) Each group will then discuss a strategy on how we can collect, document, and disseminate the information of MTSG effectively and motivate them to play the game.

Slot 2: Reintroduces Selected MTSG through design improvisation.

Each of groups will:

- i) Share their experiences playing the game with their partner.
- ii) Do SWOT analysis / mind map of previous game mechanic and structure.
- iii) Do WINQ (what Works, things to Improve, New Idea, new Question)
- iv) Present their idea on the wall
- v) Each group will then rotate and listen to other group brief presentation.
- vi) Other group will give their insight about the presentations.
- vii) Later, each of the group will work out on the structure and visual ideation of the new MTSG. (Sketching, Mock-up).
- viii) The idea will be presented to other group, and the feedbacks will be gathered.
- ix) The group will be expected to come out with the prototype and game manual's during the next session.

