

“Furniture that Celebrates the Past”:
Exploring the Nostalgia-Evoking Seating Design
on the Purchasing Behavior of Saudi Arabian Millennials
in a Case Study of the Hijazi Karaweetah
by
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ABSTRACT

Furniture is a symbol of civilizations and conveys social-cultural identity. In Saudi Arabia, after the oil discovery, radical lifestyle growth and international investors have impacted local social culture and traditional identity and altered the use and form of furniture. Although Saudi Vision 2030 aims to preserve historical buildings and architectural elements, furniture must be in the scope. This study aims to explore the Hijazi conventional seating at residential spaces, the Karaweetah, as a source of inspiration for designing and preserving cultural artifacts. The study used a multi-method research design based on hermeneutics interpretation, investigating historical nostalgic-evoking seating on Saudi millennials' perceptions and purchasing decision-making. The study involved a case study of Hijazi's Karaweetah to understand its vernacular characteristics and function, followed by design ideations based on three-dimensional prototypes of nine seating designs representing different levels of heritage inspiration. Finally, a visual questionnaire tested the historical nostalgia of Saudi millennials and its effect on their purchasing preferences.

The number of participants who interact with the study is 164, who spend an average of two to five years outside of Saudi Arabia. Most respondents were female (n=131; 79.9%), while male responses were comparatively lower (n=33; 20.1%). Nostalgic elements in seating design profoundly impact Saudi millennials' purchasing decisions by 43.3%, while others (33%) preferred the modern style due to its simplicity and unique details. The outcomes preserve the essence of conventional seating design elements while also benefiting design by providing information on traditional heritage, exploring the present, and maintaining the future of seating design based on vernacular characteristics; the study contributes to the body of knowledge. The proposed framework guides furniture design practice in identifying vernacular characteristics and preserving cultural artifacts. It also provides valuable insight

into Saudi millennials' purchasing decisions and the influence of historical nostalgic-evoking seating designs.

Keywords: Hijazi's Karaweetah, Nostalgia-evoking, Seating design, Vernacular characteristic, Heritage, Saudi Arabia millennials, Saudi consumers, Purchasing preferences

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GLOSSARY OF TERMS

Term/ المصطلح	Definition/ التعريف
Al-Hijaz, Hijazi, Hedjaz	The western region of Saudi Arabia (see map on page 3)
حجازي، الحجاز	المنطقة الغربية للمملكة العربية السعودية (انظر الخريطة في صفحة ٣)
Al-Majlis	The Al-Majlis room is the main space for the family and close female friends, at the second floor.
المجلس	غرفة المجلس هي المساحة الأساسية للعائلة والأصدقاء المقربين للنساء في الدور الثاني في البيت.
Al-Maqad	Al Maqad is the largest sitting room in the traditional Hijazi house at the first level, which is the male-dominant level.
المقعد	المقعد هي أكبر غرفة للجلوس في البيت الحجازي التقليدي في الدور الأول في البيت، وهو الطابق المخصص للرجال غالبا.
Aesthetics	Design philosophy deals with beauty and artistic taste.
جماليات	فلسفة تصميمية تعبر عن الجمال والذوق الفني.
Bayt, Bait	House
بيت	منزل
Ergonomics	Ergonomics, or human factors, is the scientific discipline of understanding human interaction with objects.
بيئة العمل	بيئة العمل او العوامل البشرية هي نظام علمي يهدف الي فهم العلاقة التفاعلية بين الانسان والاشياء.

Term/ المصطلح	Definition/ التعريف
Haji, Hajj	Muslims from all around the world come yearly to make this important trip called the Haji Pilgrimage. It is one of the five pillars of Islam to make the journey to Makkah once in a lifetime.
الحج	يأتي المسلمون من جميع أنحاء العالم سنويا للقيام بهذه الرحلة المهمة التي تسمى رحلة الحج. هي رحلة واحدة في العمر كأحد اركان الإسلام الخمسة.
Heritage	It is part of local design identity as it reflects the development of civilizations and distinct identity.
إرث	هو جزء من هوية التصميم المحلي لأنه يعكس تطور الحضارات والهوية المميزة.
Karaweetah/Karaweeet	Conventional seating at the Hijazi residential spaces. Karaweetah is the singular form of the Karaweeet.
كراوية / كراويت	المقاعد التقليدية في الأماكن السكنية الحجازية. كراوية هي المفرد من كراويت.
Low-fidelity and High-fidelity	Low-fidelity: Produce a tangible element of an artifact by using software with 3D design models to test and review ideas. High-fidelity: produce a tangible element of an artifact.
منخفضة الدقة و عالية الدقة	منخفضة الدقة: إنتاج عنصر ملموس باستخدام برنامج ثلاثي الابعاد لعرض الأفكار ومراجعتها. عالية الدقة: إنتاج عنصر ملموس للقطعة.

Term/ المصطلح	Definition/ التعريف
Madafi	It is a support side cushion that is placed on the Karaweetah covered with a thick floral red patterned fabric called Damask.
مدفة	وسادة جانبية داعمة توضع على الكراوية ومغطاة بقماش سميك منقوش باللون الأحمر يسمى الدمشقي أو أبو طير.
Millennials	The millennial, Generation Y, or Echo Boomers generally refers to individuals born between the early 1980s and the early 2000s.
جيل الالفية	جيل الالفية، جيل Y، أو Echo Boomers هم أفراد ولدو بين أوائل الثمانينات الي أوائل القرن الحادي والعشرين.
Misnad	It is a movable back support cushion covered with a thick floral red patterned fabric called Damask.
المسند	عبارة عن وسادة داعمة للظهر متحركة ومغطاة بقماش سميك منقوش باللون الأحمر يسمى الدمشقي أو أبو طير.
Nostalgia	The longing for the past, which could be an object, smell, or touch.
حنين الي الماضي	الشوق للي الماضي عن طريق منتج ملموس، رائحة او لمس.
Prototype	Prototyping is showing a design element of an artifact at various levels, whether high-fidelity or low-fidelity.
النموذج المبدئي	النماذج الأولية هي عملية اظهار منتج لقطعة على مستويات مختلفة، سواء بدقة منخفضة او دقة عالية.

Term/ المصطلح	Definition/ التعريف
Tawaweel	Tawaweel, plural of Tawalah, and Liyanat are floor cushions positioned around the room or at the top of Karaweetah.
تواويل	تواويل جمع تواله وهي وسائد ارضية توضع على مدار الغرفة او توضع على الكراوية.
Vernacular	Vernacular refers to indigenous or common group that uses local material and lives in a particular region or geographical area.
عامية	يشير مصطلح العامية الي مجموعة من السكان الأصليين الذين يستخدمون المواد المحلية ويعيشون في منطقة جغرافية معينة.
Vernacular Characteristics	Cultural features and elements used in the vernacular designs, such as structure (form, aspects, joints), material (wood species, color, texture), dimension (seat height, depth, backrest height, armrest height, seat angle), and ornament (motifs, technique, scale).
الخصائص العامية	تشير الي السمات والعناصر الثقافية المستخدمة في التصاميم العامية مثل الهيكل التصميمي (الشكل والجوانب التصميمية والمفاصل)، الخامات (نوع الخشب و اللون و الخامة)، المقاييس (ارتفاع المقعد و مسند الظهر و زاوية المقعد)، و التفاصيل (الزخارف و التقنيات و الحجم).

CHAPTER 1

INTRODUCTION

Background and Justifications

Furniture, as material culture, is a compelling symbol of civilizations; and seats are the prominent artifacts of culture (Bradford, 1978). Chairs have been part of the social living experience for a long time. This continuity has evolved from functional objects to aspects of displaying and presenting status, such as stools, chairs, and thrones. These physical pieces consist of cultures used or produced by humans. They represent human understanding, experiences, needs, living patterns, habits, and attitudes (Ashour & Rashdan, 2020). Studying a society's material culture not only helps to understand what people create based on their culture but also maintains their heritage inherited by culture. Heritage embraces the legacy of the past, what society lives in the present, and what will be passed on to future generations (UNESCO, n.d.). Hence, the ability to integrate tangible heritage in surrounding environments allows individuals to determine their social culture and design identity (Tilley, 2006). Likewise, experiencing those neglected traditions may stimulate the feeling of belonging and connection to traditional culture (Gu, Li, and Kim, 2021).

Consequently, design based on cultural identity has become a focus due to its attributes to users, religions, and locations (Ashour & Rashdan, 2020). Many contemporary design practitioners and scholars discuss the 21st century concerns in preserving cultural identity as local case studies, such as China (Liu & Li, 2016; Wan, Wang, Zhang, Song, Fei, and Li, 2018; Wu & Liu, 2019) and Taiwan (Rung-Tai, 2007). Few scholars in the Middle East have objective opinions about modernity and global design as an indication of the fast

growth of populations. However, the issue of new designs based on culture does not represent the local unique identity or make sense in some physical forms. One then asks where those forms were utilized and what their origins were. Additionally, Al-Sabouni (2016), in *Architecture with Identity Crisis: The Lost Heritage of the Middle East*, argues that the major problem that causes identity design crisis in the Arabic region is that architects and designers cannot produce a style without the Islamic traditions as an imperative aspect. They look at Islamic architecture as decorated surfaces on streets and local façades, representing all regions of the Islamic world (Al-Sabouni, 2016). However, each region has its unique heritage and characteristics based on its long history of evolution. Other studies discuss the shifting as a new objective perspective and study heritage as a new application in architectural studies (Al-Ban, 2020; Al-Othman, 2017) and interior design (Ashour & Rashdan, 2020; Khayat, 2019). However, few are associated with preserving the original local interior design identity (Ashour & Rashdan, 2020). Yet, none of the studies discuss the physical material object of cultures, such as furniture, to provide an insight into the culture to preserve inherited traditions, even though furniture has historically directed interactions with humans and served as material cultural objects that determine the social, culture, and design identity of the region.

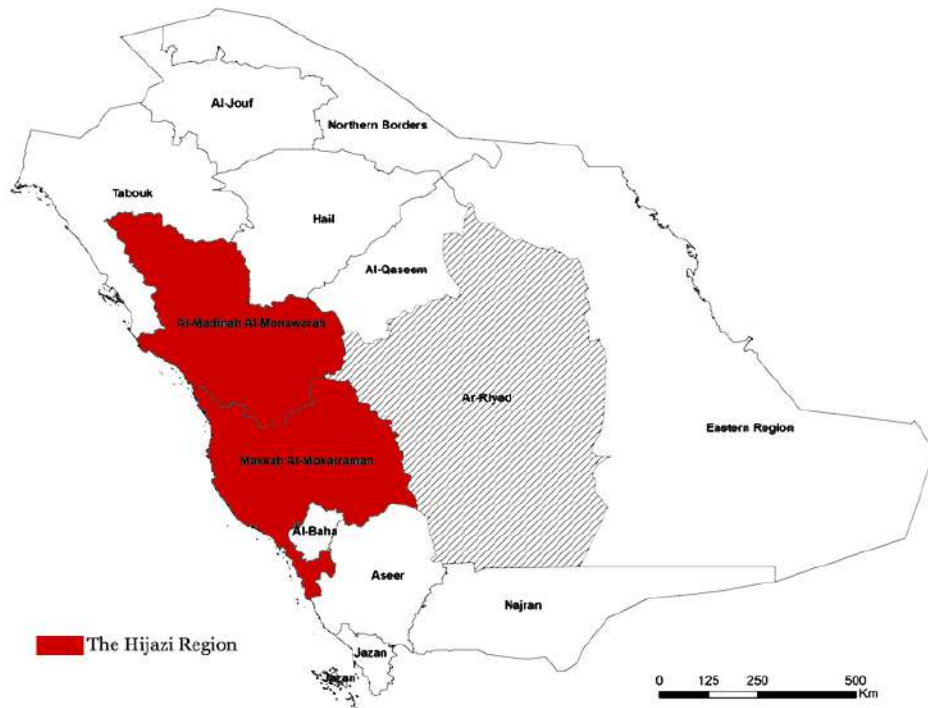
The Kingdom of Saudi Arabia (KSA), as one of the oldest lands in the Middle East, has a significant tangible and intangible cultural heritage. Historically, the land has existed for 6,000 years, forming a symbiotic relationship with nomadic tribes (Bedouins). The peninsula has developed a sophisticated trade network to transport goods between the two oldest civilizations in the Nile River Valley and Mesopotamia civilizations (*Saudi Arabia: History*, n.d.). After the birth of Islam around the 7th century, the nation became the heart of the Islamic world and the Muslim religion. It became a major international factor of cultural

development and a center for learning during the golden age of the Muslim world. The beginning of the first Saudi Arabia was initially presented by Imam Mohamed ibn Saud when he dispatched the largest cities of the peninsula. Then, by September 23rd, 1932, modern Saudi Arabia was united and formulated by King Abdul-Aziz (Al-Lyaly, 1990). Since 1932, it evolved from a desert nation to a significant international country.

The nation of Saudi Arabia has five significant regions and thirteen provinces, each with a unique cultural heritage. The region of Najd is found in the middle, Al-Sharqiyah in the East, Al-Janoob in the south, Al-Shamal in the north, and Al-Hijazi in the west (see Figure 1). The provinces include Macca, Riyadh, Asir, Jizan, Medina, Al-Qassim, Tabuk, Najran, Ha'il, Al-Bahah, Al-Jawf, and the northern Borders (*GISGeography*, n.d.).

Figure 1

Map of the Kingdom of Saudi Arabia Hijazi region and thirteen provinces (Al-Turaiki et al., 2021, p. 5)



Some of the unique historical places in the KSA were approved by international organizations to preserve heritage, such as the International Council on Monuments and Sites (ICOMOS) and the United Nations Educational, Scientific and Cultural Organization (UNESCO). According to Frey and Steiner (2011), sites in the UNESCO list include places that meet the aspects of “uniqueness, historical authenticity, and integrity or intactness” (p.556). The cultural sites on the list are Hegra Archaeological Site (2008), At-Turaif District in ad-Dir’iyah (2010), Historic Jeddah in the western region (2014), Rock Art in the Hail Region (2015), Al-Ahsa Oasis evolving cultural landscape (2018), and the Himā Cultural area (2021) (see Figure 2) (UNESCO, n.d.).

Figure 2

Saudi Arabian cultural sites on the UNESCO list (UNESCO.org, n.d.)



(A) Hegra Archaeological



(B) At-Turaif District



(C) Historic Jeddah



(D) Rock Art



(E) Al-Ahsa Oasis



(F) Himā Cultural Area

For long decades, the society of Saudi Arabia witnessed direct or indirect changes such as social culture, design identity, and family dynamics (Al-Dossry, 2012); international investors with global aesthetics (Al-Sabouni, 2016); individuals with Western perspectives (Jomah, 1992); and foreign design language that does not reflect the kingdom's local design identity (Salman, 2018). Consequently, in 2014, the government of Saudi Arabia created *Vision 2030*, which is based on economic growth, unique transformation, and innovation to maintain the local cultural identity and globalize. Several organizations and associations developed plans to preserve heritage, such as the Ministry of Culture (MOC), the Saudi Heritage Preservation Society, the Heritage Commission, and the Architectural Heritage Preservation Society in Jeddah. The MOC is a Saudi authority concerned with heritage and improving citizens' lives economically and socially (MOC.gov.sa, 2019). This organization is interested in preserving material and non-material heritage to contribute to the knowledge of neglected topics, e.g., industrial and folk heritage. These efforts are relatively new and aim to maintain and document the Saudi heritage. These projects attempt to find identity and reflect cultural heritage. However, maintaining identity was limited to large architectural projects, such as historical buildings, while negligible projects, such as housing, were outside the project's scope (MOC.gov.sa, 2019).

The Scope of the Study: The Hijazi Region, Jeddah

Historic Jeddah is a UNESCO World Heritage site, also called Al-Balad or Old Jeddah (UNESCO, n.d). Historical Jeddah reflects an outstanding traditional architecture and construction style that has been preserved and maintained for decades. Most buildings are residential spaces characterized by large wooden Mashrabiya (Roshan). The conventional interior spaces and furniture were minimal and multi-functional (Akbar, 1998). Additionally,

before furniture pieces became a part of the house, a craftsman communicated with family members about the furniture size. Therefore, furniture is locally made to adjust to the family and region. Consequently, each house has its characteristics, features, and forms (Akbar, 1998).

According to Jomah (1992) in *The Traditional Process of Producing a House in Arabia During the 18th And 19th Centuries: A Case Study of Hedjaz*, the traditional Hijazi house's private life is family-centered, and social unity is around individuals. However, the development of the modern Saudi family has weakened these connections (Jomah, 1992). This results in early patterns of social organizations shifting from collective family to individual (Al-Dossry, 2012). The attraction of contemporary perspectives weakens the family unit (Jomah, 1992). As a result, the Hijazi houses changed from large houses with more floors to fit the extended family to singular houses, apartments, or villas (Akbar, 1998). Yet, forms of conventional seating, the Karaweetah, changed from large, modest forms with simple and humble materials such as thick cushions, called Tawaweel, (Akbar, 1998), into more Westernized seating designs that neglect the symbolic values of representing social life and Islamic traditions through design.

Traditional seats in residential Hijazi houses express locals' social identity and everyday practices. Akbar (1998) explains the uses of the seating size to accommodate personal relaxing uses during the day, sleeping for guests at night, and several guests sitting during big social occasions (see Figure 3). The seating height represents a cultural behavior of respect: the person who sits is at the same level as the person who stands (Akbar, 1998). The lower part is for storage. However, for modern Saudi users, furniture represents a lifestyle, an expression of self, and social status. Many Saudi families buy from global brands for the reason of international experience (KenResearch.com, 2019). They are attracted to

functional and aesthetically pleasing goods that express modern individuality (Al-Dossry, 2012) and the ideas of self-assembling (KenResearch.com, 2019).

Figure 3

Hijazi's Karaweetah at Al-Maqad space, Historical Jeddah, by the researcher

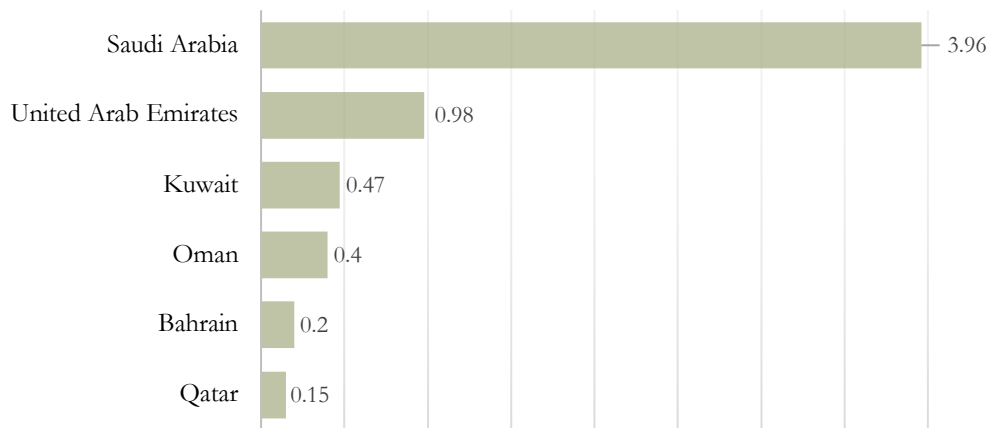


Statistical analysis showed that the Saudi consumer spent 8.3 percent of their income on furniture and household goods (Statista.com, 2021). Yet, with the increase in local population and significant demand based on end-users, the furniture market is anticipated to grow 8.7% from 2019 to 2035. Additionally, a Mordor intelligence report in *Gulf Cooperation Council Furniture Market - Growth, Trends, Covid-19 Impact, And Forecasts (2021- 2026)* states that the furniture market in Saudi Arabia is one of the fastest growing markets due to the development of socio-economic infrastructures and foreign investors (MordorIntelligence.com, 2021)(see Figure 4). Some of those global companies have

succeeded in preserving their cultural identity and have become internationally influential. For example, IKEA successfully presents a minimal Scandinavian design, low-cost, and easy-to-assemble products. However, many of those contemporary furniture design-based identities are not original Saudi designs and fall under foreign design language.

Figure 4

Forecasted demands of housing of the Gulf Cooperation Council, in millions (MordorIntelligence.com, 2021)



With the fast growth of furniture demand, markets require understanding their users' needs, preferences, and social-cultural identity. Many research studies in the West have built conceptual recognitions of consumers' shifting patterns based on demographical, socio-economical, and psychological characteristics. Previous studies have built their understanding of consumer preferences based on their background and culture (Bao, Yang, Lin, Fang, Wang, Pöppel, & Lei, 2016; Huang, Ma, & Yang, 2020; Oblak, Glavonijić, Barčić, Govedič, & Grošelj, 2020). Other studies looked at market segmentations based on age groups (Jiang, Cheung, Westland, Rhodes, Shhen, & Xu, 2020; Mehta & Chugan, 2014;

Ponder, 2013). Further studies pursued the divisions based on household categorization, such as furniture types (Huang et al., 2020; Jiang et al., 2020; Jo, Yim, Park, & Kang, 2017; Kaputa, Barčić, Matòvá, & Motik, 2018; Knauf, 2015; Oblak et al., 2020). Others presented significant differences based on decision-making and gender roles in furnishing the home (Al-Dossry, 2012; Hareri, 2018; Öztop, Erkal, & Gunay, 2008), where the male significantly influences the price (Al-Dossry, 2012), and females influence style, products, and store/brand (Hareri, 2018). Other studies showed different preferences based on the furnished finish materials (Jo et al., 2017; Knauf, 2015) and brand and environmental attributes (Kaputa et al., 2018; Khojasteh, Shalbafan, & Thoemen, 2020).

Additionally, the visual appeal of furniture becomes an interrupter in buying decisions. Previous studies showed that users' preferences are influenced by linear objects versus curved designs (Jiang, et al., 2020) and furniture color (Jiang et al., 2020). Consequently, different designs might evoke different visual perceptions and preferences (Lin, Lai, & Yeh, 2007), and emotions or moods can also produce preferences and attitudes linked to the past and affect decision-making (Sierra & McQuitty, 2007). Therefore, other studies have used the emotional attractions of the users to evoke a desirable mood, such as nostalgia, in order to capture the public's imagination (Hepper et al., 2014). The longing for the past is widely studied in marketing and branding as an important tool that can affect consumers' purchasing behavior (Gu, Li, & Kim, 2021; Marchegiani & Phau, 2011; Russell, 2013). Although the yearning for the past is stimulated differently by evocative objects, visuals, or smells, the level of historical nostalgia is shaped based on individual experiences, background, and culture (Chark, 2021; Gu et al., 2021).

By reflecting on the existing research furniture market studies, the focus is on the end-user, furniture demands, and age/gender preferences based on culture and background,

which are critical factors in understanding market segmentation preferences. Few have studied the emotional attractions of the users as a desirable mood for purchasing. However, no research has evaluated the nostalgic traditional evoking furniture on users' purchasing behavior, nor the Saudi consumer preferences as one of the market strategies. Therefore, the current study attempts to contribute to the knowledge base by exploring the influence of nostalgic-evoking traditional stimuli furniture on the Saudi millennials, individuals born between the early 1980s and the early 2000s, attention and purchasing decisions. Saudi millennials represent the highest population in Saudi Arabia, with 39% in 2023, requiring an understanding of their buying preferences for the future development of the local furniture market. Accordingly, this study aimed to explore two directions: (1) to document neglected heritage objects such as the conventional seating (the Karaweetah), where cultural traditions are human-centered and lack documentation of its design elements, visual characteristics, and originality; and (2) to explore the historical nostalgic-evoking traditional seating on the Saudis millennial's attention and purchasing decisions.

Research Problem

The goal of design is to improve the quality of the user's life by developing innovative products, systems, services, and experiences. As a result, design has a central role in achieving the Kingdom of Saudi Arabia's *Vision 2030*, which is based on economic growth, unique transformation, and innovation to maintain its local cultural identity (MOC.gov.sa, 2019). Previous studies have indicated that traditional cultural identity becomes prominent in design because of the need to develop the local economy and consumer cultural identity. Few studies have approached interior design and reflected on the local cultural heritage (Ashour & Rashdan, 2020; Khayat, 2019). In addition, no

comprehensive studies aim to investigate the original design identity of furniture or the traditional Hijazi seating Karaweetah. Although previous studies mentioned above tend to understand and articulate the consumer purchasing behaviors toward furniture purchasing to determine a better way to adjust to the changes of local demand as a marketing strategy in the West, it does not recognize consumers from the Middle East nor understand their behaviors towards preserved design identity. Given these gaps, this research study focused on maintaining the original furniture design identity of the conventional Hijazi's seating Karaweetah and probing the nostalgic-evoking traditional seating effects on the purchasing decision-making of Saudi consumers. Since age is a significant marketing variable, this study is limited to the purchasing preferences from the Hijazi regions of the subpopulations of Saudi citizens in the millennial age group.

Research Questions

This research investigated the Saudi Millennium's nostalgic behavior toward preserving traditional cultural identity in seating design in the context of Hijazi, Saudi Arabia, with a particular focus on domestic seating in the living room space. Consequently, the current study uses primary and secondary data resources to understand the following questions:

1. What are the vernacular characteristics tangible and intangible values in the conventional Hijazi's seating the Karaweetah?
2. What are Saudi millennials consumers' attitudes toward preserving traditional cultural identity in seating design?
3. Can historic nostalgia-evoking seating design influence Saudi millennials consumers in buying decision-making?

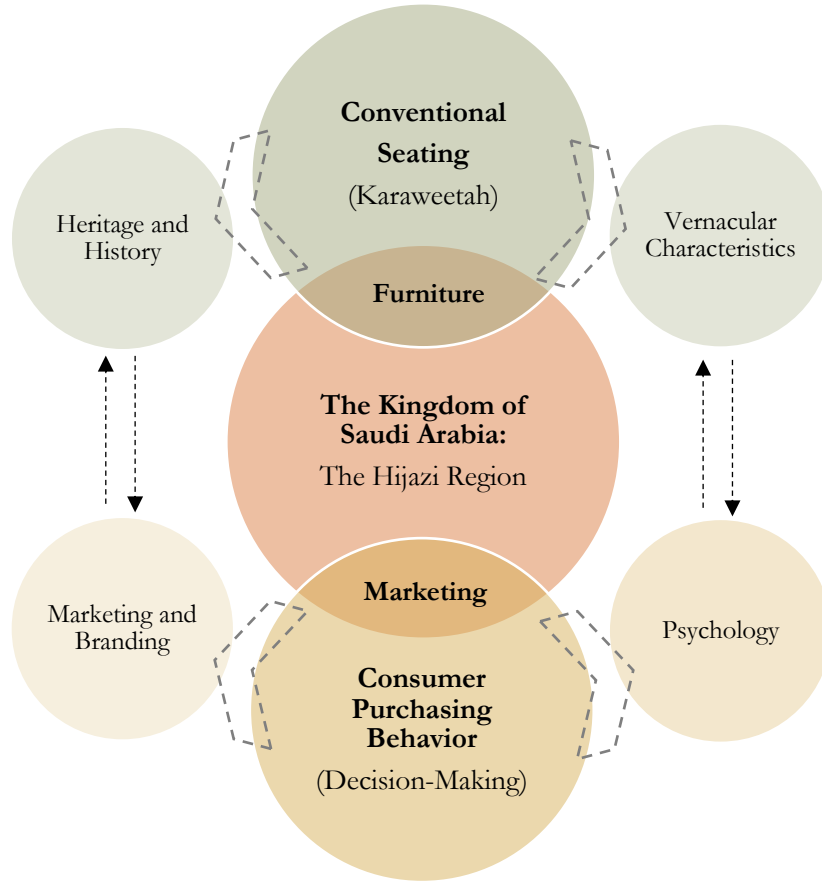
Research Aim and Objectives

This research study aims to develop a framework to help professionals, practitioners, and student designers preserve the heritage and maintain the Saudi original cultural identity in seating design. The study framework explored, analyzed, and interpreted the conventional seating Karaweetah to document elements of design and heritage, such as symbols, shapes, forms, and colors. Other characteristics related to making and traditional woodworking techniques can add value are long-lasting, and present original local identity. Nevertheless, this framework would create a three-dimensional visual prototyping of nine potential designs for the research study to test the nostalgic-evoking traditional stimuli on Saudi millennial purchasing behavior. The objectives are:

- To document information related to traditional Hijazi seating, the Karaweetah, from Historical Jeddah, Saudi Arabia,
- To identify elements of heritage and vernacular characteristics of the Karaweetah,
- To explore the existing guidance preserving social, cultural, and design identity in furniture design, the uses of heritage as a cultural component, and how it is incorporated into design,
- To produce a framework and a design approach that can improve and produce a unique characteristic celebrating the historical nostalgia of the past, and
- To test the historic nostalgia level of Saudi millennials consumers' preferences in regard to traditional cultural identity and heritage (see Figure 5).

Figure 5

The diagram shows the conceptual scope of the study.



Research Methodology

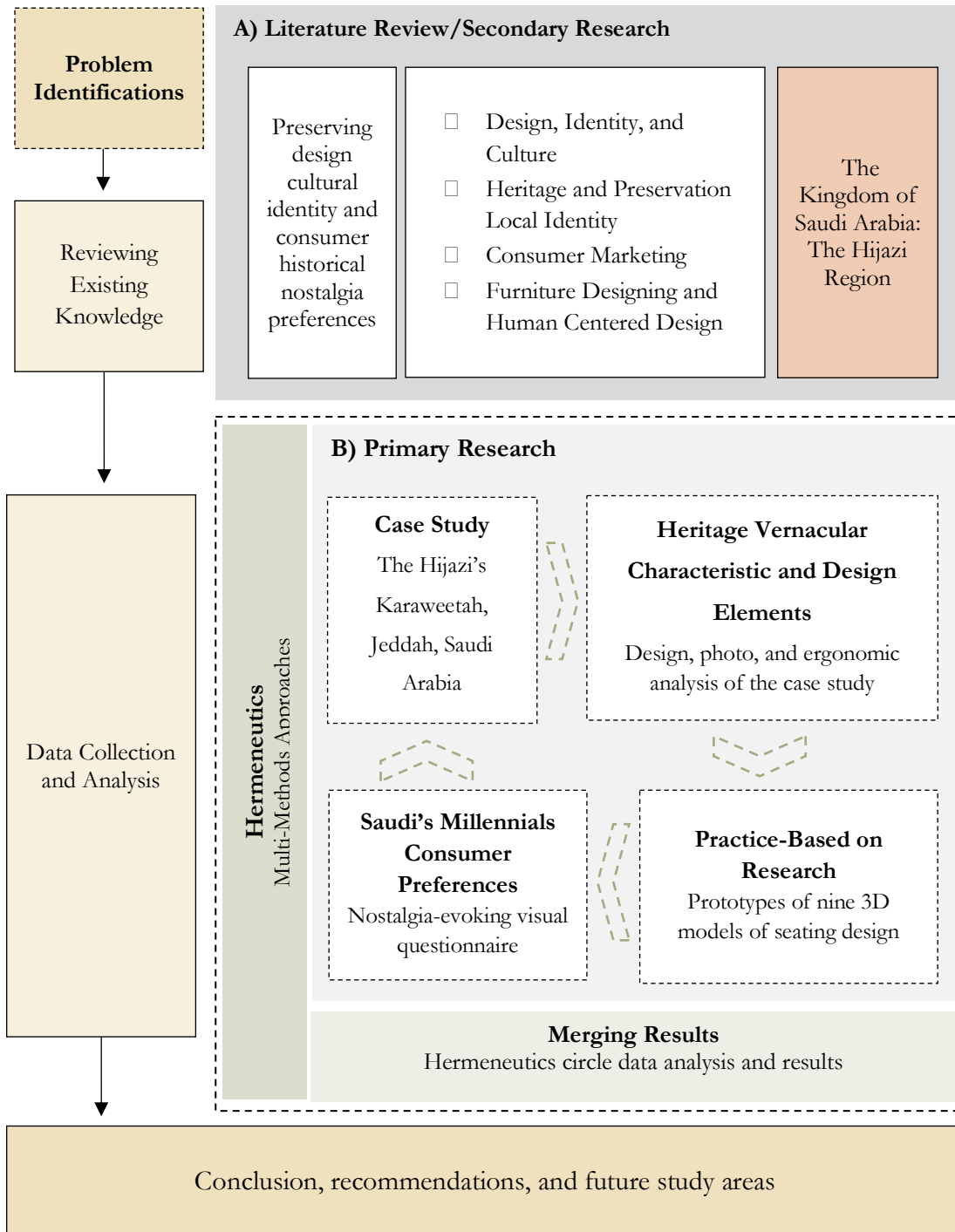
Understanding the research philosophy and methodology is essential to develop knowledge and produce valid study results (Crotty, 2015). While philosophy provides general theoretical thinking to generate an understanding of reality and to design, conduct, analyze, and interpret the research outcome (Moon & Blackman, 2017), a methodology is the plan or

strategy of the research design that shapes choices of methods and links the research outcome to prior research (Crotty, 2015).

Most research on heritage and social-cultural understanding of identity is limited or only recently active in Saudi Arabia. However, modern studies of epistemology, which looks at the relationships between subjects and objects where meanings are generated in real world and life experiences are developed. Hermeneutics is one of the scientific interpretations and methodological approaches used to understand written information and interpret human practices (Crotty, 2015). It serves as a research strategy to gather and interpret data from a multi-method approach to explore the issues related to the research study (Zweck, et al., 2008). Therefore, this study based its investigations on the hermeneutics research strategies. It developed a multi-method (qualitative and quantitative) research design to provide meaningful insights and a complete understanding of the study area (see Figure 6). Each strategy represents its techniques and guides how the research is approached, analyzed, and reported (Creswell, 2003). Multiple methods are used from primary and secondary resources to close the gap between exploring the past of Hijazi conventional seating Karaweetah, understanding the present Saudi millennials' historical nostalgia preferences, and preserving the Hijazi social-cultural design identity for the future.

Figure 6

Research methodology framework



Research Design

This study involves interdisciplinary research dealing with various data collection strategies to answer the study research questions, aims, and objectives. Multiple method approaches are used to straighten the quality of the research study and the findings. The multi-method research design is based on the interpretive approach of hermeneutics. By applying the hermeneutic lens in structuring the research design, the study follows the five-step strategy described by Patterson and Williams (2002) in *Collecting and Analyzing Qualitative Data: Hermeneutic Principles, Methods, and Case Examples*. These steps include: (1) choosing the conceptual framework, the forestructure of understanding; (2) deciding how to represent the data; (3) determining the sampling principle that guides the elements from the population; (4) deciding the methods of data collection; (5) and deciding methods of data analysis (Patterson & Williams, 2002).

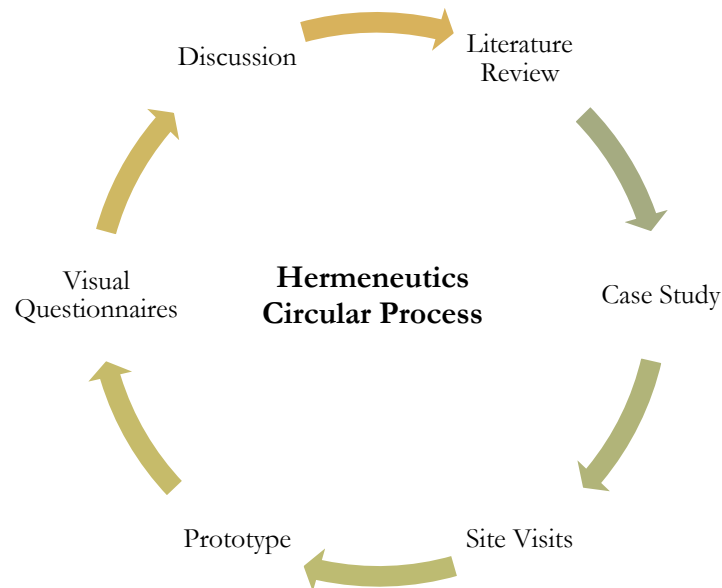
Conceptual Framework

Hermeneutics is the theory and practice of interpretation that involves thoroughly understanding the data (Gillo, 2021; Moules, 2002; Patterson & Williams, 2002). Since the late 19th century, the inquiry of hermeneutics has extended to include the study of human behavior. Thus, hermeneutics has emerged as the research tradition in the social sciences (Patterson & Williams, 2002). The core of hermeneutics is to describe and interpret human experiences in real-world situations (Mousavilar, Soleimani, & Esmaeelzadeh, 2020). Hermeneutics analysis implies a multiple meaning and inter-relationship between the whole and its parts (Patterson & Williams, 2002). This means understanding the whole data set established by referencing each part and the individual parts by referencing the whole.

The study applies the hermeneutics theory as it is the practice of interpretation. The description and interpretation of human experiences in real-world situations (Mousavilar et al., 2020; Ramsook, 2018) and the analysis of multiple meanings and inter-relationship between the whole and its parts (Patterson & Williams, 2002) are applied. Hence, understanding the whole data set is established by referencing each part and the individual parts by referencing the whole. While the study's data collection deals with multi-methods, the data set of each method is interpreted separately. The whole data of each method are reflected upon as a whole. The following diagram shows the proposed research study's circular data collection and analysis process (see Figure 7).

Figure 7

Diagram of conceptual framework based on hermeneutics circular process of data collection and analysis.



Data Representations

Nothing within the hermeneutics philosophy requires data representations. The essential descriptions of the data are in visual images and words. Therefore, the outcome of the study uses the English language as the format for this study due to the degree requirement of Arizona State University. Because the study explores culture and language in the KSA, some Arabic notation is provided to make the work more useful to Arabic designers, scholars, and leaders. The visuals could be used for practical information communication conveying quantitative representations (Patterson & Williams, 2002). Thus, this research investigation deals with elements and characteristics of the design that require visual communication. The study uses photos, sketches, drawings, diagrams, and other media to better represent the data. Although visual tools require different resources and skills than the traditional methods, they result in a higher level of innovative dissemination (Ross-Hellauer et al., 2020).

Sampling Descriptions

The aim of describing the sample is to identify representative individuals to relay experiences, beliefs, or systems rather than the average individual (Patterson & Williams, 2002). Yet, study participants are selected based on the critical element of their experiences about the phenomena under study (Ramsook, 2018). The sampling represents experiences within populations to create homogenous groups of characteristics. Thus, this research investigated Saudi millennials' consumption behavior toward preserving traditional cultural identity in seating design in the regional area of Hijazi, Jeddah, Saudi Arabia. Selected participants were born in Jeddah and have lived there since birth. Their ages are between 25 to 45 years old. Millennial consumers are considered the highest percentage of the Saudi

population (50%) (Lim, 2013). Many millennials are in the stage where historical nostalgia may have shaped part of their collective memory, and the long years that shaped their early life might influence their current buying preferences (Russell, 2013).

The participants' recruitment strategy was the focus when considering the visual questionnaire construction. Recruitment is the process of finding candidates for the study. This study aimed for a sample size of around 200 to 250. Two ways are used to disseminate the study visual questionnaire: (1) a written email directly sent to potential subjects to communicate with participants through the authorized organization (Saudi Arabian Cultural Mission (SACM)), and (2) a WhatsApp message sent to groups of participants who are studying abroad. Furthermore, based on Arizona State University (ASU) recruitment processes, to ensure following the ethical considerations, each material must: (1) Respect privacy by sending to invite individuals to take part in the study; (2) explain that the participation lacks of pressure by wishing the participant to take part voluntarily; (3) describe participation entails, such as expected time to finish the questionnaire; (4) convey the study plan and detailed information's with participants; (5) describe why the individual being connected; and (6) explain the purpose of the study and how the unbiased representations of the study information's.

The recruitment script describes the research plans and includes privacy concerns before enrolment to establish interest and willingness. This part of the information about the study is considered by federal regulations, and the IRB is to be informed by the process. Therefore, the data needs to represent the research plan and receive IRB approval before the involvement of the third phase of this research investigation clearly and accurately.

Data Collection

There are no specific approaches to data collection in hermeneutics studies. However, most research studies are likely to use in-depth interviews in tourism and recreation (Patterson & Williams, 2002); to study narratives in psychology (DeMarrais, Moret, & Pope, 2018); or to observe participants as a participatory design technique (Frauenberger et al., 2010). Other research studies used color and visual communications in advertisement (Russell, 2013) and product design research (Mousavilar et al., 2020). This research study aims to build a foundation of the past local conventional seating Karaweetah, understand the Saudi consumer purchasing preferences toward nostalgic products, and preserve the social-cultural identity for the future. The study involves a multi-method aiming to expand understanding and explore experiences. By applying the core of hermeneutic, the study developed a three-phase investigation to collect the necessary data involving multi-methods approaches:

- The study's first phase was a case study of The Hijazi Karaweetah. A case study approach generates an in-depth understanding of current situations, individuals, organizations, or visual materials (Creswell, 2003). Because of the need for original heritage awareness and design elements of the Karaweetah to be preserved in contemporary design, the study used visual documentation to explore the traditional characteristics of the Karaweetah in a real-life setting. The multiple site visits allowed the researcher to document and obtain visual materials to understand Karaweetah cultural story, function, construction, style, material, structure, and symbolic detail.

- The second phase of the study is concerned with design practice and ideations. The data collected from the first phase were used to generate two and three-dimensional prototyping. Prototyping is the tangible creation of artifacts, whether high-fidelity with actual testing of the design concepts or low-fidelity by using software design or paper prototyping. Both are free solutions for developing and testing ideas (Martin & Hanington, 2018). This study dealt with low-fidelity prototyping to generate nine different seating designs by the researcher. The nine designs represent different levels of heritage inspiration in chronological sequence: three designs are historical (traditional), three are new historical (semi-traditional), and three are free historical (contemporary), based on the three levels of reflexive modernism methods of inspiration by Ashour and Rashdan (2020).
- The third phase of the data collection was the visual questionnaire. The questionnaire is designed to give the option to choose based on their individual preferences and provides an area for open-ended comments. The questionnaire is divided into three main parts. The first part aims to collect socio-demographical information about participants, such as gender, age, level of education, and occupation. The second part includes questions about the participant's preferences when purchasing a chair for their living room space. The third part explores the Saudi millennial's experiences of historical nostalgia-evoking photos of the nine-seating ordered in chronological sequence (from traditional to contemporary) in three-dimensional views. The participants were asked to rank each design based on their preferences using a three-point scale

and five statements to report individuals' opinions with the Likert scale. The Likert scale was based on a scale from Strongly Disagree (1) to Agree Strongly (5). The statement of agreement presents a high level, and disagreements are low.

Data Analysis

Hermeneutic interpretation seeks to understand individuals' experiences and how they conceptualize the world regarding similar themes found between individuals. Thus, ethical management and confidentiality of the research data in hermeneutics is essential (Ramsook, 2018). Patterson and Williams (2002) have proposed an organized system in the hermeneutics investigation. This system is used to organize the study's data analysis in the proceeding chapters. The system of organization is explained in detail in the next part.

- Maintaining a record: A record of the data collected is maintained digitally in appropriate software (Ramsook, 2018). This is done to ensure an adequate database and for proofing to look for errors (Patterson & Williams, 2002). The data are documented in detail (written and drawing), listed, and developed into a digital coding system.
- Indexing: Developing an organizing system for the indexing to locate units of text is essential. The units are based on the study under investigation, and the analysis decides each unit of reference—Patterson and Williams (2002) reason the smallest unit of text is better for an organized system.
- Re-reading the data: The researcher must read the data several times. This reading and re-reading process provides a deeper understanding of the content before coding.

- Meaning units: Identifying and making units of meaning within the data set refers to a group of comprehensibly independent sentences. This stage required thoughtful and careful reading and rereading of the text by the researcher.
- Developing themes: After getting the meaning units, thematic labels are created under each meaning unit. The thematic labels are the researcher's analysis and interpretation. Those themes are identified based on the existing literature, research goal, questions, and themes used to guide the data-collecting methods. This stage could be done manually or by software.
- Explaining the themes: Understanding and explaining the interrelationship among themes is the crucial feature of hermeneutics analysis, and it is the first step of interpretation. Figures and visual aids are helpful organizers for the themes and the interrelation of the data rather than simply reporting the findings in writing.
- Discussion: Writing a discussion of the interpretation includes evidence as justification. The common fault of this stage is listing a summary of the respondents. This written presentation should be interpretive to provide insight into the phenomena under study. The analysis should carefully explain how specific excerpts were selected and include contradictory or ambiguous data in the analysis. Yet, the researcher's reflexivity to the study findings is based on biases, values, and assumptions to maintain integrity, honesty, and transparency (Ramsook, 2018). Based on the systematic analysis of the hermeneutics investigation, the study organized the data analysis stages as described in detail in Chapter 3.

Research Structure

This research investigation is presented in five chapters (see Figure 8). An overview description of each chapter is as followed:

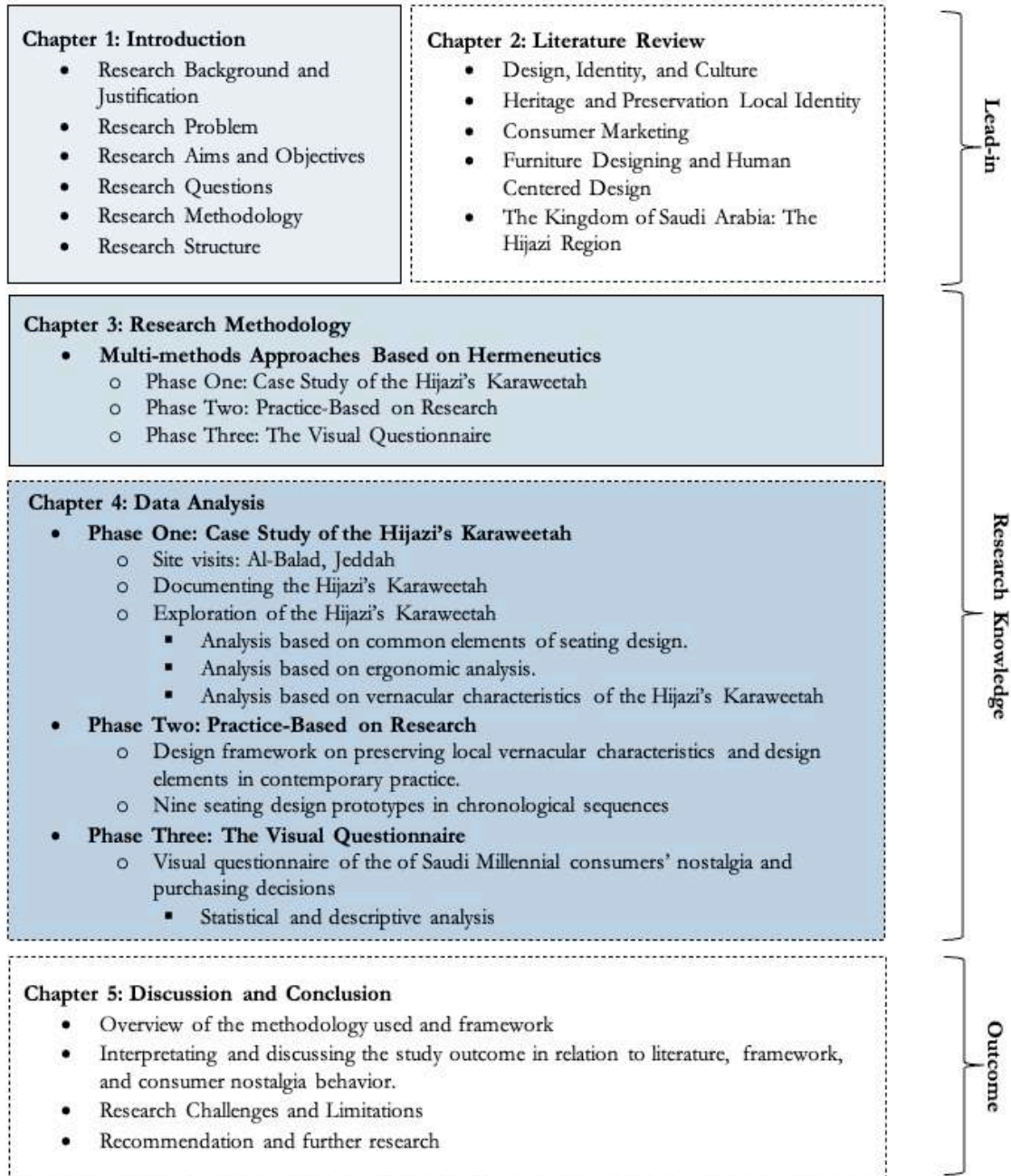
1. The first chapter is an introduction to the research study, background and justification, research problem, research questions, aims and objectives, research methodology and design, and the structure of the research investigation.
2. The second chapter is a presentation of the literature review: a general explanation of the concepts of culture, identity, and design; heritage and preserving identity in the Western world and Middle East studies; methods and strategies in undersetting consumer behavior, Millennials, and nostalgia evoking visuals; and furniture evolution and its users. Also included are the research context of the Kingdom of Saudi Arabia's culture, values, traditions, and design; history and cultural shifting; and residential spaces and furniture before the 21st century.
3. The third chapter focuses on the data collection methods and philosophical approaches used in the study. The interventions in the study are based on the philosophical interpretation of hermeneutics. The study developed a multi-method data collection approach in research design, which was developed in three phases. Phase one involved documenting the conventional seating of the Hijazi's Karaweetah as a Case study. Phase two was dedicated to creating nine seating designs that evoke nostalgia and represent different levels of heritage inspirations based on research. Of those designs, three are traditional, three are semi-traditional, and three are contemporary. Lastly, in the third phase, a visual

questionnaire was developed to test the historical nostalgia-evoking seats on Saudi millennial consumers and its effect on their attention and purchasing preferences.

4. The fourth chapter is the data analysis of the multi-methods data. This chapter is divided into three parts. The first part is the data collected from the first phase of the study (Case study). The data is visually presented with descriptions of the data collection. This includes analysis of the photos taken from the site visits, ergonomic analyses to document the seating dimensions and vernacular analysis of Karaweetah-designed elements. The second part is the outcomes of the second phase, where the nine different two-dimensional (2D) and three-dimensional (3D) prototypes of seating designs are explored and modeled. The study uses low-fidelity 2D and 3D software to generate design prototypes. The last part, the third phase of the study data collection, is the visual questionnaire outcome from testing the historical nostalgia level of Saudi millennial consumers' nostalgia effect on purchasing decisions of the nine proposed designs. The data is presented in visuals, statistics, and descriptive analysis.
5. The fifth chapter is the research conclusion and discussion—an overview of the methodology strategies and framework of the study. The use of Hermeneutic circle analysis in the findings of the whole research will relate secondary and primary data together. The result is interpreted based on the socio-cultural understanding of the local needs, users, and forms from the secondary data and primary sources. For a timeline of the research investigations, please refer to Appendix A.

Figure 8

The research outline presents the objective of each chapter.



Chapter Summary

This research investigated the original local design identity in furniture design in Saudi Arabia, specifically in Jeddah city. Historic Jeddah is a UNESCO World Heritage site with outstanding traditional architecture preserved and maintained for decades. Traditional furniture represents cultural behaviors of respect and social practices and is minimal and multi-functional. However, the furniture market in Saudi Arabia is growing rapidly due to the increase in local population, significant demand, and development of socio-economic infrastructures, attracting foreign investors and global companies. Still, many contemporary furniture design-based identities are not original Saudi designs and fall under foreign design language. This research highlighted the issue of preserving heritage in furniture design by exploring and documenting the traditional Karaweetah, which eventually increases the knowledge of local heritage to maintain its characteristics in contemporary seating designs. Additionally, the study evaluated local preferences, focusing on Saudi millennial consumer purchasing decision-making by testing nine nostalgia-evoking seating designs for the Saudi Karaweetah.

CHAPTER 2.

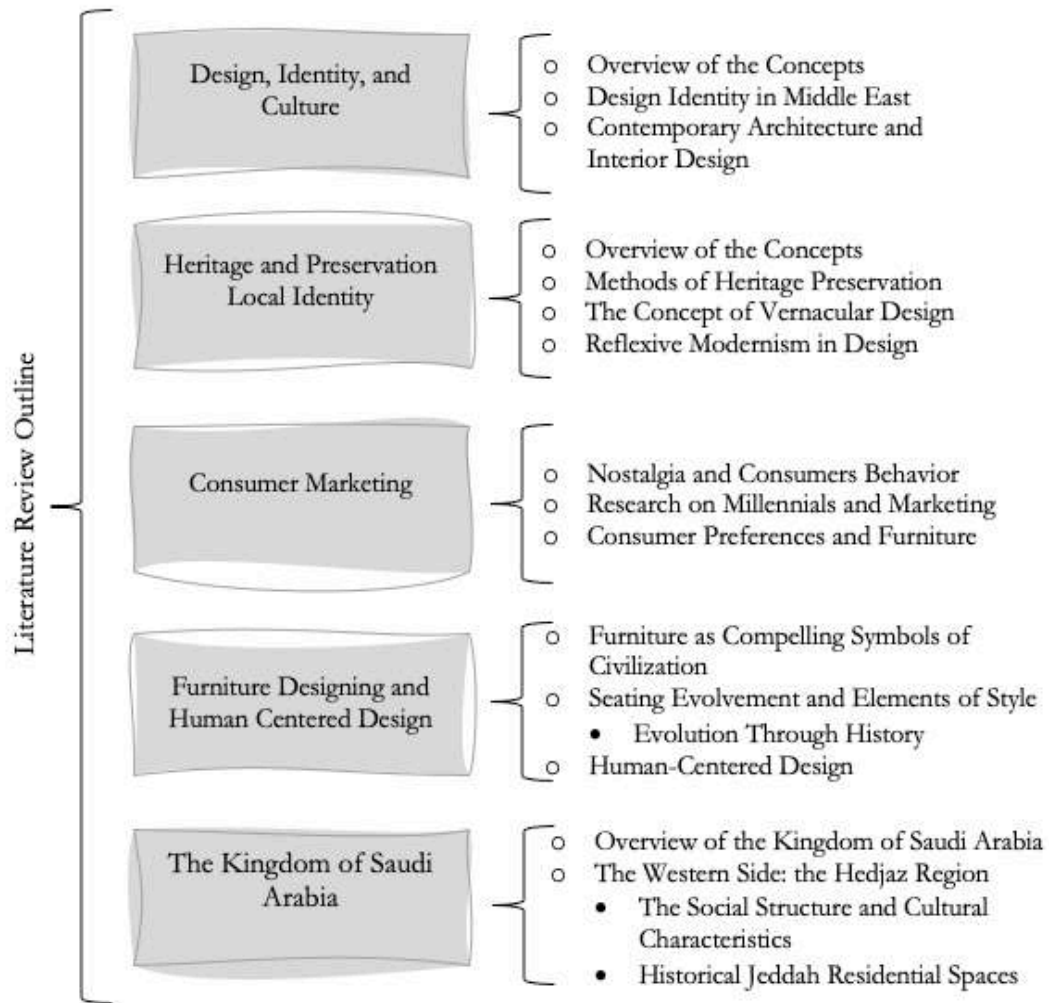
LITERATURE REVIEW

Introduction

Chapter two is the literature review of previous studies by other scholars related to the topic's aim and objective. This chapter attempts to highlight interdisciplinary thinking to obtain information on existing studies about the research areas. Multiple interdisciplinary views from anthropology, psychology, social, and sociology, questions of style and design, consumer behavior, economics, history, and material culture are all investigated. The first part described the definitions of design, culture, and identity and their relationship to design and product design methods and theories of practice. The second part includes the concept of preserving local cultural identity, heritage, and vernacular design. The third part provides studies related to consumer behavior and buying decision-making in relation to furniture choices. The fourth part focuses on the evolution of furniture design concerning seating (chairs, benches, stools, sofas) through history and human-centered design. The fifth part discusses a general overview of the Kingdom of Saudi Arabia and focuses on the Hijazi region's social structure and cultural characteristics. The last part of this chapter is the summary (See Figure 9).

Figure 9

The diagram shows the general and specific areas in the literature review.



Design, Identity, and Culture

The information presented in this section gives an overview of the research concepts and definitions of culture and identity related to design and product design. The design has a natural effect on the research outcome due to its possibilities in raising awareness of local

cultural identity and its importance to culturally oriented design. Therefore, this section presents general information related to culture and identity and research related to product/furniture design.

Culture

The term culture is widely defined in different areas of knowledge, such as psychology, sociology, and anthropology. This section starts with an overview of the various cultural definitions. The first definition was by Edward Tylor in 1871, as noted in Hofstede (2001). He defines culture as knowledge of people's language, beliefs, social behaviors, arts, law, morals, and other habits. Geertz, in 1973, defines culture as the psychological component of an individual or a group that guides their behavior (Hofstede, 2001). Geertz's definition implies the learning system, where a group acts out specific behaviors based on what they learn from the shared environment. Both definitions show that culture generates diversity, which is evident in human behavior and objects.

Additionally, Kluckhohn's 1951 definition distinguishes the transmission of culture by symbols and human or human-made achievements embedded in artifacts to preserve the culture of that environment (Hofstede, 2001). Kluckhohn's definition is more integrated than Tylor's and Geertz's definitions, where culture is a component of explicit and implicit behavior transmitted by symbols. Bodley's (1994) synthesis of culture is more straightforward from another anthropological perspective, as presented in Table 1.

Table 1

Bodley's (1994) syntheses of diverse definitions of culture by Miraglia (1999)

Topical	Culture is a combination of things (i.e., topics, categories, religion, ...)
Historical	Culture is a collection of heritage and the traditions that are passed to the future
Behavioral	Culture is learned behavior, shared in life in a society
Normative	Culture is the value, ideas, and norms of a society
Functional	Culture is the way of problem solving and decision making
Mental	Culture is the set of complex ideas that distinguish human from nonhuman
Structural	Culture is compensations of patterns, symbols, and behaviors
Symbolic	Culture is the shared meaning by the society

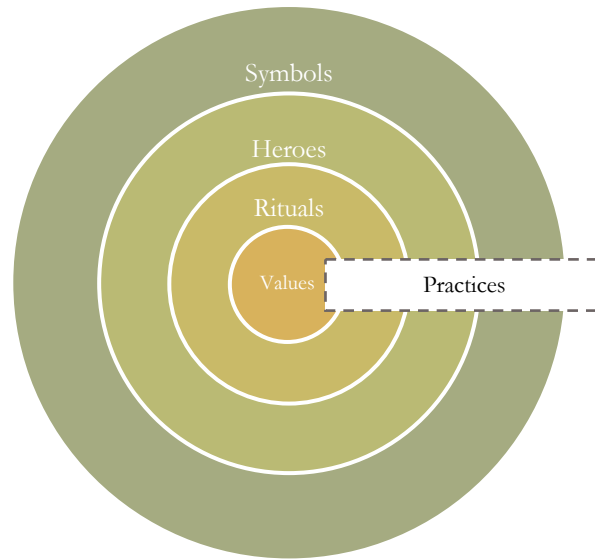
Besides Bodley's definition, Hofstede (2001) defines culture as a collective set of unwritten rules of the mind; culture is the sense of value, and value is the core of culture. In Hofstede's understanding of a social system and the behavior of a society, it is necessary to understand the society's mentality in order to define a social construction of that society. Thus, he proposed a cultural dimensions theory that divides human mentality into groups based on power distance, uncertainty avoidance, femininity and masculinity, individualism and collectivism, and long-term and short-term orientation (Hofstede, 2001). Past researchers have gained an understanding of users in Saudi Arabia based on Hofstede's five dimensions (Alabdan & Callen, 2016; Al-Gahtani et al., 2007; Cassell & Blake, 2012; Malshe et al., 2012). Several studies have investigated culture and behavior in the context of

management in the banking industry (Alabdan & Callen, 2016), information technology (Al-Gahtani et al., 2007), business (Cassell & Blake, 2012), and marketing in Saudi Arabia (Malshe et al., 2012).

From all previous definitions of culture, one can see that culture can be known as shared meaning in a group, behavioral rules in society, and practices of culture as a base of the context. Culture reveals itself differently worldwide; each culture has its distinctive essence. Culture determines what is acceptable or unacceptable, what is important or unimportant, and what is shared and learned by individuals. Moreover, it gives individual identity, making a person different, unique, and distinguishable. Social identity can establish differences in the community, whether in an individual or a nation. According to Hofstede's model for behavior called the Onion Model (2001), values are the core of the culture. Still, the outer layer of culture includes symbols, words, pictures, gestures, or objects shared in a particular culture and copied by others. The heroes, the second layer after symbols, present the individual characteristics. The third layer is the rituals, which are the collective activities considered socially essential (Hofstede, 2001). Hofstede's Onion Model (see Figure 10) shows that individual values form the core of the culture. Those values are tendencies for preferences of what is good or bad and right or wrong. Many values are unconscious and only inferred under different circumstances. However, symbols, heroes, and rituals are visual and tangible aspects of the cultural practice.

Figure 10

Hofstede's onion model of culture in different levels of depth (Hofstede, 2001, p. 11)



Culture is a powerful primer on different situations and the influence of human cognition and behavior. Studies in relation to human cognition and culture are explored intensely in psychological understanding based on individuals and cultural identity. The traditional way of psychology in seeing culture is that people from diverse societies hold different views, which causes various forms of cultural judgment, attention, and preferences. A study by Miyamoto, Nisbett, and Masuda (2006) showed that people from different cultural backgrounds provide value standards for judgment-based preferences. They conducted a comparative analysis between the cultures of Japan and the United States to test the possibility of cultural perception and its effect on people's attention toward different environments. They collected 100 photography scenes of different cultural environments, such as hotels and schools. After viewing the scenes, participants believed that the Japanese cultural environments are more complex than in the United States. The result suggests that

Western culture tends to be more context-independent cognition "holistic" where they look at the photograph as a whole. However, Asian culture is context-dependent cognition, which is "analytical," where they focus on details (Miyamoto et al., 2006).

Another study by Masuda, Kwan, and Nisbett (2008) shows that people are more likely to appreciate objects that reflect their cultural representation than objects with no relation to their cultural identity. The study selected 731 Western and 660 Eastern paintings from online sources categorized as portraits, landscapes, and people. The paintings represent two cultures, Asian and American, and all artists are well-known to these cultures. Based on previous evidence of cultural variations, the study findings prove that Western societies have object-focused attention, and Asian societies have context-oriented attention. The study result demonstrated the cultural variations in attention between Western and Asian cultures, and individuals are more likely to relate what they see to their traditional representations than to where they live (Masuda et al., 2008).

Identity

While culture is defined as a shared meaning in a group, identity is an individual characteristic of people in a group. The term identity came from the French word *identite*, whose roots are in the Latine noun *identitas,-tatis*, which means "the same." The term shares the degree of sameness. The online dictionary defines identity as a set of behavioral and personal characteristics by an individual in a group (*Merriam-Webster's Unabridged Dictionary*, n.d.). It is the characteristic that defines who or what person or things are. There are plenty of studies about identity in various fields, such as psychology, sociology, anthropology, philosophy, and science. However, identity in these fields of analysis tends to focus on the nature of personal identity and the social construction of groups. In psychology, for

example, the focus is on identity development and formation within the individual to understand issues related to identity development, identity crisis, and so on (Hammack, 2008).

Design

Culture and identity are overlapping viewpoints that can often be debated from a design point of view. *Design* is a creative process that proposes to solve problems. The word design was first used in the 1580s under the meaning of a plan that is devised by a person in the mind (*Online Etymology Dictionary*, n.d.). According to Postell (2012), design is the act of planning or drawing that appears in a pattern, product, or service. It aims to produce a design concept, which is enhanced by function, aesthetic, economic, and cultural needs. This planning process allows the designer to assemble one or more design elements to convey users' satisfaction and improve living conditions.

Moreover, design identity is acknowledged by the expectations, habits, and philosophies that influence the design organization during design practices, which eventually translates into a designed product or service (Postell, 2012). Design is not only science due to the systematic process of solving a problem, but it also has an artistic side that aims to find innovative solutions with visual elements in a real-world issue. Based on previous studies, the design might evoke feelings from experiences (Gu et al., 2021; Norman, 2004); shapes might impact how people perceive reality (Masuda et al., 2008) and affect the habits of its users (Fidelis et al., 2018). Therefore, design as a visual prime aims to improve the product aesthetic and usability—it creates interface experiences and conversations with the users (*Interaction Design Foundation*, n.d.). Therefore, design has common and fundamental

elements and principles of visual design to communicate with users. Each design element and principle are explored separately.

Design elements are used when creating a visual design or artwork, whether interior design, architecture, graphics, user experience, web design, or product design. Different scholars and design organizations have other classification methods. The essential design elements are points, lines, shapes, forms, colors, textures, and space (see Figure 11). Each will be discussed next.

1. Point: A point is a single dot with an entity. It also can act as a focal point by itself. Several points can lead the eye to create a line.
2. Line: A line is defined as a path created by moving points. Different categories define the characteristics of the line. (1) The width can be thick, thin, tapering, or uneven. (2) The length can be long, short, continuous, or broken. (3) The direction can be horizontal, vertical, diagonal, curving, perpendicular, oblique, parallel, radial, or zigzag. (4) Focus means it can be sharp, blurry, fuzzy, or choppy. (5) Feeling means it can be sharp, jagged, graceful, or smooth (Selleck, Gatto, & Porter, 2010). Lines also have different types, such as outlines, contour lines, gesture lines, sketch lines, and calligraphic lines. All create different visuals based on their uses.
3. Shape: Shapes are two- dimensional or flat with height and width with no depth. Shapes have different categories: (1) Geometric shapes such as circles, squares, rectangles, and triangles. (2) Organic shapes such as leaves, seashells, and flowers. (3) Positive shapes are the solid form indent design or drawing. (4) Negative Shapes are the space around the shape, such as the sky or background. (5) A

static shape is a shape that appears stable. In contrast, (6) a dynamic shape is a shape that appears to be moving or in action.

4. Forms: A form is the three dimensions of a combination of lines and shapes. Each physical object has height, width, and depth. A circle is a shape, and a ball is a form. For example, the designer creates a form on a flat surface by using light and shade to appear like an object contour, negative space, and surrounding objects beside the focal point of the design (*MasterClass.Com*, n.d.).
5. Texture: Texture is the surface and the quality of the object. It is used to represent how the object appears or feels. According to Selleck, Gatto, and Porter (2010), texture is categorized into two types. The first type is a natural texture which is the actual texture of the object. For example, a designed object might be visually interesting and evoke feelings. The other type is implied texture, making it look like a rough surface, but it is a smooth surface (Selleck et al., 2010).
6. Color: Color is the element based on reflecting or absorbing light. Each color has three qualities to describe the color: hue, value, and intensity. Hue describes the color names such as yellow, red, and blue. Value describes the light or dark of the color, such as the color white adding lighter value to the color. Intensity or chroma is the brightness or darkness of the hue, such as mixing gray, white, or black to the color lose intensity (Poore, 1994). Additionally, color is categorized based on its positioning on the color wheel. The primary hues are red, yellow, and blue. The secondary hues are orange, purple, and green, which are a combination of two primary colors. The intermediate colors, such as red, orange, yellow-green, blue, and purple, are created by mixing a primary with a secondary

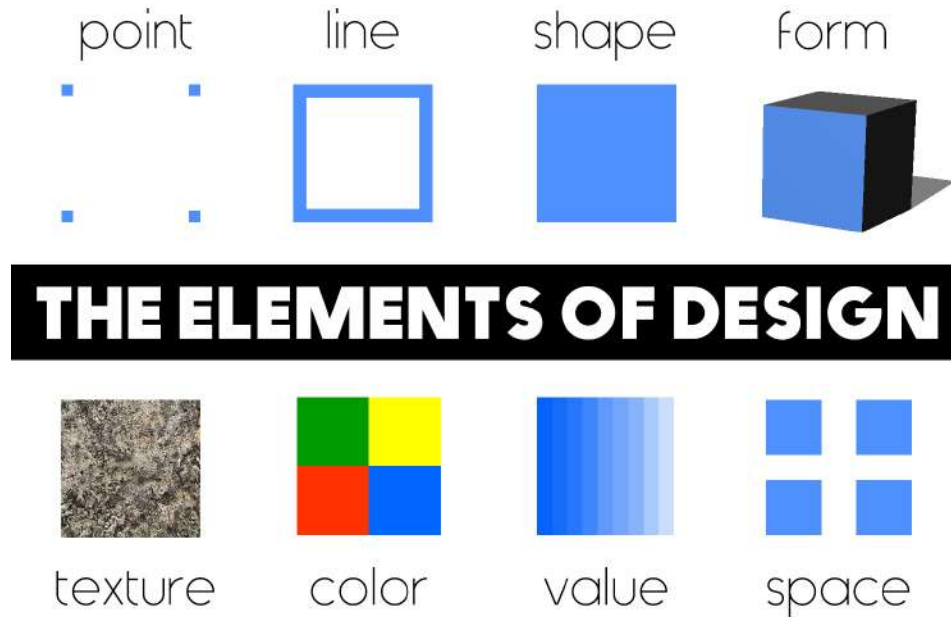
color, and the last category is complementary colors, which are colors that oppose each other in the color wheel (Selleck et al., 2010). Using color as a visual design can create a harmonious combination of colors that create cheerful looks or feelings. Analogous colors are next to each other in the color wheel: red, red-orange, and orange. Triadic Harmonies are three colors equally separated in the color wheel: yellow, red, and blue. Monochromatic colors are colors used in different values and intensities, such as light brown, brown, and dark brown. Complementary are made from two hues directly opposite on the color wheel, such as red and green. Warm colors are colors selected to give the feeling of warmth, such as red, orange, and yellow, while, cool colors on the other side of the wheel give the opposite feeling of coldness, such as blue, purple, and green (Selleck et al., 2010).

7. Space: Space refers to the area around or within a shape or a form. A person might walk around a designed object in a space, or space can be two-dimensional drawings. White space, or negative space, is around the focal objects (*MasterClass.Com*, n.d.), while positive space is the filled space in the design subject. It is also the flat surface in a picture, or the placement of elements on a picture (Selleck et al., 2010).
8. Value: In design, value refers to the lightness and darkness of color. It creates depth on surfaces and might illuminate the subject's actual color. It creates gradation, which is displayed as a series of hues arranged between light and dark colors (*MasterClass.Com*, n.d.). According to Selleck et al. (2010), values are categorized into Tints, shades, and tones, adding white to the color, such as adding white to the blue and becoming light blue. Shades add black to the color,

such as adding black to the red and becoming dark red. Tones add grey to the color, such as adding grey to blue and becoming grey-blue or livid.

Figure 11

The elements of design by Design Tutorial and Articles (Online Design Teacher.com, 2016)



Besides the design elements, design principles add a level of sophisticated quality to the design. There are six concepts of the design principles known as rhythm, proportion (scale), balance, dominance, unity, and contrast (see Figure 12) (*Online Design Teacher, 2016*). The basic design principles are:

1. Rhythm/Repetition: It is used to create a repeated element in an organized movement. Rhythm allowed the item to move from one part to another part in the design. It can be created by repeating color, shapes, texture, lines, and space; varying the sizes of objects, shapes, or lines; using the progression of color (tint

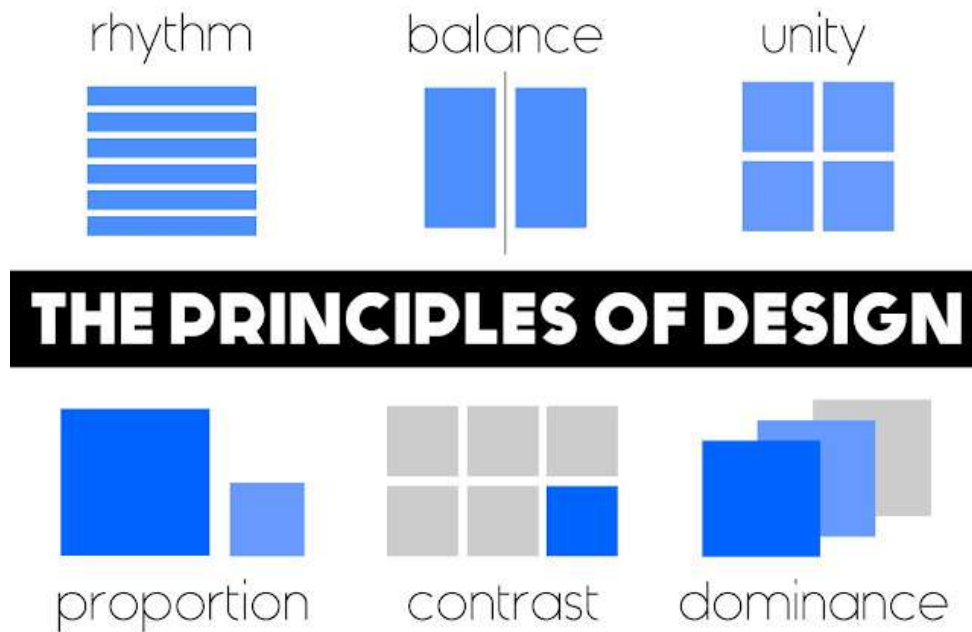
to shade); and or shifting color from one hue to another hue (blue to blue-purple).

2. Proportion/Scale: It is the comparative size of elements related to each other with the whole composition. It can be used as a composition to create distance, size difference, balance, or different weight.
3. Unity/Harmony: It is the feeling of sameness between all parts of the design which look like one thing. For example, using lines and shapes that both represent the similar effect of curve feeling.
4. Balance: It is the distribution of the visual weights of an object's coloring, texture, and space. There are three types of balance: (1) symmetrical balance, which refers to items that are equally balanced on both sides; (2) radial balance, which refers to elements arranged around a central point; and (3) asymmetrical balance, which creates the feeling of unequal weight on both sides of the same object.
5. Dominance/Emphasis: It is the part of the design that catches the eye and user's attention. There are several ways to create emphasis, such as using contrasting colors, different lines, different-sized shapes, or different background spaces. There are three strategies of emphasis: dominant, sup-dominant, and subordinate. Dominant is the primary object and the most visual appearance. Sup-dominance is the secondary object usually found in the middle. Subordinates are objects with little visual weight.
6. Contrast: It refers to the arrangement of contrasting elements to create visual interest and drama. Contrast can be made in a variety of ways, such as light

versus dark colors, rough versus smooth textures, large versus small shapes, and so on (*Online Design Teacher*, 2016).

Figure 12

The principles of design by Design Tutorial and Articles (Online Design Teacher.com, 2016)



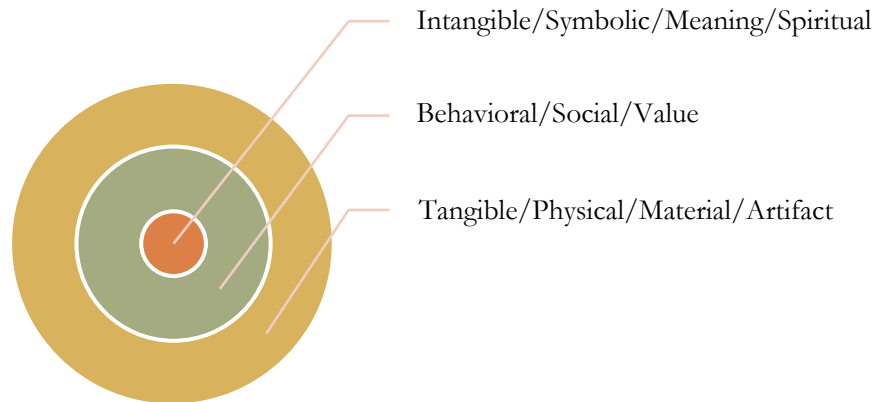
Eventually, each culture has its unique compositions in applying these design principles and elements. Most of the unique inspirations of architectural details and interior design styles are influenced by those principles. For example, in Islamic/Arabic architecture and design, most of the design concepts and philosophy are influenced by Islamic art and design principles. Those design vocabulary are the basic physical aspects of Islamic design identity. According to Kamel and Gamal (2017), the Islamic design elements are determined by five essential foundations. (1) Unity is achieved in several forms and techniques. He

explained that Islamic design uses two types of units: formation and orientation. The formation is the central unit with a usually small part, while the orientation is the central point around the shape. (2) Rhythm consists of the repetitions of the elements such as geometric shapes, plants, or calligraphy. (3) Balance is achieved in either systematic, by having asymmetry of shapes around the axis, or asymmetric, by having a dynamic balancing of elements around the axis. (4) Geometric division involves a repeated system of interlocking, overlapping, or interchanging between shapes. (5) Continuity is achieved by having a continuous motif unit in a form repeated endlessly (Kamel & Gamal, 2017).

Design based on cultured understanding becomes a potential design strategy inevitably selected after the local design identity crisis due to globalization. Therefore, Moalosi, Popovic, and Hickling-Hudson (2010) reason that culture shapes users' activities inside a space, and in order to design for users, one must understand their cultural values. In other design thinking dialogs between Clark and Leong (2003), Leong debated that designing user cultural identity based on three stages, beginning with the “Spatial Perspective of Culture.” This has three levels: the outer level is tangible, the mid-level is behavioral, and the inner is intangible. The inner part is the formation of the concept of “value orientation,” which integrates four key concepts: life-centering, totality, reflectivity, and unification (p.55-56). Additionally, other scholars classify culture in three levels: physical or material, social or behavioral, and spiritual or ideal (Lin et al., 2007; Lin, 2009). Even though these studies use different expressions to describe the three-level culture that Leong outlines, all the definitions carry the same meaning that culture relates to design and translates into three different levels: tangible, behavioral, and intangible (see Figure 13).

Figure 13

Integrations of previous study definitions of culture in relation to object by the researcher (Leong & Clark, 2003; Lin et al., 2007; Lin, 2009)

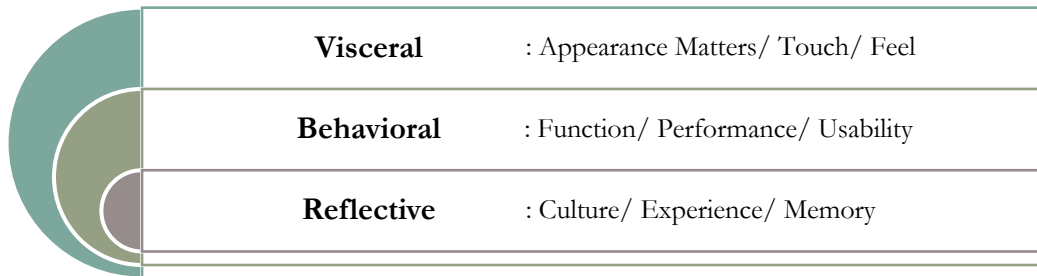


Moreover, Norman (2004) describes designing a product as an advocate process of human-centered design and interaction. In his book *Emotional Design*, he suggests the role of aesthetics and visual design in influencing users' biases of objects as identified in three levels: the visceral, behavioral, and reflective levels according to human brain activity (see Figure 14). The visceral level is the most understood level. It is instinctively working, where both personality and cultural values influence how people perceive a product, such as a shape, color, or material. The reactions of this level are immediate and powerful, and it takes seconds to determine if the look and feel of the product are appealing to the observer. The quality of this level is observed as a first impression. The behavioral level is related to the experiences and the uses of the product. Appearance is the domain for graphic designers, and performance is the engineers' butter. Function, performance, and usability are the physical attributes of the product that fulfill the users' needs. The reflective level is the user's interpretation and understanding after experiencing the product. This level defines people's

overall reactions, directly affected by the user's memory, experiences, and cultural background. The visceral and behavioral levels are emotional responses of feelings and experiences that the users get from the product they see or use, and it is in the present tense. However, the reflection level is cognitive and includes conscious changes that might include recalling from the past or imagining the future. These three levels are interwoven through any product design process (Norman, 2004). Consequently, the appearance of a design is only the first level of visual design. The behavior level relates to functionality, and the reflective level relates to long-term impact.

Figure 14

Show the illustration of Don Norman's (2004) three levels of processing an object.

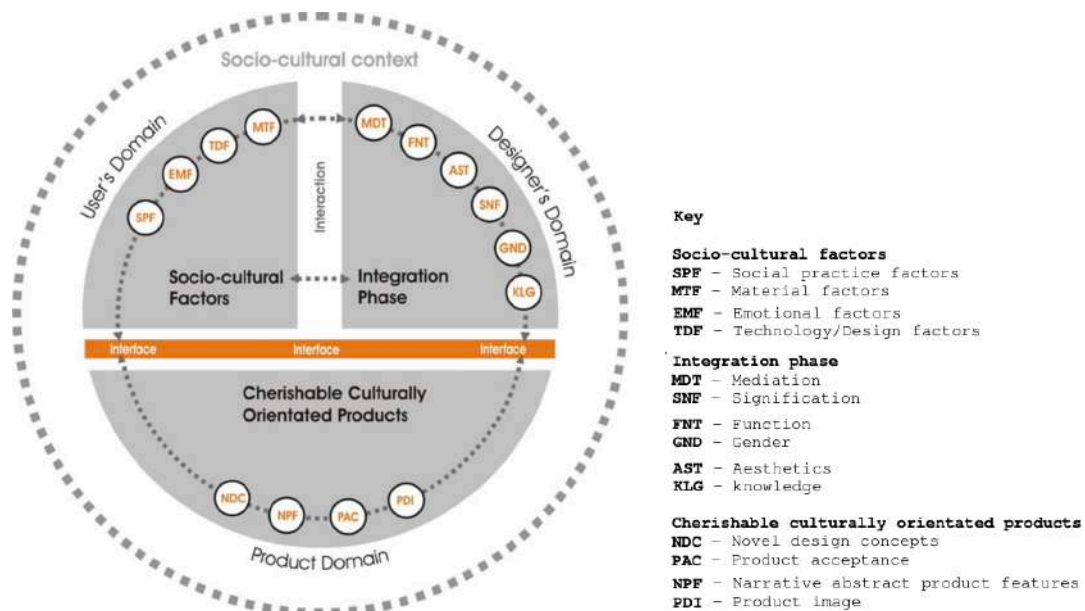


Also, Richie Moalosi is an activist researcher in product design and cultural-based innovation. He conducts a series of innovative processes in re-thinking culture. He argues that design is embedded in the culture of the users, and it is an opportunity to express users' desires. Moalosi, Popovic, and Hickling-Hudson (2010) developed a social-cultural design model based on aspects of the Botswana people, such as their social, emotional, and aesthetic traits, plus values and habits that assist designers in integrating culture into a design. They developed a theoretical framework into a design model which can be used as a design

guideline (see Figure 15). The Culture-Oriented Design (COD) model brings together traditional and contemporary areas of knowledge into the three design stages. First is the users' domain, which is the social-cultural and cultural needs such as material, emotional, social practice, and technology. This stage covers the core values of culture and the local users' experiences. Second is the designer domain, which is the integration phase. This is where designers need to transform the social-cultural factors into product features such as function, symbols, and aesthetics. Third is the product domain or the output of the design, which characterizes the product. This culture-oriented design model should provide tactile consistency, symbolism, and a narrative that gives goods significance and purpose (Moalosi et al., 2005; Moalosi et al., 2006; Moalosi et al., 2010).

Figure 15

Culture-Oriented Design (COD) model by Moalosi et al., (2010, p. 12)



Other research by Lin and others (2007) explores the user's local culture as a central design assessment for future design. They proposed a framework focused on localized cultural growth in Taiwan that reflects a desire to substitute the Taiwanese style in the global economic market. The Cultural Product Design Model is a conceptual framework to guide designers and makers in Taiwan in designing culture into modern products (see Figure 16). The concept of the design model is to produce the design by using a scenario or storytelling approach. The model consists of three stages of design processes: the conceptual model, research methods, and design processes. First, the conceptual model in this phase focuses on how to derive cultural characteristics from cultural artifacts and then convert these characteristics to a design model to create cultural objects. Second, the research method phase consists of three steps: (1) identification, when the designer will extract cultural features from the original cultural object; (2) translation, which transfers to design elements; and (3) implementation, when the product becomes an artifact. The final stage in the design process is the concept which contains four steps. First is the investigation, which is a set of scenarios or stories of cultural features. Second, the interaction which is telling the story and understanding users' needs and culture. Third, the development of ideas and sketching. The implementation of the prototype, which is based on the results of all steps, is the final stage (Lin et al., 2007). The product designed by using this product design model increases the sense of the Taiwan culture to the consumer. Still, it extends the heritage and the traditional values of the area. The study researchers provided one example of the application of the model (see Figure 17).

Figure 16

Cultural Product Design Model (Lin et al., 2007, p. 4)

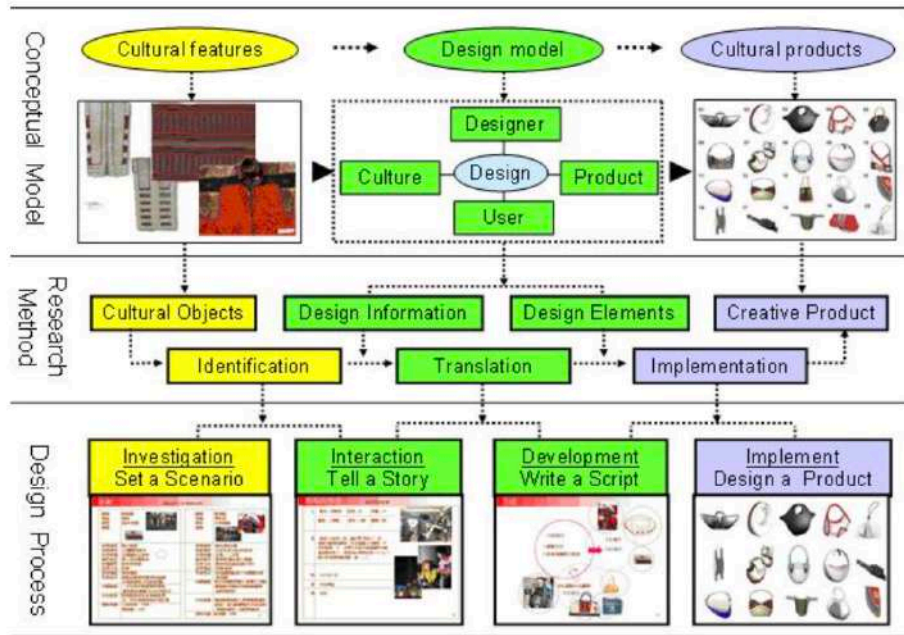
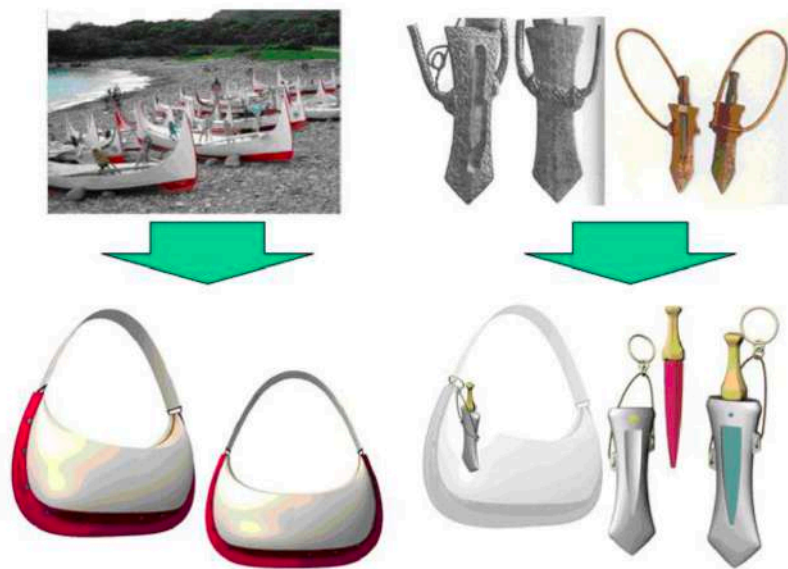


Figure 17

An example of the application of the model by Lin and colleagues (2007, p. 48): the cultural product from the Pin-Ban boat and the holy dagger of Taiwan culture



Heritage and Preserving Local Identity

Preserving local cultural identity became a new direction of research study due to the negative impacts of globalization. Preserving local identity not only establishes support to the local environment (*Preserving Our Heritage, Improving Our Environment*, 2009), but also maintains the original and unique local identity (Ashour & Rashdan, 2020).

Heritage is an essential part of local design identity as it reflects the development of civilizations and distinct identities (Jomah, 1992). Heritage is a culture of human understanding and needs, which consists of people's living patterns, habits, beliefs, and attitudes (Ashour & Rashdan, 2020). For Al Jabri (1991), heritage is human cultural, intellectual, and artistic inheritance. There are tangible and intangible elements of cultural heritage, and both are examples of heritage that carry social values and history. Likewise, heritage is the product of the past which is part of society's tradition. It is a human legacy from the past, how people live today, and what they pass on to future generations (UNESCO, n.d.). Additionally, Vecco (2010) argues that heritage is not only the past that is passed to generations but also the use of elements as a modern source. Still, heritage is the surrounding objects that determine users' social, moral, and design identity (Tilley, 2006). One can imply that cultural heritage is people's identity and that it does not exist in the past; it is used as a commodity for the present.

Since the 1980s, architecture practitioners and scholars in the Middle East have been seeking and complaining about the loss of traditional architectural features and blaming modernity (Akbar, 1998; Al-Naim, 2006). Al-Ban (2016) reported that several scholars, including Sami Angawi, Abdulla Bokhari, Thamer Al-Harbi, and Ayman Al-Ltany, discussed the importance of heritage and traditional design elements in human social life. In the book

Home environment in Saudi Arabia and the gulf states: Growth of identity crises and origin of identity, Al-Naim (1998) examined the evolution of contemporary Saudi architecture with a focus on how traditional architecture inspired modern design. He explained how people embraced new forms in their homes and how they expressed their identity as a social system that blends the physical and psychological needs of people and their surrounding environment (Al-Naim, 1998). Additionally, Hassan Fathy (1900-1989) advocated for cultural continuity and tradition in the living environment. He was one of the first architects who broke the modern vocabulary and found new approaches to interpreting forms from the past. In his book, *the natural energies and vernacular architecture: Principles and examples with reference to hot arid climates* (1986), he explained the understanding of the function of Islamic/Arab elements of design and their relations to the environment. Fathy's work focused on local fabrics and techniques of mudbricks that have been used in Egypt. He created a structural system, which became a source of inspiration and approach for more traditional design directions in order to preserve heritage (Sergeldin, 2007).

In other recent responses to preserve heritage, researchers have studied and documented the Arabic/Islamic architecture elements, such as Mashrabiya (Al-Ban, 2016; Al-Othman, 2017). Mashrabiya is a wooden window covering part of the building façade (see Figure 18). Historically, Mashrabiya represented the social, cultural, and traditional identity of the Arabic/Islamic style. A few scholars presented the Mashrabiya in detail as a sustainable contemporary solution for climate conditions (Batool, 2014; Mohamed, 2015; Samuels, 2011). Samuels' (2011) study used Mashrabiya in the Gibson Desert by applying Hassan Fathy's theory and explored the Mashrabiya parameters to produce modern patterns. Batool (2014) used a methodological approach to further study the Mashrabiya as a case study in the country of Pakistan. Another researcher approached the Mashrabiya by

examining its history, craftsmanship, and woodwork (Mohamed, 2015). Furthermore, Hiba Al-Othman (2017) intensively studied the Mashrabiya as a traditional heritage architectural element that functions in the building's facade for adjusting light, airflow control, heat, and privacy. Inversely, Al-Othman (2017) analyzed all aspects of the subject due to the lack of original criteria for the rethinking of traditional objects and aimed to provide a clearer understanding with complete documentation of the Mashrabiya with modern standards for a contemporary version of it (Al-Othman, 2017).

Figure 18

Examples of the Mashrabiya, Historical Jeddah houses from Keeping the Past Alive in Old Jeddah, by Nicole Trilivas (2021)



Even though scholars have studied the changes of local identity from different aspects, the existing studies on preserving identity in the Middle East are on architectural solutions, using Mashrabiya as architectural elements and the home environment as a local identity system. In interior design, Khayat (2019) explored integrating heritage characteristics into designing hotel entrances in the 21st century in Jeddah, Saudi Arabia. The result of the study illustrated the uses of heritage as a design element and the aesthetic of heritage in a modern hotel interior. Still, preserving heritage in furniture design as one of the interior design elements has not been approached thus far.

The Concept of Vernacular

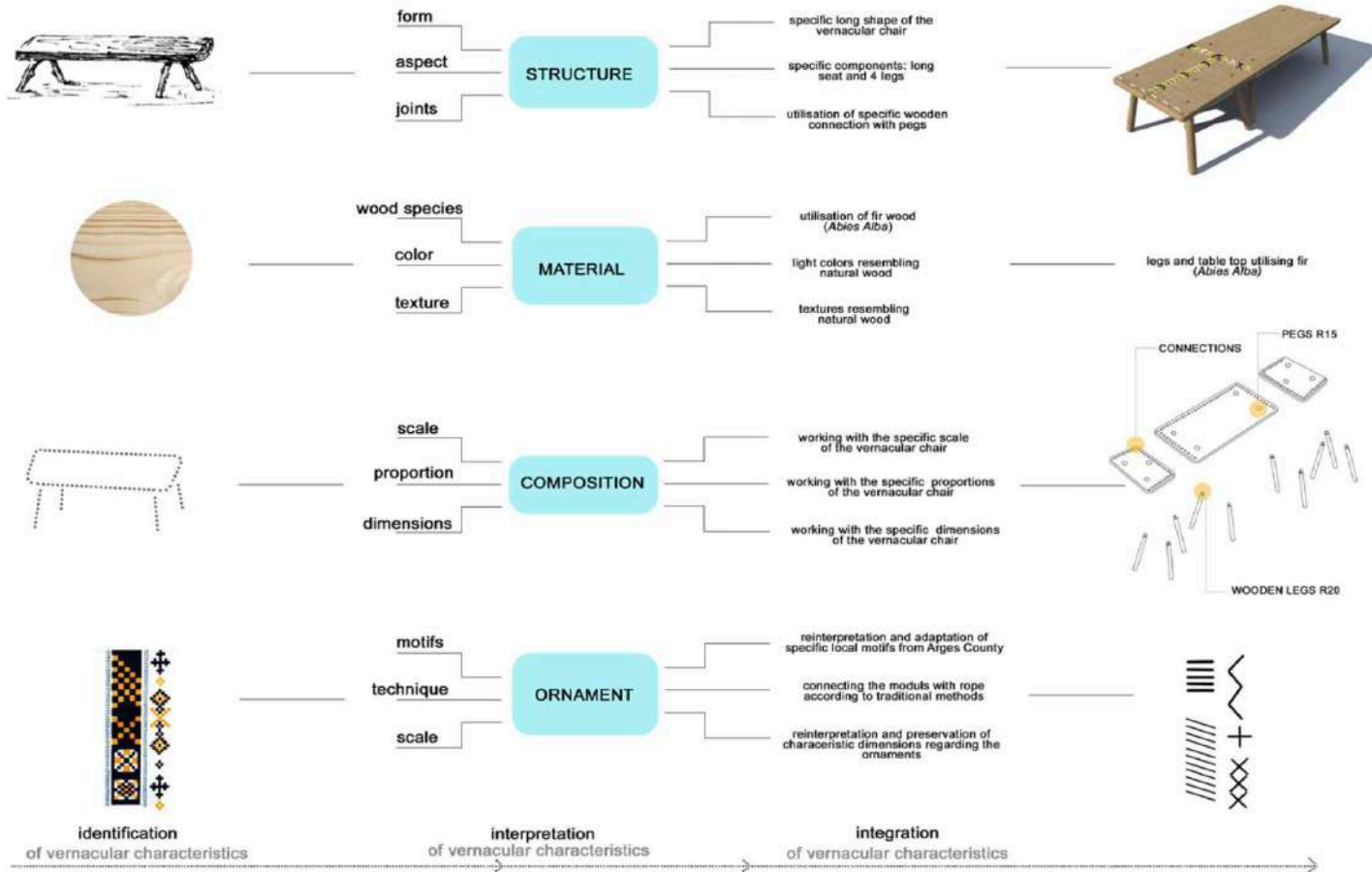
The notion of the word vernacular is first introduced in French, meaning indigenous (Guillaud, 2020). The definition of vernacular refers to an ethnic group that uses local material and lives in a particular region or geographical area. The term vernacular architecture is used in the nineteenth century to refer to the traditional or popular building form (Kigston, 2003). Studies in vernacular architecture tend to study specific places and groups as case studies, such as in Carter and Cromley's (Carter & Cromley, 2005) book *Invitation to vernacular architecture: a guide to the study of ordinary buildings and landscapes*. A material cultural investigation of indigenous vernacular refers to an in-depth understanding of traditional resources. According to Bartha and Olarescu (2017), vernacular furniture is a term used to identify pieces of furniture for everyday use that are made locally, reflect the needs of everyday objects, and represent the community's culture, location, function, and meaning. A few examples are research projects in India aimed to explore local vernacular furniture in different regions (Bais & Thakkar, 2020; Parmar, n.d.). Those projects developed an organized investigation to discover and document vernacular furniture as design and craft

resources based on traditional heritage (*Finding Vernacular Furniture from India*, n.d.). They first identified the local vernacular furniture and location. Second, they recorded the users' stories and understood their anthropological perspectives and social-cultural narratives. Thirdly, they analyzed the crafts and the vernacular furniture design in detail. Lastly, they used the collection to publish and show that furniture.

Bartha and Olărescu (2017) propose a design model to create furniture with vernacular spirit meaning and value-adding with time (see Figure 19). The study took an evolutionary perspective, similar to Fathy's local continuity model. It applied the concept of vernacular architecture in new furniture design. The methodology is based on two logical stages: theoretical and experimental. The first cycle is theoretical: (A) consultation of existing design such as current status of furniture or architecture, elements of vernacular, material used, color, façade, solutions, and/or ornamental characteristics; (B) making decisions about the design purpose; and (C) selecting directions such as context, culture, ethics, social, values, need for comfort, construction, material, and/or orientation. The second cycle is practical: (D) sustainable direction by selecting from multiple possibilities and identifying the optimal measure; (E) functional interpretation by highlighting characteristics of vernacular elements such as joints, ornaments, or local features of walls, roof or furniture; and (F) the value-adding through architectural projects or interior elements (Bartha & Olărescu, 2017).

Figure 19

The diagram explains the integration process by Batba and Olărescu (2017, p. 478) with a sample of traditional elements into contemporary furniture.



The Concept of Reflexive Design Thinking

Ashour and Rashdan (2020) define reflexive modernism as a heritage-inspired design method shaped by applying reflexive modernism of site-specific design and symbolic identity to gain complex interpretations of local identity in design. Their investigation illustrates that thoughtful design based on historical inspirations is on three reflective design levels. Each level presents a percentage of inspiration: (1) Historical Revival strategies, (2) Eclectic Historicism Strategy, and (3) Free Historicism Strategy. Each level is discussed separately.

Historical Revival Strategy. The Historical Revival strategy reflects forms, shapes, and content from history. For example, designers and practitioners copy and paste design elements by making minor adjustments to material and colors (Ashour & Rashdan, 2020; Harris & Dostrovsky, 2008; Sloboda, 2008). One example is the Gold Market at Dubai Mall in the United Arab Emirates, where the inspiration concepts are based on elements from Islamic design (see Figure 20). Another unique example of the Historical Revival strategy is the Arab World Institute (AWI) in Paris, France (Nouvel, n.d.). The architectural concept develops an understanding of the Arab world's culture of the middle courtyard and fountain, which is considered an element from the Islamic building (see Figure 21). The facade of the building is inspired by Mashrabiya, a traditional element in Islamic architecture. Traditionally, the Mashrabiya is made of wood and has geometric patterns to allow light, ventilation, and privacy for the interior residents. The concept of the building represented the regionalism of Islamic heritage. However, the use of new technology, new construction, and new materials (such as glass and metal) add another level of inspiration.

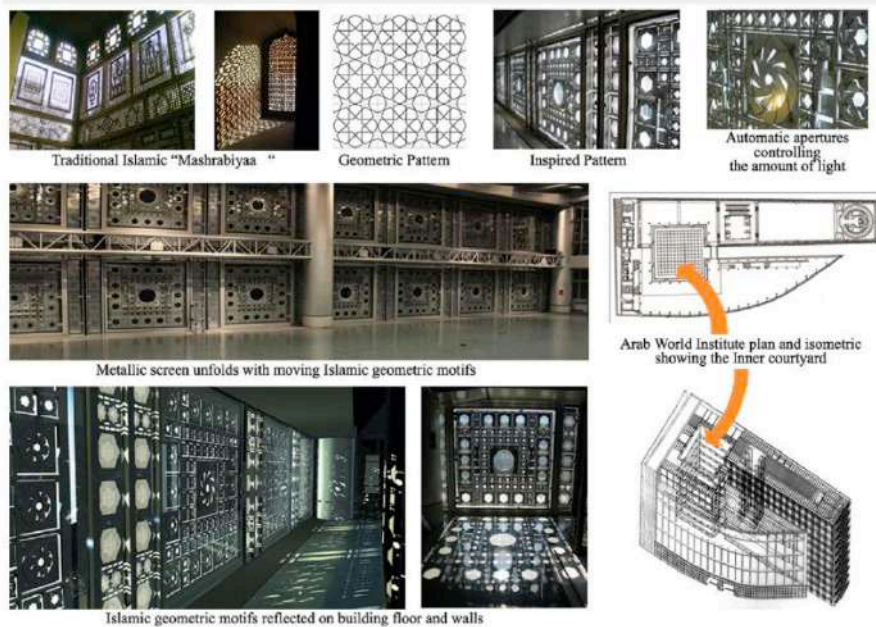
Figure 20

An example of the Revival Historicism in the Gold Market at Dubai Mall in the United Arab Emirates from Gold Souk Mall Dubai (2013) (Ashour & Rashdan, 2020, p. 732).



Figure 21

The AWI's interior design is inspired by Islamic architecture and modern technology (Ashour & Rashdan, 2020, p. 734).



Eclectic Historicism Strategy. The second strategy is Eclectic Historicism. The approach is based on the visual diversion of classical vocabularies that simulate history (Ashour & Rashdan, 2020). This strategy requires reforming a set of historical design elements with the requirement of modern technology to express cultural identity, which is considered the main inspiration of the design. According to Ashour and Rashad (2020), the success of contemporary design based on this strategy depends on the designer's vision, interpretation, and understanding of the historical source, which might result in incomplete geometric shapes. One example is the Japanese designer Nobu Miake, who redesigned the Cathedral line of arches in a contemporary side table (see Figure 22).

Figure 22

An example of the eclectic historicism strategy is the Cathedral table by Nobu Miake (Contemporist, 2011).



Free Historicism Strategy. The third strategy of inspiration is free historicism. This strategy is free from the uses of heritage elements, where designer inspirations come from symbolic expression, images, and innovative modern materials (Ashour & Rashdan, 2020). The result of these design inspirations is a new form that impacts the perception of the heritage of the local identity. One example of the free historicism strategy is an inspiration based on abstract Islamic arches, as seen in the Armani Hotel in Dubai (see Figure 23). The overlapping arches mimic the form of the original arches yet make it challenging to identify their original design intent.

Figure 23

An example of the Free Historicism strategy is Armani Hotel Dubai in the United Emirates from Oliello Luxury Reviews, by Armani Hotel Dubai (n.d.) (Ashour and Rashdan, 2020, p. 732).



Consumer Marketing

This section presented an overview of marketing research related to consumers and furniture preferences. It also discusses nostalgia concepts and definitions related to consumer behavior. Nostalgia affects the research outcome due to its influences on consumer behavior, preferences, and decision-making. Therefore, this section presents general information about nostalgia, marketing, and research on purchasing decision-making associated with the study age group (Millennials) and furniture.

Nostalgia and Consumer Behavior

Nostalgia is the longing for the past (Christou et al., 2018), which has disappeared but still carries some feeling (Chark, 2021). Nostalgia is the desired mood of remembering and might be prompted by an object, a scene, a smell, or a sound (Belk, 1990). These emotions or moods can produce preferences and attitudes. They are linked to the past and may affect decision-making (Sierra & McQuitty, 2007). Nostalgia-seekers show the desire to relive past days as a kind of vintage charm (Christou et al., 2018). Although the yearning for the past is stimulated differently by evocative objects, visuals, smells, or feelings, the level of nostalgia is based on individual experience, background, and culture (Chark, 2021; Gu et al., 2021; Wildschut et al., 2018).

Nostalgia is a complex cognitive process of remembering, such as thinking, recalling, imagining, and experiencing the emotional moments of the past (Chark, 2021). In psychology, the feeling of nostalgia is both universal and different among individuals and in other contexts (Chen et al., 2014). Nostalgia commonly occurs between people with different demographics (Sedikides et al., 2015); and cultures (Hepper et al., 2014); and frequently occurs in young and old generations (Wildschut et al., 2018). Historically,

nostalgia refers to a psychopathological condition of people who suffer from sadness brought on by objects or places that remind them of their past (McCann, 1941, as cited in Chark, 2021). However, the contemporary interpretations of the concept have changed to the yearning of the feeling of the past in modern existence (Wildschut et al., 2018).

There are two types of nostalgia. Personal nostalgia is about the feeling of returning to an experience or event, and historical nostalgia is the desire to return to the past that an individual believes is better than the present (Chark, 2021; Christou et al., 2018). Both types involve the cognitive process and similar conceptual backgrounds (Chen et al., 2014). However, historical nostalgia typically does not rely on first-hand experience (Chark, 2021). Historical nostalgia is learned from other sources such as books, movies (Chen et al., 2014), or narratives of older adults (Chark, 2021). Personal nostalgia draws from “Autobiographical Memory”. Historical nostalgia is formed from “Collective Memory,” which is shared among a society or a group (Chi & Chi, 2020, p.3). Therefore, personal nostalgia is linked to the individual’s identity, while historical nostalgia is related to social factors (Merchant et al., 2013). Additionally, previous studies have shown frequent exposure to other older adults’ nostalgic memories can produce psychological benefits for young adults (Sedikides et al., 2015). Nostalgia also has the potential to transfer through written narratives across intergenerational and younger generations (Wildschut et al., 2018).

According to Davis (1979), nostalgia has three levels of experience: (1) simple nostalgia, which is the belief that things were better in the past and an individual would like to return to the past; (2) reflexive nostalgia, in which individuals analyze the past and wonder if the past was beautiful; and (3) the interpret nostalgia, which means the individual compares the present feeling to enhance their life, in order to locate the source of nostalgia and its psychological meaning (Davis, 1979, as cited in Sierra & McQuitty, 2007).

Additionally, Holbrook and Schindler (2003) argue that nostalgia is attached to objects that no longer exist or are lost since one was a child or at an earlier time of life. For example, a teapot that provokes a nostalgic-related memory of its purchase. Therefore, in examining the effects of nostalgia, previous studies have developed several nostalgia scales to measure nostalgia in different contexts, such as the nostalgia proneness scale by Holbrook (1993), personal nostalgia scales by Marchegiani and Phau (2011), and the historical nostalgia scale by Marchegiani and Phau (2007). Also, Cho and others (2019) have developed a scale to measure consumer nostalgia evoked in marketing studies and advertisements. Consequently, a better understanding of consumers' nostalgia and interaction with a product might guide better marketing and branding strategies for targeted users (Schindler & Holbrook, 2003).

Marketing and advertising research studies have studied nostalgia as an essential factor affecting consumers' purchasing behavior. One survey by Sierra and McQuitty (2007) examines consumers' cognitive and emotional aspects of purchasing nostalgic products. The study shows that the yearning for the past influences consumers' intention to buy reflective products. The liking of the past can affect decision-making and increase the likelihood that items bought as a youth will be purchased again as an adult (Sierra & McQuitty, 2007).

Another study focuses on nostalgia-evoking to explore consumer post-purchasing behaviors and evaluations at nostalgic restaurants by Gu et al. (2021). They conducted in-depth interviews to identify nostalgic stimuli factors based on consumer perspective. The study findings indicate a positive and strong effect between the nostalgia evoking and the user's philosophy and emotion. When consumers were exposed to the nostalgia-theme restaurant, they experienced a better understanding of the local community and felt more connected to traditional culture (Gu et al., 2021).

Research on Millennials and Marketing

Although the definitions of the millennial, Generation Y, or Echo Boomers are varied in marketing literature, they generally refer to individuals born between the early 1980s and the early 2000s (Musfialdy & Lusrivirga, 2021; Naumovska, 2017; Weber, 2019; Wright, 2006). They grew up in the global change with the rise of former leaders, cultural diversity, and social awareness (Naumovska, 2017). Millennials are among the most influential market segments due to their buying power (Wright, 2006), status in the workforce (Weber, 2019), and distinctive behaviors and habits (Naumovska, 2017; Wright, 2006). They are influenced by technology, digital media, and the Internet and are a more visual generation than generations before them (Naumovska, 2017; Valentine & Powers, 2013).

When it comes to purchasing decisions and preferences, millennial choices are based on advertising and brands, as they are fascinated with vintage entertainment and products (Russell, 2013). They value creative activities, are attracted to locally made products, demand personal connections, and have emotional feelings with brands (Naumovska, 2017). Additionally, they look for products that are related to their lifestyle and ones that promote the self, (Naumovska, 2017, as cited in Howell, 2012). The Internet has been a source of information for the millenniums, and most of the generation will search online before purchasing a product. Therefore, marketing and advertising studies have targeted the millennials in selling nostalgic products and have studied their effectiveness. A study showed that nostalgia as a verbal cue in printed messages resulted in positive feelings and favorable attitudes (Muehling & Pascal, 2011). Russell (2013) also studied using color and fonts as historical nostalgia in advertising. The result shows a significant effect of visuals in

encouraging millennials to stop and read the ads. She argues that visuals are an evocative trigger of nostalgia and a valuable tool to reach consumer emotions for advertisers seeking a deeper personal level (Russell, 2013).

The research industry has directly suggested that successful psychographic analysis of millennials could create brand awareness and sales (Wright, 2006). Psychographics are characteristics based on analyzing attitudes, values, and lifestyles. A study by Weber (2019) aimed to understand the decision-making process and its relationships between personal values orientations and cognitive morals. The study showed a strong relationship between value orientation and cognitive moral reasoning among millennials (Weber, 2019). Another study by Russell (2013) reported that millennials are obsessed with luxury, yet buying potential might increase if it is associated with quality (Blazquez et al., 2020). Blazquez, Alexander, and Fung (2020) explored the millennials' perception of luxury fashion smartwatches. They found a strong correlation between consumers' attitudes toward luxury technology and purchasing intentions. Individual and social factors influence that intention: "hedonism and usefulness" are the most motivating factors, followed by "subjective norm and perceived conspicuousness," which indicate that smartwatches are both technological and luxury fashion (p.349). They also found that the degree of connections between brands and millennial consumers might affect their purchasing intention (Blazquez et al., 2020). Additionally, a study explored the effect of the millennials' values and inherent innovations on attitude and intuition toward 3D printed fashion goods. The study demonstrated the link between personal values and innate innovations in developing a positive attitude (Lyu et al., 2018).

Consumer Preferences and Furniture.

For modern users, furniture represents a lifestyle, an expression of the self, and social status. A previous study showed that an individual's social status influences their preferences for placing furniture at home (Jo et al., 2017). Other studies showed different preferences based on selected furniture materials (Jo et al., 2017a; Knauf, 2015), and brand and environmental attributes (Kaputa et al., 2018; Khojasteh et al., 2020). Additionally, visual appearance is another factor that influences users' choices of linear objects versus curved designs (Cotter et al., 2017) and colors on furniture (Jiang et al., 2020). Therefore, different designs might evoke different visual perceptions and preferences (Al-Sabouni, 2016).

A study by Kaputa and others (2018) investigated customer preferences for furniture materials. Demographic factors such as age, gender, education, profession, geographic location, purchasing power, buying attitude and practice, interest, and needs that influence users' biases were considered in this study. The study used an online questionnaire to collect information on furniture buyers from Slovakia and Croatia. The research aimed to understand customer preferences for materials, attributes, and styles when purchasing furniture. The survey consisted of two parts. The first part was about consumer demographics (gender, level of education, and age). The second part was about their purchasing decision-making processes (material, attributes, and style). Using a five-point Likert scale to assess the likeliness of preferences, the results show that Slovak and Croatian respondents have different tastes for furniture fabrics and other factors that affect their purchase decisions. Overall, solid wood as a furniture material was widely favored by Croatian and Slovak respondents as opposed to the surveyed alternatives such as composite wood, plastic, metal, and glass (Kaputa et al., 2018).

Besides the furniture's material, the furniture's location in the home environment affects the level of attraction when decisions are made in buying furniture. Each person values the level of public opinion differently, as this can change with time and context. Each user's responses to the visual aesthetic of furniture can be significantly different. When space is open to the public, the visual aesthetic level is essential. However, users think the visual aesthetic is less critical if the space is private (Jo et al., 2017). One can argue that the correlation between privacy and users' preferences for more aesthetically appealing furniture is related to presenting a social-cultural level. Those differences in visual aesthetics responses, including shape, material, or other design factors, are based on individual preferences.

Furniture Designing and Human-Centered Design

Furniture as Compelling Symbols of Civilization

The word *furniture* is developed from European verbs, nouns, and adjectives. The French verb *fournir* means “to furnish.” The Latin adjective *mobile* means “movable,” which is a characteristic of furniture (Postell, 2012). Furniture is a movable object used to make a room or building for living, such as chairs, tables, or desks (Collins English Dictionary, n.d). Jim Postell, in his book *Furniture Design* (2012), categorizes furniture with a broader range. He states that furniture is a service to support different activities, a storage device to arrange space, a display to show pieces, and a spatial partition. In all views, furniture pieces are designed to assist humans in many ways, and function is the primary purpose for social uses. For a long time, it has been part of the human living experience, and this continuity has evolved from functional objects to aspects of displaying and presenting status (i.e., chairs and thrones). From ancient society to the modern day, furniture has different forms, uses,

and narratives. Although the function is critical, beauty, design principle, material, the technology of fabrications, business economics, environment, and surrounding context are all intertwined with function, utility, and other emerged modern society needs (Postell, 2012). Over time, current society users have various emerging needs that accommodate their uses, age, gender, and space of use. Thus, this study highlights the need to sit and understand seating as one of history's earliest furniture forms and evolution.

Sitting Position and Elements of Style

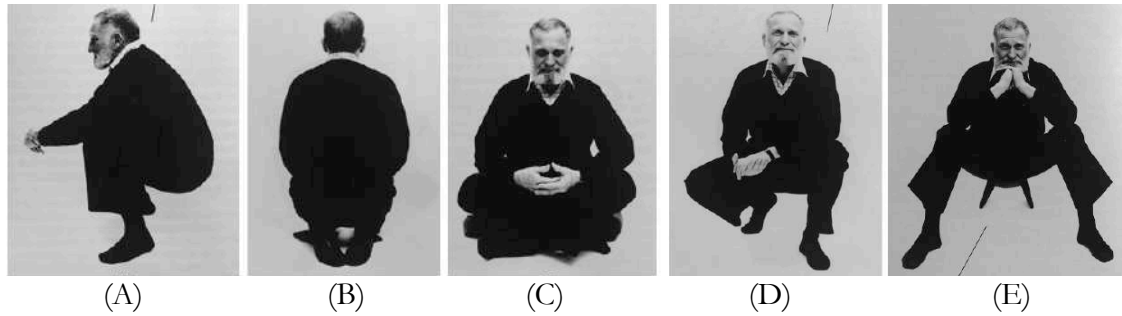
If furniture is a compelling symbol of civilization, chairs are the prominent artifacts of culture (Bradford, 1978). Chairs or thrones are distinguished as one-person seats. However, in modern society and today's everyday uses, a larger array of seats are designed. They are categorized based on the number of people using the seat at the same time: one-person seats such as a chair, stool, lounge chair, recliner, and ottoman, and multiple seats such as a bench and couch. A chair is a seat commonly used by one person. It is supported by four, three, two, or one leg, often with a back on one side. Different shapes and forms are used in designing chairs as long as they support human stability. The evolution of the chair has a long history that can eventually be distinguished based on four factors: sitting surface, backrest, armrest, and base. A stool is another type of seating that is commonly used throughout history. It is distinguished as a chair with no back and no arms. A lounge chair is an upholstered sofa in the form of a chair, but it is longer than a chair, allowing users to recline and lounge. In addition, a recliner is an armchair sofa with an adjustable back that can be tilted front and back and has a connected footrest. However, the ottoman is a block-shaped upholstered seat with no back or arms. It is usually used as a footstool. The other types of seating that can accommodate several people are benches and couches. Benches

generally have no arm or back and are made of wood, metal, or stone. It is used more in public and outdoor spaces. However, couches usually have armrests and a back and are fully or partially covered with upholstery. Based on this seating typology, it seems that the function of the seating determines its form.

Sitting is the seated position or the act of being seated. Galen Cranz, in her book *The chair: rethinking culture, body, and design* (1998), argued the idea of sitting is situated in the past. In order to understand contemporary chairs, there is a required appreciation of their social history. In early human beginnings, chairs did not exist yet. However, when the need to be elevated from the floor started, humans sat on objects like logs, tree stumps, or rocks. The evolution of seating found the need to sit and attempt to separate the body from cold weather. Therefore, other comfortable positions, such as squatting, were learned by early men as the development of culture, body, and purpose (Bradford, 1978). Ward Bennett (1917-2003) studied the sitting position commonly used in everyday and culture (see Figure 24). For instance, there are several human positions for “sitting.” (A) It is an example of squat positions in India due to the Indian people’s thin and small frames; (B) It is a way of sitting positions in Japan due to the Japanese people’s short torso and legs; (C) It is the lotus position for meditation and development of the wellness; (D) It is the three-point position cowboy stance for relaxing; and (E) it is the South American (stool) positioning to elevate man off the ground (Bradford, 1978). His categorizations of the way of sitting are based on cultural differences. However, the table's appearance significantly affects these categorizations to more universal and standard dimensions, such as lounge chairs for rest and comfort and work chairs for studying and making things. These tasks have changed the cross-cultural identity of sitting throughout history (Bradford, 1978).

Figure 24

(A) Squat positions in India for thin and small frames; (B) Japan sitting positions for short torso and legs; (C) lotus position for meditation and development of wellness; (D) the three-point position cowboy stance for relaxing; and (E) the South American (stool) positioning to elevate man off the ground (Bradford, 1978)



While Ward Bennett categorized the changes based on how to sit (Bradford, 1978), other categorizations are based on the elements of styles (Cranz, 1998); and others are divided into the interindustry revelations of before or after (Burchell, 1991; Erdem, 2019). According to Cran­z’s (1998) classification, chairs develop into five categories based on style elements. The first category is the Handmade Chairs, which were made with less tool involvement and characterized the ancient period as the solid visual richness and high-status chairs that relayed meaning. Egyptian furniture is one of the earliest examples presenting the high standards of luxury and explicit messages in decorating the chair’s foot. However, by the beginning of the 16th century, a skillful artisan in woodworking, the English Cabinetmakers, started making classical furniture with new classical lines and decorative ornamentation on a small scale during the Baroque, Rococo, and early neoclassical styles. By the 19th century, technological, economic, and social changes disrupted stylistic stability (Cranz, 1998).

The second category is Mass Production Chairs, also called the revivalism of ancient styles, which were reproduced in endless profusion. Yet, with the Industrial Revolution, furniture production developed new lines, concepts, and ideologies because of technology. For example, chair No14 (see Figure 25), designed in simple, elegant, correct proportions, forms the first step in the evolution of modernity due to the wood's bending techniques. IKEA is another example of mass production in the 20th century (see Figure 26). The company reduced the cost of assembling furniture at home to reduce reliance on manufacturing. Scandinavian furniture uses mass production to provide multiple pieces instead of a piece-by-piece ideology. IKEA relies on a contemporary look rather than a historical style.

Figure 25

(A) Michael Thonet. Chair No.14 (Moma.Org, n.d.) and (B) the dimensions of the chair (Dimensions.Com, n.d)

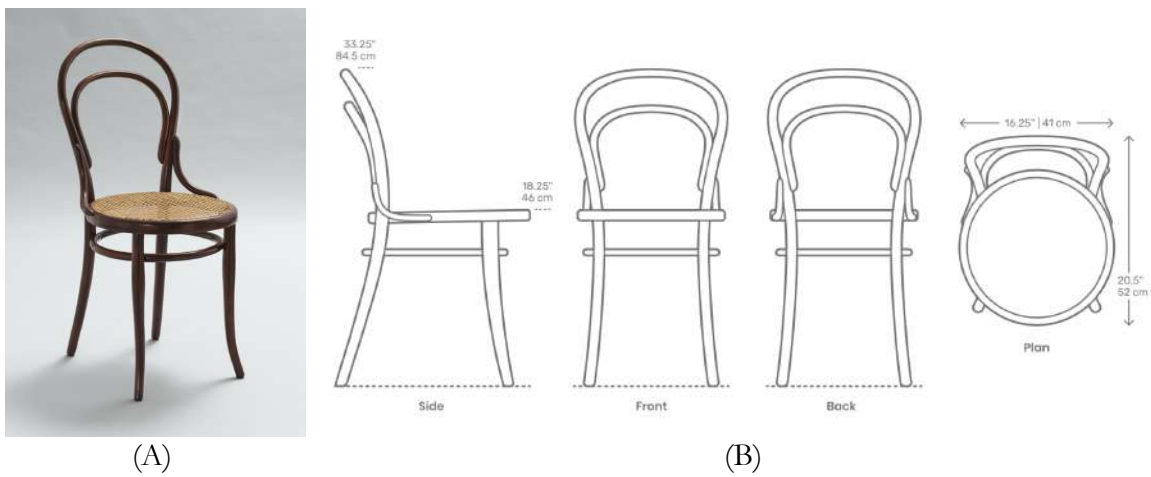


Figure 26

IKEA as an example of mass production in the 20th century (IKEA.com, n.d)

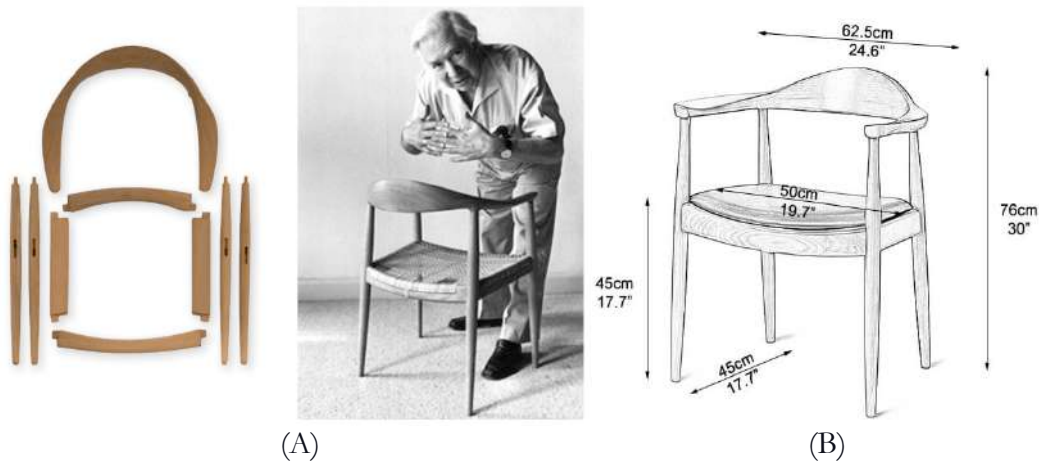


The third category is the Craftsman Chair, which is a revival of handmade furniture by craftspeople who value handmade pieces. In 1880, when the Art and Craft movement in England started, a pre-Raffaello group delivered the idea that nature should have better making strategies. They believed that mass production and workers did not have the traditional way of connecting furniture parts and lacked knowledge. The ideology of this movement is that beauty is the goal of design, and art is part of life (Erdem, 2019). Craftspeople are people with a college background and intellectual concepts to produce limited editions of designs (Cranz, 1998). One of the studio furniture makers was Hans Wegner, who was a Danish designer in the 1950s. He made furniture based on the strengths of craftspeople and was familiar with woodworking tools, but he did not necessarily build everything by hand or by himself (see Figure 27). Sam Maloof is another furniture maker

who worked with natural materials like wood and had craftsman skills. The craftsman skill and background were used to assess the furniture's durability, price, and aesthetic value (Cranz, 1998).

Figure 27

(A) Hans J. Wegner and Kennedy Armchair (Heim, 2020) and (B) Kennedy Armchair dimensions (Norpefurniture.Com, n.d)



The fourth category is the Designer Chairs, which are chairs made by an architect in the 20th century. A designer with an architectural background looks at chairs as a microcosm of the designed environment. They search for a new aesthetic called modernism; they look at chairs as three-dimensional objects with complex forms that present a symbolic function. Architect Paul Overly defined chairs as stylistic and geometrical forms of modern architecture that are metaphors for the human body (Cranz, 1998). The Art Nouveau movement started to express the designer's artistic way of thinking with new ideas, materials, construction, and techniques associated with industrialization. The designer replaced traditional woodworking and fabrication with laminated wood, canvas, stainless

steel, plastic, rubber, foam, and resin. The modernist attitude is more toward adopting new materials and technology to adopt new ideas, characteristics, techniques of joining, and construction into contemporary expression. All these characteristics influenced the principles of furniture form in the early 20th century (Cranz, 1998).

The last category is the Artistic chairs. The artist looks at a chair as an opportunity to engage in social criticism. Chairs are subject matter that plays a communicational function in social theories. As Cranz (1998) mentioned, 19th-century artists used chairs, such as wheelchairs, office chairs, high chairs, and rocking chairs, to make statements about a person's life or social roles (Cranz, 1998).

Seating Evolvement Throughout History

Seating becomes a natural object in everyday use, which might be invisible (Cranz, 1998). Consequently, most human and object relations are understood in context. But one can ask how culture might affect styles. People from different cultures do things that might be misinterpreted, such as the local habits, when preserving design for a community. For example, in the Eastern side of the world, people sit on the floor on mats as a cultural tradition rather than an economic expanse. Thus, highlighting those cultural differences is a reason for the postural variations based on gender, social status, and needs.

In history books, seating characteristics and design elements are divided based on the timeline. One of the distinctive transitions in the furniture industry was the Industrial Revolution, which affected the making processes and resulted in the development of seating forms and human' social life. Before the Industrial Revolution, society depended on human resources and agriculture-based production. For example, in ancient Egypt, from 4500 B.C. - A.D. 30, as the oldest kingdom, a chest is used as a sitting element. However, kings and

queens of the new Kingdom of Egypt sat on chairs to symbolize their social status. Unlike a chest, a chair has a function and various dimensions, i.e., a chair has legs, a back, an armrest, and seating parts (Burchell, 1991). Chairs of the new Kingdom were small, highly ornamented, carved, and wood-turned. An example is the ceremonial chair in Tutankhamun's tomb, which was made of ebony and gold-leaf, and inlaid with ivory, glass, Egyptian faience, and stones (see Figure 28) (Abercrombie & Whiton, 2007). Compared to the chair formed in ancient Greece from 2000-30 B.C., thrones were inlaid with gold, silver, ivory, and precious stones. Furniture in Greece has not survived, except for thrones made of stone or bronze. Over time, chairs became more comfortable, had modern lines and simple forms, and became highly compatible with human ergonomics. *Klismos* chair, for example, is designed with a curved back and curved legs to match the proportions of a woman's body (see Figure 29).

Figure 28

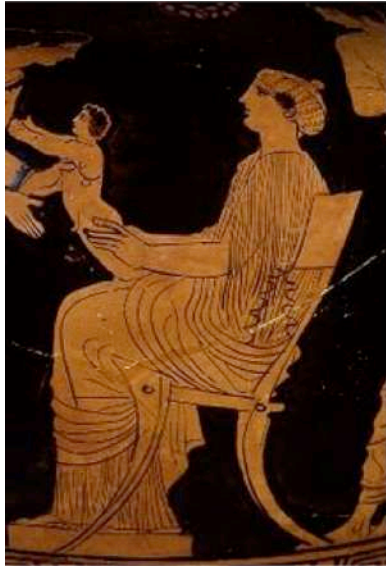
The ceremonial chair found in Tutankhamun's tomb (Flickr.Com, n.d.) by M. Attia (2019)



Figure 29

(A) *The Klismos chair* and (B) *the modern-day Klismos designed by Terence Robsjohn-Gibbings in 1937*

(*The Met Museum, n.d.*)



(A)



(B)

Additionally, in the ancient Roman period 753 B.C. – A.D. 550, furniture started to show the contemporary standards where people represented their wealth on the furniture (Cranz, 1998). Seating became largely decorative and vital status symbols. Roman's *Lectus*, or *bed/couch*, was a highly valued piece for eating, relaxing, and sleeping (Abercrombie & Whiton, 2007; Harwood et al., 2002). Chairs and stools were rarely found. For example, scholars, religious clergy, and government employers only used the upright back *thronus*. In contrast, women of noble families used the *catbedra* with a sloping back, curving legs, and no arms (see Figure 30) (Cranz, 1998). The *Sella Curulis* or curule stool is an X-shaped base with an interlocking seat and multiple parallel legs. It also was used by the highest dignitaries. It was made of ivory and gold (see Figure 31).

Figure 30

(A) The thronus white marble (Aimone, 2019) and (B) the cathedra with sloping back (Schwartz, 2006)



(A)



(B)

Figure 31

The Sella Curulis - curule seat has multiple parallel legs (Cataviki.Com, n.d.) by Henri69 (n.d.)



Between 500 to 1500 A.D., the Middle Ages describe the transition between the Roman era and classicism (Harwood et al., 2002). After the fall of the Roman Empire, Europe fell into darkness with no development in art. However, Western and Eastern Europe witnessed major changes. Germanic tribes from the north and Muslims from Africa and the Middle East led invasions, leading to social, religious, and political changes. Western Europe adopted the tradition in the early Christian churches where a stool was more commonly used than a chair. In the Byzantine Empire, thrones and chairs were used and constructed of ivory carved with images of animals and birds (see Figure 32). Romanesque and Gothic styles used heavy, bulky, and immovable thrones that leveraged the ruler's status. The most common seat was a floor cushion, yet there were few pieces of seating with backs or half-backs for grand people and occasions (see Figure 33) (Abercrombie & Whiton, 2007). Benches or folding stools similar to the Romans, Greeks, and Egyptians were also used.

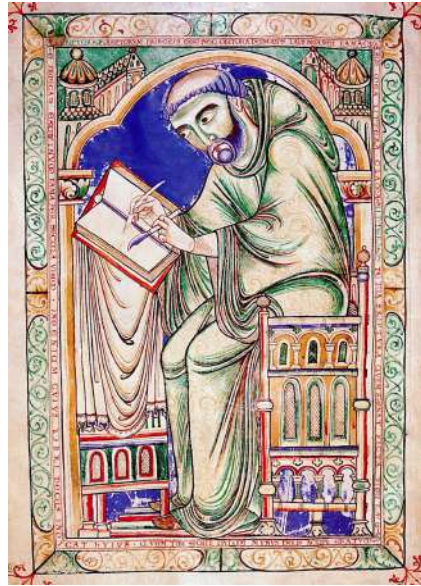
Figure 32

Byzantine Empire example in the throne of Maximian (Alchetron, 2021) by N. Patil (n.d.)



Figure 33

(A) The scribe Eadwine seated on a chair with ornaments popular in Romanesque style, and (B) a walnut chair from the Gothic fifteenth century (Abercrombie & Whiton, 2007)



(A)



(B)

In Eastern Europe, during the 7th century, the development of Islamic architecture and design began. Seating, such as chairs, stools, and benches, was limited and movable. Large cushions or rugs were also general seating options because sitting on the floor cross-legged and squat was common during this period. Interior spaces were covered with rugs to sit on the floor. For example, in mosques, Muslim practice requires one to sit and kneel on a carpeted floor to protect knees and hands (see Figure 34). Domestic spaces used couches that were deep and wide enough to sit in any direction. For example, in a Turkish traditional house, couches are placed above a low wooden platform (see Figure 35). Seats vary in height, and the tallest seat is reserved for guests (Harwood et al., 2002).

Figure 34

Carpets (prayer rug) used in Masjid (Mosques) (The Islamic Information, 2021)



Figure 35

Typical family room in Turkish House (Türel, 2014)



Even though the Western world's seating characteristics were strong with visual richness and status presentation, the Renaissance period, between the 14th and 16th centuries, was a significant point of cultural change (Abercrombie & Whiton, 2007). The

introduction of the printing press further developed the technology, science, and tools for making furniture. Fine handmade techniques such as carving and inlay were invented. There was more specialization in furniture makers, such as framers, upholsterers, veneerers, and metal accessory makers. Handmade chairs are transformed from simple utilitarian tools for kings and popes to worthy objects of visual attention and stylistic expression. Renaissance furniture designs are constructed in forms with architectural details. Most furniture pieces in the Italian Renaissance (15th to 18th centuries) were monumental and positioned against the wall. However, by the 16th century, a variety of furniture forms developed. Chairs and stools were used, and legs were turned, carved, or left plain (see Figure 36). Box stools were invented. By adding a straight back, a chair was created. It is worth noting that chairs and stools were named frequently. However, it is unclear where those names were invented (Cranz, 1998).

Figure 36

Examples of the Italian Renaissance seating: (A) the Sgabello, (B) the Savonarola Chair, and (C) the Dante chairs or Dantesca (The Met Museum, n.d).



(A)



(B)



(C)

In the Spanish Renaissance (8th to 18th centuries), benches, stools, and built-in seating were used more than chairs, and women sometimes used cushions to sit upon them (see Figure 37) (Harwood et al., 2002). Seating such as the X-shaped frame chair was frequently upholstered in crimson velvet with edging and fringe. For example, the *sillon de frailero* chair or “monk’s chair” was the most commonly used. It had a wooden frame, square or rectangular, with a straight back separated from the seat.

Figure 37

The Spanish Renaissance sillon de frailero chair (Santafeartauction.Com, n.d.).



In the English Renaissance, seating included different forms, such as chairs, settees, daybeds, stools, and benches. The characters of chairs of the Jacobean phases were carved or had inlaid backs, as heavy chairs with a high rectangular seat and a footstool (see Figure 38).

The legs were turned or columns with slightly curved arms, such as the wainscot chairs or panel chairs (Abercrombie & Whiton, 2007). During the Baroque period, a chair's seat and back were made of cushions, and legs were joined by an S- or U-shaped scroll or a carved stretcher. The tilted back legs were first introduced for comfort. However, in the William and Mary phase, legs were returned to straight form, square or tapered, with a flat shape stretcher. Also, seats with two, three, and four legs were first introduced during the William and Mary period.

Figure 38

The wainscot armchair during the English Renaissance (The Met Museum, n.d)



Beauty and character were introduced in the curved lines in legs and finish materials during the Queen Anne style. An unornamented back with S-shaped arms and cabriole legs that reflect the knee-and-ankle form represents comfort. A splat back is used to elaborate the degrees of the carved back. One of the distinctive chairs, known as a stick chair, is the

Windsor chair. The design first appeared in the late 18th century with a slightly concave shape for comfort. The legs are turned and joined to the bottom of the chair instead of the back. The legs have stretchers in an H shape, and the arms are connected in the back, with the spindles passing through the arms (see Figure 39). In the Renaissance period, seating was categorized as handmade seating that presented a high standard of luxury and precluded explicit messages of states.

Figure 39

Windsor chair during the English Renaissance (The Met Museum, n.d).



Between the 16th and early 18th centuries, English cabinetmakers with artisan skills built classical and novel seating during the Louis XIV era, known as the Baroque style. Chairs and sofas are upholstered and more fashionable than cushions (Abercrombie & Whiton, 2007; Harwood et al., 2002). Typical forms of sofas were rectangular with high backs, and they might include a closed armchair or open armchair in the sofa design. Upholstered seating had particular etiquettes, as only kings and queens sat on armchairs, and royal children sat on chairs with backs and no arms (Harwood et al., 2002). The early H-shape of stretchers is replaced with an X-shape. The arms end with curves or volutes, and the legs take the shape of an S curve known as a cabriole. The armrest is placed above the front legs in the Baroque style but farther back at the beginning of the Regency period. The legs also become shorter to lower the chair and lighten the weight. The stretchers between legs diminish. Rococo furniture is delicately ornamented in the Baroque style and is more curvilinear. The size of the furniture is scaled down and became less formal and lighter in contrast to Baroque-style seating, which comes in different sizes and was extremely comfortable. The back of the chair is either flat or concaved—the chair wider and with upholstered arms. Early Neoclassical (Louis XVI) seating was full of right angles, straight lines, architectural proportions, and decorative elements influenced by the Greeks and Romans. The back of the chair might be rectangular or oval. Legs and backs were straight (see Figure 40). By the end of the 18th century, designs started to be distinguished by the maker's name, not by the ruling monarch of that period (Cranz, 1998).

Figure 40

The three Louis chairs and the changes of leg profiles: (A) Louis XIV (Baroque), (B) Louis XV (Regency), and (C) Louis XVI (Rococo) (The Met Museum, n.d).



(A) Louis XIV (Baroque)

(B) Louis XV (Regency)



(C) Louis XVI (Rococo)

In contrast to handmade and English cabinetmaker seating, the Industrial Revolution enabled the furniture industry to move from expensive, time-consuming, handmade workshops to much faster, cheaper mass production (Erdem, 2019). The 18th century was a transforming point in furniture design style and stability. Great developments in mechanization resulted in huge steps in modern lines and tools. The Industrial Revolution in

Europe caused changes in production forms and social structure, where the population was moved from the country to the city (Erdem, 2019). New professions emerged and formulated new social classes with new values, lines, concepts, ideologies, and technology (Cranz, 1998).

The furniture in the 19th century was varied and stylistic. New techniques, materials, and designs were allowed for new forms and types. Mahogany wood, seen frequently in Regency furniture, is joined with richer woods such as rosewood and amboyna. Skillful Regency cabinetmakers were known by their names. A few examples of known makers during the English Regency are Thomas Hope, who designed a tripod table in 1807, and Charles Wyllys Elliott, who was famous for using satinwood in his furniture. In America, the French Charles-Honore Lannuier produced finely crafted furniture combining rosewood and marble (Abercrombie & Whiton, 2007).

Additionally, new classical details with lighter wood and ornamentation were introduced. Joseph Danhauser is one of the furniture makers who produced custom-made furniture for middle-class users. Revisionist furniture became popular in the United States as designers mixed styles. Two famous designers are A. Baudouine and Alexander Rous. They combined motifs of the 16th, 17th, and 18th centuries with a simple form of Louis XV furniture. Likewise, Sir Laurence Alma-Tadema mixed classic and ancient Egyptian styles in one furniture piece. One of his design commissions is the Settee, a sofa with cedar, ebony veneer inlays, and upholstery aimed at reviving the original richness of the past eras (see Figure 41).

Figure 41

Sir Laurence Alma-Tadema sofa during the 19th century (The Met Museum, n.d).



The Arts and Crafts movement was started by craft people who were concerned about daily use with an aesthetics of plainness and functionality. Artists and crafters resembled past elements in mass productions (Abercrombie & Whiton, 2007). For example, Philip Webb reused medieval building elements such as gothic arches, windows, and doors into new furniture production by Morris and company (see Figure 42).

Figure 42

Philip Webb Sussex chair during the 19th century (Sellingantiques.Co.Uk, n.d.)



Likewise, the Art Nouveau movement appeared as a reaction to industrialization. This movement was widespread in Europe, America, Germany, and Italy and even reached the eastern world in Japan and China, where designs first broke from local traditional arts (Harwood et al., 2002). Belgian Henri Van De Velde was one of the theoretics who found the beauty in machines. He started the future of iron, steel, and aluminum as furniture materials due to these materials' straight, long-lasting stability and construction. Art Nouveau furniture is characterized by using plant and leaf motifs and curved lines. For example, Louis Majorelle (1859-1926) was a French furniture designer who manufactured his designs influenced by Emile Galle's glass (see Figure 43). He advanced his work in new directions by getting inspiration from nature, such as stems of plants and leaves (Cranz, 1998).

Figure 43

French Art Nouveau armchair by Louis Majorelle, 1905 (Christies.Com, n.d.)



New furniture techniques became available by the 19th century, such as wood bending and laminating. Both methods were cheaper and faster ways to develop designs. Michael Thonet was famous because of his wood bending in furniture making. He is an Austrian master carpenter who created a new bending technique to soften solid beech wood in water vapor. He designed the Taborets, a low stool or a small table, with simple, elegant, and correct proportions (see Figure 44). Then, his revolutionary modern chair, named No. 14, was produced 50 million times between 1859 and 1930 (Cranz, 1998). On the other hand, Jhon Henry Belter was famous for his lamination techniques (see Figure 45). He revived the curved chairback using the lamination technique with thin sheets of wood to show the beauty of a wood grain's directions by bending them in the steam. He was famous for making chairbacks and bedframes with decorations to show his ability to hand-carve a curved piece of wood from top to bottom and side to side.

Figure 44

(A) Michael Thonet. Taborets Stool No. 14 and (B) Chair No. 14 (Moma, 2021)



(A)



(B)

Figure 45

Jhon Henry Belter's five-legged sofa during the 1850s (The Met Museum, n.d).



The 20th century was an impressive period for furniture transactions because furniture was available to all classes, not only the wealthy. Furniture designers were period architects such as Frank Lloyd Wright, who designed furniture for his open-space architecture based on rigorously geometric designs. One of his famous chairs is the office chair made of oak and innovative painted steel frames (see Figure 46). The base is cast iron, and the armrest is continuously carved and joined at the back leg (Abercrombie & Whiton, 2007). Besides Wright, Marcel Breuer was an architect and interior designer who turned furniture design into innovative form and material during the Bauhaus style. Also, Mies van der Rohe designed the famous Barcelona Pavilion in 1929. His chair and stool were designed in simple X-shaped chromium-plated steel (see Figure 47). The new developments established the link between art, architecture, and industry in contemporary understanding with a philosophy based on functionality. The Bauhaus style is characterized by simple lines along with materials such as steel pipe, plywood, leather, and plastic, and dominant colors such as black, white, brown, and gray (Erdem, 2019).

Figure 46

(A) Frank Lloyd Wright's office armchair, 1904 (The Met Museum, n.d), and (B) Marcel Breuer's tubular steel and leather Wassily chair, 1925 (Modernplant.Com, n.d.)



(A)



(B)

Figure 47

The Barcelona Chair by Mies van der Rohe, 1929 (Knoll.Com, n.d.)



It was a purism time around 1925 before the De Stijl Movement was started when Le Corbusier designed the interior design of the Villa Savoy living room. He created the chaise lounge 1928 and the rotating stool on four tubular steel legs (see Figure 48) (Abercrombie & Whiton, 2007). Likewise, the De Stijl is an art and architecture movement that creates a new

style to express basic shapes such as circles, squares, and rectangles with primary colors such as blue, red, and yellow (Erdem, 2019). A famous example of the De Stijl style is Gerrit Rietveld's The Red Blue Chair, 1918 (see Figure 49)(Burchell, 1991).

Figure 48

Le Corbusier chaise longue, 1925 (Nutrend.Co.Uk, n.d.)



Figure 49

Gerrit Rietveld, the Red Blue Chair, 1918 (Moma.Org, n.d.)



During the 1920s, the Art Deco movement began. Also called the *Style Moderne*, it was developed as a rejection of the Art Nouveau movement. Art Deco avoids and replaces curves and plant shapes with more geometrically interpreted forms. Subtle and naturalistic colors are also replaced with stronger ones (Abercrombie & Whiton, 2007). One example is the chair and cabinet by Jacques-Emile Ruhlmann. The piece is made of amboyna wood, ivory, and a shark's skin. The piece is a delicate material that expresses the beginning of modernism.

With the Modern movement, many forms of making are now available for all social classes. In Scandinavian design, many furniture makers aimed to produce fine furniture forms. Designers from Finland, such as Alvar Aalto, explored and experienced slicing, laminating, and bending methods to design furniture. One example is his three-legged stacking stool (see Figure 50).

Figure 50

(A) Alvar Aalto's three-legged stacking stool (*Turbosquid.Com, n.d.*), (B) Kaare Klint's Safari chair, and (C) Hans Wegner's Chinese armchair (*Danishdesignstore.Com, n.d.*)



While in Denmark, the furniture designer Kaare Klint designed the Safari chair in 1933. His making techniques respect the natural materials and solid construction of 18th-century English furniture. Hans Wegner is also a well-made furniture designer known for his famous Chinese armchair. Another Danish designer, besides Hans Wegner, is Arne Jacobsen. He is an architect and interior, furniture, and textiles designer. His famous chairs are the three metal legs Ant, Egg, and Swan (see Figure 51).

Figure 51

Arne Jacobsen chairs: (A) Ant chair, (B) Egg chair, and (C) Swan chair (Danishdesignstore.Com, n.d.)



Charles and his wife, Ray Eames, are also well-distinguished designers and makers of the 20th century. They applied manufacturing methods that were never previously used in furniture making. They designed a chair with a light structure consisting of plastic glue and molded wood veneer in a three-dimensional form (Abercrombie & Whiton, 2007). Their experiment of molding veneers led them to create the chair of the century, the LCW lounge chair, in 1946 (see Figure 52). The form became internationally recognized and is still produced today.

Figure 52

Charles and Ray Eames's LCW lounge chairs (Hivemodern.Com, n.d.)



The Herman Miller furniture company employed many designers and became an essential part of modern design in the United States. The company first designed in a Renaissance Revival style with a sleek new design and an Art Deco slant office system for home and office uses. Herman Miller hired talented designers and makers such as Charles and Ray Eames, George Nelson, Isamu Noguchi, and Alexander Girard (Abercrombie & Whiton, 2007). However, the Knoll manufacturing company, founded by Hans Knoll, is a company that produces the work of outside designers. Knoll's furniture design includes Eero Saarinen's Tulip chair, Mies van der Rohe's Barcelona chair, and Marcel Breuer Cesca's (see Figure 53) (Abercrombie & Whiton, 2007).

Figure 53

(A) Eero Saarinen's chair, the Tulip, (B) Mies van der Rohe's Barcelona chair, and (C) Marcel Breuer Cesca's chairs (Knoll.Com, n.d.)



(A)



(B)



(C)

While modernism rejected the traditional rules to simplest form and structures, post-modernism furniture embraced new possibilities of new colors, textures, and aesthetics (Abercrombie & Whiton, 2007). The post-modernism movement revitalized historical trends to create new forms inspired by old forms. For example, in 1981, architect Hans Hollein designed the Marilyn Sofa, which was made with rare wood and old sofa fabric (Cranz, 1998). The shape is unsymmetrical, has curved forms, uses organic lines, is comfortable, and incorporates flexible upholstery fabrics (see Figure 54). Modularity systems and built-in ideas of office space were developed by George Nelson. New trends such as symbolism, expressionism, low-tech, pop art, and arabesque emerged (Erdem, 2019). For example, Japanese designer Shiro Kurumata experimented with steel mesh material in order to design the 'How High the Moon' chair in 1986 (see Figure 55) (Abercrombie & Whiton, 2007).

Figure 54

Hans Hollein, Marilyn Sofa, 1981 (*Wright20.Com, n.d.*)



Figure 55

Shiro Kuramata's How High the Moon chair (Moma.Org, n.d.)



By the 21st century, the relationship between design and technology strengthened design practice and changed the relationship between individuals and design (Abercrombie & Whiton, 2007). The quality found during the early eras by highly skilled artisanal and in-production materials becomes more abstract. In other words, the modern design targets everyone, not just royalty or the wealthy. Therefore, the quality of the design becomes associated with problem-solving and the practice of making to reflect a personal taste, habit, and well-being. Furniture is getting more individual and is given a more distinctive treatment than a standard design (Cranz, 1998). Seating design is more than just a practical object that performs a service. It is a culturally loaded symbol that helps express a person's attitude, identity, and lifestyle.

The Scientific Literature (Ergonomics)

The artistic and historical approaches of the chair are associated with human social positioning. Then, it turned out to be more about the human body by the 20th century. This section discusses the scientific literature on seating design demarcated by ergonomics. Understanding these relations between human activity, work function, and the immediate environment helps evaluate seating.

Ergonomics, or human factors, is the scientific discipline of understanding human interaction with objects. The word is originally from the Greek *ergon* and *nomos*, which means 'laws of work' (*ErgoPlus.Com*, n.d.). It refers to the practice of designing a workplace, product, or system and aims to minimize working harm or future injuries (*Ergonomics*, n.d.). The International Ergonomics Association (IEA) has developed a global level of knowledge and resources to evolve the practice of ergonomics in education and research since the 1950s (Caple, 2012). According to the International Ergonomics Association (2006), ergonomics

has five aspects: safety, comfort, easy use, productivity and preferences, and aesthetics.

These aspects are determined by understanding the anthropometric data of size, shape, and form (Gary et al., 2006), such as understanding classroom furniture as a universal issue in the education sector (Esmael et al., 2022; Fidelis et al., 2018; Setiawan et al., 2021). Additionally, ergonomics has three broader domains: physical, cognitive, and organizational. (1) Physical ergonomics is concerned with human anatomical, anthropometrical, physiological, and biomechanical characteristics related to physical activity. For example, workplace ergonomics deals with work problems and builds a productive work environment and better worker experience. (2) Cognitive ergonomics concerns mental processes related to human interactions with other elements. (3) Organizational ergonomics is concerned with the system of organizations or processes (Gary et al., 2006).

Ergonomics is a helpful tool to identify which users' characteristics should be considered during the furniture design process. Ergonomic furniture is furniture that supports, functions, and adds comfort to human users. Its goal is to protect the musculoskeletal and reduce joint pain, back issues, neck issues, arthritis, restricted organs, and poor blood pressure (Kumar, 2022). The essential principle of ergonomics aims to understand human interaction among humans or other elements. It applies theories, principles, and methods to design to optimize humans' well-being and overall performance (Moore & Steiner, 2011).

According to Wagle (2018), ergonomics has ten critical principles associated with designing workspaces and human positions besides comfort, safety, and health. Ergonomic principles are:

1. Maintaining neutral positions at work.
2. Reducing joint force that might cause injury.

3. Reducing unnecessary stretching and strain to maintain better posture.
4. Keeping proper height makes working easier.
5. Reducing excessive motions to minimize the cause of disorder and numbness.
6. Decreasing the strenuous and fatigue issues involving the static load.
7. Minimizing the sitting pressure points, such as adding a cushion behind the knees.
8. Providing enough clearance to prevent space for workers to move freely.
9. Maintaining enough moving space between workers for stretching and exercising.
10. Maintaining comfort concerns the working environment, such as lighting, space, and air.

Ergonomic interventions can reduce health hazards if implemented in the designed environment. Therefore, several workspace studies explore the ergonomics of workstations and analyze their safety and comfort concerning the working environment. A case study by Adaramola and Ugbebor (2014) investigates the impact of ergonomic design work and its relation to increased productivity. They examine the furniture display, physical envelopment, facility management, and its effect on employee performance for one year. As a result, they found that productivity increases in the workplace. However, longevity employees with time lose their productivity due to the absence of fulfilling aging issues in ergonomic workstations (Adaramola & Ugbebor, 2014) . Another cross-sectional research study by Bello and others (2022) explored the ergonomic risk factors in workstation seats. They evaluated the body-chair dimensions of each participant with an ergonomic assessment checklist to determine risk factors. Based on the data and the time spent using chairs, which is approximately five to ten years, the data report showed a link between back pain and the chair dimensions. This

assessment connects the workstation seat with the procurement policy (Bello et al., 2022). Both research papers show that the assessment of inappropriate seating design is directly related to design and manufacturing issues. The analysis of both studies showed the ignorance of furniture companies in designing a better version of seating that is ergonomically based on the research investigations.

Ergonomic explorations related to housing or homes are determined by the user's activities in the space. These considerations are used to design household equipment, organize home layouts, design an effective lighting environment, or design furniture that fits users and reduces risk. One example is the kitchen layout and ergonomics, which are concerned with lighting, working surfaces, standing positioning, proper height, reaching tools, and shoulder height. A case study investigated house layout in Indonesia and applied the ergonomics of living to analyze people's behaviors by Kristyanto (2008). The researcher believes that culture and traditions analysis are associated with home size and layout. The data shows that the number of family members in a traditional Indonesian home affects the amount of furniture, space layout, and space priority. For example, the bedroom is more crucial than the bathroom, kitchen, living room, and dining room. New proposed home and furniture layouts were presented based on the ergonomic analysis, and the standard needs were based on users' behavioral analysis and the number of users in the home (Kristyanto, 2008).

Besides working spaces, several other research studies investigate end-user ergonomics as an essential part of furniture design in the education sector. Most studies understand classroom furniture as a universal issue in education. Classroom furniture is often poorly designed, and students' anthropometric data are limited. One of these studies is the effect of primary school furniture on children's activities and in-class habits. Fidelis and

others (2018) study investigates the relationship between students' anthropometrics and furniture dimensions in the classroom. They show that the performance in the school and the arthrometric data of these students are needed to develop well-sitting positions for students, especially in undeveloped countries such as Nigerian universities. The data is obtained by measuring participants' anthropometric dimensions. As a result, the study proves that furniture manufacturers do not rely on primary sources to design furniture in the education sector (Fidelis et al., 2018). Another research study by Ansari and others (2018) aims to develop an ergonomic chair based on student anthropometric data. The result of the analysis determined the best seat height, depth, width, and backrest angle to match the student's anthropometric characteristics and body sizes (Ansari et al., 2018).

Universal Design

Universal design is the theory and practice of design that all people use (Story, 2011; Story et al., 1998). Previously, the definition of universal design was used in two simple ways: The first is to communicate a good example of concepts, such as the door handles requiring no grasping. The second is to prove tests for universal uses, such as a device that can be used. However, these early definitive aspects did not convey the universal design aspects and different abilities (Story et al., 1998) or criteria that define what makes design usable by everyone (Story, 2011). According to Story and others (1998), in their book *the universal design file: Designing for people of all ages and abilities*, abilities are categorized into groups: cognition, vision, hearing and speech, body function, arm function, hand function, and mobility. Each grouping variant the way the design might affect, use, and the way to test a product, and understanding human diversity is a critical aspect of the design efficiency. Therefore, successfully applying universal design principles requires understanding human diversity.

Cognitions affect the uses of the design, which means the design considers a variety of human abilities, interpreting and acting. For example, a design might be hard to understand if the Roman numbers are used instead of the Arabian numbers. Visions affect the design ability when perceiving visual stimuli. For example, varied populations and ages might perceive visuals based on color brightness, low and high lighting levels, or judging distances. Hearing and speech also affect the uses of the design based on age and abilities. For example, individual attention is varied among auditory sources and age. Body function demands the human capability to perform different tasks, considering the various skills to perform. For example, individuals with other physical disabilities should be regarded as diverse populations. Arm and hand function means considering designs that require a range of motions and strength, such as individuals with only one arm lifting, pushing, or pulling. Mobility is related to individual balance while walking or standing, which means considering a human variety of abilities and performing—for example, designing spaces to cover distances to convey wheelchairs (Story et al., 1998).

The Center for Universal Design, founded by the U.S., has conducted a project with the Department of Education’s National Institute on Diversity and Rehabilitation Research (NIDRR) called “Studied to Future Development of Universal Design” during the 1990s century (Story, 2011, p. 4.4). The project was developed to set guidelines for universal design. These resulted in seven principles of Universal Design, also called design for all. The seven principles are explained as follows.

1. Equitable use: The design should be appealing to all users, provide the same means of service, avoid separating or stigmatizing users, and make provisions equally for privacy, security, and safety.

2. Flexibility in use: The design must consider different individual preferences, provide choices of use, accommodate right- and left-handed access, and provide adaptability.
3. Intuitive and straightforward: By eliminating complexity, the design should be easy to understand regardless of the user's language, background, and skills.
4. Perceptible information: The design must effectively communicate information regarding the users' condition or ability.
5. Tolerance for error: The design should minimize the risks and consequences of unintentional actions.
6. Low physical effort: The design must be efficient and comfortable.
7. Size and space: The design should be in the right size and space to provide fit to multiple populations regarding body size.

The Kingdom of Saudi Arabia

The Geographical Location of the Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia (KSA) is the largest country in the Middle East and the second-largest country in the Arab world. The land covers 80% of the Arabian Peninsula (Al-Dossry, 2012), approximately 2,150,000 km² (Al-Ban, 2016), with 95 percent of it as desert. It is bordered on the north by Jordan and Iraq; Kuwait on the northeast; Qatar, Bahrain, and the United Arab Emirates on the east; Yamen on the southern side; Oman to the southeast; and the Red Sea and the Persian Gulf to its west (see Figure 56). The west coast extends across 1700 kilometers of the Red Sea. The east coast spans 560 kilometers of the Arabian Gulf, the only nation with access to the Red Sea and the Persian Gulf. The land's topography is vast plains to deserts, valleys, mountains, and plateaus. The most

significant features are the Empty Quarter desert, the eastern province, the northern mountains and plateaus, the Najd plateaus of the central, the western highlands, and the Tihama plains in the southwest.

Figure 56

Map of the Middle East (Worldatlas.Com, n.d.)



According to the World Population Review (2021), the population of Saudi Arabia is 34 million, with 1.7% annual changes, divided into different groups. The ages of 0-14 contain the median amount of the population, with 32.4% of the total. The middle age group of 15-64 comprises the most significant population, with about 64.8%. The age 65+ group comprises 2.8% of the population. In 2020, the ratio of males and females was 137.11 males per 100 females, with a 1.73% growth rate (*World Population Review, 2021*). By 2023,

Saudi Arabia's population reached 36.33 million (*Population Pyramids of the World from 1950 to 2100*, n.d.). The male population is 57.76%, females are 42.24%, and the median age is 30.5 years. The age group under study, which includes people aged between 25 and 45 (millennials), represent 39% of the Saudi population by 2023 (*Population Pyramids of the World from 1950 to 2100*, n.d.).

Identity, Tradition, Religion, and Culture

Before the Kingdom of Saudi Arabia was united, most people who lived in the desert were Bedouins. Bedouins are nomadic people in the Middle Eastern desert, moving to find water and food. They have lived in the Arabic Peninsula for centuries. They are constantly moving; thus, their homes accommodate their lifestyle (see Figure 57). They live in tents made of goat and camel hair. Women weave the fabric on a narrow ground loom and then stitch the fabric panels together. The space inside the tents is divided into two rooms. One room is for male guests and outside visitors, and the other room is only for women. Bedouins use rugs and cushions for sleeping and seating. They do this because mats are easy to roll and carry on a camel when moving to other places. However, many Bedouin people transition to become villagers. They use mattresses to sit around the rooms due to their simplicity, invitingness, and comfort. This seating style is integrated into traditional Jeddah home furniture and used on the floor or raised on built-in or wooden frames. Today, with all these changes, the living standard is higher than before, as most people who descend from the Bedouin culture are urbanized.

Figure 57

The Kingdom of Saudi Arabia in the 1960s. A Bedouin tent in the desert (Glimpse of the Past, 2008)



However, after 6,000 years of symbiotic relationship with nomadic tribes (Bedouins), the nation was united by King Abdul-Aziz on September 23rd, 1932 (Al-Dossry, 2012). Now, the single nation has five significant regions and thirteen central provinces. Each zone defines a different and unique architectural and design identity of the Kingdom of Saudi Arabia. The region of Najd is in the middle; Al-Sharqiyah is in the East; Al-Janoob is in the south; Al-Shamal is in the north; and Hijazi is in the west.

The Western Side: The Hijazi Region/Makkah Region

The Hijazi, also known as Hijazi, Hedjaz, and Al-Hijaz (Arabic: **الْحِجَاز**, al-Ḥiǧāz), is located on the western coast of Saudi Arabia, where the Islamic holy city Makkah/Mecca is located. The city is also called the Makkah Region because Makkah is in the western region. The region is most important due to the two holy mosques, Makkah and Madinah. The

region also includes the cities of Jeddah, Tabuk, Yanbu, and Taif. Jeddah is the second-largest city in Saudi Arabia, with 3,976,400 citizens (*World Population Review*, 2021) (see Figure 58). The city was designed to shorten the journey from all over the world for Muslim pilgrims to Makkah. That is why the city has also been called the Gate of Makkah, as it is in between the two mosques. These mosques signify the birthplace of Islam, and one of the five pillars of Islam is to make the journey to Makkah once in a lifetime (see Figure 59). Muslims from all around the world come yearly to make this important trip called the Haji Pilgrimage. In 2019, there were around 2.5 million pilgrims. Thus, religious tourism has made the Hijazi a diverse and multicultural region since the beginning of Islam, with a distinct traditional architecture and design vocabulary.

Figure 58

(A) *The geographic location of Jeddah in Saudi Arabia and (B) Jeddah city (Aljoufie, 2016, p. 396)*

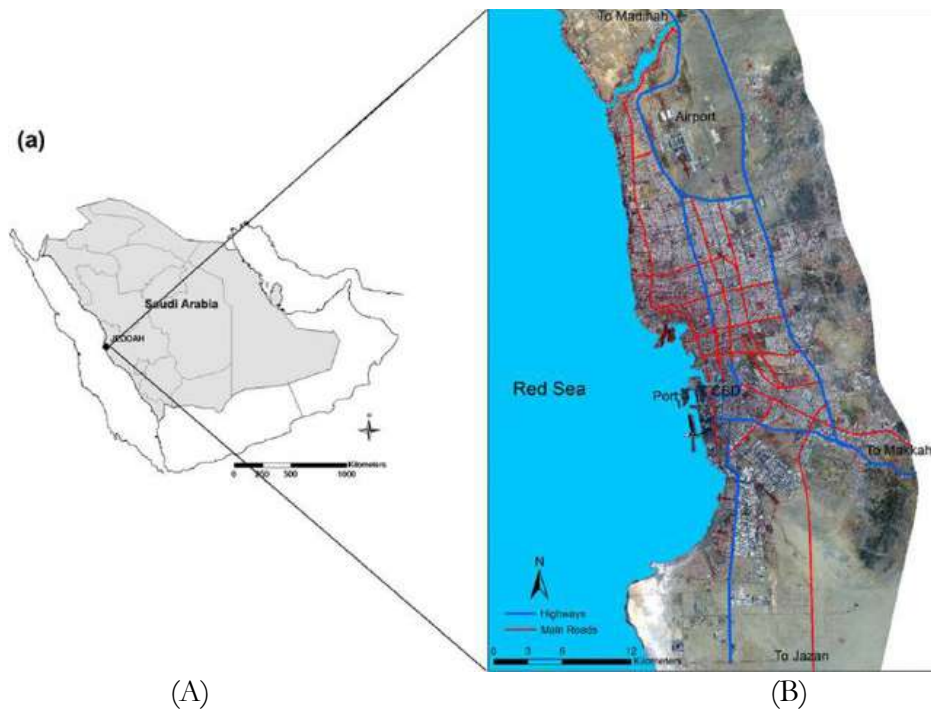


Figure 59

Millions of Muslims during the Hajj (Chambers, 2019) by Georgia Chambers (2019)



Jeddah's economy is based on three industries: international trading, maritime-related activity, and hospitality and tourism. The locations on the coast of the Red Sea have made fishing and boat building a significant income to the city. However, the millions of religious tourists impacted the trade and hospitality because of the international recognition of the religious importance of Saudi Arabia. The Hijazi region is highly urbanized, with 50 percent of the population living in Jeddah city (*World Population Review*, 2021).

Furthermore, it is worth noting that an international organization in preserving heritage, the United Nations Educational, Scientific and Cultural Organization (UNESCO), approved historical Jeddah on the world-historical list (UNESCO, n.d.). According to Frey and Steiner (2011), the UNESCO list included the sites that meet the aspects of “uniqueness, historical authenticity, and integrity” (p. 556). Therefore, the value of historical Jeddah is based on several factors:

1. The style of the area includes imposing tower houses with large wooden Mashrabiya.
2. Since the 7th century A.D., Jeddah has served as a symbolic gateway to Makkah for Muslim pilgrims arriving by sea.
3. After opening the Suez Canal in 1869, historical Jeddah linked Europe with India and Asia, bringing wealth to merchants to build luxurious houses.
4. The city plays an essential role in exchanging human value, knowledge, building materials, and techniques, especially between the 16th and the 18th centuries.
5. Because of international sea trading, historical Jeddah represents a growing cultural world and a shared religious, cultural, and geographical background. It provides an innovative technical and aesthetical solution to overcome the climatic conditions of humidity and heat.
6. Among other Saudi Arabian cities, Jeddah still preserves cultural attributes such as a multi-cultural environment, precious woodwork facades, and a commercial-based economy.

The Social Structure and Cultural Characteristics of the Hijazi

The Hijazi region, like most other regions, has transformed over time. The social, economic, and political changes affect society's social identity, environment, and culture. Even though the people in the region still follow their traditional practices such as food, clothing, and religion, their way of life has changed significantly since the time of the messenger Prophet Mohammed in the 7th century. The discovery of oil in the 20th century also brought about significant changes in the socio-economic patterns of the region (Jomah, 1992). According to Jomah (1992), at the beginning of Islam, the first cultural changes were

due to trade ideas and goods. When Muslims from other Islamic lands travel to attend the Halaqa (“the circles of learning” to learn about Islam in Makkah and Madinah), ideas start to transform in those intermediate groups (Jomah, 1992, p.38). The second change occurred before modern Saudi Arabia was united when the Hijazi depended on foreign workers, teachers, and doctors from Syria and other Arab countries.

The third change followed the economic changes in the 1970s with the first contact with people in Western cultures, such as American and British people. The orientalist William Goodwin (2001) argues that after the oil was found in the early 1930s, the country witnessed a turning point from mostly poor and uneducated people to an influential nation. The economy dramatically improved with the rule of the Al Saud family to use the wealth for two purposes: to modernize the nation and assist other Islamic/Arab populations. The first king, King Abdul-Aziz, ruled the land with fewer resources and people. Most of those people were poor, uneducated, and had no industry or city resources. Money brought international influencers and made Western technology attractive to the rapid construction industry (Goodwin, 2001). The need for skilled human resources and labor for building and infrastructure improvements occurred from the 1900s until the 1990s (Jomah, 1992). Such customs increased the dependency on foreign labor. They developed professional and skilled artisans, such as craftsmen from Egypt, India, and Syria, who made wooden windows and other artifacts in the traditional Hejaz. Nevertheless, the lack of a workforce and materials caused the issues of alien customs, habits, way of life, and possible changes in the unique Islamic pattern.

After the 1970s, the fourth social evolution was the materialism crisis (Jomah, 1992). Hi-tech, modern artifacts, and new luxurious building materials have developed an artificial level of the region. Wealth in Saudi Arabia has gripped the materialism of the other societies

imported from different parts of the world, such as carpets from Turkey and Persia and wood from India and Egypt. The fifth change was when the government started to prompt education plans to improve the educational system for younger generations. According to Jomah (1992), between the 1970s to 1980s, the need for an educated workforce set an effective plan to study in the West. More than 15,000 Saudi students were sent to the United States (U.S.) in 1980 and learned to judge themselves from Western perspectives. They characterized themselves as “pro-western” and “modernized” through their lifestyles (Jomah, 1992). One can define the modern Hijazi society as individuals with broader cultural participation due to trade, travel, and tourism, making them multi-cultural individuals.

Likewise, the reflections of the several cultural changes were also seen in the architectural and urban design of the Hijazi cities. For example, houses of higher-educated families have Western characteristics that are different from other houses. Jomah (1992) reasoned those changes began when their actual needs and demands did not arise, and they found the strength to break their traditions, focusing on the self instead of the community. He stated that the new houses of this generation appeared with the most modern features, such as air-conditioning. However, it was not realized that the design of the nuclear family as a unit is separating and consequently isolating young children from older adults (Jomah, 1992).

Residential Spaces at Al Balad/Historical Jeddah/Old Jeddah

Al Balad is located in the southwest of Jeddah, overlooking the sea (see Figure 60). Goodwin (2001), in his book *Modern Nations of the World Saudi Arabia*, says the modern people of Saudi Arabia possess heritages from early civilizations such as Persia, Turkey, the Ottoman Empire, Egypt, Syria, and other countries nearby (Goodwin, 2001). In the Western

region, the architectural unity was attributed to Ottoman and Egyptian times (Jomah, 1992). The Residential building industry has reflected the architectural solutions to climate, geography, and material resources. The western coast has a desert climate characterized by extreme heat during the day, a night temperature drop, and low rainfall. For example, this climate has caused the use of external architectural elements such as Mashrabiya as a cooling system during the day. Along with climate and topography, material availability is another factor that influenced the design forms and the decorative elements of residential spaces in Al Balad (Al-Ban, 2016). Most of the building materials, either freshly cut or fossil coral stone, are locally found, and wood is imported from India or Egypt (Jomah, 1992). During the 18th and 19th centuries, wealth was controlled by the upper class and royal family. However, few people from the upper non-royal and the middle class owned houses and belongings.

Figure 60

A view of Al Balad in 1938 (Bindajam, 2016, p. 23)



Hijazi domestic architecture existed for over 300 years, and over time, those traditional houses became individual case studies for interested scholars. Some had interests

in the interior building environment, social, and cultural values in relation to males and females (Akbar, 1998; Jomah, 1992; Khayat, 2019), while others studied architectural elements as a way to maintain sustainable solutions to the area (Al-Ban, 2016; Al-Othman, 2017). One of the historical houses at Al-Bald is the Nassif house (see Figure 61). It is considered a symbol of Jeddah's past. It is one of the old houses with outstanding features of traditional Hijazi architecture and design vocabulary, such as Mashrabiya, a courtyard, and a windcatcher. The house has 106 rooms and four levels. According to Al-Ban (2016), the house was designed by Turkish architects featuring the Ottoman style. It was designed and built between 1872 and 1881 for Omar Nassif Efendi's owner. Nassif was a member of one of the area's wealthiest families and the governor of Jeddah. When King Abdelaziz Ibn-Saud entered the city in 1925, he stayed in Nassif's House, also called Nassif House, as an honored guest. Because of its significant history, in 1987, the house was preserved as one of the region's outstanding monuments.

Figure 61

Nassif House in Al-Balad, Jeddah, Saudi Arabia (Lowey, 2021) by Hani Abuljadayel (n.d.)



According to an investigation by Jomah (1992), there were two sub-periods for builders in house forms at Al Balad. The first was from the late 1600s to early 1800s when the Ottoman Empire, Turkish, and Egyptian populations lived at that time. The size of the building was small and simple. However, in the second period, from the late 1800s to the middle of the 1900s, when faster changes happened, including the unity of the Kingdom and oil growth, the area witnessed an increase of Western elements. A wider range of foreign vocabularies is expressed in the design of residential houses. For example, Turkish-influenced houses or the Mamluk and Ottoman houses of Cairo were more complex, with more wall elements, an elaborate façade, and decorations (Jomah, 1992).

Additionally, Jomah (1992) has categorized the Hijazi house into two categories. The first is the small house built during the 17th and late 18th centuries. The house is designed like a stone shack, simple and cubic, and it contains three rooms. Those houses are self-built by low-income families. The construction of the walls is wooden posts or pillars (Indian wood) shipped from Sudan. The second categories are much larger houses during the late 19th and early 20th centuries. The construction involved artisans, richer materials, building techniques, and planned layouts to follow specific styles (such as the Mamluk and Ottoman Cairene) and symmetrical layouts. Those houses have more floors, large Mashrabiya (bay windows), and broader elevations. The morphology of the house is made of coral or stone, with wooden doors and windows. The building appeared as a simple rectangular cube with wooden elements clad onto the facade. Rooms are never forced to a particular form. The result is a simple form with elaborate applied articulations using wood. The house size is made to consider the changes in the number of family members. The extended family is one reason to construct the sizeable traditional house (Jomah, 1992).

The traditional house at Al Balad has several floors based on location (Jomah, 1992). Each floor has specific functions suitable to its position and socio-cultural meaning (Akbar, 1998).

1. The underground level has vaulted rooms, water tanks, septic tanks, and sometimes a storage room (Akbar, 1998).
2. The ground floor usually has two entrances, one for men and one for women, with different staircases. There is a lobby as a transitional space between public and private areas for privacy and a ventilation system. The sitting room is called Al-Maqad (with Mashrabiya) and is the reception room for guests. It is also used for sleeping and sitting for men. More details deal with this space in the next section (Akbar, 1998).
3. The first/upper floors hold the family residential quarters, consisting of three main rooms and other facilities. Al Al-Majlis is a reception room for women, Muakhkhar room (back room), rear room, and the Mabit room is the bedroom. The other facilities are a storage room, antechamber, kitchen, restroom, and roof-top terrace (Akbar, 1998).

Architectural and Design Elements in Islamic Design

The characteristic of the Historical Jeddah is a representation of Islamic art and design. Traditional decorative elements are generally geometrical ornament produced with straightedge rulers and compasses. Patterns are central points based on the universe's demonstrations and logic. Unity and harmony are Islamic intellectual expressions of art. Calligraphy is also a popular form, which is produced in the form of ceramics, metalworks, and textiles. Ornamental woodworking is used for architectural elements such as doors,

walls, and tie beams and small objects such as furniture and Quran stands. Additionally, it is generally acknowledged that Islamic interior design has little furniture and is minimal compared with other cultures (see Figure 62). Even though Islamic architecture and interiors are full of woodworking and ornaments, furniture is less prevalent (Abercrombie & Whiton, 2006).

Figure 62

Reception room from an early 18th century house in Damascus, Syria from the (The Met Museum, n.d.)



During the 15th century, the Ottoman empires' production techniques of ornamental woodwork, such as inlaying ivory, bone, and mother of pearl, became essential elements in Islamic design. Moreover, woodworking in Islam used turning-wood members in building the Mashrabiya in Egypt (see Figure 63) (Abercrombie & Whiton, 2006). Another technology that was also introduced is a wood joining technique called the Kundekari, or tongue-and-groove joinery in woodworking (see Figure 64). This system is originally from the Ottoman Turks, who used geometric blocks and keel bars by interlocking pieces of small

sizes through tenon-mortising and tongue and groove without using any nails or glue. The whole system makes the structure durable (Kündekari, 2013). In addition, Ottoman craftsmanship used the Sunk or Sunken relief technique to decorate doors, objects, and reading desks, which are motifs carved into a plain surface, i.e., the Quran holder stands (see Figure 65) (Kündekari, 2013).

Figure 63

The Egyptian woodturning: (A) Masrabiya and (B) chair (Stoneburst.Org, n.d.)

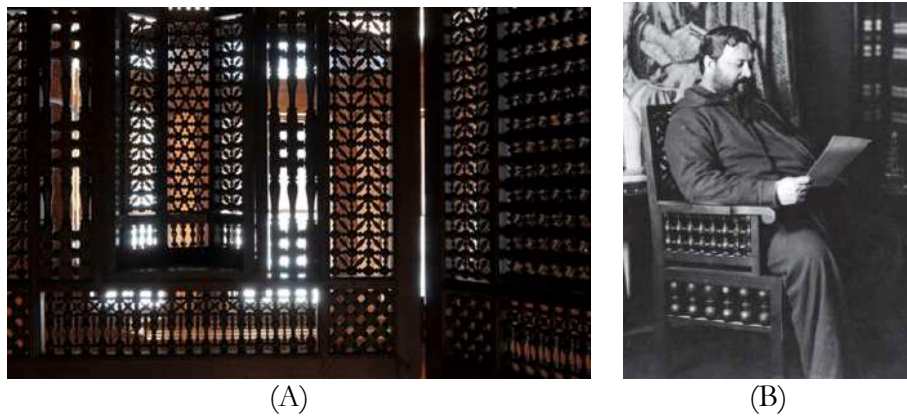


Figure 64

An example of the Kundekari technique from the Ottoman Turks (Yüksel et al., 2016, p. 113)



Figure 65

Example of the Sunk Relief technique (The Met Museum, n.d.)



Design Elements at the Hijazi's Traditional House

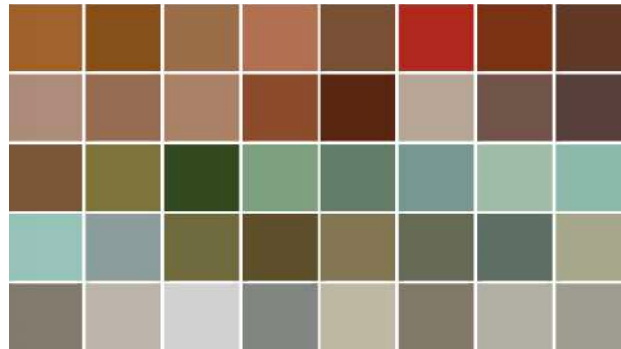
According to Jomah (1992), motifs and ornaments in the Hijazi house are categorized into three shapes: geometric motifs, floral motifs, and calligraphy. The materials used to achieve the three types of decorations are wood for engraving, gypsum for relief, and paints or pigments for flat drawing. Woodworking techniques such as carving, turning, and assembling different sizes were also used to achieve all desirable effects to build windows, doors, arches, lintels, and Mashrabiya (Jomah, 1992). Additionally, limestone was used to elaborate the ornamentation of columns and other motifs.

Color options are schemed based on the surrounding environment. Exterior walls are light colors and cyan (Bahman, 2000). According to Khayat (2019), the color scheme of the interior space is brown, grey, blue, green, and red (see Figure 66). Attiah and Alawad's (2021) analyses of Al-Majlis spaces show that the color scheme of the western regions is monochromatic. However, each house has an individual color scheme. For instance, Bait

Matbouli has used red and darker red in Al-Majlis's design, yet Bait Baeshen does not use red in house details. Instead, they use the color cyan (Attiah & Alawad, 2021).

Figure 66

Example of color schema from the Hijazi houses by Khayat (2019, p. 250)



Conventional Seating

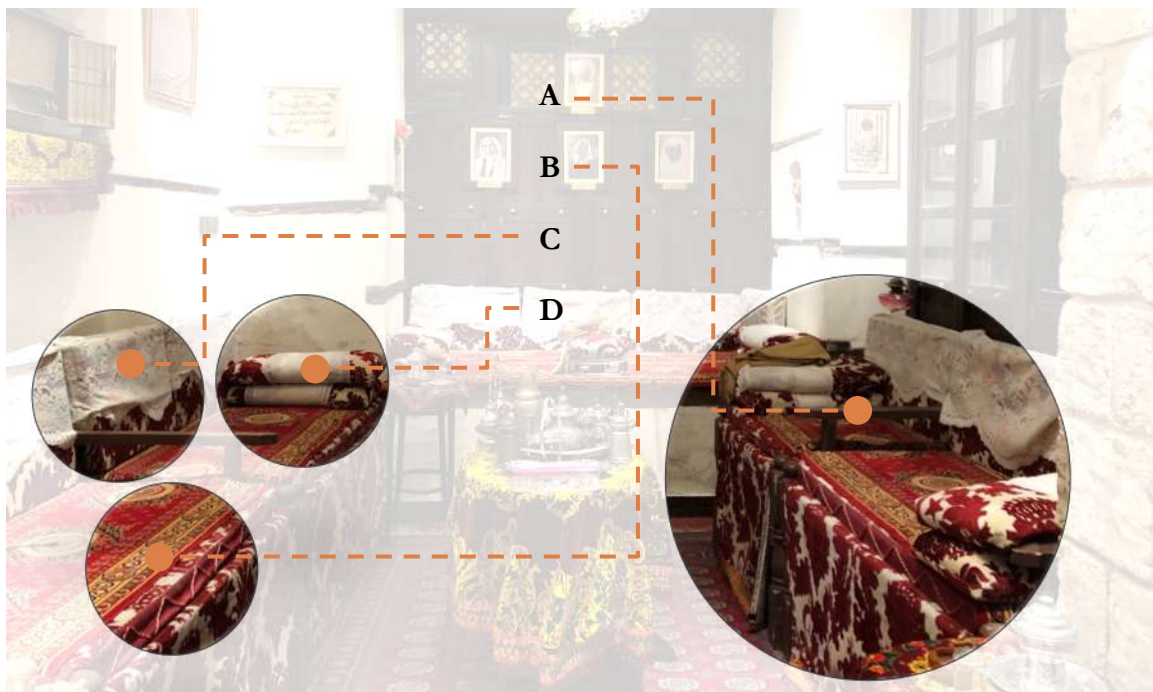
According to Akbar (1998), furniture at the historical Jeddah in the western region of Saudi Arabia is multi-functional, minimal, and movable, and most of the pieces are locally made. However, some pieces (like rugs, mirrors, chests, and utensils) have been imported from the West, such as Europe, from the East, such as India and China, or from neighboring countries, such as Egypt, Kuwait, and Iraq. Each room in a residential space contains different variations of furniture depending on the users, space, and the room's purpose (Akbar, 1998).

For seating, Khayat (2019) discussed that there are three types of seating found at traditional houses: cushions on the floor such as Tawaweel and Madafi; cushions on wooden structures (benches) made of sponge and covered with fabric (red or green) called Karaweetah; and the Mashrabiya seating which is a built-in deck of stone or brick. The

Mashrabiya is higher than regular seating to overlook the outside (Khayat, 2019). In traditional living spaces, seating is a combination of several parts that might come together or separately, depending on the social-cultural context and the uses of the space: (A) Karaweetah, (B) Tawaweel, (C) Misnad, and (D) Madafi (see Figure 67). For example, the Al-Maqad space at the ground level is usually used by males to gather, communicate, or sleep. In this space, all four elements might exist. However, on the third and fourth floors, which are the Al-Majlis family living rooms, furniture is more moveable and multi-functional such as Misnad, Tawaweel, and Madafi (Akbar, 1998). Each part is described separately.

Figure 67

Al-Maqad room furniture and interior design at Salom house, Al-Balad, Jeddah, Saudi Arabia: (A) Karaweetah, (B) Tawaweel, (C) Misnad, and (D) Madafi.



Karaweetah. It is wooden seating that is commonly used in residential spaces. Karaweetah, a singular form of Karaweet, is continuous seating for many uses and users (see Figure 68). Tawaweel is placed above the Karaweetah or on the floor. Sometimes, the house owners might place rugs from Persia above the cushions to show higher status. The beauty of the Karaweetah is that it creates an extended continuous seating arrangement when put together, or it can exist individually. The platform might create an L- or U-shape, leaving the rest of the space for various uses. Karaweetah is rectangular with a hidden wooden structure. It is built out of wooden frames and local handmade joinery as inner structures; it is covered by a thick fabric called Sijani in red color. In 1982, Al Ansari mentioned that people from Jeddah preferred the red color to the red coral stone on the seashores (Akbar, 1998). The size of the Karaweetah is between 19 to 31 inches. Height, 31 inches, Width, and Length are up to 78.7 inches (Akbar, 1998).

Figure 68

A view of the Karaweetah seating at Salom house, Al-Balad, Jeddah, Saudi Arabia.



Tawaweel & Liyanat. Tawaweel, plural of Tawalah, and Liyanat are floor cushions positioned around the room made by local upholsterers (see Figure 69). They are multi-functional pieces that can be folded and transferred around the space and are usually used in small living rooms for sitting or sleeping. They are also placed above the Karaweetah wooden bench to soften the seating. Tawalah is filled with cotton. However, Liyanat is filled with sponge. Both are covered by a thick floral red Damask material, and both are large enough to cover a human lying down, which is around 27 by 70 inches (Akbar, 1998).

Figure 69

A view of the Tawalah used as a cushion to sit on when placed above the Karaweetah at Salom house, Al-Balad, Jeddah, Saudi Arabia.



Masnid. It is a movable back support cushion covered with a thick floral red patterned fabric called Damask (Maghribi, 1982) as cited in (Akbar, 1998). A Masnid is a hard rectangular-shaped pillow without any solid structure. It is handmade by local upholsterers (see Figure 70). Because removing the cover of the Masnid is a challenging task, the upholsters often covered the top part of the red pattern with white handmade thin cloth to remove and easily clean it (Akbar, 1998).

Figure 70

A view of the Masnid as a back support at Salom house, Al-Balad, Jeddah, Saudi Arabia.



Madafi. It is a support side cushion that is placed on the Karaweetah (see Figure 71). Madafi contrasts with Tawaweel. It is a hard rectangular shape filled with compressed cotton. According to the Akbar (1998) investigation, Madafi is used for side support instead of sleeping. Therefore, it was made with stiff, compressed cotton to enhance the tidy appearance of the seating. It is easier to carry it like a box and restore its shape than the softer materials. Madafi is covered by a thick floral red pattern fabric called Damask, as are all other seating parts. The portable Madafi was used freely anywhere and anyplace users would like. It is also locally made by hand (Akbar, 1998).

Figure 71

A view of Madafi at Salom house, Al-Balad, Jeddah, Saudi Arabia.



Spaces In the Traditional Hijazi House Used for Sitting.

Al-Maqad. It is the largest sitting room in the traditional Hijazi house at the first level, which is the male-dominant level (see Figure 72). Some houses have two sitting rooms on both sides of the house entrance. However, it is possible to find the upper floor sitting room dedicated to females due to the house's size and the family's status. The Al-Maqad room is used as a reception room, business office, or for friends and male guests to sleep. It is furnished with a kitchenette to make tea and coffee in larger houses. The space has one or two Mashrabiya and usually overlooks the street. Inside the Mashrabiya, a building platform covered with stuffed pillows and mattresses called Turahah or Batermah. The seating arrangement of the space is positioned near walls in a U- or L-shape. A guest can squat, sit, or lean against the wall, with the Masnid (cushions) for those who want back support. Chairs, Karasi, and high benches like Karaweetah were not commonly used until the 19th century (Jomah, 1992). Karaweetah is the only fixed furniture that is heavy to move and exists mainly on the first floor (Akbar, 1998).

Figure 72

Al-Maqad, a male sitting room at Beit Salom, was built in the 19th century.



Al Madjalis/Al-Majlis. The Al-Majlis room is the main space for the family and close female friends (see Figure 73). The location of the Al-Majlis is towards the main façade with one or two cooling systems, the Mashrabiya. The wooden sofa, Karaweetah, is placed all around the room's perimeter in some houses (Akbar, 1998). Family members sit on the ground or the floor, but there are always rugs, woven mats, or palm tree mats to sit on. Floors are frequently furnished with imported carpets from Persia or Africa to protect the residents from dust, heat, and cold. Interior spaces are treated as oversized couches. Therefore, one can sit wherever they prefer (Jomah, 1992). There is also typically a wooden or marble table in the center of the room for service (Akbar, 1998).

Figure 73

Al-Majlis or family living room at Beit Salom built during the 19th century.



Chapter Summary

This chapter reviewed previous studies and highlights various interdisciplinary concepts to provide background information on the research areas. Several views from anthropology, psychology, and sociology were discussed to determine the information needed for later discussions. The research context is about Saudi Arabia and the Western region, where the furniture market may benefit from understanding the Saudi millennials' consumer behavior toward preserving heritage and visual elements in furniture design. Although studies on heritage and preserving culture still need to be expanded in Saudi Arabia, this study focuses on traditional Saudi furniture. This research investigation might be the basis of future development and assessment for furniture designing and preserving local identity.

CHAPTER 3.

RESEARCH DESIGN

Introduction

This chapter presents the research strategies, and the multi-method approaches of using hermeneutics as a methodological practice in research design, theoretical perspective, and methods. Each section of the data collection stage is explored in detail to obtain the information necessary to answer the research questions and address the research aim and objectives. The first part is an overview of the philosophical research approach of Hermeneutics, its principles, and applications, while the second part presents the research design and the selection of research methodology in its multiple phases. The final two parts of this chapter are the conclusion with the chapter summary and overview of trustworthiness and ethical considerations.

Research Study Based on Hermeneutics

Understanding the research philosophy and methodology is essential to develop knowledge and produce valid study results (Crotty, 2015). Philosophy provides general theoretical thinking to generate an understanding of reality and to design, conduct, analyze, and interpret the research outcome (Moon & Blackman, 2017). Yet, methodology is the plan or strategy of the research design that shapes the choices of methods and links the outcome of the current research to prior research (Crotty, 2015).

Modern studies of epistemology, which look at the relationships between subjects and objects where meanings are generated in the real world and life experiences, are developed. Hermeneutics is one of the scientific interpretations and methodological

approaches used to understand written information and interpret human practices (Crotty, 2015). It serves as a research strategy to gather and interpret data from a multi-method approach in order to explore the issues related to the research study (Zweck et al., 2008). Moreover, the concept of hermeneutics has proven to be a valuable tool in design (Bürdek, 2005). According to Bürdek (2005), hermeneutics in designs are used in three ways. (1) The hermeneutics triangle consists of the relationship between the designer, the designed object, and the user. Each has additional knowledge and consciousness to interpret objects. (2) The Fusion of Horizons hermeneutics, on the other hand, means waiting to understand. In this understanding, the previous knowledge and intentions between the recipient and designer can be unified in this horizon type. (3) The hermeneutics circle is the basic pattern of interpretations with no beginning and no end. Therefore, this study based its investigations on the circular structure of understanding. This research strategy developed a multi-method, qualitative, and quantitative design to provide meaningful insights and a complete understanding of the study area.

Historical Understanding of the Hermeneutics

Since the late 19th century, the inquiry of hermeneutics has extended to include the study of human behavior. This emerging trend developed the research traditions of hermeneutics in social science (Patterson & Williams, 2002). According to Zimmermann (2012), the term *Hermeneutics* is from the Greek word *to utter*, which means to explain or to translate. Hermeneutics is a scientific philosophy of interpretative approaches that deal with theory and methodological principles of interpretation (Crotty, 2015; Patterson & Williams, 2002). Additionally, Gillo (2021) defines hermeneutics as a scientific and philosophical interpretation of texts and behavior by putting them with history, culture, and context as a core factor that assists in explaining the process.

Historically, Edmund Husserl started the approaches to understanding human social life in 1962. He is the father of the phenomenological approach concerning individual consciousness, experiences, memories, thoughts, imaginations, and emotions (Reiners, 2012; Seamon, 2000). Because of his view of consciousness as pure experiences, his approach is known as the transcendental style. Instead, in 1962, Martin Heidegger's thoughts contradict Husserl's transcendental style. He argues that Husserl's reality is based on speculations rather than real everyday human experiences (Schmidt, 1985, as cited in Seamon, 2000). Heidegger believes that interpretations structure human experiences rather than pure consciousness. Both Husserl and Heidegger think from a philosophical position, while Schutz, in 1967, developed the lifeworld as a method that incorporates detailed experiences in everyday life (Goulding, 2005). In addition to Schutz's development, Gregova 1996 distinguished the difference between the lifeworld and the social world. He proposed that the lifeworld is a consistent formal structure with fewer details. However, the social world includes everyday actions and experiences (Goulding, 2005). Furthermore, Hans-Georg Gadamer, one of Heidegger's students, between 1960 and 2004, developed his interpretation mode in philosophical hermeneutics. He believed that human perceptions are not theoretical but practical, where objects disclose themselves, and people interact with them (Zimmermann, 2012).

According to Patterson and Williams (2002), there are four philosophical orientations in hermeneutics. The first branch is the Hermeneutic Divination by Friedrich Schleiermacher. The characteristic of this research tradition is achieved by separating the researcher from the original thought and its existence. The second branch is the Hermeneutic Reenactment, which is associated with Wilhelm Dilthey. The feature of this tradition is that the interpretation is through an empathetic process by putting oneself in the

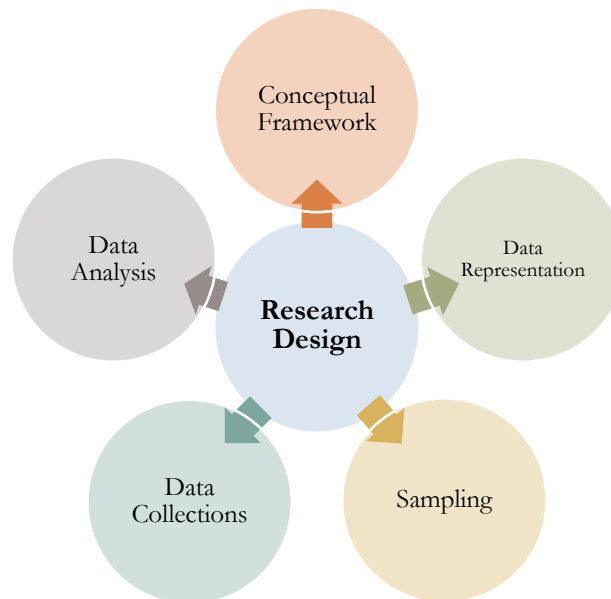
place of another and imaginarily re-living their experiences. The third branch is Hermeneutic Reconstructionism, which is associated with Karl-Otto Apel and Jurgen Habermas. This approach believes that human actions are not understood individually, and science needs to develop sensitive techniques to influence behavior in social understanding. The fourth branch is the Productive or Projective Hermeneutics, which is associated with Martin Heidegger, Hans-Georg Gadamer, and Paul Ricoeur. This branch is in contrast with the Hermeneutics Reenactment. Hermeneutics reenactment reproduces the original experiences and meaning by empathy, while productive hermeneutics disconnects the researcher's preconceptions and experiences with others (Patterson & Williams, 2002). The aim is to recover meaning that enables the effects of others' history, tradition, and cultural heritage from the past and then interpret them in the present (Duncanson-Hales, 2017). More importantly, the knowledge is produced from a world with different perspectives than the researcher's experiences.

Principals and Philosophical Guide to Practice Hermeneutics

Methods are the tools to collect data, and normative commitments are the principles that guide the selection of the tools. According to Patterson and Williams, in their book *Collecting and analyzing qualitative data: Hermeneutic principles, methods, and case examples* (2002), failing to match a methodology with principles in hermeneutics research inquiry is a waste of time and a recipe for error. Therefore, the basic methodological decision in the hermeneutics research design is based on five principles: (1) Choosing the conceptual framework; (2) deciding how to represent the data; (3) determining the sampling of the study from the population; (4) deciding the methods of data collection; and (5) deciding the methods of data analysis (see Figure 74) (Patterson & Williams, 2002).

Figure 74

The basic methodological decisions of Hermeneutics practices by Patterson and Williams (2002)



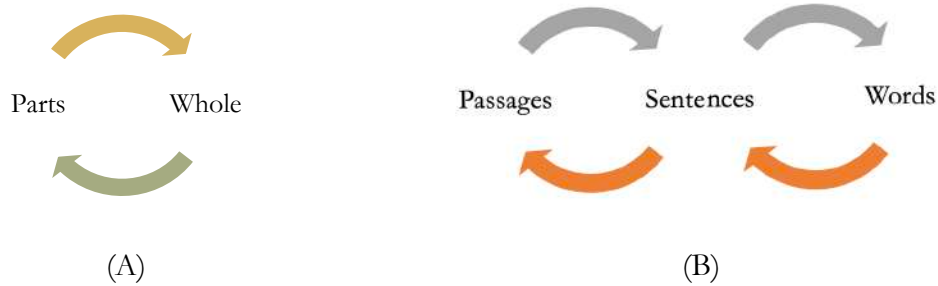
The Hermeneutics Circle. The circular process in hermeneutics implies multiple meanings and inter-relationships between the whole and parts of data (Patterson & Williams, 2002). Several philosophers are recognized for their contributions to the development of hermeneutics, including Wilhelm Dilthey, Schleiermacher, and Gadamer. According to Patterson and Williams (2002), Wilhelm Dilthey (1933-1911) believes that the relationship between parts and whole is the fundamental way to grow meaningful understanding grounded in living experiences (see Figure 75). His thought of understanding is about something other than thinking about an object. It is the perception of the connections between subjects and objects.

Furthermore, Schleiermacher has established the understanding of the circle movements between words in sentences and passages, and the researcher is the actor of the whole. He believes that human reasoning is always in a circular movement, including every

aspect of human understanding and experience (Zimmermann, 2012). In addition to Dilthey and Schleiermacher, Gadamer believes that reality changes with time and history never ends. All these elements affect human judgment (Patterson & Williams, 2002). The key consideration of previous philosophers in hermeneutics is that human interpretations might change as history, culture, and technology change. Yet, the hermeneutic circle has no end, which results in a subjective revision for future insights during the hermeneutic circle and beyond (Zimmermann, 2012).

Figure 75

Both diagrams present the Hermeneutics Circle: (A) Dilthey and (B) Schleiermacher.



The Applications of Hermeneutics in Design. The uses of hermeneutics approaches in design are limited. Previous research studies presented the applications of hermeneutics as a methodological approach to understanding the lived experiences of children with Autism in participatory design processes (Frauenberger et al., 2010), visual art of landscape (Asadpour, 2021), and product design (Mousavilar et al., 2020). Hence, hermeneutics aims to improve living conditions by understanding users' experiences, and designers could position those experiences before creating design concepts and during the design process. Yet, the core of the hermeneutics is to describe and interpret human

experiences in a real-world context (Mousavilar et al., 2020). Therefore, the practice of hermeneutics circle is used to guide this research investigation for several reasons:

1. The study is an interdisciplinary research investigation that requires different integrations on several levels during the data collection and analysis and between primary and secondary resources during the study investigation.
2. The connections between furniture and humans are vital since there is a direct relationship between human cultural heritage and seating forms.
3. Saudi Arabia's culture requires profound descriptions of furniture due to the novelty of the discipline of furniture design.
4. Understanding the area's social history and heritage of conventional seating is limited and requires primary investigation.

Research Design

There are no specific approaches to data collection in hermeneutics studies (Patterson & Williams, 2002). However, deeper investigation demands a multiple-method approach to gather the necessary data to answer the research questions (Ramsook, 2018). Previous research studies have used in-depth interviews in tourism and recreation (Patterson & Williams, 2002); narratives in psychology (DeMarrais et al., 2018); or observing people as a participatory design technique (Frauenberger et al., 2010). Other research studies used color and visual communications in advertisement research studies (Russell, 2013) and visual photography in product design research (Mousavilar et al., 2020). Additionally, the objective of the hermeneutics is to probe the phenomena from individuals who were involved in a situation in order to understand their perspective (Ramsook, 2018). Although participants might experience different things in the same situation, obtaining information is subjective

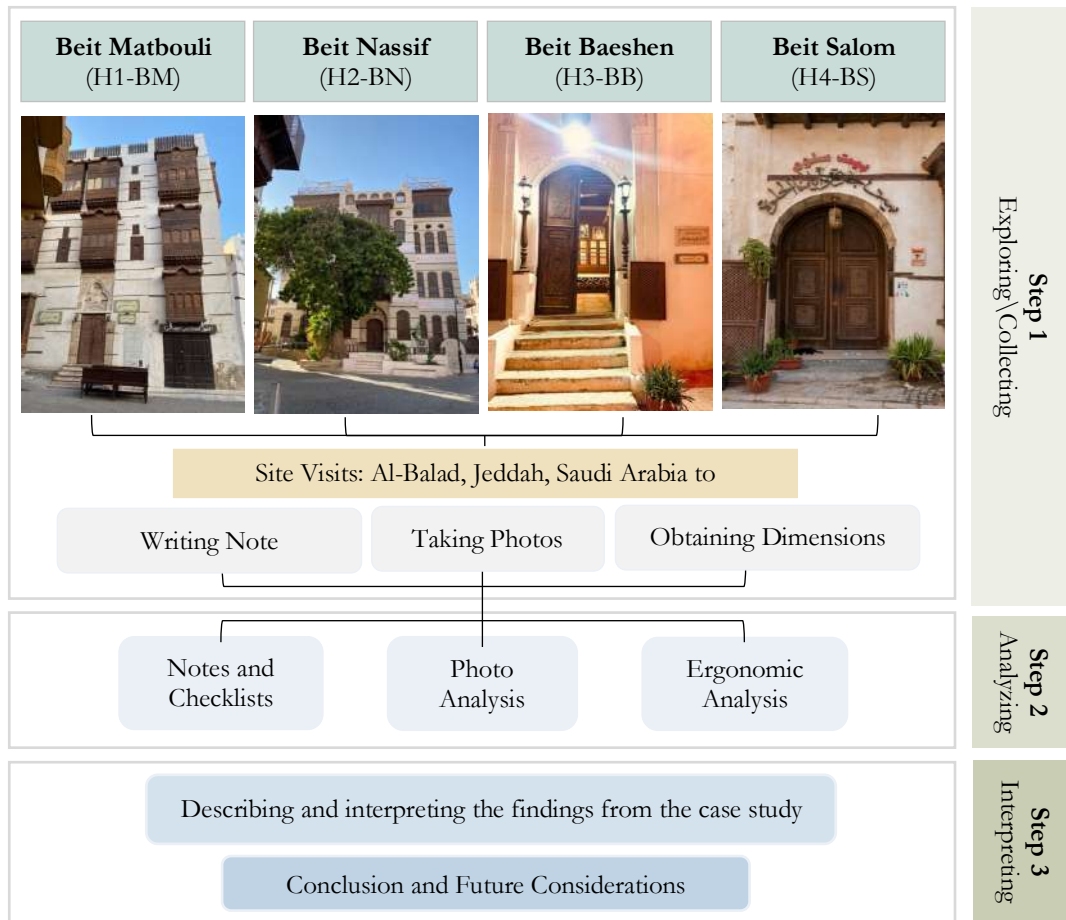
and based on individual experience. Therefore, by applying hermeneutics, the study developed a three-phase investigation to obtain qualitative information. Phase one is concerned with collecting data about the Hijazi's Karaweetah in a real-life setting. The second phase is practice-based on research to create a nine-seating culturally oriented. The third phase is the visual questionnaire to explore the impact of nostalgia on historical seating design and individual purchasing preferences for this type of seating. Each stage is explained separately and in detail.

Phase One: Case Study of the Hijazi's Karaweetah

A material cultural understanding of the traditional Hijazi seating known as Karaweetah can help generate knowledge of local original design. Therefore, the case study approach is used to create an in-depth understanding of current situations, individuals, organizations, and visual materials (Creswell, 2003). Yet, because of the lack of original heritage awareness and design elements of the Karaweetah to be preserved in contemporary design, the study used visual documentation to explore the cultural vernacular characteristics of the Hijazi's Karaweetah in a real-life setting. A case study attempts to understand the original context and document the Hijazi's Karaweetah properties, such as usability, aesthetics, semiotics, safety, materials, ergonomics, and technology. An intensive project aims to present the existence of the Karaweetah as an earlier product that can serve as a living example of original local seating design inspiration. The study's first phase is divided into three steps: Exploring and collecting, analyzing, and interpreting. Each phase is described next in detail (see Figure 76).

Figure 76

The case study steps by the researcher.



Step One: Exploring and Collecting Data (Site Visits). Site visits aim to explore the visual elements and obtain photographic documentation of the Hijazi’s Karaweetah from museums and old houses in Al-Balad, Jeddah, Saudi Arabia. The site visits also allow the researcher to observe people interacting with the Karaweetah, including the atmosphere, functions, and users’ preferences. The buildings selected for the research site visits are Beit Matbouli, Beit Nassif, Beit Baeshen, and Beit Salom (see Table 2). Most of the houses at Al-Balad are empty, under government preservation, or re-opened after the interiors were preserved. These selected buildings were chosen due to pre-searching for the availability of

the Karaweetah in the interior spaces and accessibility. The goal is to understand Karaweetah's cultural story, function, construction, style, material, structure, and symbolic detail. The researcher used a checklist format for each site visit (see Appendix B).

Table 2

Detailed table of the building selected for the site visits.

Code	Residential	Spaces	Present Uses	Previous Uses
H1-BM	Beit Matbouli 1613	Al-Maqad- L1	Museum for public	Private house
H2-BN	Beit Nassif 1867	Al-Maqad- L1	Special occasions- Museum VIP	Private house
H3-BB	Beit Baeshen 1856	Al-Maqad- L1	Two museums and Cafe	Private house
H4- BS	Beit Salom 1883	Al-Maqad- L1	Museum for public	Private house

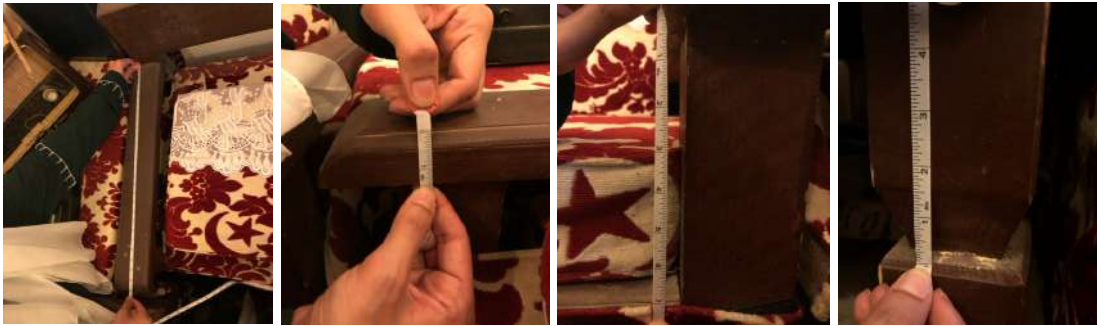
Note Taking. It is an essential part of the research besides photos for validity purposes. Data are collected by writing information and visualizing details about the Karaweetah. Additionally, each site visit report is helpful to understand future needs. Each report explains the data collected and additional information that is needed. Notes and drawings are taken using traditional paper and pen for a quick note-taking strategy. Notes are then transcribed into word processing software for future use. Likewise, drawing is an essential note-taking strategy beneficial in visualizing details and analyzing concepts not captured by words or photos. Drawings are then translated into 2D and 3D drawings.

Taking Photos. It is a fundamental part of the research documentation and design elements analysis. The site visit photos are high-quality images taken with an iPhone. Two types of photos are needed: (1) photos with general views of the space with the uses of

Hijazi's Karaweetah in order to present the general atmosphere of the space, the number of pieces used in the space, and the arrangement of the seating; and (2) close-up photos created by zooming into specific details to show the size of elements in relation to a tape measure. The dimensions of each element of the Karaweetah were taken individually in Imperial units (i.e., feet and inches). An example of the detailed photos with dimensions can be seen in Figure 77. The sizes of each element are carefully documented on paper in addition to a repository of visual images.

Figure 77

An example of photos taken during the site visit to Beit Salom (Code H4- BS) (January 5th, 2022)



Step Two: Analyzing. Detailed checklist reports are immediately completed after each site visit. A checklist was designed to document general information about the visit date, time, building name, and residential space name. The report describes the study's objective and method, with general comments for the next visit. Each report has a table of the main findings of the visit with details of vernacular furniture design elements such as structure (form, aspects, joints), material (wood species, color, texture), dimension (seat height, depth, backrest height, armrest height, seat angle), and ornament (motifs, technique, scale). A second visit to the house was needed when the information in the checklist was not

covered. The list aims to direct the research study, formulate specific details for the next stage of the research study, and provide evidence for the future cross-comparison analysis between the four sites.

Photo Analysis. The photo analysis of the data is generated from studying the photos, sketches, and other visual imagery. The study applied two types of analysis: Semantic and Thematic. Semantic analysis is an approach to understanding, describing, and analyzing visual elements like texture, color, line, form, and scale. Pohlen and others (2016) used visual understanding to perform semantic segmentation of modular furniture by comparing the most common elements of modular furniture, such as doors (red), drawers (green), and shelves (blue) (Pohlen et al., 2016). Their approach interpreted structural information only. Another study by Khayat (2019) identified the standard existing design features, elements, and motifs by showing images of the details and drawing lines above the pictures (Khayat, 2019). Therefore, this study applied both techniques to study and analyze the visual cultural elements from the photos obtained from each site visit. The data are categorized into themes based on traditional cultural elements (structure, material, dimension, and ornament) (see Appendix C). Thematic analysis aims to report general patterns within the data (Glaw et al., 2017). Thus, a thematic analysis was used to report each element based on the four houses by using color coding to categorize the visuals, break down the analysis, and find general design features that link the original heritage of the Karaweetah between the four houses (see Appendix D).

Ergonomic Analysis. Dimensions of the Karaweetah are also important aspects in studying the characteristics of this conventional seating. Previous studies have presented specifications for school chairs (Mousavilar et al., 2020). They categorize measurements into four central dimensions: (1) the seat height is the space from the floor to the highest point

on the front of the seat; (2) the seat depth is the space from the back of the seating surface to its front; (3) the seat width is the horizontal distance across the sides of the seating on the surface; and (4) the backrest height is the vertical surface from the seating to the top edge of the back. Those specifications fit the classifications of school chairs. However, domestic furniture needs other specifications, such as an armrest height and backrest angle.

The data of this step are presented in two- and three-dimensional drawings. One drafting software is AutoCAD, an application used to create two-dimensional (2D) drawings. Another software is Fusion 360, which is an application for creating three-dimensional (3D) drawings, objects, models, and images. AutoCAD's 2D data provide information, such as dimensions, shapes, and other data that might not be obtained from the 3D data. The drawing displays the Karaweetah from various standard directions: front, top, side, and back. Also, the software provides drawings, such as isometric for perspective view, the exploded-view 3D drawing, and the working drawing, which are used to show more detail of the Karaweetah. However, 3dMAX and Fusion 360 can convey Karaweetah's size, shape, texture, and color in more realistic views.

Step Three: Interpreting. Based on the study output from the first phase, the data in this step is described and interpreted from the case study site that was visited and analyzed. Then, the data is interpreted as a whole in Chapter 5. Finally, the researcher provides future recommendations as an outcome of this research strategy.

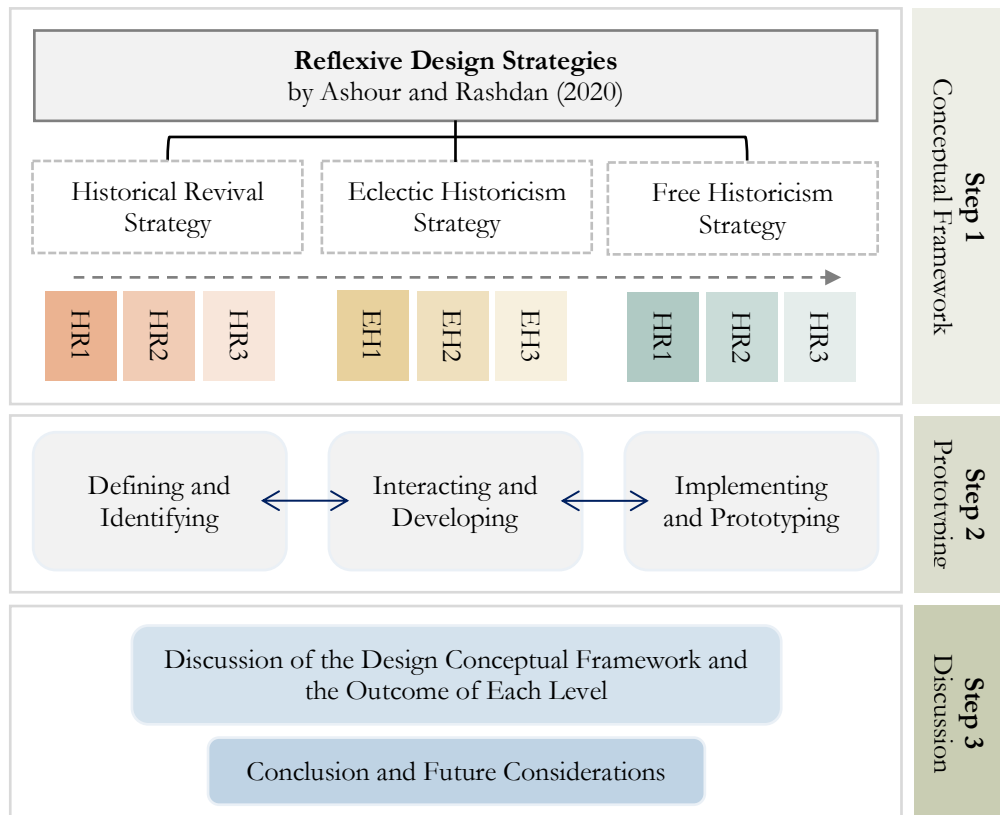
Phase Two: Practice-Based on Research

The second stage is concerned with design practice and creativity. The data collected in the first phase generated nine different seating designs (see Figure 78). The nine designs represent different levels of heritage inspiration in chronological sequence: three designs are

historical (traditional), three are new historical (semi-traditional), and three are free historical (contemporary), all based on the three levels of reflexive modernism methods of inspiration by Ashour and Rashdan (2020). They define heritage inspiration reflexive design as a method of inspiration by applying reflexive modernism and symbolic historical identity to gain complex interpretations of local identity in design. Therefore, the three reflective design strategies are (1) Historical Revival Strategy, (2) Eclectic Historicism Strategy, and (3) Free Historicism Strategy (Ashour & Rashdan, 2020). The second stage of the study is divided into three phases: conceptual design framework, prototype, and discussion. Each phase is described next in detail.

Figure 78

The design framework and process of prototyping the nine-seating designs.



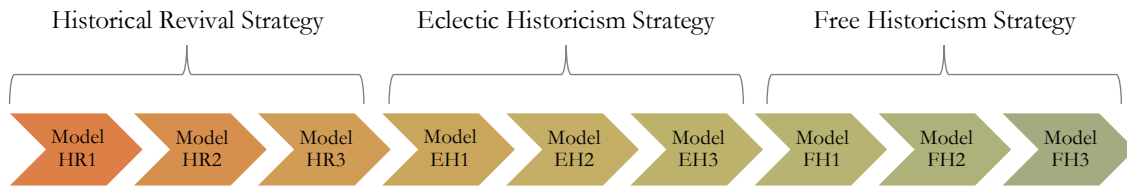
Step One: Seating Design Framework. For the aim of this study, the researcher adopted a conceptualized framework based on the culturally oriented product design model by Lin and colleagues (2007), vernacular furniture design and value-adding approach by Bartha and Olărescu (2017), and reflective design strategies by Ashour and Rashdan (2020) to propose nine seating designs. The integrated framework of the three methods is used to guide the design process of the study in three steps. First, the vernacular concepts by Bartha and Olărescu (2017) were used to clarify cultural features and vernacular characteristics used in the traditional Karaweetah, then used as vernacular characteristics in seating design, such as structure (form, aspects, joints), material (wood species, color, texture), dimension (seat height, depth, backrest height, armrest height, seat angle), and ornament (motifs, technique, scale). After defining the cultural characteristics, the second step is choosing the level of reflectivity based on Ashour and Rashdan's (2020) criteria. The applications of the level of reflectivity create chronological sequences of nine different levels of vernacular characteristics in the seating design. The final step resulted in three levels (traditional, semi-traditional, contemporary) with three categories of vernacular characteristics. The proposed framework allows the researcher to practice a systematic criterion in creating the nine-seating design. However, based on the data analysis of the first stage, the researcher might retain some of the distinctive features and design elements and manipulate others to create the nine seating designs after the data collection and analysis of the first stage.

Step Two: Prototyping and Testing Ideas. In the second phase, after the seating design process, the researcher applies a three-step context based on the findings from the designing step. First, the researcher defines the design criteria that are applied to the framework of each seating. Second, the researcher uses different drawing strategies, such as sketching and 2D and 3D drawing, as primary data presentations for design practice and idea

generation. Third, prototyping occurs by showing the final 3D drawings of each seating design solution (see Figure 79). It can use 3D prototyping, whether high-fidelity or low-fidelity. Both ways produce the tangible elements of an artifact at various levels, which is a free solution for developing and testing ideas (Martin & Hanington, 2018). In this stage, the study uses low-fidelity prototyping software with 3D design models (Fusion 360). The 3D images of the final photos of the nine seating designs are all presented at the same isometric angle (30-degree angle). The background settings of the nine photos (ceiling, wall, and floor) are all in gray shading. For the direction of sunlight, the location of Jeddah was selected for the renderings, as was the data (March) and time (10:00 am).

Figure 79

Design frame of the nine seating designs and the code of each prototype in chronological sequence



Step Three: Discussion. Based on this second phase output, the data are illustrated and presented within the study conceptual framework for each designed model. Also, the development of each model is explained in detail to show the process of generating the model concepts. Then, the data are interpreted as a whole analysis in Chapter 5. Finally, the researcher provides future recommendations as an outcome of this research strategy.

Phase Three: The Visual Questionnaire

In order to gather responses from study participants, a questionnaire was developed and tested by the researcher. The questionnaire included different question types such as open-ended, forced choice, and Likert scale. These types are typically used in ethnography surveys as an effective way to collect data about research subjects (Sommer & Sommer, 2002). Yet, in hermeneutics, the questionnaire with open-ended questions within the research objectives is constructed to capture the essence of the participants' experiences. This allows the participants to respond freely and openly (Ramsook, 2018). The open-ended questions aim to encourage participants to voice their experiences in the best way without any restrictions from the researcher. A structured visual questionnaire is designed to target the Saudi millennial consumers from Jeddah. The questionnaire adopts hermeneutics approaches focused on lived experiences, ethnographic information, and photos of the nine-seating designs to convey nostalgic traditions and social-cultural heritage.

After receiving the IRB approval from Arizona State University (see Appendix E), the questionnaire must be pre-tested to minimize ambiguity and word choice (Ramsook, 2018). Therefore, a pilot study tests the data collection instrument and identifies problems (see Appendix F). A pilot study is a small study that aims to test the research data collection, sample strategies, and other research potentials to identify issues and implications before conducting the complete study (In, 2017). This also provides validity of the instrument (Creswell, 2003). The visual questionnaire is designed in an online format for ease of distribution. The researcher considered that study participants may access the visual questionnaire on their phones. Therefore, image quality and size were taken into consideration in its design. The recruitment script is also provided on the first page of the survey to describe the research plans and include privacy concerns before the participant

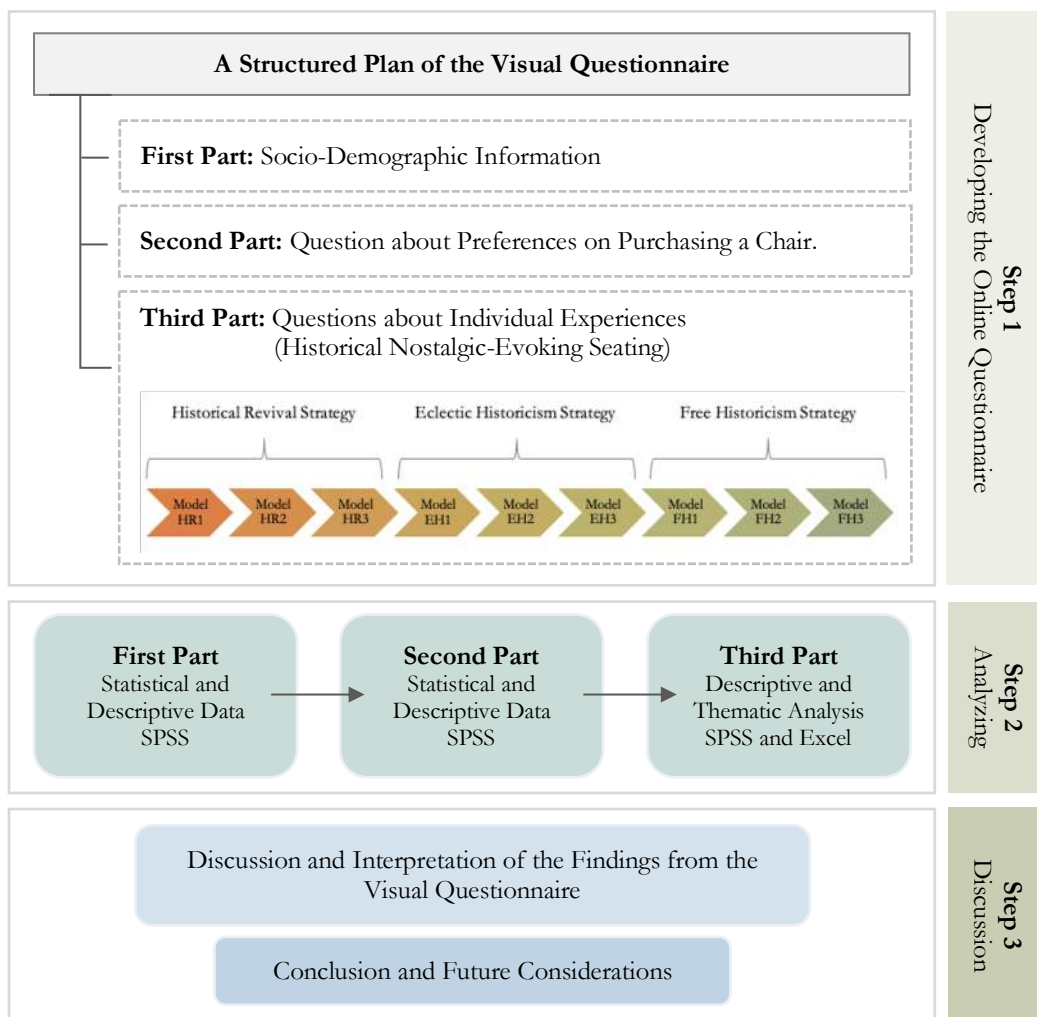
enrolment to establish interest and willingness (see Appendix G). The survey is divided into three main parts (see Figure 80). Each part is described in detail below.

1. The first part aims to collect socio-demographical information about participants, such as gender, age, level of education, and occupation. In addition, participants are asked if they lived and obtained an education outside of Saudi Arabia. If so, where and for how long? This part discovers the consumer experiences significant lifetime changes (Ponder, 2013).
2. The second part includes questions about the participant's preferences when purchasing a chair for living room space. This part aims to obtain data about the reasons for seating selections, such as size, materials, colors, and texture preferences. Additionally, the questionnaire is designed to allow multiple options based on the respondent's preferences.
3. The third part includes questions exploring individual experiences (i.e., nostalgic-evoking seating). This part investigates the levels of nostalgia of the Saudi millennials' consumer purchasing, decision-making, and personal preferences for seating that evokes local heritage. Visual photos are a way to capture users' experiences, perceptions, and social realities of people in interior design evaluations (Khayat, 2019). This part of the visual questionnaire aimed to test the Saudi millennial's reactions to historical nostalgia-evoking photos of the nine-seating models ordered in chronological sequence (from traditional to contemporary) in three-dimensional views. The participants were asked to rank each design based on their self-experiences. They were using a three and five-point Likert scale. Additionally, language is the central medium to provide knowledge in social studies, such as consumerism studies in the 21st century

(Goulding, 2003). Therefore, the participants are asked to express their reasoning in open-ended comments by choosing one preferred design. The questionnaire is distributed in English. The participant also has the option to use their language to describe their feelings and experiences. The questionnaire is distributed online by email and WhatsApp; the scripts are in Appendix H.

Figure 80

A structured plan of the visual questionnaire



Trustworthiness, Validity, and Credibility

Trustworthiness in Hermeneutics research is the phenomenologist's dilemma because the phenomenological perspective cannot be measured based on a scale. It is based on the experiences and understanding of the researcher (Seamon, 2000). In other words, different phenomenologists might interpret the same qualitative data differently based on their own experiences. According to Polkinghorne (1983), the research study's trustworthiness can be evaluated based on the research findings reading clarity, accuracy, richness, and descriptive flow. It is also evaluated based on the efficiency of the interpretations and the quality of describing and presenting the phenomena (Seamon, 2000). Yet, participants might interpret reality differently (Zweck et al., 2008) based on their unique backgrounds. Integrating a multi-methods approach in the investigation strengthens the quality of the research findings (Zweck et al., 2008). Therefore, to ensure the validity and credibility of the study findings, this study outlined the four quality concepts by Krefling (1991). The four qualities are:

1. Authenticity refers to the truth of the study results. Each phase of the study created a layer of knowledge that allowed a review of the findings during the study's progress. Also, authenticity is enhanced by describing the study research questions and the rationale of the data collection strategies to the advisory committee for their feedback and agreement.
2. Neutrality refers to the unbiased data reflecting the participant's experiences. Hermeneutics, as a research strategy, linked the data of the findings where the researcher shared the participants' reality and provided a descriptive interpretation based on previous knowledge. The study in the third stage allows

the opportunity to obtain data from a wide range of participants for diverse information and rich descriptions of their experiences.

3. Consistency refers to the process of the study and methods. Hermeneutics provides a systematic principle and tool for interpreting the research findings. The hermeneutic circle assists the researcher in consistently addressing organized interpretations. The study provides a clear development of participants, data collection, and data analysis. During the research study process and developing the study findings, the data are reviewed by the advisory committee and other experts in qualitative and quantitative methods.
4. Applicability refers to the generalization of the finding. The data from qualitative methods could be more generalized. However, as a hermeneutics understanding of context, the relevance of the finding is facilitated through this approach. The study attempts to include a large number of participants in order to provide a general understanding of the study's age group experiences. The finding outlined the Saudi millennials' experience explored in stage three.

Chapter Summary

In this chapter, the methodological and philosophical approaches of the study were presented, along with methods adopted in the research study. Hermeneutics approaches are used to address the research questions, aims, and objectives. This research investigation uses a multi-methods strategy with qualitative and quantitative data collection approaches. Hermeneutics principles and tools are used to explore the Saudi millennials' historical nostalgia. The data are gathered through three stages to provide information on the

traditional heritage of the past, explore the present, and maintain the future of seating design based on vernacular characteristics.

CHAPTER 4.

RESULTS OF DATA ANALYSIS

Introduction

In Chapter Four of this exploratory study, the research strategies, design, and methods used to obtain information are in the multiple-method approaches described in Chapter Three. The purpose of the chapter is to present the data analysis and results divided into three parts based on the data collection stages in the previous chapter. Each data section is detailed to obtain the information necessary to answer the research questions, aims, and objectives. The first part started with analyzing the data obtained using the qualitative methods from the case study and site visits of the first stage of the study. This is followed by the second stage of the data collection in the next part, which presents the design practices process of the nine seating designs. This follows the analysis of the data obtained from the visual questionnaire and the exploration of nostalgia for historical seating design and individual purchasing preferences for this type of seating in the third part. The final part of the chapter is the summary.

Phase One: Case Study of the Hijazi's Karaweetah

This phase of the study presents the data collected from the case study as one of the strategies used to conduct a material cultural understanding of objects to generate knowledge. For the study, Hijazi's Karaweetah is used as an expression and vernacular of Hijazi heritages, which represents vernacular characteristics that have not previously been studied. Therefore, the material culture approach was used in this research study to generate a design awareness of the existing Karaweetah's design elements and vernacular

characteristics. The investigations developed in three stages: site visit, drawing, and analysis. Each part is explained in detail in Chapter Three.

Site Visits: Al-Balad, Jeddah, Saudi Arabia

The researcher and research assistant Reema made two site visits to document the visual characteristics of Hijazi's Karaweetah as it exists. Most houses at Jeddah Al-Balad, the Historical Jeddah, are empty, under government preservation, or re-opened after the interior and exterior spaces were preserved. Most of those houses are for wealthy and well-known families at that time. Based on a pre-search for the availability of the Karaweetah and accessibility, four houses were selected: Beit Matbouli (H1-BM), Beit Nassif (H2-BN), Beit Baeshen (H3-BB), and Beit Salom (H4- BS).

On each visit, detailed photos were taken by the researcher and the assistant (who helped in taking pictures and holding the tape measure). iPhone 13 Pro was used to take photos. For each Karaweetah, various angles were taken; some were general, and others were detailed photos to document function, construction, style, material, structure, and symbolic details. The seat dimensions were also measured in general and in detail. Also, a quick sketch was made with rough drafts of some details that were difficult to capture with photos, such as bank details. Additionally, a checklist was filled out immediately after the visit to obtain an organization of the data collected from each site visit by the researcher for each Karaweetah.

In January 2022, the first visit was made to document the Karaweetah at Beit Matbouli (H1-BM) and Beit Salom (H4- BS) at 7:00 pm. Both houses are used as a local museum for visitors. To enter the house, individuals must pay 10 Ryals (about US \$2.67) with full access. The house's first level has Al-Maqad, the largest sitting room in the traditional Hijazi house, and a space where the conventional Karaweetah existed. Al-Maqad

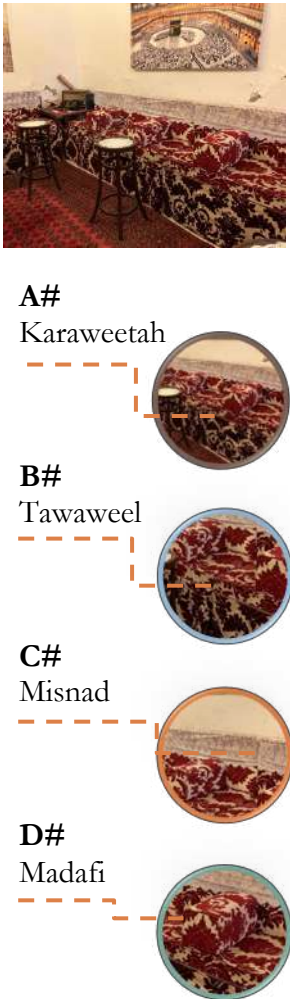
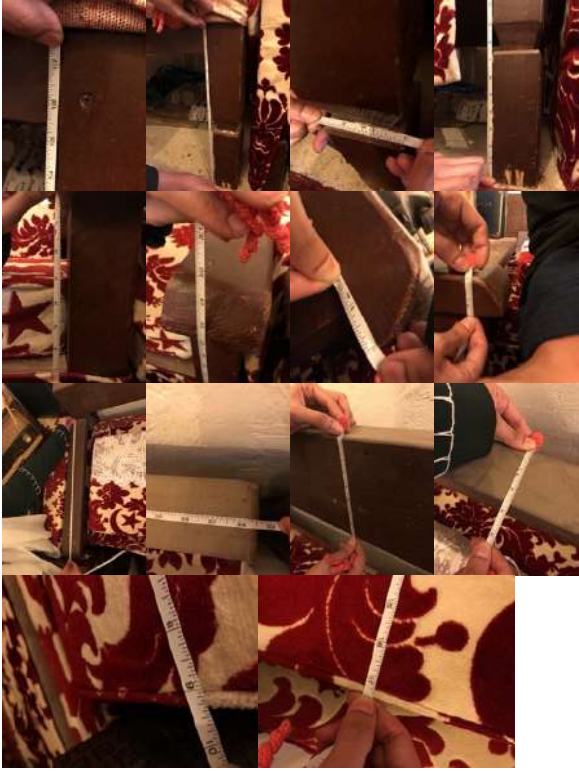




has a minimum of two Karaweetah and one to two in the lobby. A second visit was made to Beit Matbouli to fill in missing information, such as the dimensions of some parts of the Karaweetah and detailed photos.

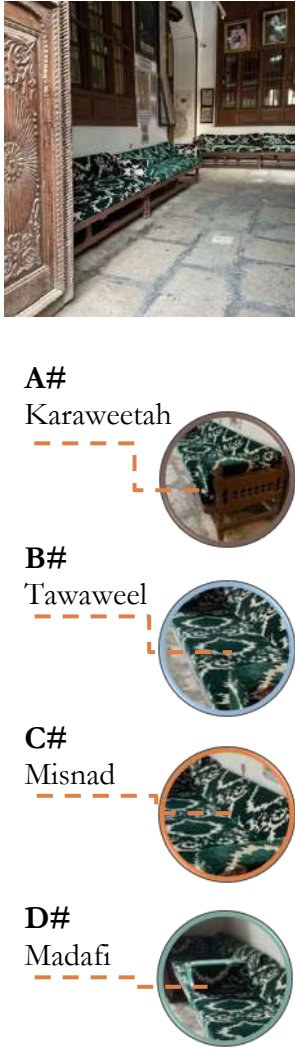
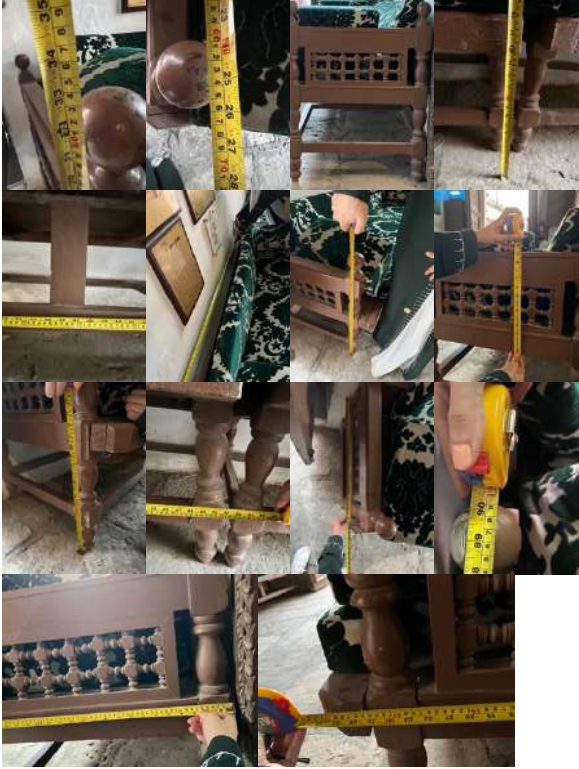


In August 2022, a second visit was made to the other houses, Beit Nassif (H2-BN) and Beit Baeshen (H3-BB) at 6:30 pm. Beit Baeshen (H3-BB) is an open house for the public. Most house spaces are used as a café on the first level, and the second level with the entrance is an open museum with no charge to enter. Each space has a different number of Karaweetah, a minimum of one and a maximum of four. However, Beit Nassif (H2-BN) is limited to VIPs and is not open for public visits. It is one of the oldest houses at al Balad, full of historical events and details, and due to its historical importance, the house is under heritage preservation authority from the government. Therefore, the study of the existence of the Karaweetah was limited to three houses in Jeddah al-Balad.






After obtaining photos needed from the first and second visits, a general content division was made to understand the original content of the conventional seating parts. As was explained in Chapter Three by Akbar (1998), conventional seating is a combination of several parts that might come together or separately, depending on the social-cultural context and the uses of the space: (A) Karaweetah, (B) Tawaweel, (C) Misnad, and (D) Madafi. Therefore, the researcher generates table format applications to demonstrate each house with part of the Karaweetah and its detailed photos. In Table 03, the data illustrates the number of Karaweetah found with different designs and codes distributed in each seat with each house. Furthermore, the data in detailed photos of each Karaweetah as found, and its complementary parts for each house serially with measurements.







Table 03










The number of Karaweet found on the site visits.

Code	Number of Karaweet	Photo Analysis	Detailed photos of each Karaweetah and its complementary parts with measurement
<p>Beit Matbouli (H1-BM)</p>	<p>Design 1 (H1-BM-K1) One in the lobby and four pieces of Karaweet in Al-Maqad space</p>	 <p>A# Karaweetah</p> <p>B# Tawaweel</p> <p>C# Misnad</p> <p>D# Madafi</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">A# Karaweetah</p> 
		<p style="writing-mode: vertical-rl; transform: rotate(180deg);">B# Tawaweel</p> 	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">C# Misnad</p> 
		<p style="writing-mode: vertical-rl; transform: rotate(180deg);">D# Madafi</p> 	

Code	Number of Karaweet	Photo Analysis	Detailed photos of each Karaweetah and its complementary parts with measurement
Beit Baeshen (H3-BB)	Design 2 (H3-BB-K2) Six pieces of Karaweet in the entrance space	 <p>A# Karaweetah</p> <p>B# Tawaveel</p> <p>C# Misnad</p> <p>D# Madafi</p>	 <p>A# Karaweetah</p>
		 <p>B# Tawaveel</p> <p>C# Misnad</p>	
		 <p>D# Madafi</p>	

Code	Number of Karaweet	Photo Analysis	Detailed photos of each Karaweetah and its complementary parts with measurement		
Beit Baeshen (H3-BB)	Design 3 (H3-BB-K3) Two pieces of the Karaweet in the Cafe space	 <p>A# Karaweetah</p>  <p>B# Tawaweel</p> 	A# Karaweetah		
			B# Tawaweel		
			C# Misnad	None	None
			D# Madafi	None	

Code	Number of Karaweet	Photo Analysis	Detailed photos of each Karaweetah and its complementary parts with measurement		
Beit Baeshen (H3-BB)	Design 4 (H3-BB-K4) Three pieces of the Karaweet in the Cafe space	 <p> A# Karaweetah </p>  <p> B# Tawaweel </p>  <p> C# Misnad </p> 	 <p style="writing-mode: vertical-rl; transform: rotate(180deg);">A# Karaweetah</p>	 <p style="writing-mode: vertical-rl; transform: rotate(180deg);">B# Tawaweel</p>	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">C# Misnad</p> <p>Tawaweel used as a Misnad</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">D# Madafi</p> <p>None</p>

Code	Number of Karaweet	Photo Analysis	Detailed photos of each Karaweetah and its complementary parts with measurement
<p style="text-align: center;">Beit Salom (H4-BS)</p>	<p style="text-align: center;">Design 5 (H4-BS-K5) Two in the entrance and five Karaweet in Al-Maqad space</p>	 <p>A# Karaweetah</p>  <p>B# Tawaweel</p>  <p>C# Misnad</p>  <p>D# Madafi</p> 	<p style="text-align: center;">A# Karaweetah</p> 
		<p style="text-align: center;">B# Tawaweel</p> 	<p style="text-align: center;">C# Misnad</p> 
		<p style="text-align: center;">D# Madafi</p> 	

Documenting the Hijazi's Karaweetah

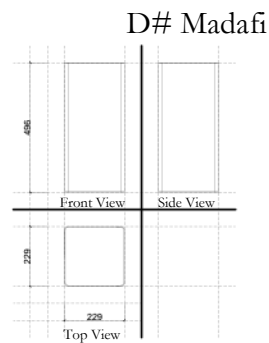
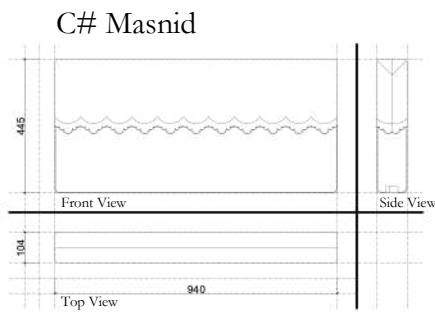
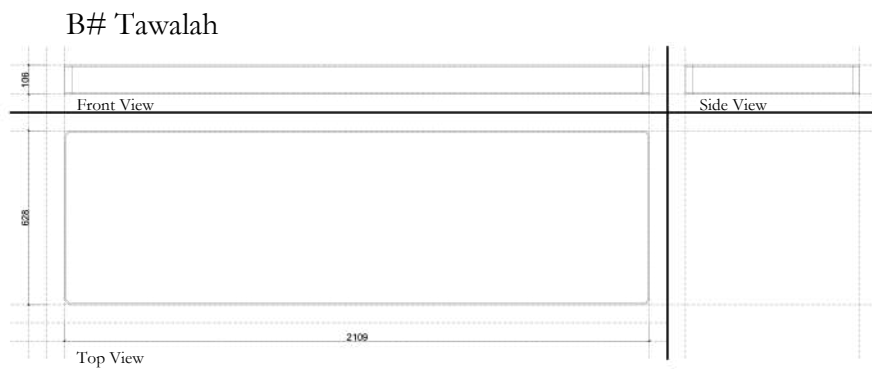
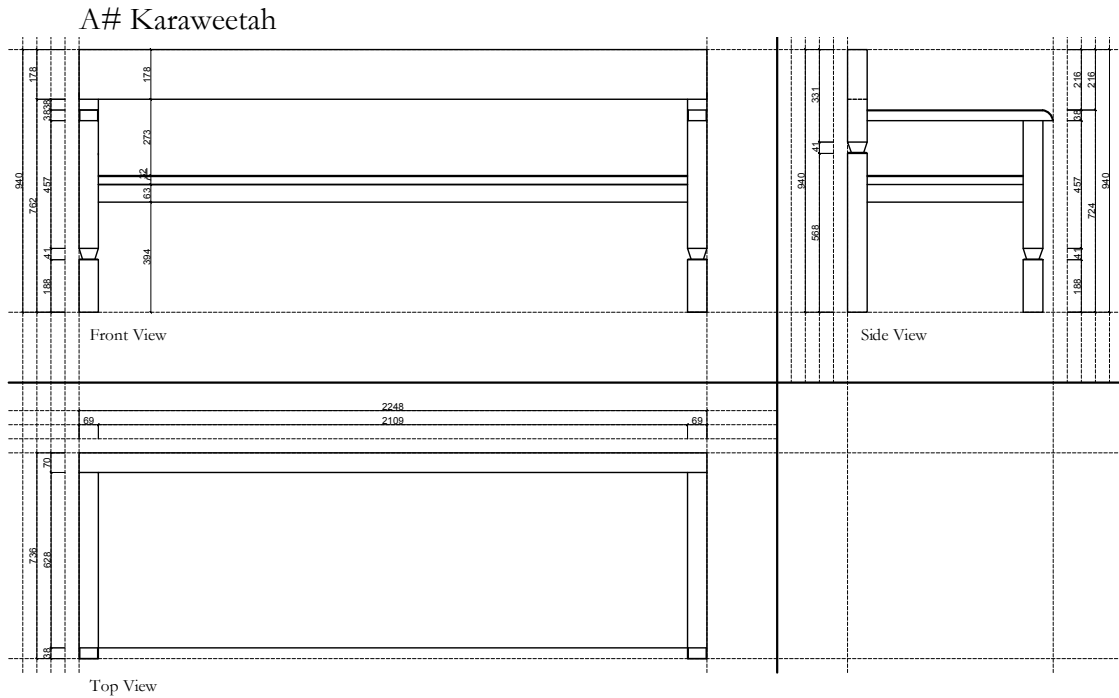
Based on the data collected from the site visits as a first step in phase one of this research study, the second step aimed to transfer the data collected into documented information about the local heritage and the conventional seating of the Hijazi Karaweetah. This step determines the transfer of drafts and photos into understandable material for professionals and practitioners in furniture design. Nevertheless, this step helped benefit visual understanding and assisted in phase two of this research investigation. This step is divided into two sets of knowledge: the first produced data into two-dimensional drawings, and the second set generated information in three-dimensional drawings.

Two-Dimensional (2D) Drawing. Using AutoCAD software, the researcher transferred the drafts and photos into two-dimensional (2D) drawings for each Karaweetah. The five Karaweetah were drafted in three different views (top, side, and front views) with detailed dimensions of the seating parts: (A) Karaweetah, (B) Tawaweel, (C) Misnad, and (D) Madafi. This part's purpose is to convert the data into design language to help generate an understanding of the vernacular characteristics of conventional seating, ergonomic considerations of sizes, and its elements of design (see Figure 81). The set of data of the drawing is coded as follows: (1) 2D drawing of the H1-BM-K1, (2) 2D drawing of H3-BB-K2, (3) 2D drawing of H3-BB-K3, (4) 2D drawing of H3-BB-K4, and (5) 2D drawing of H4-BS-K5. The dimensions in the 2D drawing are all in millimeters.

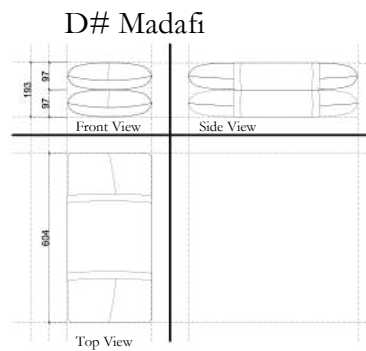
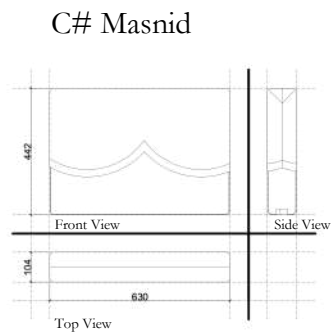
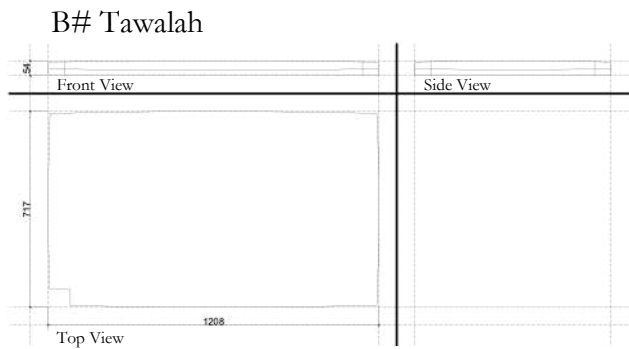
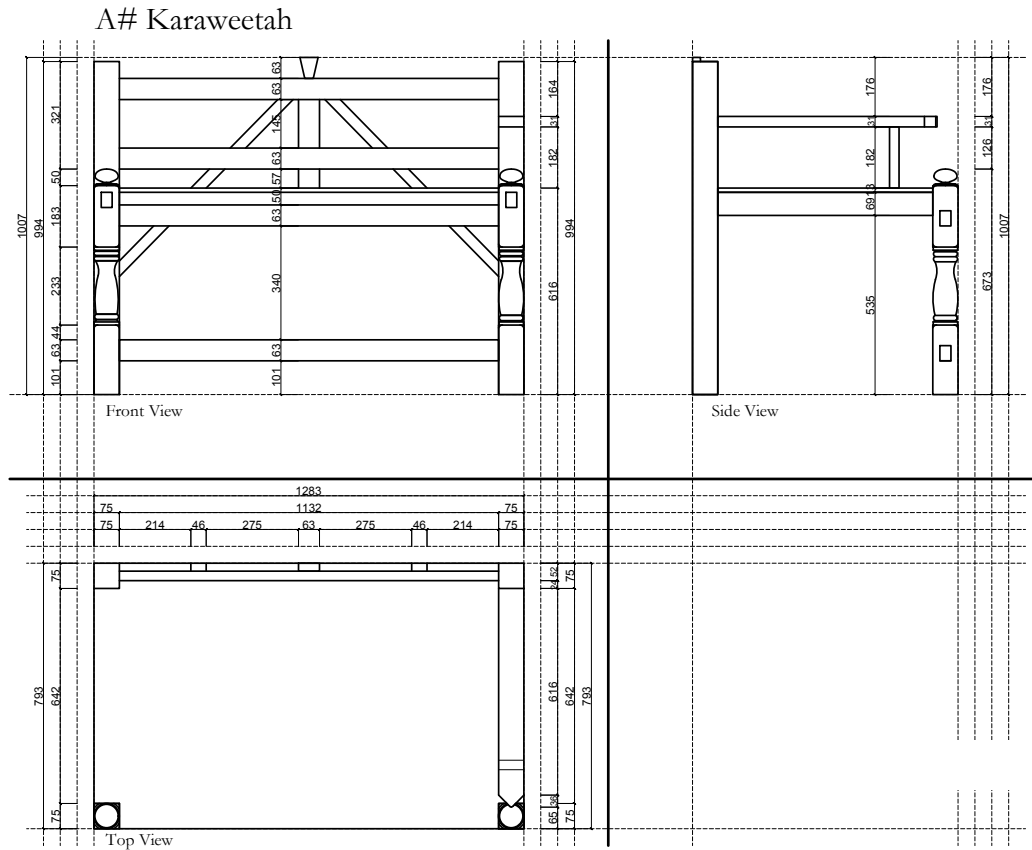
Figure 81

The Two-dimensional (2D) drawing of each Karaweetah (measured in mm)

Design 1: (H1-BM-K1)



Design 5: (H4-BS-K5)



Three-Dimensional (3D) Drawing. After converting the data into two-dimensional drawings for each Karaweetah and its parts, three-dimensional (3D) drawings were created. The three-dimensional drawing is a presentation media used to present the Karaweetah and its parts as a more understandable material object for designers and non-designers. The researcher used Fusion 360 to create three-dimensional drawings. Fusion 360 conveyed the Karaweetah in more realistic views, and most of the rendered photos show material, details, and structural understanding of the seating as found (see Figure 82). The set of data of the drawing is coded as follows: (1) 3D drawing of the H1-BM-K1, (2) 3D drawing of H3-BB-K2, (3) 3D drawing of H3-BB-K3, (4) 3D drawing of H3-BB-K4, and (5) 3D drawing of H4-BS-K5.

Figure 82

The Three-dimensional (3D) drawing of each Karaweetah.

Design 1: (H1-BM-K1)



Design 2: (H3-BB-K2)



Design 3: (H3-BB-K3)



Design 4: (H3-BB-K4)



Design 5: (H4-BS-K5)



Exploration of the Hijazi's Karaweetah



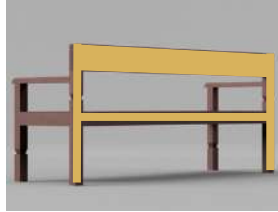
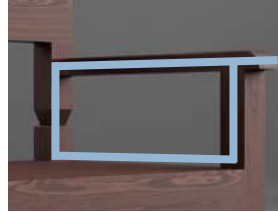

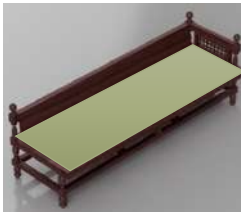

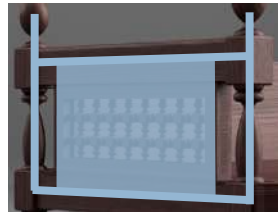
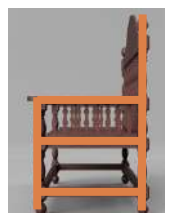

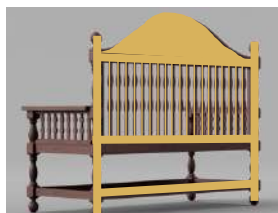
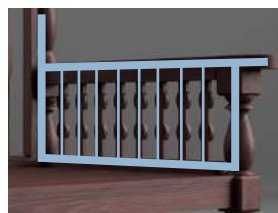






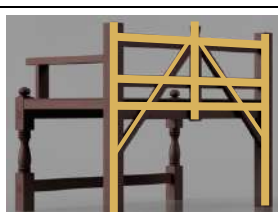
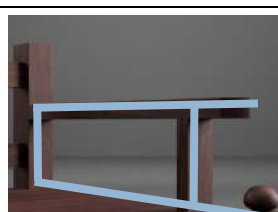
Following the two phases of the site visit and 2D/3D drawing, different analyses were applied to determine the details of the conventional seating and its elements. The first

analysis set is based on common aspects of seating design grounded on a photo analysis of the data in color, line, form, and scale, as Pohlen et al. (2016) and Khayat (2019) suggested. The second analysis set is based on the ergonomic analysis of seat elements. The third analysis set is based on vernacular characteristics proposed by Bartha and Olărescu (2017).

Analysis Based on Common Elements of Seating Design. This part of the analysis focused on the standard design component of the chair as a function and its structural parts. A photo analysis was applied based on the 3D drawing of the previous stage to generate knowledge in color, line, form, and scale. These strategies were used by Pohlen et al. (2016) as a visual analysis to understand the semantic segmentation of modular furniture. Another study by Khayat (2019) also identified the standard existing design features, elements, and motifs by showing images of the details and drawing lines above the photos. Therefore, this study applied both techniques to study and analyze the visual cultural elements from the images collected from the site visit. The data are categorized into four themes: (1) Legs, the vertical members that elevate the seating part from the floor, are presented in orange. (2) The seat, which is a flat surface, is green in color. (3) The back, which connects the seat with the back, is yellow. (4) The armrest, the structural part that holds the hand rest, is blue. Those sets of themes aim to report general patterns within the data (Glaw et al., 2017). Thus, the thematic analysis was used to report each element of the Karaweetah based on the three different houses by using color coding to categorize the visuals, break down the analysis, and find general design features that link the original heritage of the Karaweetah between the three houses (see Table 04).

Table 04

Shows each Karaweetah and color coding for thematic analysis of the parts.

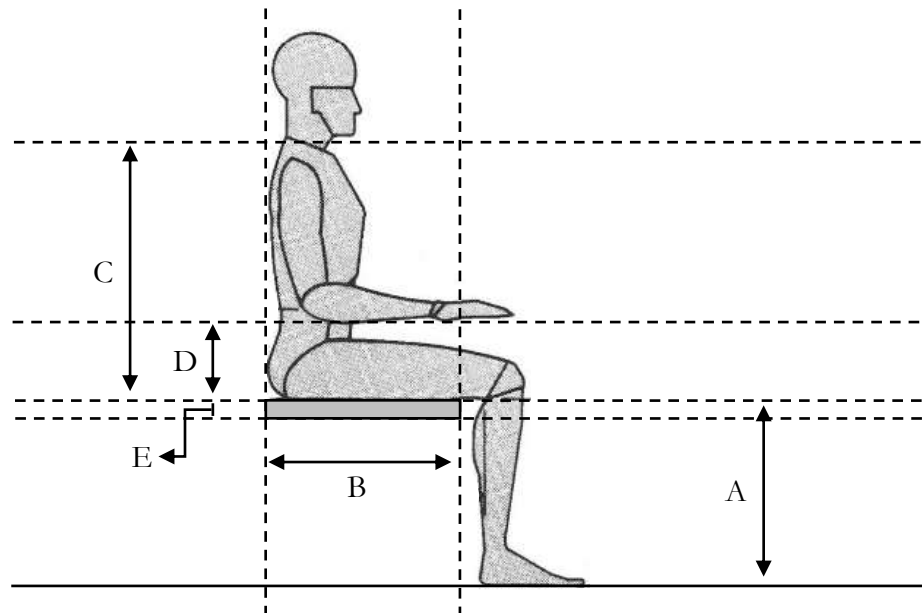
Theme		legs	Seat	Back of the seat	Armrest
Design 1	H1-BM-K1				
Design 2	H3-BB-K2				
Design 3	H3-BB-K3				
Design 4	H3-BB-K4				
Design 5	H4-BS-K5				

Design Analysis Based on Ergonomic Analysis. In this part of the analysis, the researcher converted the data generated from the 2D drawing into ergonomic understanding

concerning users. The chair dimensions are controlled by the human body, which is elusive, like sitter comfort. Additionally, as The International Ergonomics Association (IEA) has played a role in developing a global level of knowledge to evolve the practice of ergonomics in education and research since the 1950s (Caple, 2012), the five aspects of safety, comfort, easy use, productivity, and preferences, and aesthetics are determined by understanding the anthropometric data of size, shape, and form (Gary, et al., 2006). Therefore, the seating anatomy and structure involve diagrams of five anthropometric considerations: (A) Seat Height, (B) Seat Depth, (C) Backrest, (D) Armrests, and (E) Cushioning (see Figure 83). For clear visions into the ergonomic analysis of the Hijazi Karaweetah, a comparative study was made based on the classic book *Human Dimension & Interior Space* (Panero & Zelnik, 1979) for an anthropometrical understanding of the nature of sitter comfort and the approaches used in designing the Hijazi's Karaweetah.

Figure 83

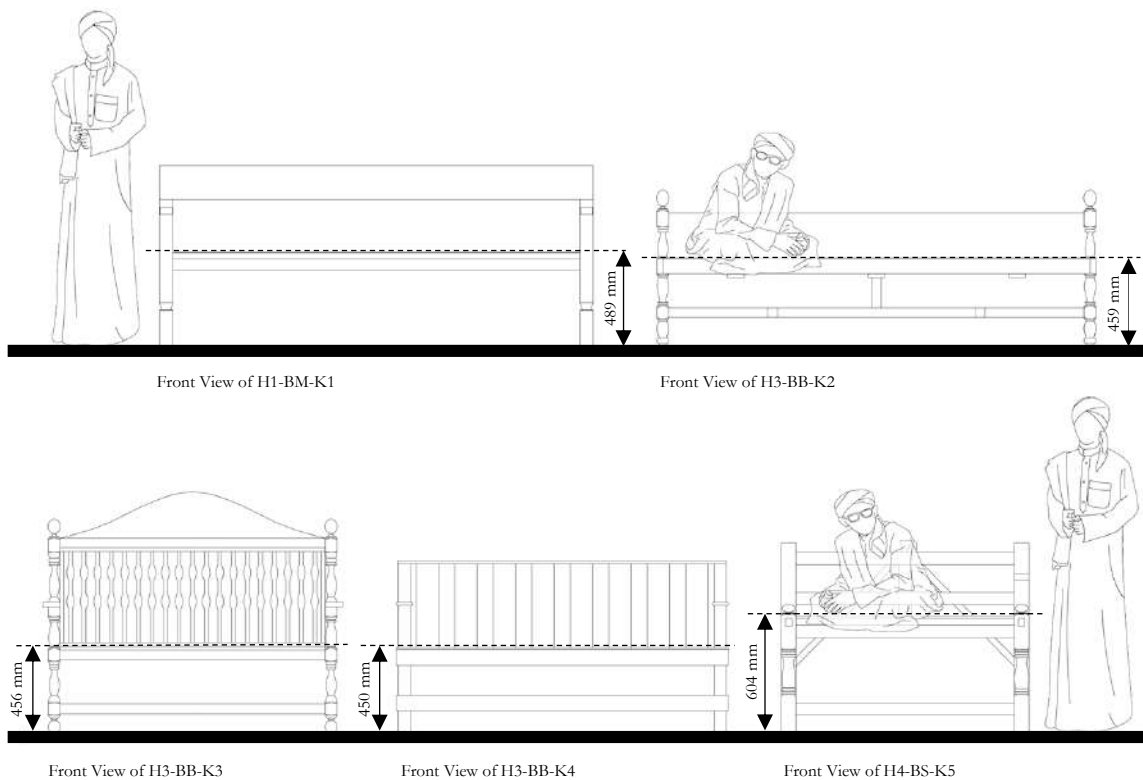
Anthropometric dimensions for chair design (measured in mm)



A. Seat Height: An essential part of the seat is the height. It is defined as the top surface of the seat above the floor, between 356mm to 445mm for women and 394mm to 490mm for men (Panero & Zelnik, 1979). In the case of this study, the Hijazi's Karaweetah had two different systems regarding heights. Usually, the height of the Karaweetah matches the Roshan height (the wooden windows from the inside). However, the height found among the data was between 459mm and 604mm (see Figure 84), which depends on the space and its existence within the space.

Figure 84

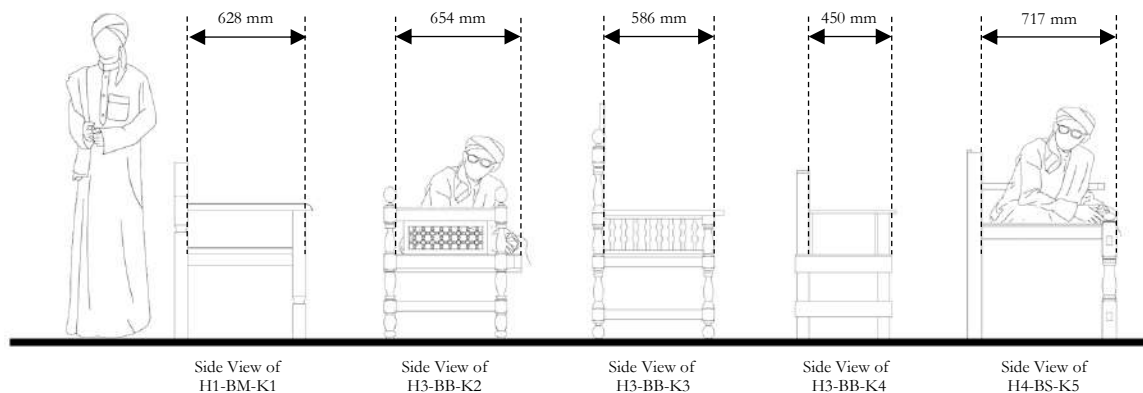
Front views of the Hijazi's Karaweetah designs show the seat height.



B. Seat Depth: Another consideration in seat design is the seat depth. The depth of the seats is between 432mm to 533mm for women and 430mm to 549mm for men (Panero & Zelnik, 1979). Due to the different seating positions while sitting and relaxing on the Hijazi's Karaweetah, as was mentioned by Akbar (1998), the depth of the surface is more significant than standard in most of the five designs. In this case, the whole body is positioned on the top of the seating without showing the legs and feet to reduce discomfort and add a level of relaxation to the users. The depth found among the data was between 450mm and 717mm (see Figure 85), which depends on the space and users of the space.

Figure 85

Side views of the Hijazi's Karaweetah design show the seat depth.

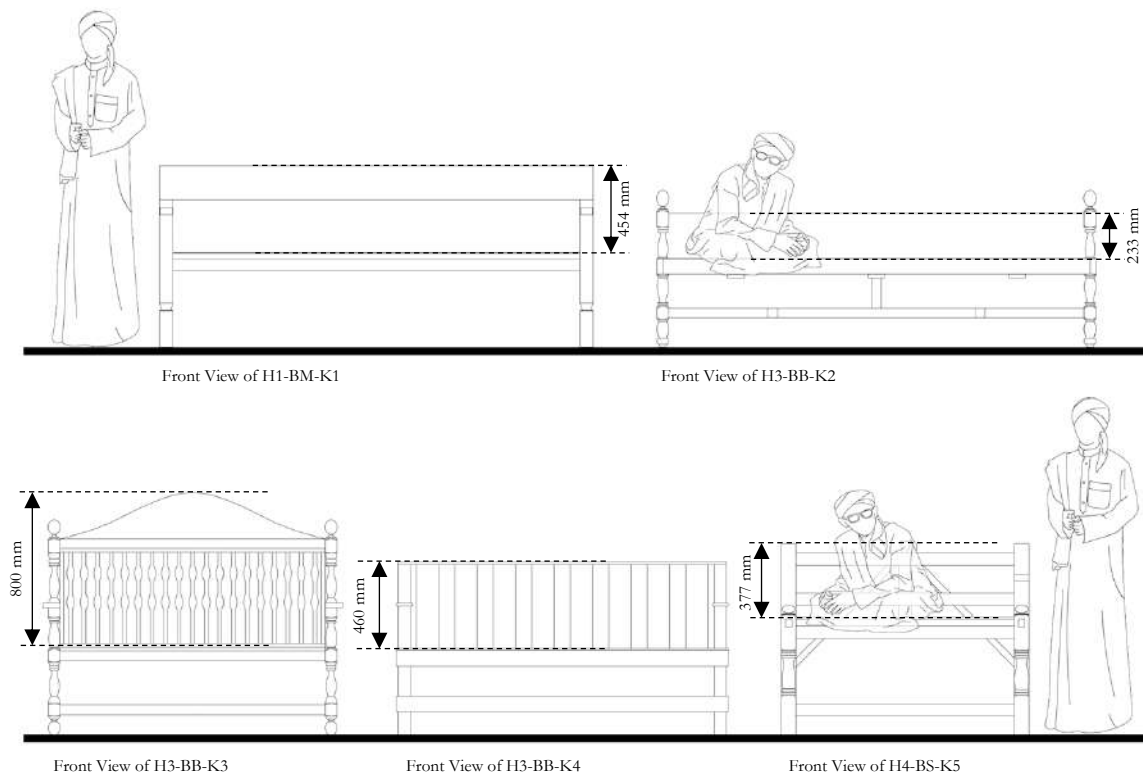


C. Backrest: The backrest is also one of the seat's most essential components for a better fit and to provide back support for the human body, the concave part from the waist to the middle of the back. The height of the backrest varies

depending on the seat type and use. Overall, the backrest may extend from the seat top to the head of the neck or somewhere in between (Panero & Zelnik, 1979). In this case, Hijazi's Karaweetah backrest was varied, and the height found among the data was between 450mm and 717mm (see Figure 86).

Figure 86

Front views of the Hijazi's Karaweetah designs show the backrests.

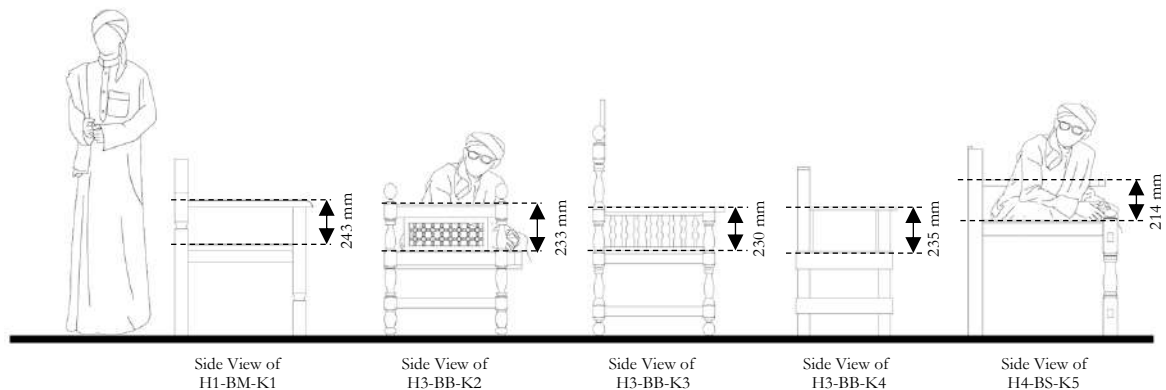


D. Armrests: The armrests support the arms on the seat, which aim to assist the user to rise out of the seat. The elbow rest height of the seats is between 180mm and 279mm for women and 188mm to 295mm for men (Panero & Zelnik, 1979). In this case, the Hijazi's Karaweetah backrest was varied, and the armrest

height found among the data was between 214mm and 243mm (see Figure 87), where the elbow rests on the armrest or supports the head when side-leaning.

Figure 87

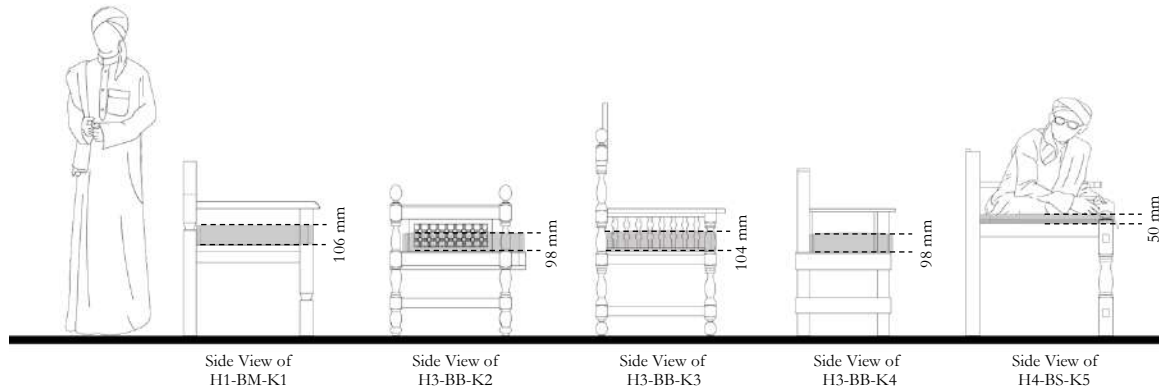
Side views of the Hijazi's Karaweetah designs show the height of the armrests.



E. Cushioning: Another essential part of seating considerations that affects the distribution of body weight pressure is cushioning. A safety concern might develop if the seat cushion is abundant, deep, and soft, which can cause discomfort (Panero & Zelnik, 1979). However, appropriately designed cushions relieve compressive stress on the human body structure and weight. Therefore, to increase comfort, different recommendations have average padding thicknesses that involve human weight, i.e., 51mm for a 78-kg male, and with each additional 30 kg, 5.4mm is added (Panero & Zelnik, 1979). In this case, the Hijazi's Karaweetah cushions were varied, and the padding size found among the data was between 50mm and 106mm (see Figure 88).

Figure 88


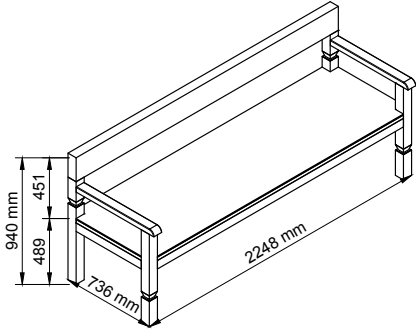
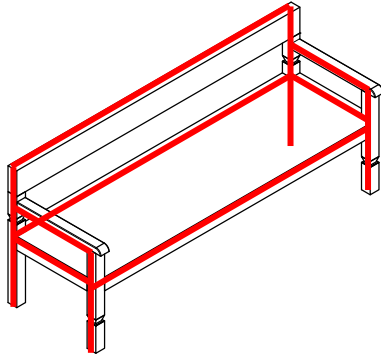

Side views of the Hijazi's Karaweetah designs show the cushion thicknesses.

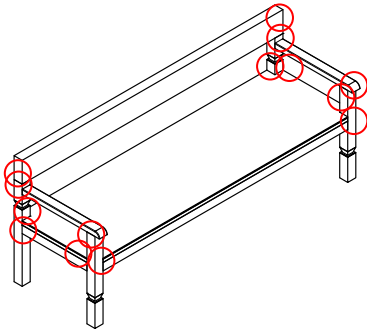
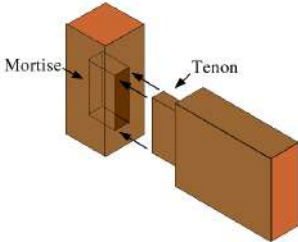


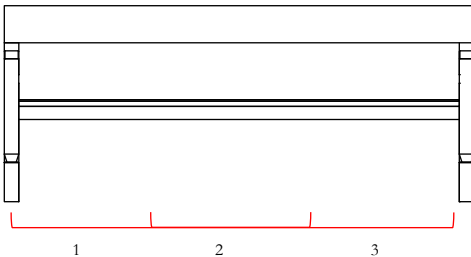
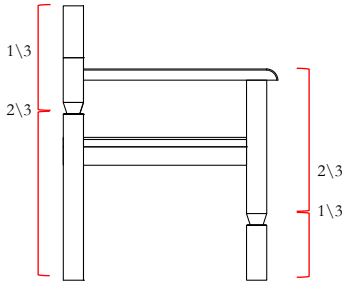


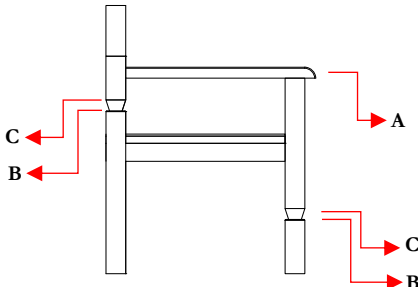


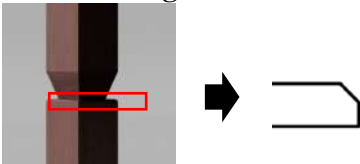
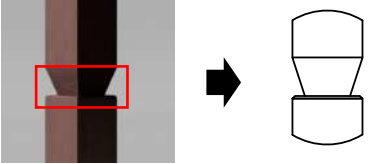
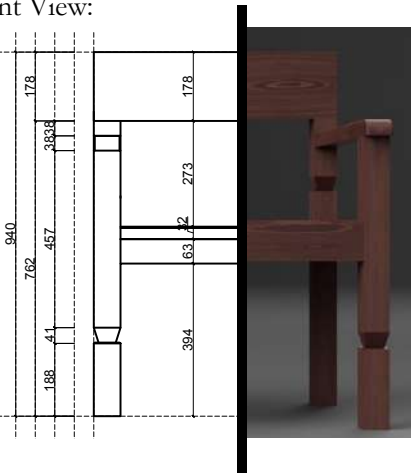
Design Analysis Based on Vernacular Characteristics. To generate an in-depth understanding of the Karaweetah function, construction, style, material structure, and symbolic detail, a visual vernacular characteristics analysis was made based on the vernacular concepts by Bartha and Olărescu (2017). They applied these strategies to clarify a traditional object's cultural features and vernacular characteristics to create other modern objects. Therefore, in this stage of the study, the researcher applied this strategy to the five Karaweetah to clarify its vernacular characteristics of design, such as structure (form, aspects, joints), material (wood species, color, texture), dimension (seat height, depth, backrest height, armrest height, seat angle), and ornament (motifs, technique, scale) for in-depth analysis. The following five tables present each Karaweetah with its parts in a detailed analysis of vernacular characteristics: H1-BM-K1 (see Table 05), H3-BB-K2 (see Table 06), H3-BB-K3 (see Table 07), H3-BB-K4 (see Table 08), H4-BS-K4 (see Table 09).


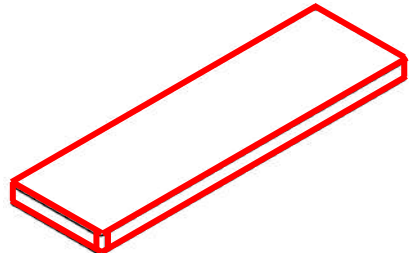
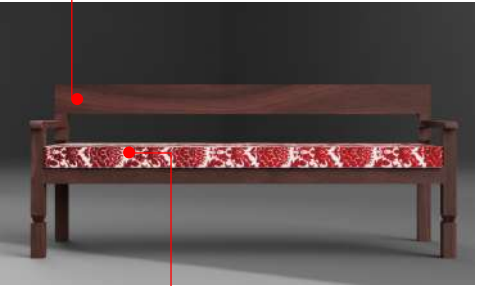
Table 05

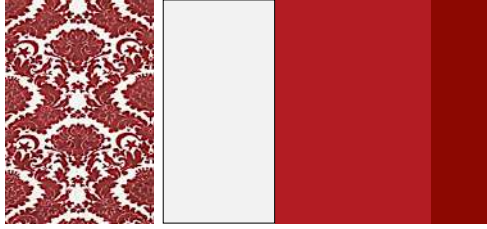

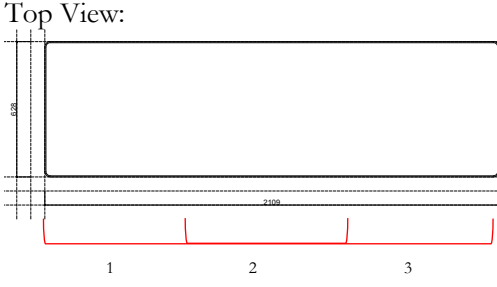
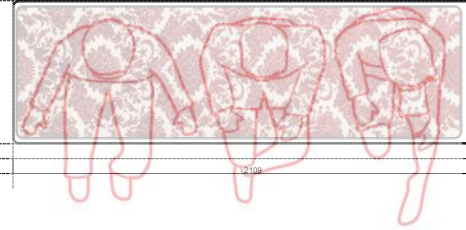
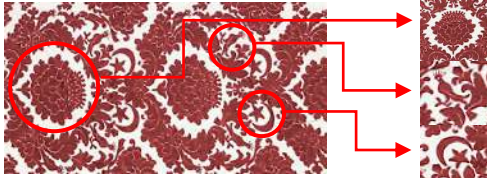
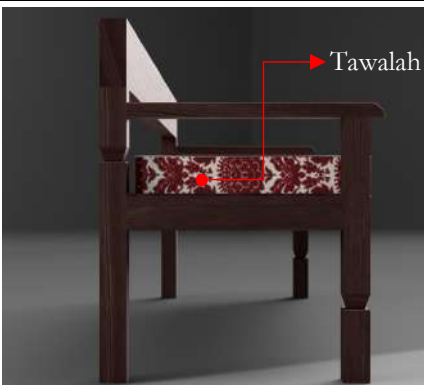
Shows the design analysis of the Karaweetah and its elements based on visual vernacular characteristics: H1-BM-K1

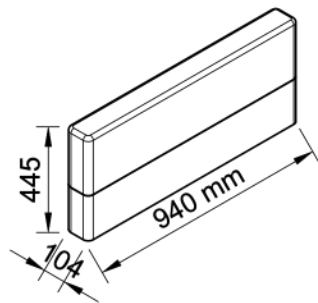
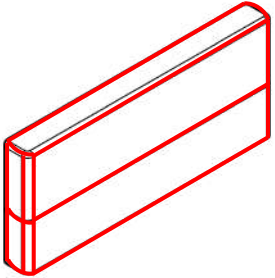
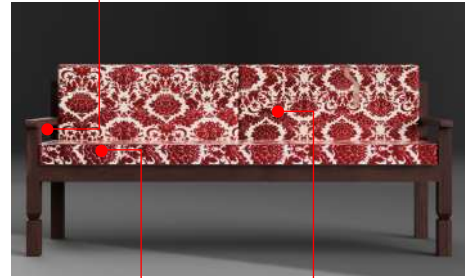
Code	Conventional Seating Parts				
H1-BM-K1	A# Karaweetah				
		Dimension	Height	489mm (48.9cm)	
			Depth	736mm (73.6cm)	
			Width	2109mm (210cm)	
			Armrest Height	235mm (23.5cm)	
			Backrest Height	451mm (45.1cm)	
Back Angle			90 Degree		
Vernacular Characteristics		Identification	Interpretation	Images	
Structure	Form		Long bench with back fits more than two		
	Aspect		Rectangular shape bench with four legs and two or one side armrests.		



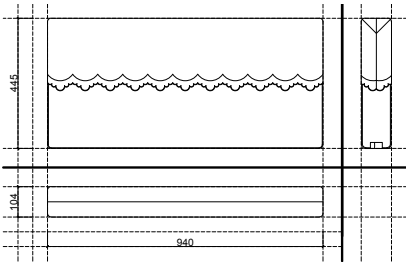
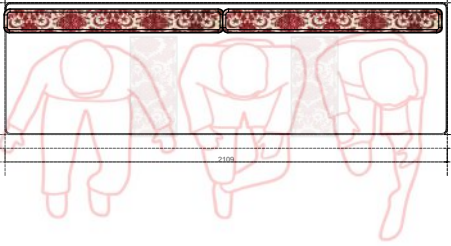
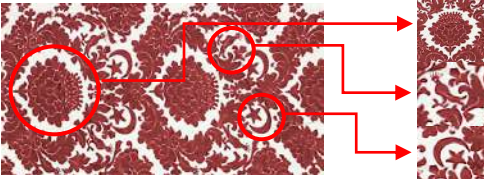

Vernacular Characteristics		Identification	Interpretation	Images
H1-BM-K1	Structure		Traditional wood joints Mortises and Tenon joints. (14 hidden joints)	
	Material		Teak wood	
	Color		Dark brown	
Texture	Wood Stain finish			
Composition	Scale	The front view shows the proportion of the seating area:	The seating fit more than three. (One person required 55cm to 70cm) <i>Neufert Architects' Data</i> , 2012). The width of the seating is similar to sofa bed (80X200cm).	The side view shows the proportion of the bench legs:
Proportion				
Dimension				


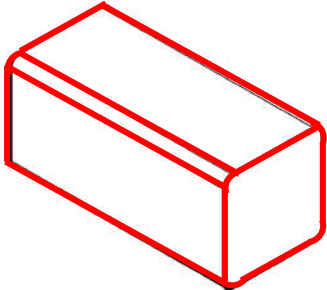
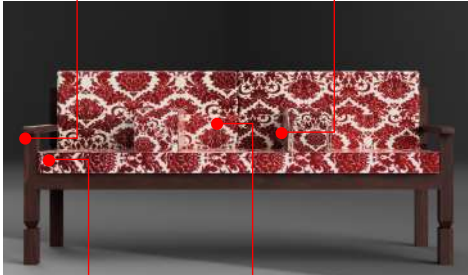
Vernacular Characteristics		Identification	Interpretation	Images
H1-BM-K1 Ornament	Motifs	Side View: 	Simple details are used in legs and armrests. A. Demi bullnose edge of the armrest with clean cut _ Machine Made. B. Chamfered edge (45 Degree) _ Machine Made. C. Bevel cut on four sides (108 angle approximate).	Side View: 
	Technique	A. Demi Bullnose Edge: 		
	Scale	B. Chamfered Edge:  C. Bevel Cut: 	The Karaweetah bench size accommodate two to three people which allows a free and multifunctional use. The bench is used for seating, relaxing, and sleeping for guests. The depth of the bench is wider than 20inch (508mm).	Front View: 

Code		Conventional Seating Parts			
H1-BM-K1		B# Tawalah/Layana			
			Dimension	Height	106mm (10.6cm)
Depth	628mm (62.8cm)				
Width	2109mm (210cm)				
Armrest Height	-				
Backrest Height	-				
Back Angle	-				
Vernacular Characteristics		Identification		Interpretation	Images
Structure	Form			Rectangular shape with round edges.	
	Aspect			Tawalah is made based on the size of the Karaweetah seating depth and width.	
	Joints	Hidden zipper to remove the red and white cloth. Usually at the back side of the Tawalah.	Hand stewing fabric to cover the compressed foam or sponge.		

Vernacular Characteristics		Identification	Interpretation	Images
Material	Wood Species		-	
	Color		Red Fabric Abo-Tare (أبو طير)	
	Texture		Soft fabric and the red motifs are velvet.	
Composition	Scale	<p>Top View:</p> 	<p>The Tawalah fit the size of the Karaweetah (fit three adults) (one person required 55cm to 70cm) (Nenfert Architects' Data, 2012)</p>	<p>Top View:</p> 
	Proportion			
	Dimension			
Ornament	Motifs	<p>The distinguished motifs are on the fabric itself.</p> 	<p>The motifs on the fabric are repetitive flowers, moon and star shapes, and peacocks.</p>	
	Technique	Hand sewing by the women of the house.	-	
	Scale	-	-	

Code		Conventional Seating Parts					
H1-BM-K1		C# Masnid					
		Dimension	Height	445mm (44.5cm)			
			Depth	104mm (10.4cm)			
			Width	940mm (94cm)			
			Armrest Height	-			
			Backrest Height	-			
			Backrest Angle	-			
Backrest Angle	-						
Vernacular Characteristic		Identification		Interpretation		Images	
Structure	Form			Rectangular shape with round edges.			
	Aspect			Masnid is made based on the Karaweetah width, and usually two pieces are used.			
	Joints	Hidden zipper to remove the red\white cloth. Usually at the bottom side of the Masnid.		Hand sewing fabric to cover the compressed foam or sponge.			

Vernacular Characteristic		Identification	Interpretation	Images
Material	Wood Species		-	
	Color		Red Fabric Abo-Tare (أبو طير) + White Fabric	
	Texture		Soft fabric and red velvet.	
Composition	Scale	Dimension: 	The size of the two Masnid usually fits one piece of the Tawalah. (This size is the average size).	Top View: 
	Proportion			
	Dimension			
Ornament	Motifs	The distinguished motifs are on the fabric itself. 	The motifs on the fabric have repetitive patterns of flowers, moon and star, and peacocks.	
	Technique	Hand sewing by the women of the house.	-	
	Scale	-	-	

Code		Conventional Seating Parts			
H1-BM-K1		D# Madafi			
			Dimension	Height	229mm (22.9cm)
Depth	496mm (49.6cm)				
Width	229mm (22.9cm)				
Armrest Height	-				
Backrest Height	-				
Back Angle	-				
Vernacular Characteristic		Identification		Interpretation	Images
Structure	Form		Rectangular shape with round edges.		
	Aspect		Madafi is used for side rest. Each Karaweetah has one or two Madafi placed above the Tawalah.		
	Joints	Hidden zipper to remove the red\white cloth. Usually at the bottom side of the Madafi.	Hand sewing fabric to cover the compressed foam.		

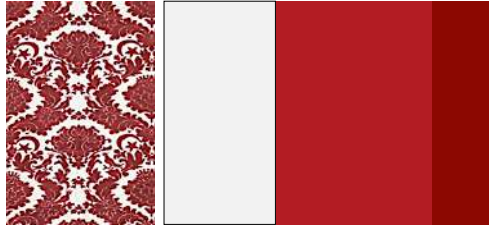

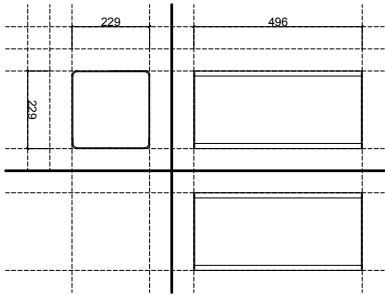
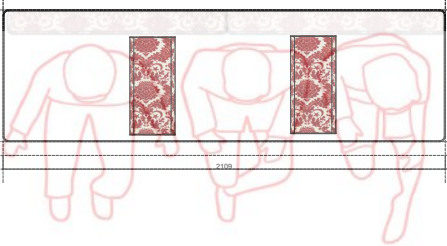
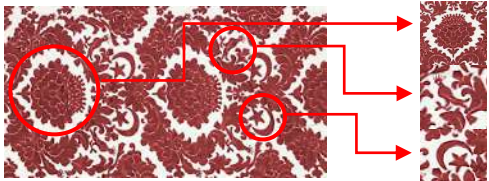


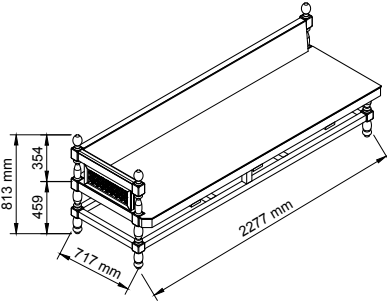
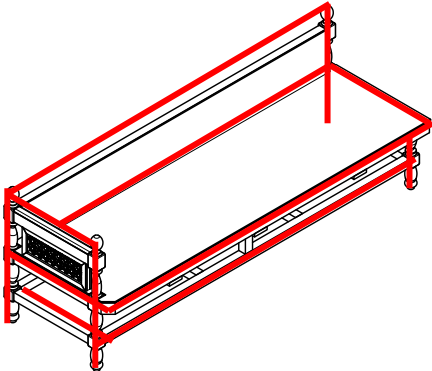

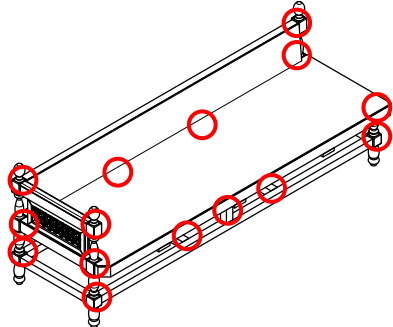
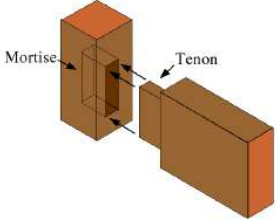

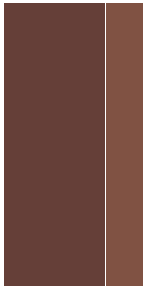

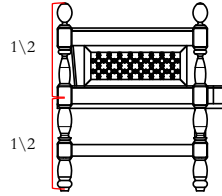
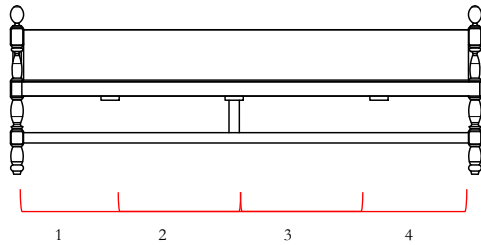

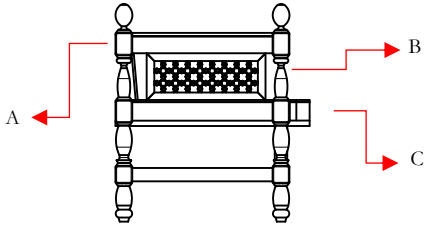

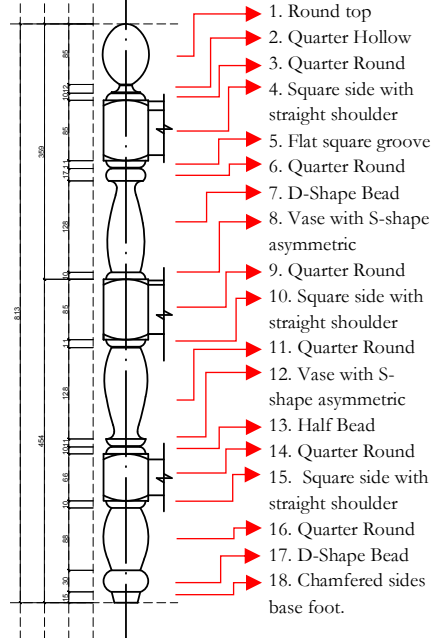
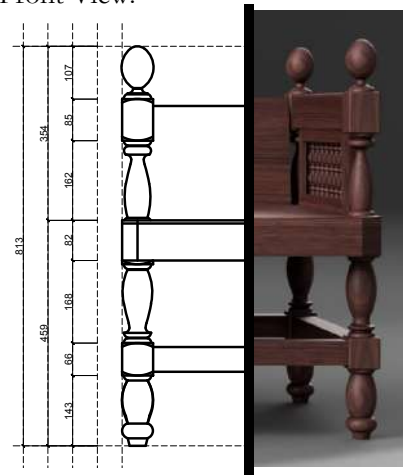
Vernacular Characteristic		Identification	Interpretation	Images
Material	Wood Species		-	
	Color		Red Fabric Abo-Tare (أبو طير) + White Fabric	
	Texture		Soft fabric and red velvet.	
Composition	Scale	Dimension: 	The scale of Madafi is relatively small and fits a human arm to rest upon.	Top View: 
	Proportion			
	Dimension			
Ornament	Motifs	The distinguished motifs are on the fabric itself. 	The motifs on the fabric have repetitive patterns of flowers, moon and star, and peacocks.	
	Technique	Hand sewing by the women of the house.	-	
	Scale	-	-	


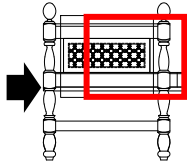


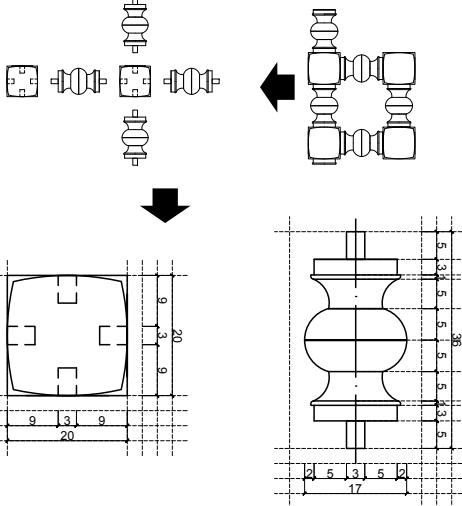
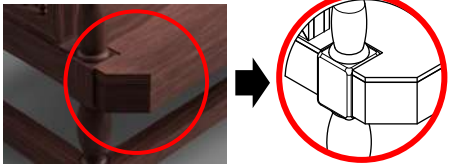
Table 06


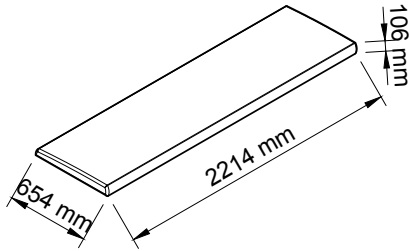
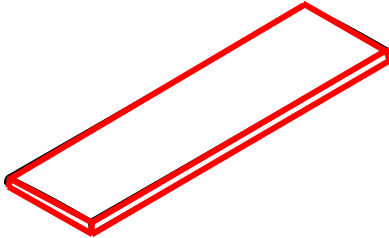
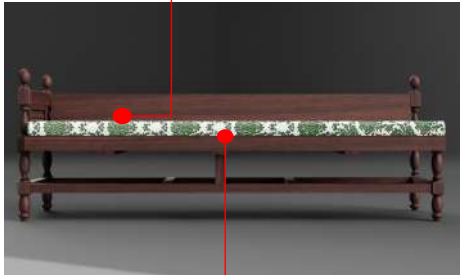
Shows the design analysis of the Karaweetah and its elements based on visual vernacular characteristics: H3-BB-K2

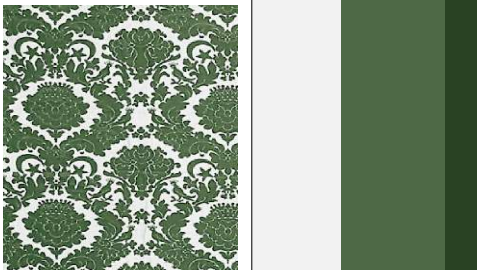

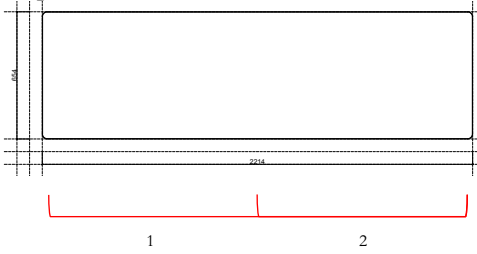
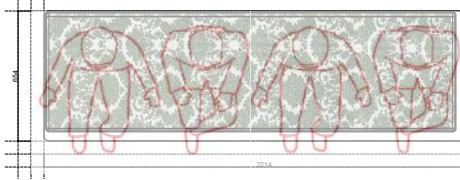

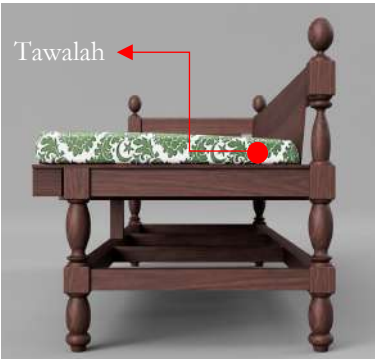
Code	Conventional Seating Parts				
H3-BB-K2	A# Karaweetah				
	Dimension		Height	813mm (81.3cm)	
		Depth	717mm (71.7cm)		
		Width	2277mm (227cm)		
		Armrest Height	354mm (35.4cm)		
		Backrest Height	354mm (45.4cm)		
		Back Angle	100 to 105 Degree		
Vernacular Characteristics		Identification		Interpretation	Images
Structure	Form			Bench-size seating with back fits more than three people.	
	Aspect			A rectangular shape bench with four legs and one armrest side allows continuous sitting with a second Karaweetah.	

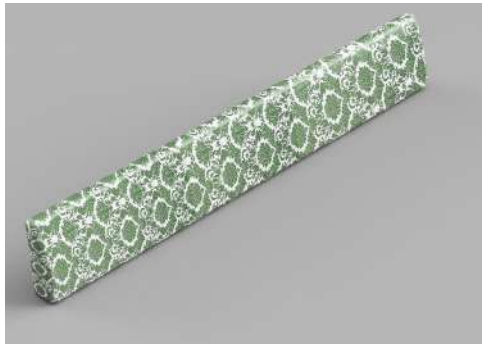
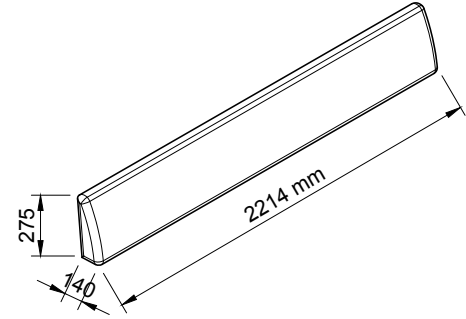
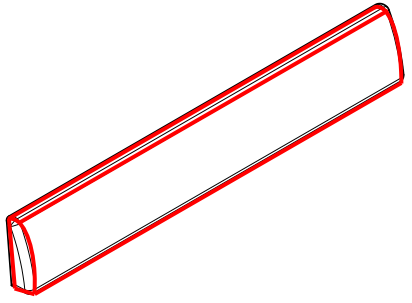
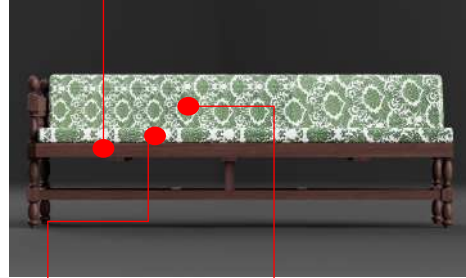
Vernacular Characteristics		Identification	Interpretation	Images	
H3-BB-K2	Structure		Traditional wood joints Mortise and Tenon joints. (22 hidden joints).	<p>● Mortise and Tenon joints</p> 	
	Material	Wood Species	 	Teak wood	
		Color		Dark brown	
Texture		Wood stain finish			
Composition	Scale	The front view shows the proportion of the seating area:	<p>It fits four people. (One person required 55cm to 70cm) (<i>Neufert Architects' Data</i>, 2012). The seating size is similar to the couch size of 95X195 cm (<i>Neufert Architects' Data</i>, 2012).</p>	<p>The side view shows the proportion of the bench legs:</p> 	
	Proportion				
	Dimension				



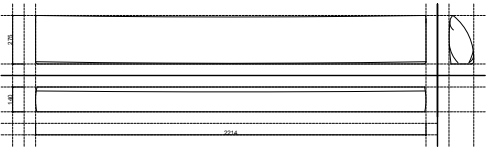
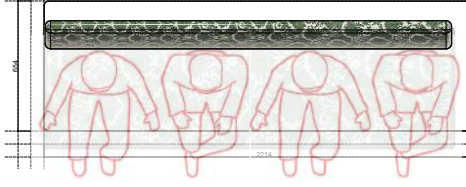


		Vernacular Characteristics	Identification	Interpretation	Images
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">H3-BB-K2</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Ornament</p>	Motifs	<p>Side view:</p> 	<p>Distinguished details are used on the seating legs and armrest:</p> <p>A. Woodturning techniques are used to make the four legs _ Machine made.</p> <p>B. Woodturning is used on one side armrest _ similar to the one found on Mashrabiya.</p> <p>C. Chamfered corner with 45 degrees on one side (the armrest side) _ Machine-made.</p>	<p>Side View:</p> 	
	Technique	<p>A. Woodturning (lathe):</p>  <ol style="list-style-type: none"> 1. Round top 2. Quarter Hollow 3. Quarter Round 4. Square side with straight shoulder 5. Flat square groove 6. Quarter Round 7. D-Shape Bead 8. Vase with S-shape asymmetric 9. Quarter Round 10. Square side with straight shoulder 11. Quarter Round 12. Vase with S-shape asymmetric 13. Half Bead 14. Quarter Round 15. Square side with straight shoulder 16. Quarter Round 17. D-Shape Bead 18. Chamfered sides base foot. 		<p>Front View:</p> 	

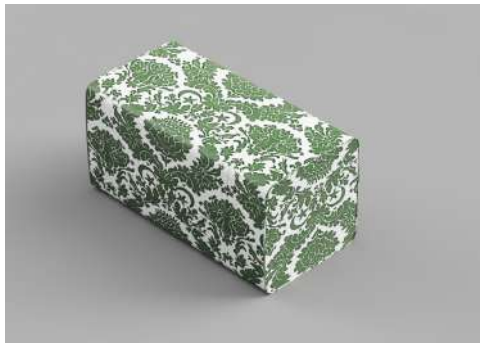
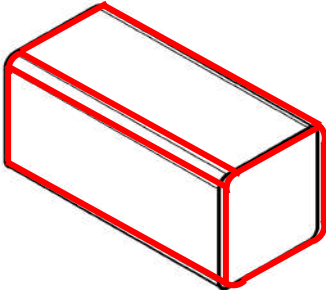
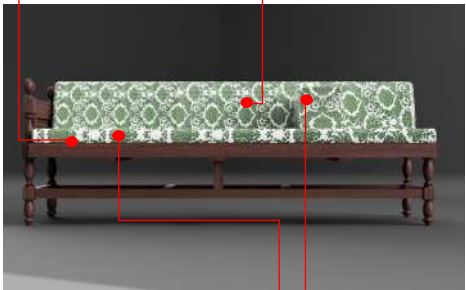
Vernacular Characteristics		Identification	Interpretation	Images
H3-BB-K2 Ornament	Motifs	<p>B. Woodturning (lathe):</p>  	<p>The armrest has distinctive details of the woodturning technique. A simple repetitive form is used to decorate the armrest. A chamfered corner is used for safety reasons since the seating is used by family members, friends, and guests. The details add another aesthetic level to the form of the Karaweetah.</p>	<p>Side View:</p>  
	Technique			
	Scale	<p>C. Chamfered Corner: 45 Degree</p> 		

Code		Conventional Seating Parts			
H3-BB-K2	B# Tawalah/Layana				
		Dimension	Height	106mm (10.6cm)	
			Depth	654mm (65.4cm)	
			Width	2214mm (221cm)	
			Armrest Height	-	
			Backrest Height	-	
			Backrest Angle	-	
			Backrest Angle	-	
	Vernacular Characteristics		Identification	Interpretation	Images
	Structure	Form		Rectangular shape with round edges.	
Aspect		Tawalah is made based on the size of the Karaweetah seating depth and width.			
Joints		A hidden zipper removes the green\white cloth, usually at the back side of the Tawalah.	Hand-sewing fabric to cover the compressed foam or sponge		

Vernacular Characteristics		Identification	Interpretation	Images
Material	Wood Species		-	
	Color		Green Fabric Abo-Tare (أبو طير)	
	Texture		Soft white fabric and the green motifs are velvet.	
Composition	Scale	<p>Top View:</p> 	<p>The Tawalah fits the size of the Karaweetah (fits four adults) (one person required 55cm to 70cm) (<i>Neufert Architects' Data</i>, 2012)</p>	<p>Top View:</p> 
	Proportion			
	Dimension			
Ornament	Motifs	<p>The distinguished motifs are on the fabric itself:</p> 	<p>The motifs on the fabric are repetitive flowers, moon and star shapes, and peacocks.</p>	
	Technique	Hand sewing by the women of the house.		
	Scale	-		

Code		Conventional Seating Parts					
H3-BB-K2		C# Masnid					
			Dimension	Height	275mm (27.5cm)		
				Depth	140mm (14cm)		
				Width	2214mm (221cm)		
				Armrest Height	-		
				Backrest Height	-		
				Back Angle	-		
Vernacular Characteristic		Identification		Interpretation		Images	
Structure	Form			Rectangular shape with round front.			
	Aspect			Masnid is made based on the Karaweetah width; usually, two pieces are used. For this seating, one continuous Masnid is used.			
	Joints	A hidden zipper removes the green\white cloth, usually at the back side of the Tawalah.		Hand-sewing fabric to cover the compressed foam.			

Vernacular Characteristic		Identification	Interpretation	Images
Material	Wood Species		-	
	Color		Green Fabric Abo-Tare (أبو طير)	
	Texture		Soft white fabric and the green motifs are velvet.	
Composition	Scale	Dimension: 	The size of the Masnid is made to fit the Tawalah size.	Top View: 
	Proportion			
	Dimension			
Ornament	Motifs	The distinguished motifs are on the fabric itself: 	The motifs on the fabric are repetitive flowers, moon and star shapes, and peacocks.	
	Technique	Hand sewing by the women of the house.		
	Scale	-		

Code		Conventional Seating Parts													
H3-BB-K2		D# Madafi													
			Dimension	<table border="1"> <tr><td>Height</td><td>229mm (22.9cm)</td></tr> <tr><td>Depth</td><td>453mm (45.3cm)</td></tr> <tr><td>Width</td><td>229mm (22.9cm)</td></tr> <tr><td>Armrest Height</td><td>-</td></tr> <tr><td>Backrest Height</td><td>-</td></tr> <tr><td>Back Angle</td><td>-</td></tr> </table>	Height	229mm (22.9cm)	Depth	453mm (45.3cm)	Width	229mm (22.9cm)	Armrest Height	-	Backrest Height	-	Back Angle
Height	229mm (22.9cm)														
Depth	453mm (45.3cm)														
Width	229mm (22.9cm)														
Armrest Height	-														
Backrest Height	-														
Back Angle	-														
Vernacular Characteristic		Identification		Interpretation	Images										
Structure	Form			Rectangular shape with round edges.											
	Aspect			Madafi is used as a side rest. Each Karaweetah has one or two Madafi placed above the Tawalah.											
	Joints	A hidden zipper removes the green\white cloth, usually at the bottom side of the Madafi.	Hand-sewing fabric to cover the compressed foam or sponge.												

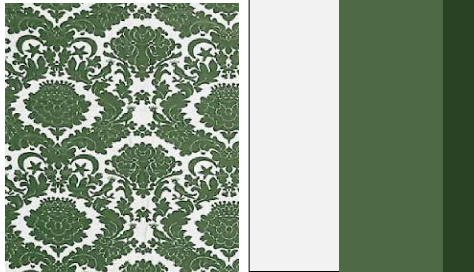

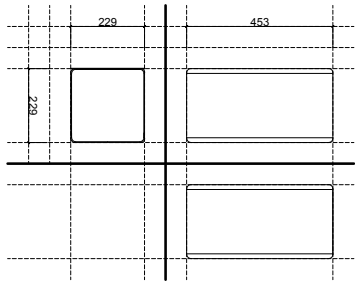
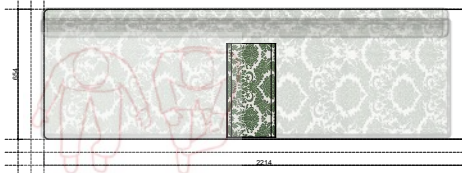

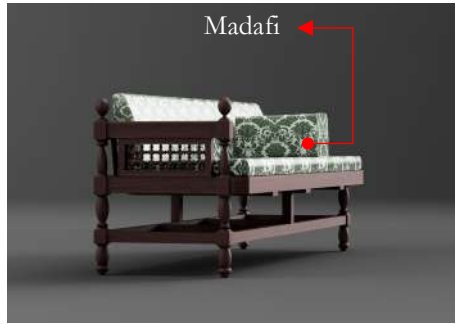

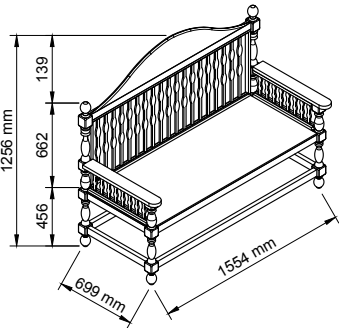
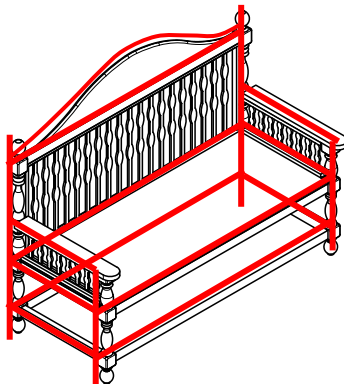

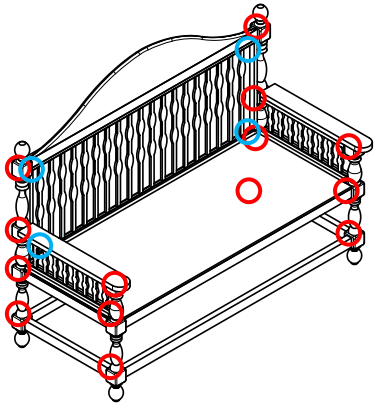
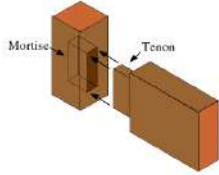
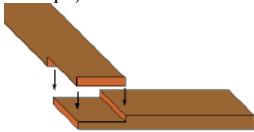






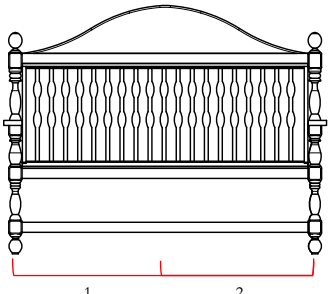
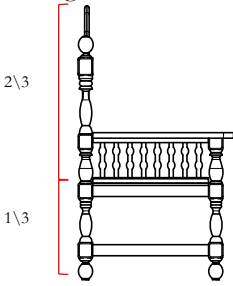
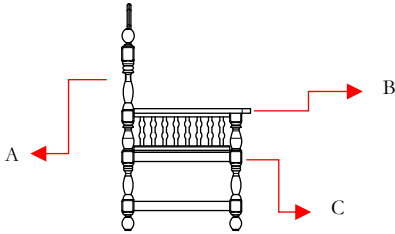
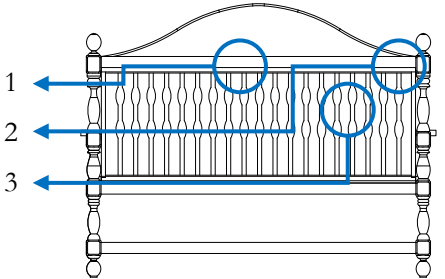

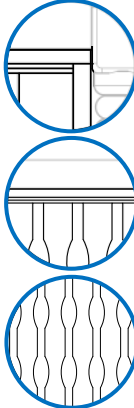
Vernacular Characteristic		Identification		Interpretation	Images
Material	Wood Species			-	
	Color			Green Fabric Abo-Tare (أبو طير)	
	Texture			Soft white fabric and the green motifs are velvet.	
Composition	Scale	Dimension: 		The scale of Madafi is relatively small and fits a human arm to rest upon. The size of the Madafi is made to be assembled above the Tawalah.	Top View: 
	Proportion				
	Dimension				
Ornament	Motifs	The distinguished motifs are on the fabric itself: 		The motifs on the fabric are repetitive flowers, moon and star shapes, and peacocks.	
	Technique	Hand sewing by the women of the house.		-	
	Scale			-	



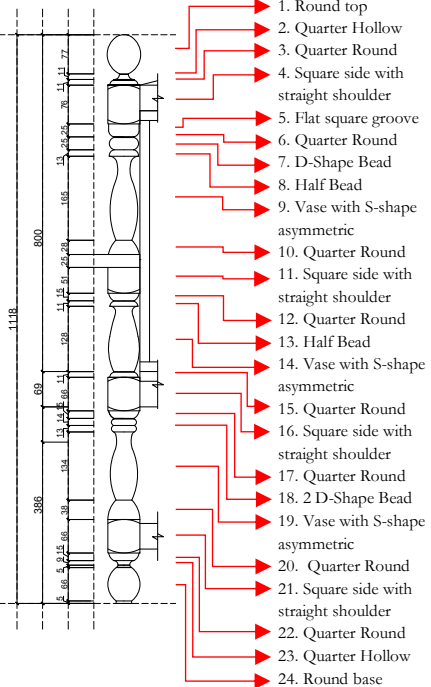
Table 07

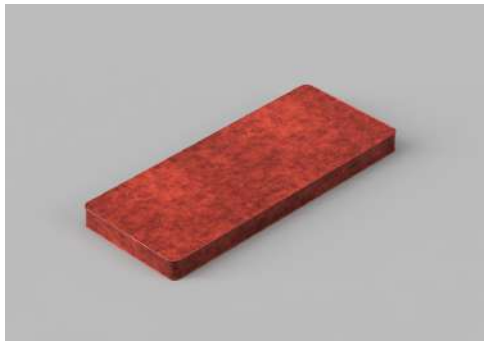
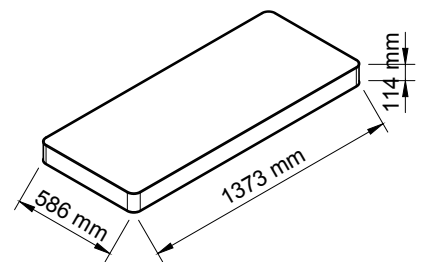
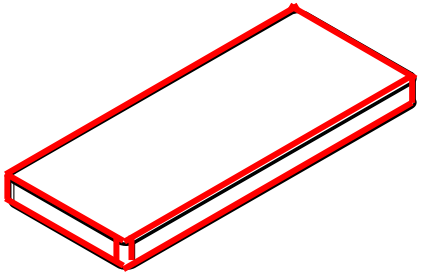
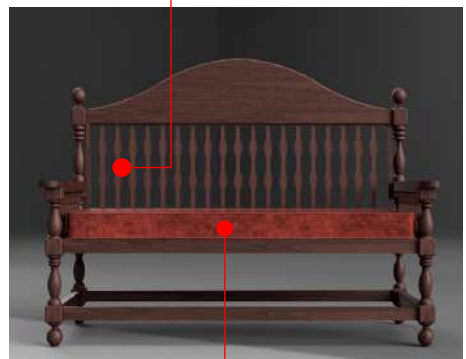
Shows the design analysis of the Karaweetah and its elements based on visual vernacular characteristics: H3-BB-K3

Code	Conventional Seating Parts				
H3-BB-K3	A# Karaweetah (Karaweetah)				
	Dimension		Height	1256mm (125cm)	
			Depth	699mm (69.9cm)	
			Width	1554mm (155cm)	
			Armrest Height	230mm (23cm)	
			Backrest Height	800mm (80cm)	
			Back Angle	90 Degree	
Vernacular Characteristics	Identification	Interpretation	Images		
Structure		Bench-size (seat for two) with long back fits two people.			
Aspect		A rectangular shape bench with four legs, armrest on both sides, and long backrest.			

H3-BB-K3		Vernacular Characteristics		Identification	Interpretation	Images				
		Structure	Joints		<p>Traditional wood joints:</p> <ol style="list-style-type: none"> 1. Mortise and Tenon joints. (22 hidden joints). 2. The inner frame joints are uncertain due to the lack of clarity of the images, but they might be half-lap. 	<ul style="list-style-type: none"> 1. Mortise and Tenon joints  2. Half-lap joints  				
			Material		<table border="1"> <tr> <td>Wood Species</td> <td rowspan="3">  </td> <td>Teak wood MDF the armrest</td> <td rowspan="3">  </td> </tr> <tr> <td>Color</td> <td>Dark brown</td> </tr> <tr> <td>Texture</td> <td>Wood stain finish</td> </tr> </table>	Wood Species		Teak wood MDF the armrest		Color
Wood Species		Teak wood MDF the armrest								
Color		Dark brown								
Texture		Wood stain finish								
Composition		Scale	The front view shows the proportion of the seating:		<p>It fits two people. (One person required 55 to 70 cm), and the seating size is similar to the couch size of 95X195 cm (<i>Neufert Architects' Data</i>, 2012)</p>	<p>The side view shows the proportion of the bench legs:</p> 				
Proportion										
Dimension										

		Vernacular Characteristics	Identification	Interpretation	Images
H3-BB-K3	Ornament	Motifs	<p>Side view:</p>  <p>A. Back details</p> 	<p>Notable details are used on the seating, legs, armrest, and back:</p> <p>A. The backrest details are repetitive shape (19 figures of the same form).</p> <p>B. Armrests contain the same repetitive form with a smaller scale.</p> <p>C. Woodturning techniques are used to form the four legs _ Machine made.</p>	<p>Side View:</p> 
		Technique	<ol style="list-style-type: none"> 1. Half-lap joints are used to build the frame around the repetitive shapes of the back. 2. Potential uses of Mortise and Tenon to connect the linear members with the frame. 3. Repetitive forms of lines that have two round shapes in the center of the back. 		

H3-BB-K3 Ornament		Vernacular Characteristics	Identification	Interpretation	Images
		Motifs	<p>B. Armrest with round form</p> 	<p>The armrest has similar details to the back on a smaller scale—a simple repetitive form of line and oval shape.</p>	Side View: 
		Technique	<p>C. Woodturning lathe</p> 		
Scale	<p>The Karaweetah size accommodates two people, allowing free and multifunctional uses. The bench is used for seating, relaxing, and sleeping for guests.</p>				

Code		Conventional Seating Parts					
H3-BB-K3		B# Tawalah\Layana					
			Dimension	Height	114mm (11.4cm)		
				Depth	586mm (58.6cm)		
				Width	1373mm (137cm)		
				Armrest Height	-		
				Backrest Height	-		
				Back Angle	-		
Vernacular Characteristics		Identification		Interpretation		Images	
Structure	Form			Rectangular shape with round edges.			
	Aspect			Tawalah is made based on the size of the Karaweetah seating depth and width.			
	Joints	A hidden zipper removes the red velvet cloth, usually at the back side of the Tawalah.		Hand-sewing fabric to cover the compressed foam.			

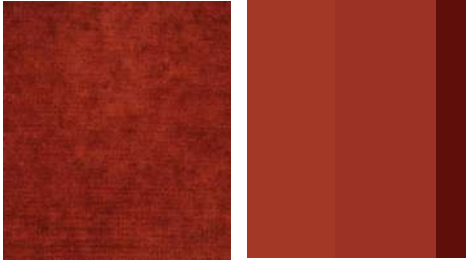

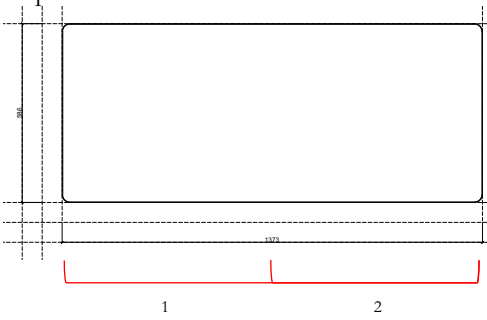
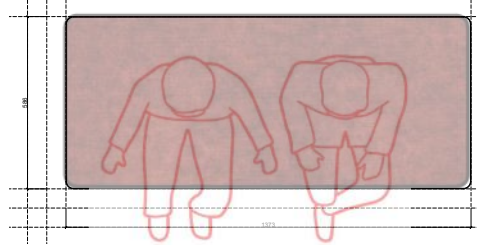


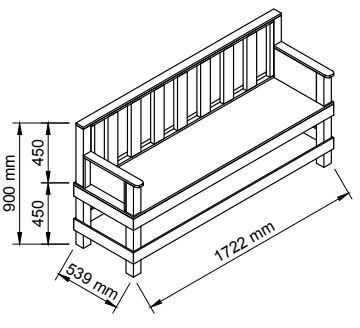
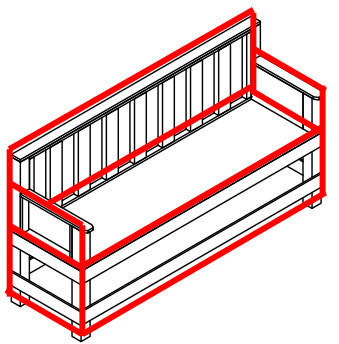

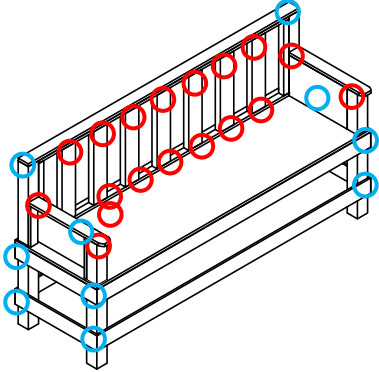
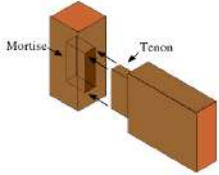
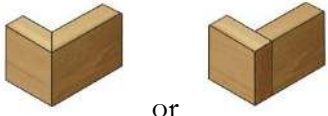
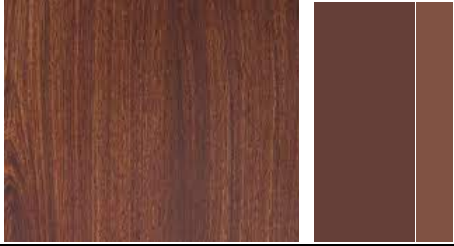

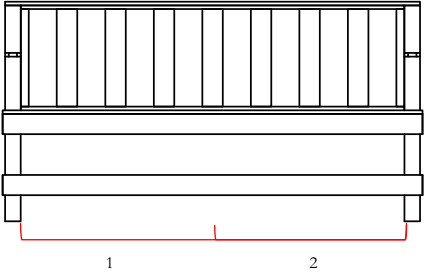
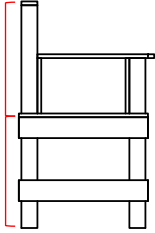
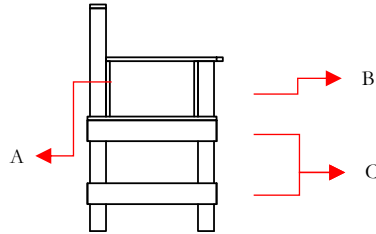
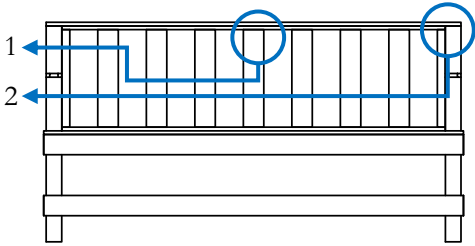

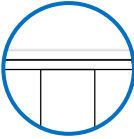
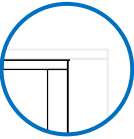
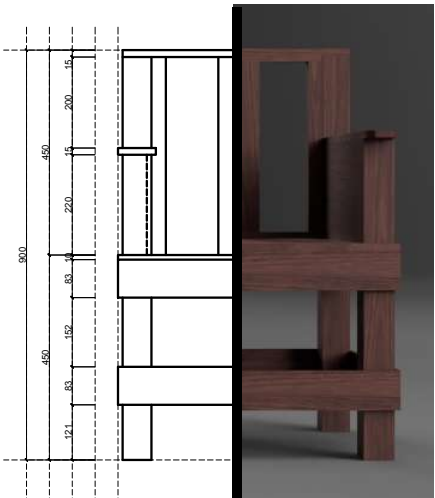
Vernacular Characteristics		Identification	Interpretation	Images
Material	Wood Species		-	
	Color		Dark Red	
	Texture		Soft velvet fabric	
Composition	Scale	<p>Top View:</p> 	<p>The Tawalah fits the size of the Karaweetah (fits two adults) (one person required 55cm to 70cm) (<i>Neufert Architects' Data</i>, 2012).</p>	<p>Top View:</p> 
	Proportion			
	Dimension			
Ornament	Motifs	-	<p>Simple fabric choices with no patterns or motifs.</p>	
	Technique	Hand sewing by the women of the house.		
	Scale	-		

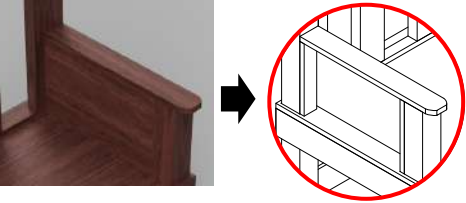

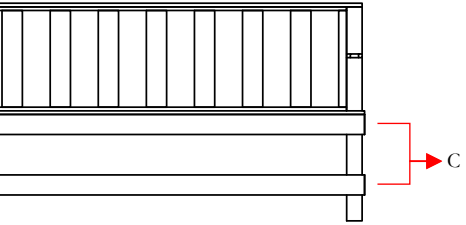
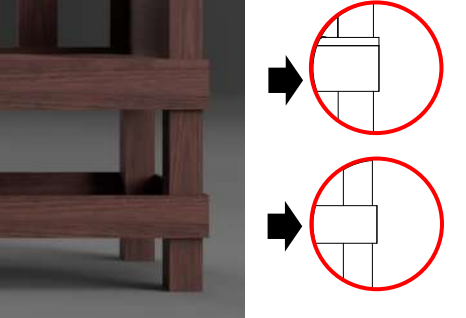

Table 08


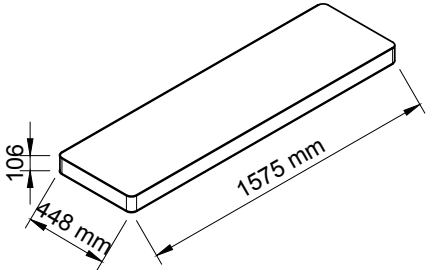
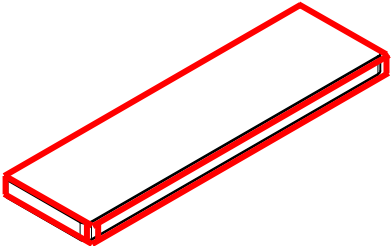
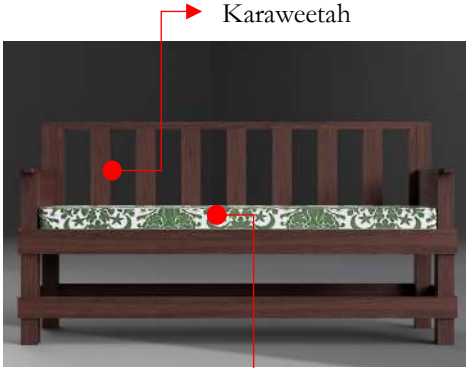
Shows the design analysis of the Karaweetah and its elements based on visual vernacular characteristics: H3-BB-K4



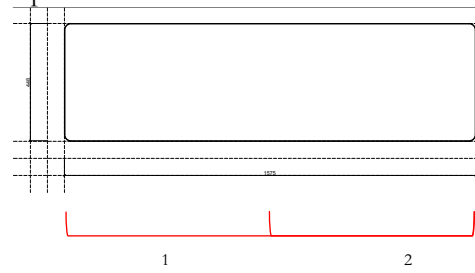
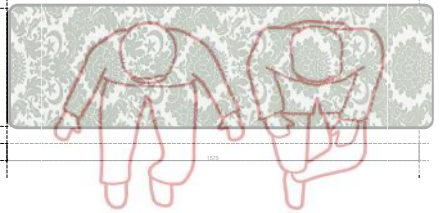
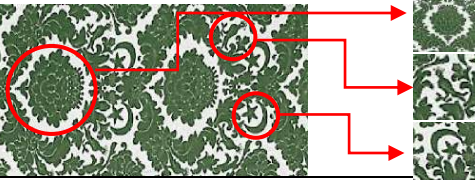

Code	Conventional Seating Parts				
H3-BB-K4	A# Karaweetah				
		Dimension	Height	900mm (90cm)	
	Depth		539mm (53.9cm)		
	Width		1722mm (172cm)		
	Armrest Height		235mm (23cm)		
	Backrest Height		450mm (45cm)		
Back Angle	90 Degree				
Vernacular Characteristics	Identification		Interpretation	Images	
Structure	Form				
	Aspect				Bench-size seating with back fits two people.


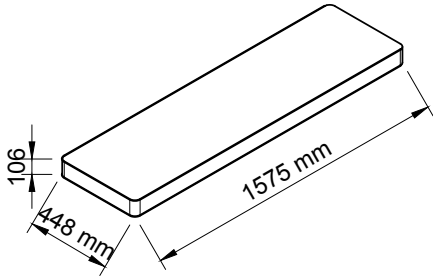
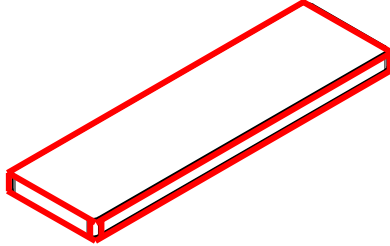
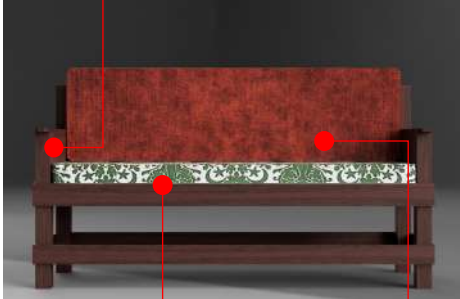
Vernacular Characteristics		Identification	Interpretation	Images
H3-BB-K4	Structure		<p>Traditional wood joints:</p> <ol style="list-style-type: none"> Mortise and Tenon joints. (18 hidden joints). Box joints are used for the box structures of the legs (10 Joints). 	<p>1. Mortise and Tenon joints</p>  <p>2. Box-Joints</p>  <p>or</p>
	Material		Teak wood MDF the armrest	
	Color		Dark brown	
Texture	Wood stain finish			
Composition	<p>Scale</p> <p>The front view shows the proportion of the seating area:</p> 	<p>It fits two people. (One person required 55cm to 70cm), and the seating size is similar to the couch size of 95X195 cm (<i>Neufert Architects' Data</i>, 2012).</p>	<p>The side view shows the proportion of the bench legs:</p> 	

		Vernacular Characteristics	Identification	Interpretation	Images
H3-BB-K4	Ornament	Motifs	<p>Side view:</p>  <p>A. Back details</p> 	<p>Simple and box frame structures are used to make this seating on legs, armrests, and back:</p> <p>A. The backrest details are the repetitive shape of rectangular flat shapes (8 figures of the same form).</p> <p>B. Armrests contain solid box frame with a flat surface on the top.</p> <p>C. Box frame structure to connect legs (instead of using stretchers between legs).</p>	<p>Side View:</p> 
		Technique	<ol style="list-style-type: none"> Potential uses of Mortise and Tenon to connect the linear members with the top and bottom frame (90-degree angle structure).  Double uses of the box joints frame. The first is the back frame of the seating. The second is the box frame of the back details. Both might use the box-joint techniques.  		<p>Front View:</p> 

		Vernacular Characteristics	Identification	Interpretation	Images
H3-BB-K4	Ornament	Motifs	<p>B. Armrest with semi-round corners</p> 	<p>The armrest has a simple structure—a box frame closed from one side (the inner side). The top of the armrest is flat with semi-rounded corners.</p>	<p>Perspectives View:</p> 
		Technique	<p>C. The box frame (seating and legs structure)</p> 		
		Scale		<p>The Karaweetah size accommodates two people.</p>	

Code		Conventional Seating Parts					
H3-BB-K4		B# Tawalah/Layana					
			Dimension	Height	106mm (10.6cm)		
				Depth	448mm (44.8cm)		
				Width	1575mm (157cm)		
				Armrest Height	-		
				Backrest Height	-		
				Back Angle	-		
Vernacular Characteristics		Identification		Interpretation		Images	
Structure	Form			Rectangular shape with round edges.			
	Aspect			Tawalah is made based on the size of the Karaweetah seating depth and width.			
	Joints	A hidden zipper removes the green\white cloth, usually at the back side of the Tawalah.		Hand-sewing fabric to cover the compressed foam.			

Vernacular Characteristics		Identification	Interpretation	Images
Material	Wood Species		-	
	Color		Green Fabric Abo-Tare (أبو طير)	
	Texture		Soft white fabric and the green motifs are velvet.	
Composition	Scale	<p>Top View:</p> 	<p>The Tawalah fits the size of the Karaweetah (fits two adults) (one person required 55cm to 70cm) (<i>Neufert Architects' Data</i>, 2012).</p>	<p>Top View:</p> 
	Proportion			
	Dimension			
Ornament	Motifs	<p>The distinguished motifs are on the fabric itself:</p> 	<p>The motifs on the fabric are repetitive flowers, moon and star shapes, and peacocks.</p>	
	Technique	Hand sewing by the women of the house.		
	Scale	-		

Code		Conventional Seating Parts			
H3-BB-K4	B2# Tawalah/Layana				
		Dimension	Height	106mm (10.6cm)	
			Depth	448mm (44.8cm)	
			Width	1575mm (157cm)	
			Armrest Height	-	
			Backrest Height	-	
			Backrest Height	-	
			Back Angle	-	
	Vernacular Characteristics	Identification	Interpretation	Images	
	Structure	Form		Rectangular shape with round edges.	
Aspect		Tawalah is made based on the size of the Karaweetah seating depth and width. A second Tawalah is used as a back rest.			
Joints		A hidden zipper removes the red velvet cloth, usually at the back side of the Tawalah.	Hand-sewing fabric to cover the compressed foam.		

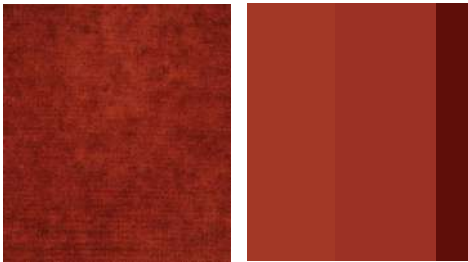

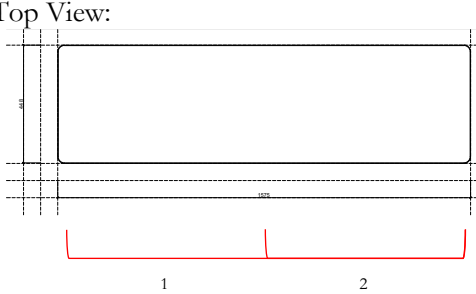
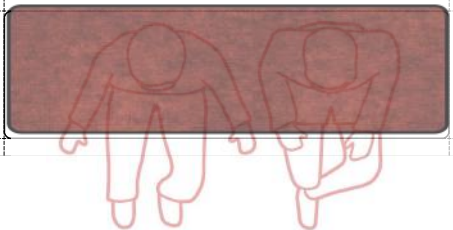
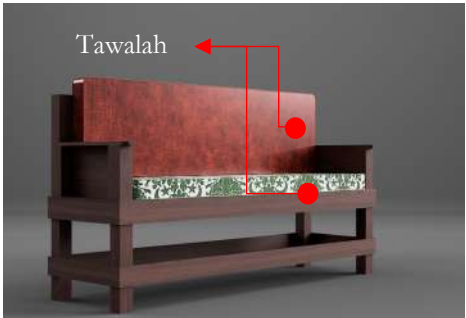

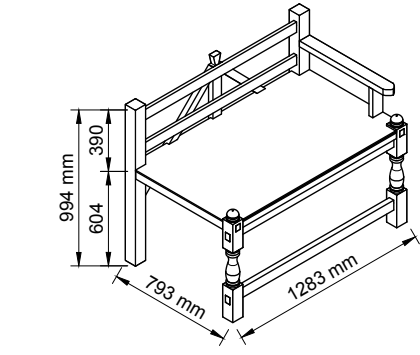
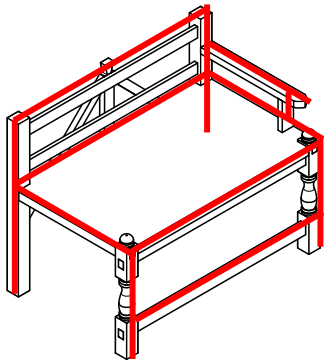

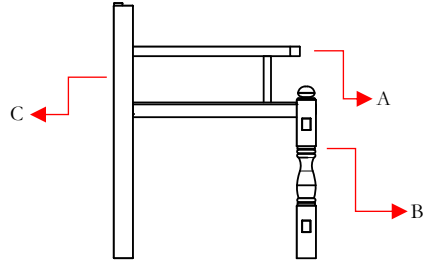

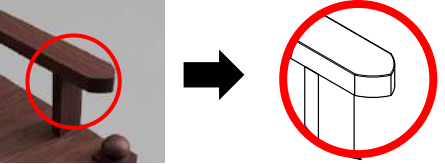
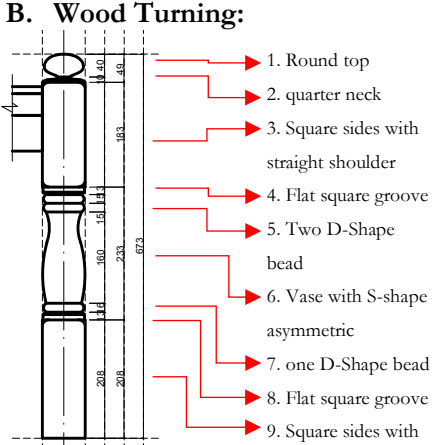
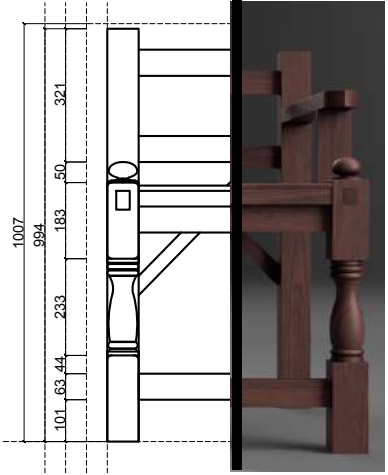
Vernacular Characteristics		Identification	Interpretation	Images
Material	Wood Species		-	
	Color		Dark Red	
	Texture		Soft velvet fabric	
Composition	Scale	<p>Top View:</p> 	<p>The Tawalah fits the size of the Karaweetah (fits two adults) (one person required 55cm to 70cm) (<i>Neufert Architects' Data</i>, 2012).</p>	<p>Top View:</p> 
	Proportion			
	Dimension			
Ornament	Motifs	-	-	
	Technique	Hand sewing by the women of the house.		
	Scale	-		

Table 09


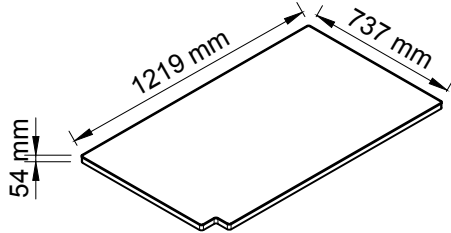
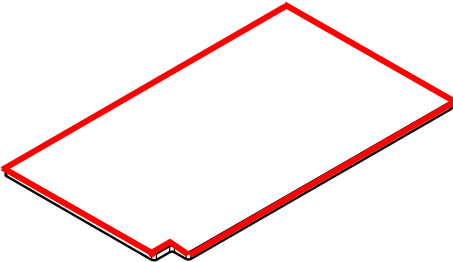
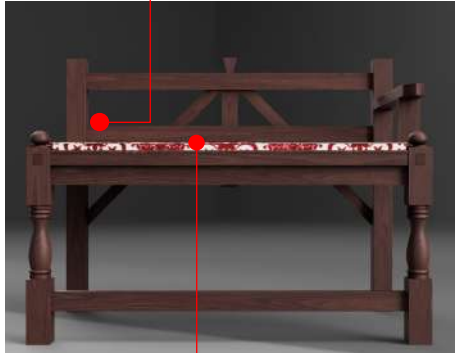
Shows the design analysis of the Karaweetah and its elements based on visual vernacular characteristics: H4-BS-K5

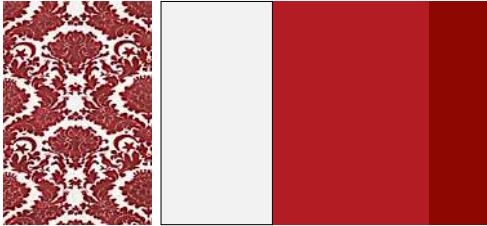

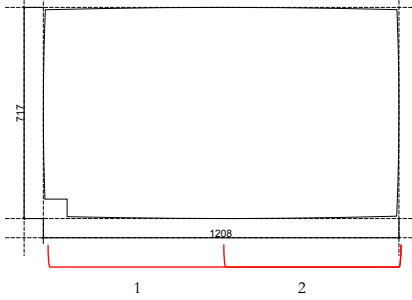
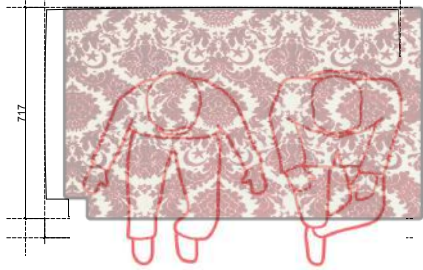
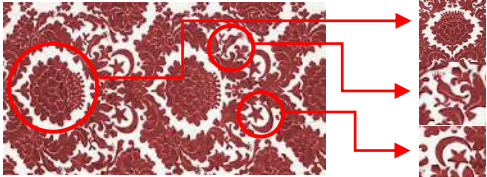
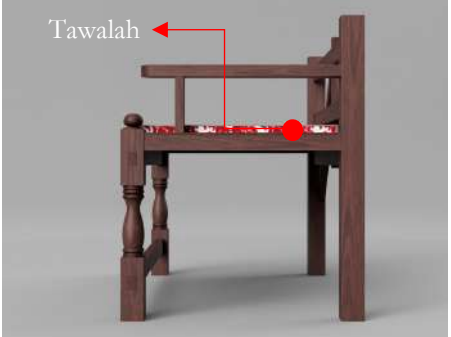
Code	Conventional Seating Parts				
	A# Karaweetah				
H4-BS-K5		Dimension	Height	604mm (60.4cm)	
			Depth	717mm (71.7cm)	
			Width	1208mm (120cm)	
			Armrest Height	226mm (22.6cm)	
			Backrest Height	390mm (39cm)	
			Back Angle	90 Degree	
	Vernacular Characteristics		Identification	Interpretation	Images
Structure	Form		Bench size with back fits two people.		
	Aspect		Rectangular shape with four legs and one side armrest to allow continuous sitting with second Karaweetah.		


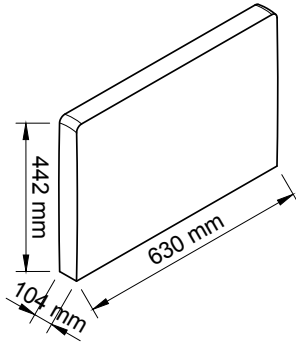
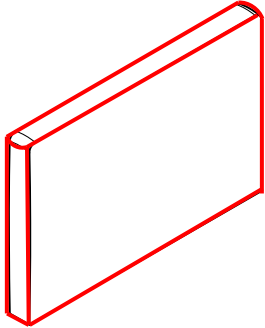
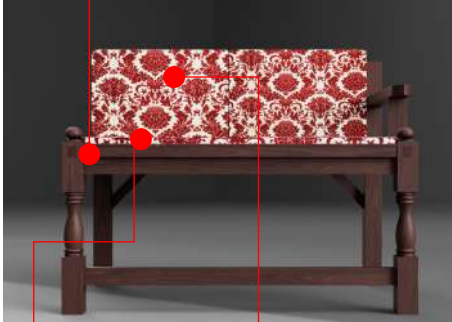
Vernacular Characteristics		Identification	Interpretation	Images
H4-BS-K5	Structure		<p>Traditional wood joints:</p> <ol style="list-style-type: none"> 1. Mortise & Tenon joints. (6 exposed & 16 hidden joints) 2. Cross-lap joints (3 joints) 	<p>1. Mortise & Tenon:</p> <p>2. Cross-lap:</p>
	Material		<p>Teak wood</p> <p>Dark brown</p> <p>Wood Stain finish</p>	
	Composition	<p>The front view shows the proportion of the seating area:</p>	<p>The seating fits two people. (One person required 55cm to 70cm), and the size of the seating is similar to couch size 95X195 cm (<i>Neufert Architects' Data</i>, 2012).</p>	<p>The side view shows the proportion of the bench legs:</p>



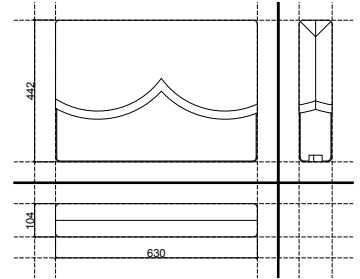
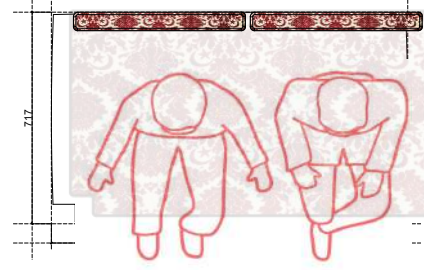
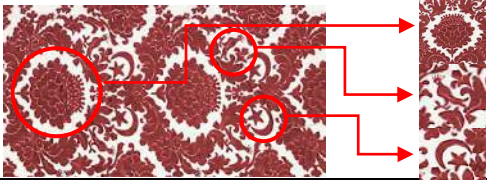
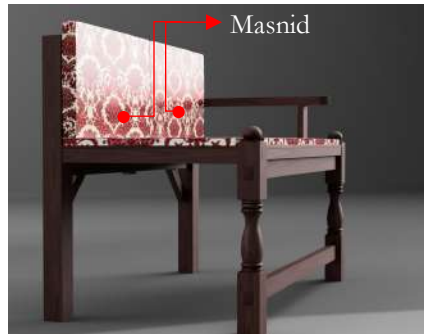
Vernacular Characteristics		Identification	Interpretation	Images
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">H4-BS-K5</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg);">Ornament</p>	<p>Motifs</p>	<p>Side View:</p> 	<p>Distinguished details are used at the seating legs and back.</p> <p>A. Semi-Round Corners and Edges on the armrest _ hand shaped.</p> <p>B. Wood turning _ Machine Made.</p> <p>C. Cross-build structure for the back _ Hand cut and shaped.</p>	<p>Side View:</p> 
	<p>Technique</p>	<p>A. Semi-Round Corners & Edges:</p> 		
	<p>Scale</p>	<p>B. Wood Turning:</p>  <ol style="list-style-type: none"> 1. Round top 2. quarter neck 3. Square sides with straight shoulder 4. Flat square groove 5. Two D-Shape bead 6. Vase with S-shape asymmetric 7. one D-Shape bead 8. Flat square groove 9. Square sides with 	<p>The Karaweetah bench size accommodates two people which allows a free and multifunctional use. The bench is used for seating, relaxing, and sleeping for guests. The seating depth of the bench is wider than the normal size of seating.</p>	<p>Front View:</p> 


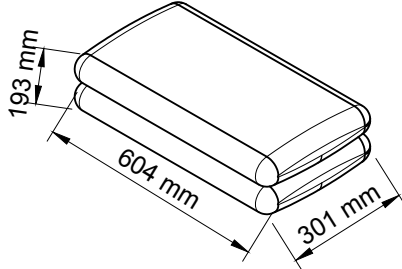
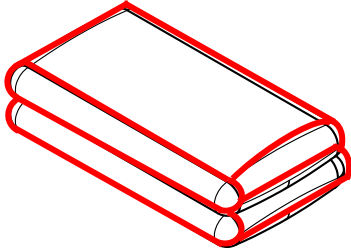

		Vernacular Characteristics	Identification	Interpretation	Images
H4-BS-K5	Ornament	Motifs	<p>C. Cross-build structure of the back:</p>	<p>The back of the Karaweetah has simple structured solutions to strengthen the back. Also, the joint options are simple and use hand-shaping techniques of the back. A triangular shape at the top of the seating is aesthetic with simple and low-tech solutions.</p>	<p>Back View:</p>
		Technique	<p>1. Triangular shape at the top of the seating with a 77-degree angle.</p> <p>2. Cross-lap joints: 136-degree angle stretcher with 90-degree chairback structure.</p> <p>3. Cross-lap joints: 136-degree angle stretcher with 90-degree chairstructure.</p>		
		Scale	<p>4. Cross-lap joints: 90-degree angle stretcher with 90-degree chairstructure.</p> <p>5. Mortises and tenon joints: 46-angle stretcher with 90-degree straight leg.</p>		



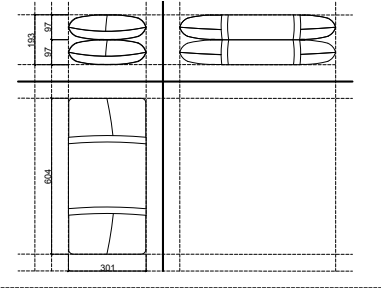
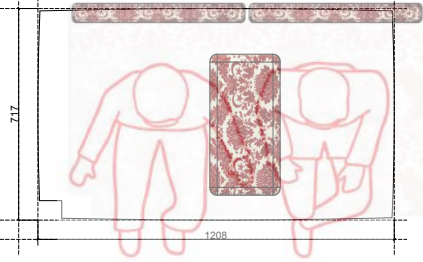

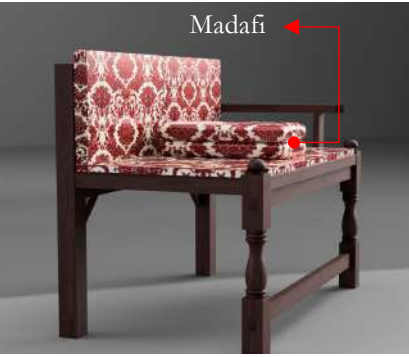
Code		Conventional Seating Parts				
H4-BS-K5		B# Tawalah/Layana				
			Dimension	Height	54mm (5.4cm)	
				Depth	737mm (73.7cm)	
				Width	1219mm (121cm)	
				Armrest Height	-	
				Backrest Height	-	
				Back Angle	-	
Vernacular Characteristics		Identification		Interpretation		
Structure	Form			Rectangular shape with round edges.		
	Aspect			Tawalah is made based on the size of the Karaweetah seating depth and width. The leg space was removed to fit the seat cushion.		
	Joints	Hidden zipper to remove the red\white cloth. Usually at the back side of the Tawalah.		Hand sewing fabric to cover the compressed foam.		
						

Vernacular Characteristics		Identification	Interpretation	Images
Material	Wood Species		-	
	Color		Red Fabric Abo-Tare (أبو طير)	
	Texture		Soft fabric and the red motives are velvet.	
Composition	Scale	<p>Top View:</p> 	<p>The Tawalah fits the size of the Karaweetah (fits two adults) (one person required 55 to 70 cm) (<i>Neufert Architects' Data</i>, 2012).</p>	<p>Top View:</p> 
	Proportion			
	Dimension			
Ornament	Motifs	<p>The distinguished motifs are on the fabric itself.</p> 	<p>The motifs on the fabric are repetitive flowers, moon and star shapes, and peacocks.</p>	
	Technique	Hand sewing by the women of the house.		
	Scale	-		

Code		Conventional Seating Parts				
H4-BS-K5		C# Masnid				
			<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Dimension</p>	Height	442mm (44.2cm)	
				Depth	104mm (10.4cm)	
				Width	630mm (63cm)	
				Armrest Height	-	
				Backrest Height	-	
				Back Angle	-	
Vernacular Characteristic		Identification		Interpretation	Images	
Structure	Form			Rectangular shape with round edges.		
	Aspect			Masnid is made based on the Karaweetah width, and usually two pieces are used.		
	Joints	Hidden zipper to remove the red\white cloth. Usually at the bottom side of the Masnid.	Hand sewing fabric to cover the compressed foam.			

Vernacular Characteristic		Identification	Interpretation	Images
Material	Wood Species		-	
	Color		Red Fabric (أبو طير) + White Fabric	
	Texture		Soft fabric and red velvet.	
Composition	Scale	Dimension: 	The size of the two Masnid usually fits one piece of the Tawalah. (This size is the average size).	Top View: 
	Proportion			
	Dimension			
Ornament	Motifs	The distinguished motifs are on the fabric itself. 	The motifs on the fabric have repetitive patterns of flowers, moon and star, and peacocks.	
	Technique	Hand sewing by the women of the house.	-	
	Scale	-	-	

Code		Conventional Seating Parts				
H4-BS-K5		D# Madafi				
			Dimension	Height	193mm (19.3cm)	
				Depth	604mm (60.4cm)	
				Width	301mm (30cm)	
				Armrest Height	-	
				Backrest Height	-	
				Back Angle	-	
Vernacular Characteristic	Identification	Interpretation	Images			
Structure	Form		Rectangular shape with softer edges.			
	Aspect		Madafi is used as a side rest. Each Karaweetah has one or two Madafi placed above the Tawalah.			
	Joints	Hidden zipper to remove the red\white cloth. Usually at the bottom side of the Madafi.	Hand sewing fabric to cover the compressed foam.			

Vernacular Characteristic		Identification	Interpretation	Images
Material	Wood Species		-	
	Color		Red Fabric Abo-Tare (أبو طير) + White Fabric	
	Texture		Soft fabric and red velvet.	
Composition	Scale	Dimension: 	The scale of Madafi is relatively small and fits a human arm to rest upon.	Top View: 
	Proportion			
	Dimension			
Ornament	Motifs	The distinguished motifs are on the fabric itself. 	The motifs on the fabric have repetitive patterns of flowers, moon and star, and peacocks.	
	Technique	Hand sewing by the women of the house.	-	
	Scale	-	-	

Phase Two: Practice-Based on Research

The second stage of the study presents the data generated based on the data collected from the first stage of this research study. This part shows the design practice process, starting after identifying the vernacular characteristics and ending with integrating the data into nine designed models. The nine models were developed based on the design practice process to generate a systematic framework of nine seating models to combine both modern and traditional features, as stated in Chapter Three. This section presents the process of design practices applied to generate the nine models chronologically. A description was used for each designed model process, starting with defining, developing, and integrating. All the data are produced as visuals, such as sketches of 2D and 3D ideas. The nine seating design models represent different levels of heritage inspiration in chronological sequence: three designs are historical (traditional), three are new historical (semi-traditional), and three are free historical (contemporary). All are based on the three levels of reflexive modernism methods of inspiration by Ashour and Rashdan (2020), as stated in Chapter Two. The focus is to design nine seats based on the study's aim and use those models to guide the development of the third stage of this study.

Historical Revival Strategy

The first group of three seats is the historical revival strategy (traditional), which reflects forms, shapes, and content from history. The designed models in this strategy copy and paste historical design elements with minor adjustments. Therefore, each of the three designed models under Historical Revival reflects different content found in Hijazi's Karaweetah vernacular characteristics and elements: HR1, HR2, and HR3. Each model is explained in detail separately.

The First Model: HR1. *Define and identify.* The first design model, HR1, seeks to propose vernacular characteristics found at H3-BB-K2. The model presented the traditional aspects of conventional seating and contained vernacular elements and details. The aim is to add a higher level of value to the design by mimicking the vernacular details.

Interact and develop. The HR1 model was inspired by the armrest details found at H3-BB-K2. The chair structure is square with one side armrest. The armrest is built with a woodworking technique called woodturning. It is a traditional woodworking joinery used to create part of the Mashrabiya. Moreover, these making techniques were also used as distinctive features in interior spaces and small objects like the Karaweetah. For this model, the researcher applied those aesthetic details in one side armrest and the back of the chair. The chair positions are at 90-degree angles with linear members, as found at H3-BB-K2. Ergonomically, the size and height of the seating were adjusted to add a level of contemporary feeling, comfort, and safety based on the universal ergonomic requirement. The legs of the chair are in round shapes with soft edges. The understructure of the seating is linear members jointed in mortise and tenon joints as simple as the traditional Hijazi Karaweetah of H3-BB-K2.

Implement and prototype. In this step, the processes implied the heritage inspiration into sketches and visualizing the concept of HR1. In Figure 89, the layouts illustrate the drawing process from the inspiration's details to the final model. Consequently, the drawing of the idea was converted into 2D and 3D models to present the chair color and material. This stage turns the model into a more realistic experience to deliver user insight in Figure 90.

Figure 89

Shows the concept of implementing vernacular elements into seat design: HR1.

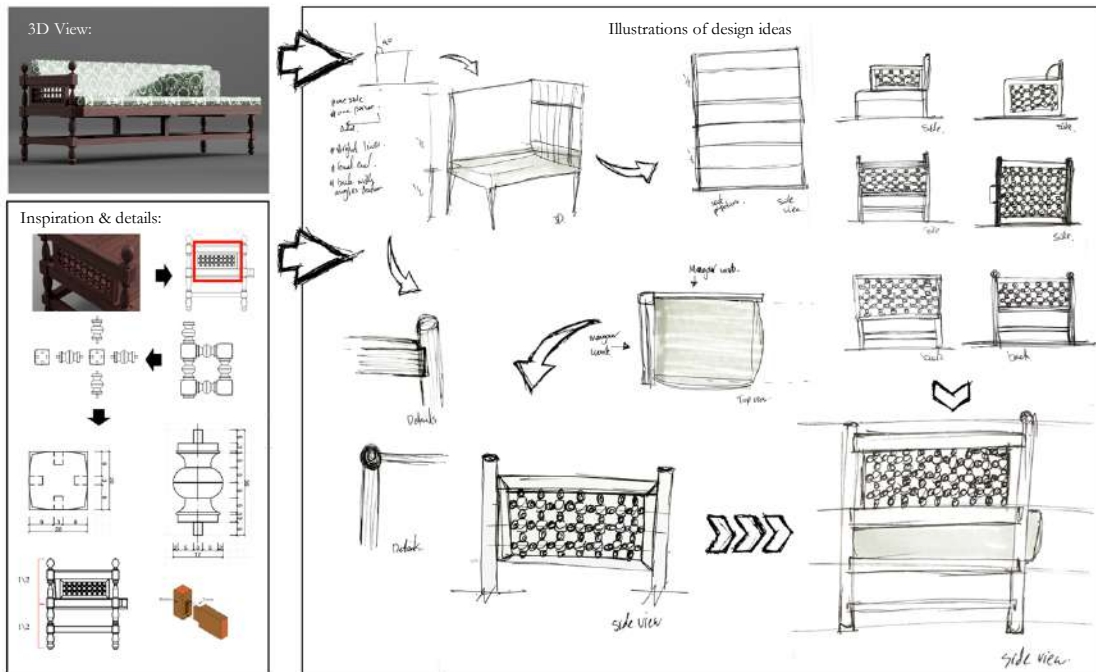
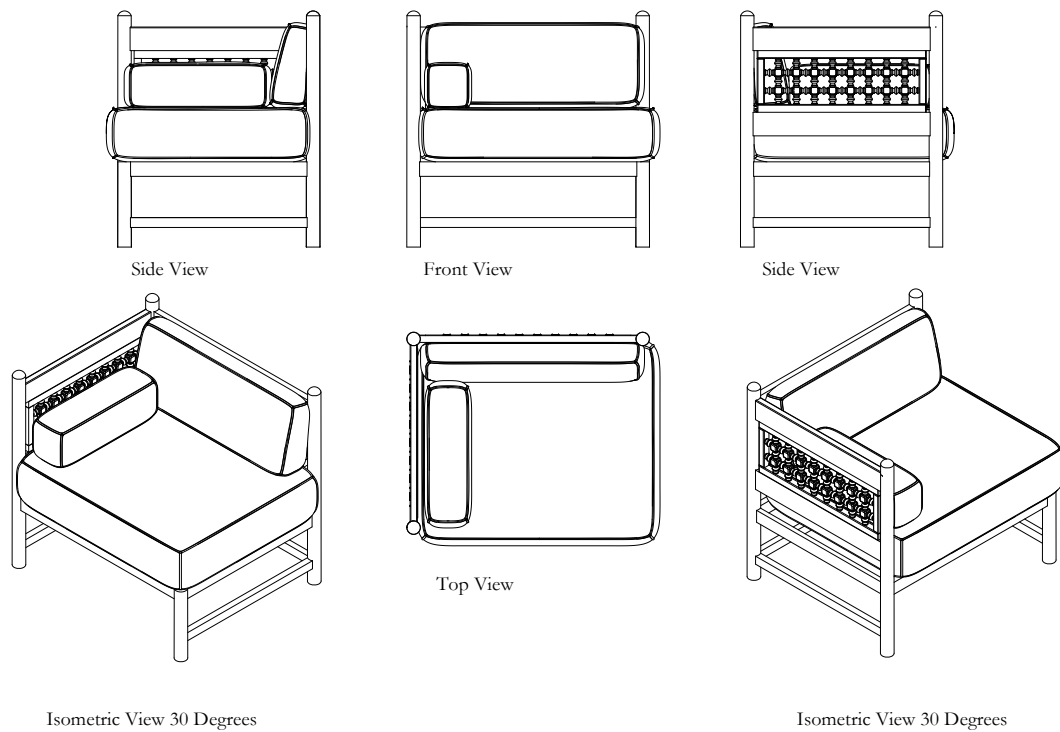


Figure 90

(A) The three-dimensional and (B) the two-dimensional views of the HR1 model.



(A)



(B)

The Second Model: HR2. *Define and identify.* The second design model, HR2, seeks to show vernacular characteristics found at H4-BS-K5. The model presented the traditional aspects of conventional seating and contained vernacular elements and details. The aim is to add a higher level of value to the design by mimicking the harmony of the back details with the vernacular details in the one-sided armrest.

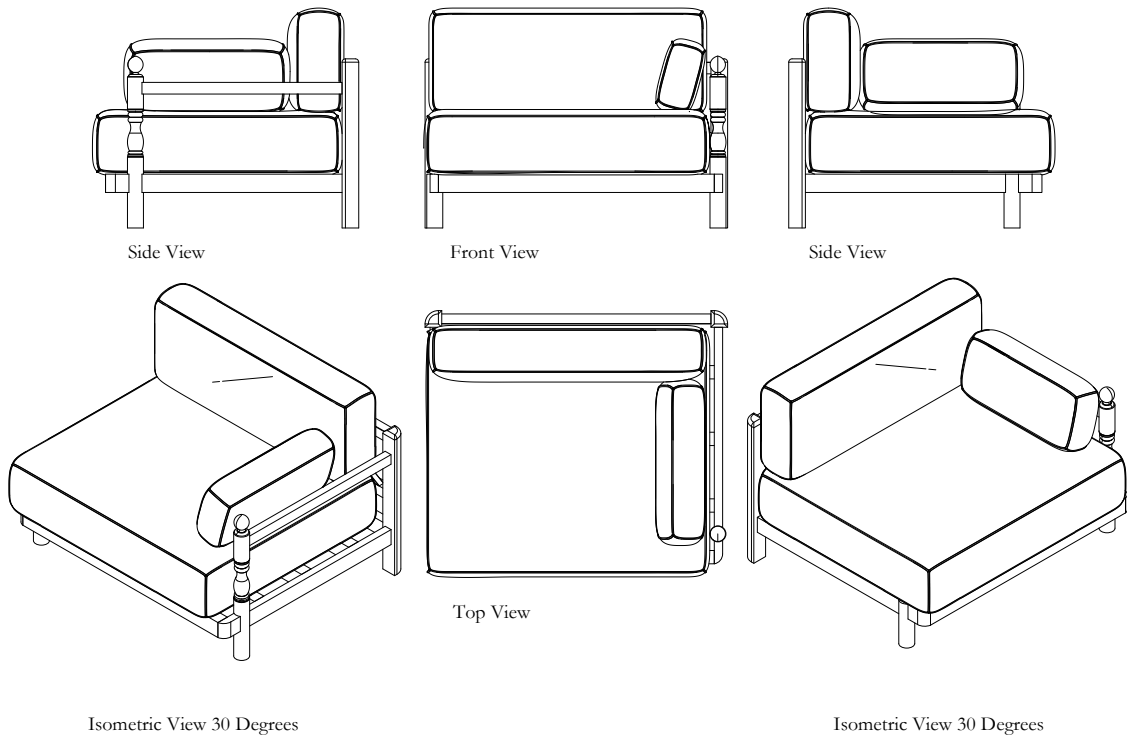
Interact and develop. The HR2 model was inspired by the back and armrest details at H4-BS-K5. The chair structure is square with an X-formed back; these techniques were only found in H4-BS-K5. These aesthetic details were used to design the back of the HR2 model. The seat and back positions are at 90-degree angles with linear members. Ergonomically, the size and height of the seating were adjusted to add a level of modern

Figure 92

(A) The three-dimensional and (B) the two-dimensional views of the HR2 model.



(A)



(B)

The Third Model: HR3. *Define and identify.* The third design model, HR3, aims to show vernacular characteristics found at H1-BM-K1. The model presented the traditional aspects of conventional seating and contained vernacular elements and details. The aim is to add a higher level of value to the design by simulating the features found at H1-BM-K1 in modern proportions of seat design.

Interact and develop. Details at H1-BM-K1 inspired the HR3 model. The chair structure is square, with chamfered edges on the legs and back. The seat and back positions are at 100-degree angles with linear members. Ergonomically, the size and height of the seating were adjusted to add a level of modern feeling, comfort, and safety based on the universal ergonomic requirement. The legs of the chair are square with round edges and have chamfered details in the front and back legs. The chair has two side armrests. The understructure of the seating has linear members joined in mortise and tenon joints, as found at H1-BM-K1.

Implement and Prototype. In this step, the process moved the heritage inspiration into sketches and visualized the concept of HR3. In Figure 93, the layouts illustrate the drawing process from the inspiration's details to the final model. Consequently, the drawing of the idea was converted into 2D and 3D models to present the chair color and material. This stage turns the model into a more realistic experience to deliver user insight in Figure 94.

Figure 93

Shows the concept of implementing vernacular elements into seat design: HR3.

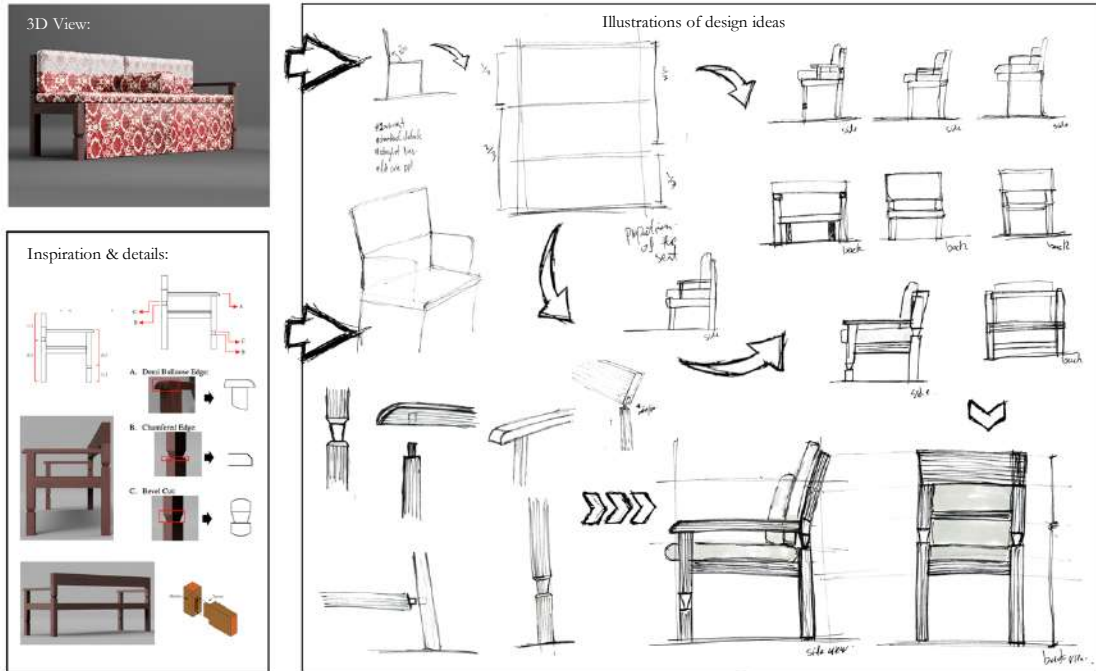
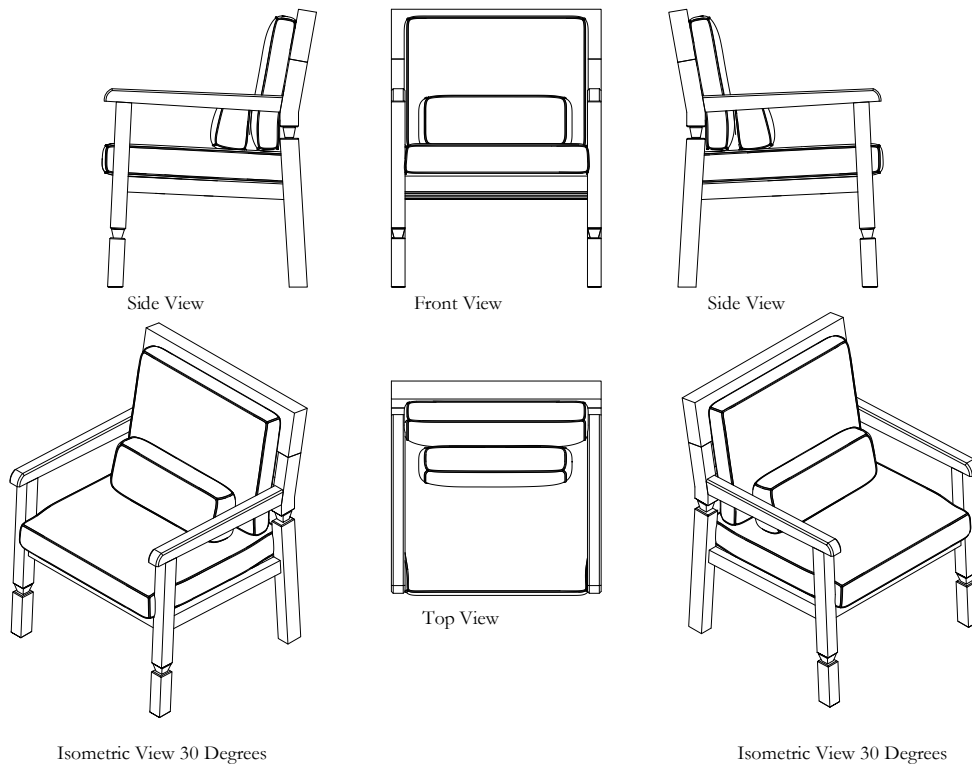


Figure 94

(A) The three-dimensional and (B) the two-dimensional views of the HR3 model.



(A)



(B)

Eclectic Historicism Strategy

The second group of three seats is the eclectic historicism strategy (semi-traditional), which requires conveying a set of historical elements in modern technology to express cultural identity, which is considered the main inspiration of the design. The designed models in this strategy comprehend the historical source into geometric shapes. Therefore, each of the three designed models under eclectic historicism reflects different content found in Hijazi's Karaweetah vernacular characteristics and elements: EH1, EH2, and EH3. Each model is explained in detail separately.

The Fourth Model: EH1. *Define and identify.* The fourth design model, EH1, aims to reflect vernacular characteristics found at H3-BB-K4 and H4-BS-K5 in modern ways. The model presented the traditional aspects of conventional seating, such as material, seat size, back proportions, and woodworking techniques, and translated those traditional aspects into modern form. The model presents the vernacular characteristic in a mix of modern features to add a mid-level value to the design by simulating the features found at H3-BB-K4 in modern proportions of seat design.

Interact and develop. The structure at H3-BB-K4 inspires the chair details in model EH1. The form is square with turned legs and rounded edges. The front legs are tapered with rounded ends. The seat and back positions are at 100-degree angles with linear members. Ergonomically, the size and height of the chair were adjusted to add a level of modern feeling, comfort, and safety based on the universal ergonomic requirement. The model has two side aesthetic details based on H4-BS-K5 without armrests. The understructure of the seating is cubic, joined in mortise and tenon joints, as found in H3-BB-K4.

Implement and prototype. In this step, the process moved the heritage inspiration into sketches and visualized the concept of EH1. In Figure 95, the layouts illustrate the drawing process from the inspiration's details to the final model. Consequently, the drawing of the idea was converted into 2D and 3D models to present the chair color and material. This stage turns the model into a more realistic experience to deliver user insight in Figure 96.

Figure 95

Shows the concept of implementing vernacular elements into seat design: EH1.

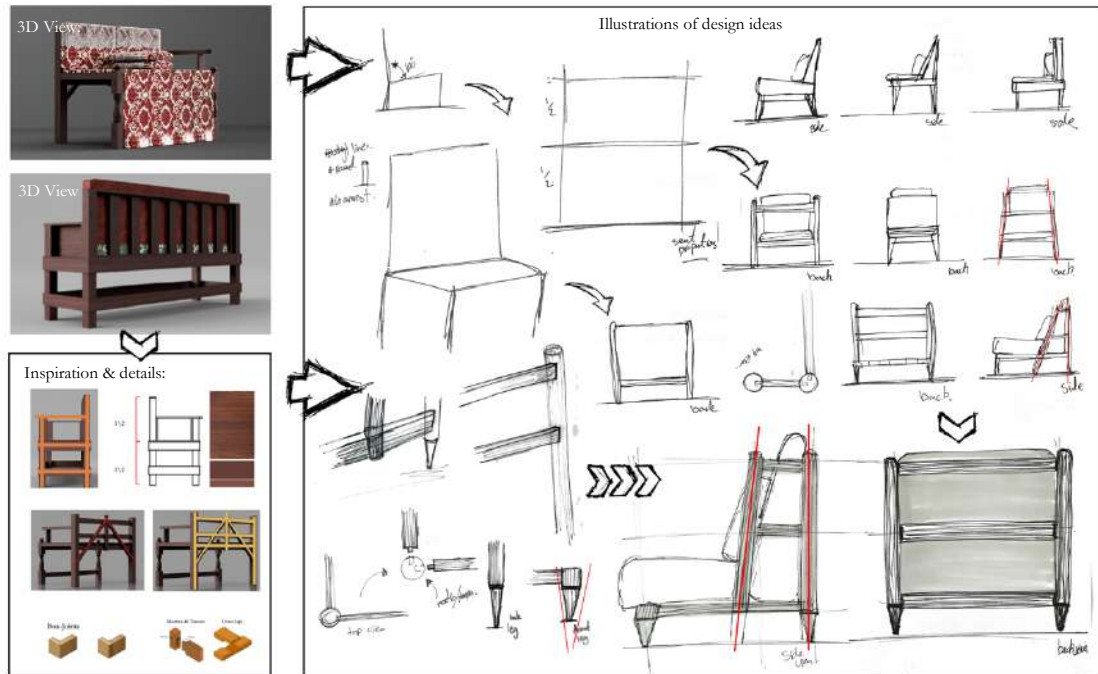
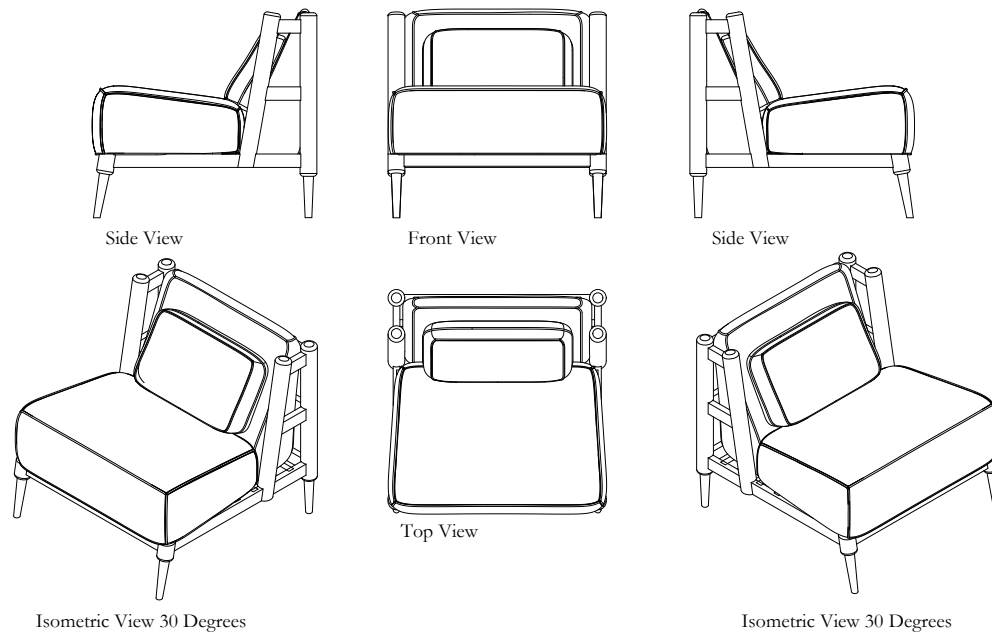


Figure 96

(A) The three-dimensional and (B) the two-dimensional views of the EH1 model.



(A)



(B)

The Fifth Model: EH2. Define and identify. The fifth design model, EH2, aims to reflect vernacular characteristics found at H3-BB-K2 in modern ways. The model presented the traditional aspects of conventional seating, such as material, seat size, back proportions, and woodworking techniques, and translated them into modern form. The model presents the vernacular characteristic in a mix of modern features to add a mid-level value to the design by simulating the features found at H3-BB-K2 in modern proportions of seat design.

Interact and develop. The structure at H3-BB-K2 inspires the chair details in model EH2. The form is square with a wider front. The front legs are turned with tapered ends and rounded edges. The back details are inspired by the woodturning techniques found at H3-BB-K2. The back legs are square, evolving from a traditional back to modern details in front. The seat and back positions are at 103-degree angles with linear members. Ergonomically, the size and height of the chair were adjusted to add a level of modern feeling, comfort, and

safety based on the universal ergonomic requirement. The understructure of the seating is cubic form jointed in the mortise, tenon, and Bridle joints as found H3-BB-K2.

Implement and prototype. In this step, the process moved the heritage inspiration into sketches and visualized the concept of EH2. In Figure 97, the layouts illustrate the drawing process from the inspiration's details to the final model. Consequently, the drawing of the idea was converted into 2D and 3D models to present the chair color and material. This stage turns the model into a more realistic experience to deliver user insight in Figure 98.

Figure 97

Shows the concept of implementing vernacular elements into seat design: EH2.

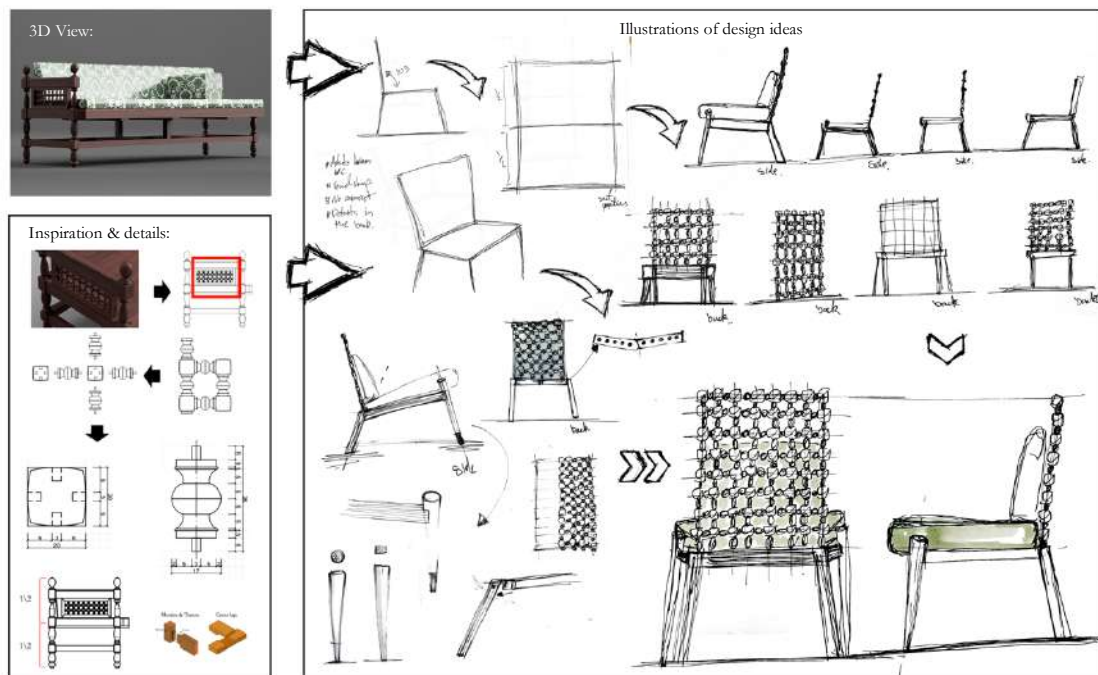
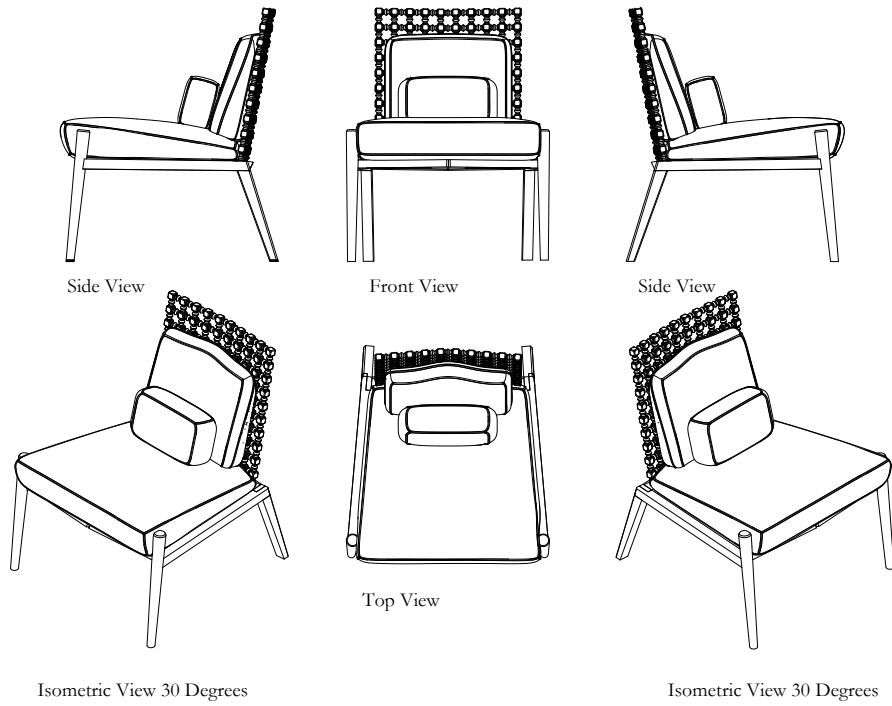


Figure 98

(A) The three-dimensional and (B) the two-dimensional views of the EH2 model.



(A)



(B)

The Sixth Model: EH3. *Define and identify.* The sixth design model, EH3, aims to reflect vernacular characteristics found at H1-BM-K1 and H3-BB-K2 in modern ways. The model presented the traditional aspects of conventional seating, such as material, seat size, back proportions, and woodworking techniques, and translated them into modern form. The model presents the vernacular characteristic in a mix of modern features to add a mid-level value to the design by simulating the features found at H1-BM-K1 and H3-BB-K2 in modern proportions of seat design.

Interact and develop. The inspirations of the model EH3 are the details found in H1-BM-K1 and H3-BB-K2. The form is square with a wider front. The front legs are turned with tapered ends and rounded edges. The back legs are square, evolving from a traditional back to modern details in front. The chair

has two armrests with simple details that connect the front legs with the armrest. The details represent the simple form of the woodturning work. The seat and back positions are at 110-degree angles. Ergonomically, the size and height of the chair were adjusted to add a level of modern feeling, comfort, and safety based on the universal ergonomic requirement. The understructure of the seating is mortise and tenon joints with linear/rounded members and stretchers.

Implement and prototype. In this step, the process moved the heritage inspiration into sketches and visualizing the concept of EH3. In Figure 99, the layouts illustrate the drawing process from the inspiration's details to the final model. Consequently, the drawing of the idea was converted into 2D and 3D models to present the chair color and material. This stage turns the model into a more realistic experience to deliver user insight in Figure 100.

Figure 99

Shows the concept of implementing vernacular elements into seat design: EH3.

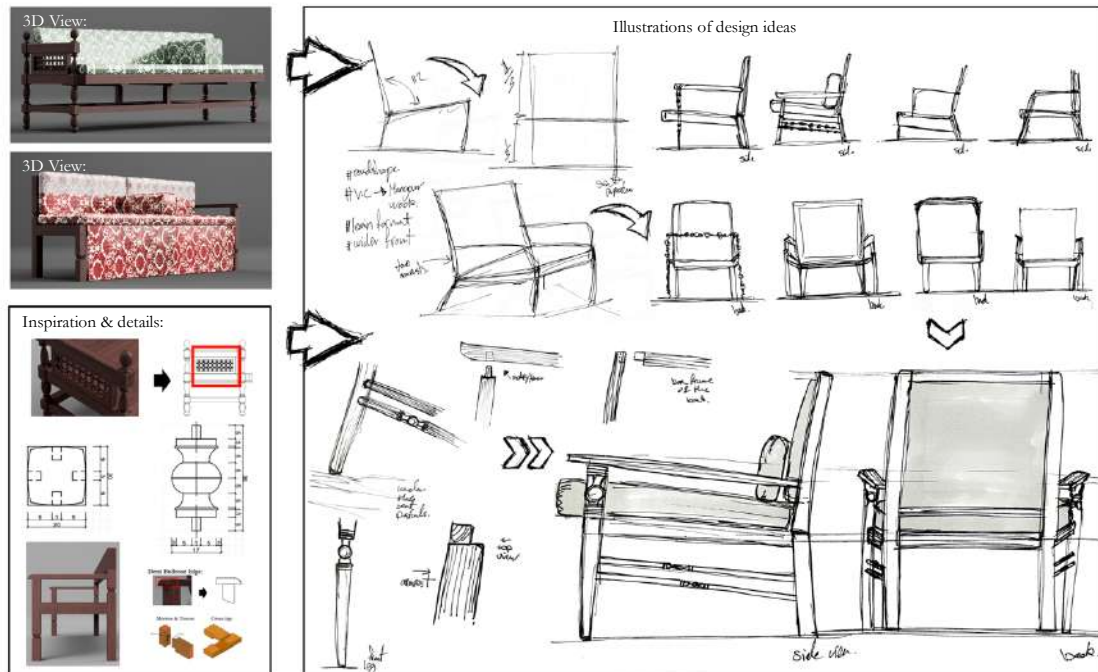
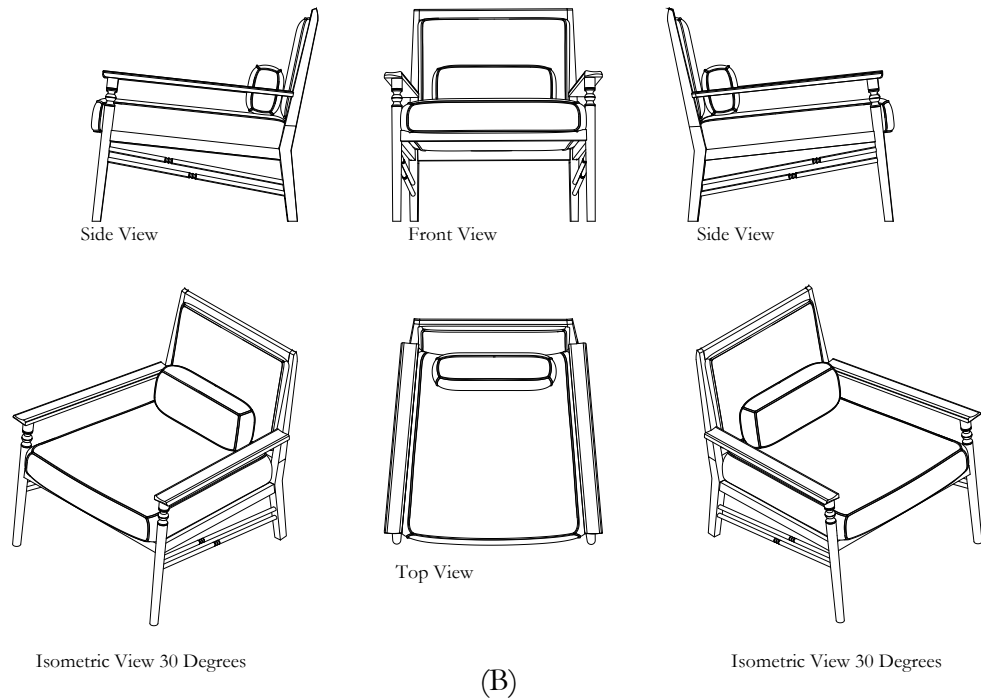


Figure 100

(A) The three-dimensional and (B) the two-dimensional views of the EH3 model.



(A)



Free Historicism Strategy

The Third group of three seats is the free historicism strategy (contemporary), a free form of heritage elements that requires designs free of historical elements in modern technology. The designed models in this strategy are in free form. Therefore, the three designed models under free historicism reflect different content: FH1, FH2, and FH3. Each model is explained in detail separately.

The Seventh Model: FH1. *Define and identify.* The seventh design model, FH1, aims not to reflect vernacular characteristics in the Hijazi Karaweetah. Instead, the model presents modern features with nonvernacular characteristics and is full of contemporary elements. The model presents modern features with nonvernacular elements to lower the historical value of the design.

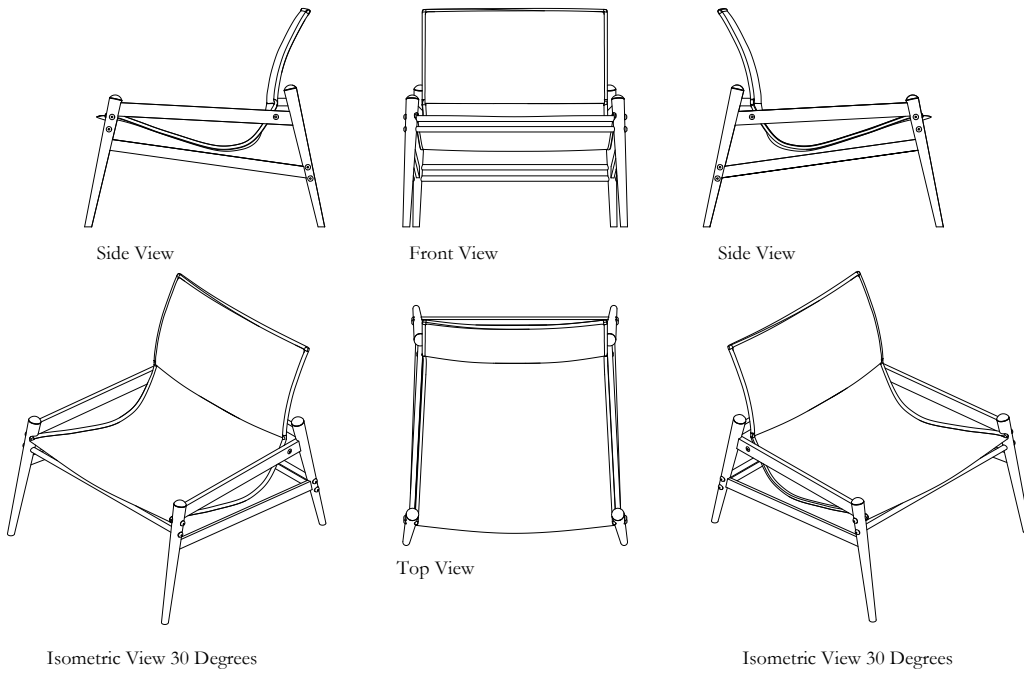
Interact and develop. The chair structure is square with a wider front. The legs are turned with tapered ends and rounded edges. It has two modern armrests that connect the

Figure 102

(A) The three-dimensional and (B) the two-dimensional views of the FH1 model.



(A)

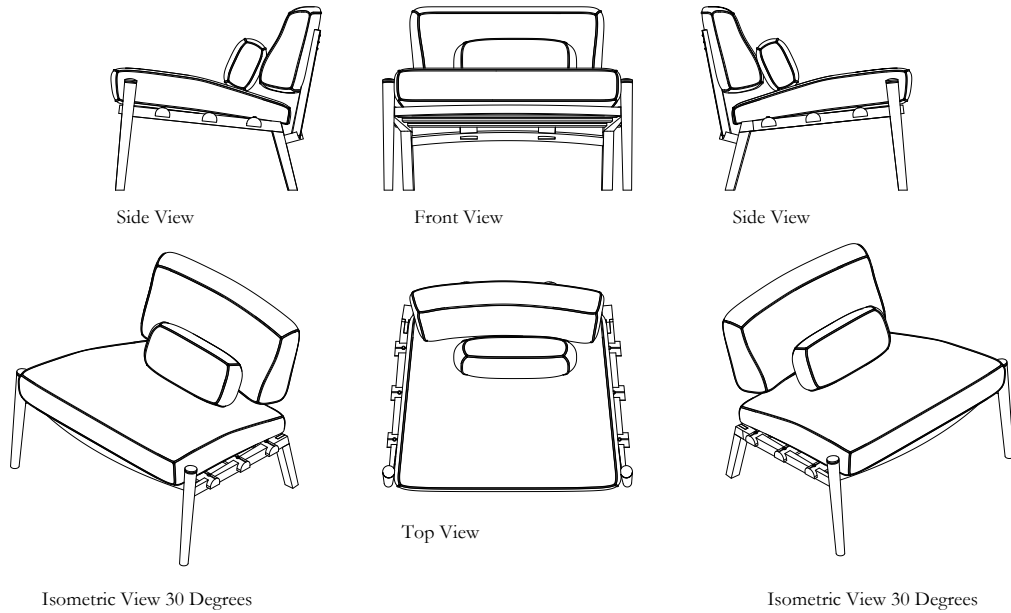


(B)

The Eight Model: FH2. *Define and identify.* The eighth design model, FH2, also aims not to reflect vernacular characteristics in the Hijazi Karaweetah. The presented concepts reflect the modern lounge seats in FH2. The model presents modern features with nonvernacular characteristics and is full of contemporary elements. The model presents modern features with nonvernacular elements to lower the historical value of the design.

Interact and develop. The chair structure is square with a wider front. The front legs are turned with tapered ends and rounded edges. The back legs are squared and connected with the back stretcher. The seating and the back positioning are at 120-degree angles with a curved shape back to better fit the human body. Ergonomically, the size and height of the chair were adjusted to add a level of modern feeling, comfort, and safety based on the universal ergonomic requirement. The understructure of the seating is mortise and tenon joints with linear/rounded members. Bridle joints are also used for the seat back, back legs, and stretchers.

Implement and prototype. In this step, the process guided the inspiration into sketches and visualizing the concept of FH2. In Figure 103, the layouts illustrate the drawing process details of the final model. Consequently, the drawing of the idea was converted into 2D and 3D models to present the chair color and material. This stage turns the model into a more realistic experience to deliver user insight in Figure 104.



(B)

The Ninth Model: FH3. *Define and identify.* The ninth and final design model, FH3, also aims not to reflect vernacular characteristics founded in the Hijazi Karaweetah. The presented concepts reflected the modern lounge seats in FH3. The model presents modern features with nonvernacular characteristics and is full of contemporary elements. The model presents modern features with nonvernacular elements to lower the historical value of the design.

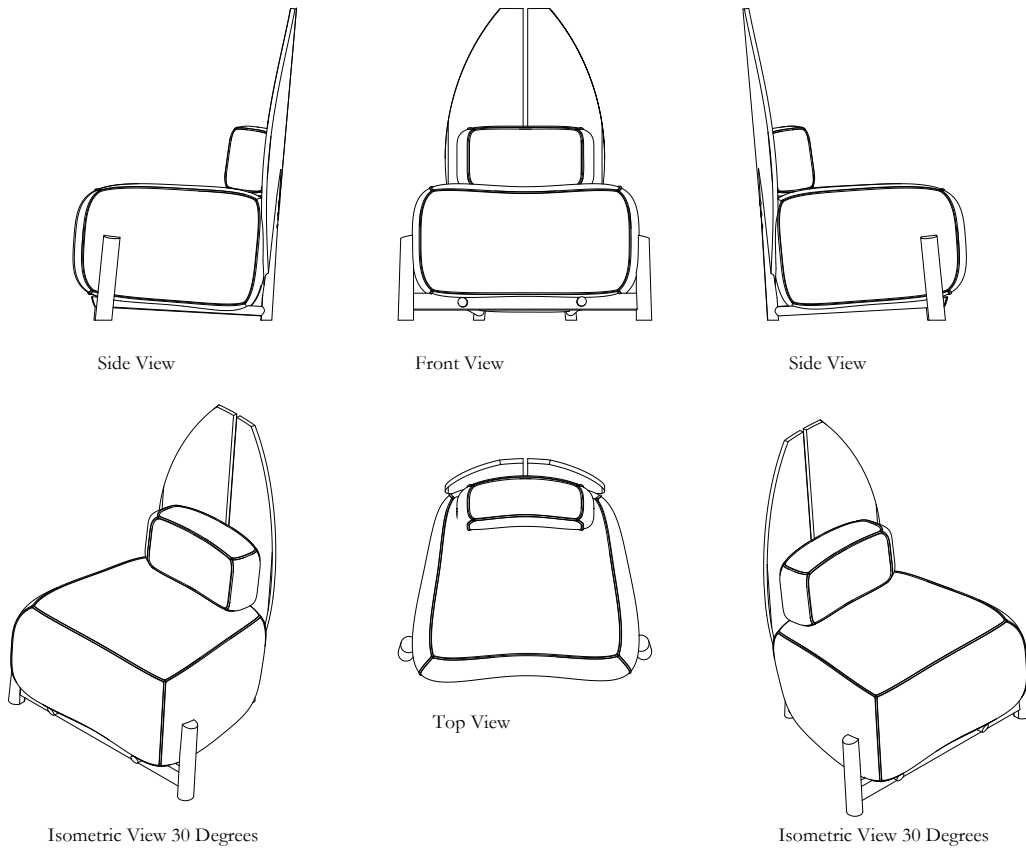
Interact and develop. The chair structure is square with a wider front. The front legs are turned with soft ends, and the back legs are turned with a tapered top. Two stretchers under the seat cushion connect the back and front legs. The seating and the back positioning are at 110-degree angles with a curved shape back to fit the human body. Ergonomically, the size and height of the chair were adjusted to add a level of modern feeling, comfort, and safety based on the universal ergonomic requirement. The understructure of the seating is

Figure 106

(A) The Three-dimensional and (B) the two-dimensional views of the FH3 model.



(A)



(B)

Phase Three: Visual Questionnaire

After documenting the existence of Karaweetah in stage one and integrating its vernacular elements into nine designed models in stage two, the nine models were used to develop a visual questionnaire to assist the study objectives and aim. This questionnaire was used to explore the impact of nostalgic-evoking traditional seating on the Saudi Millennial's purchasing decisions. The third stage of this study illustrated the data gained from the visual questionnaire. The data collection design, sampling type, and procedures were explained in Chapter 3.

Pilot Study

The researcher conducted the pilot test before publishing the final questionnaire. As suggested by Creswell (2003), a pilot test aims to ensure the reliability and validity of the questions in the survey. Additionally, the pilot test was meant to make sure that the questions were clearly stated, to evaluate the survey effectiveness, to identify problems within the questionnaire visuals, and to record the time needed to finish the survey. The researcher developed and tested the questionnaire as suggested by In (2017). The pilot study occurred in April 2023 and was conducted individually with six people. The survey was tested with three Ph.D. students and three graduated participants with master's degrees. Four are in Saudi Arabia, and two are in the United States of America. Each took the survey individually due to the time difference; each was asked to record their time spent finishing the survey and voice record any identified problem with the survey. The following are the feedback for the pilot tests:

- The 3D images were small for phone users in questions Q29, Q30, Q31, and Q32. Therefore, the size of the pictures changed to fit phone users.

- The rating scale changed from a five-point scale to a three-point scale due to Phone users and the size issues.
- A few questions were eliminated, rephrased, and combined into a more straightforward format.
- In questions Q12, Q14, Q16, Q18, Q20, Q22, Q24, Q26, and Q28, descriptive terminology was changed in the Likert rating section to more understandable words for those outside the design field.
- All statements changed to be neutral to reduce confusion in questions Q12, Q14, Q16, Q18, Q20, Q22, Q24, Q26, and Q28.
- Images were added to visualize the theme of fabrics/cushions in Q35.

The Study Visual Questionnaire

It included three sections: socio-demographical information, preferences when purchasing seating, and buying decision-making based on the nostalgic-evoking nine models (see Appendix I). The questionnaire has different questions: closed, multiple choice, rating scale, Likert scale, and open-ended, as Chapter Three explained. A statistical and descriptive analysis was used to summarize the data. Nevertheless, it is crucial to identify the question variables. Bryman (2015) mentioned three variables: (1) dichotomous variables resulted from questions limited to two sets of answers; (2) nominal variables resulted from more than two answers; and (3) ordinal variables resulted from rank-ordered with unequal categories. Additionally, Thematic analysis was used in analyzing open-ended questions. These explored general patterns of decision-making preferences based on nostalgia-based seats. Each question analysis with the variable type is displayed in Table 10 with the code of each question from the study questionnaire.

Table 10

Shows the survey question codes, type of variable, and analysis of each type.

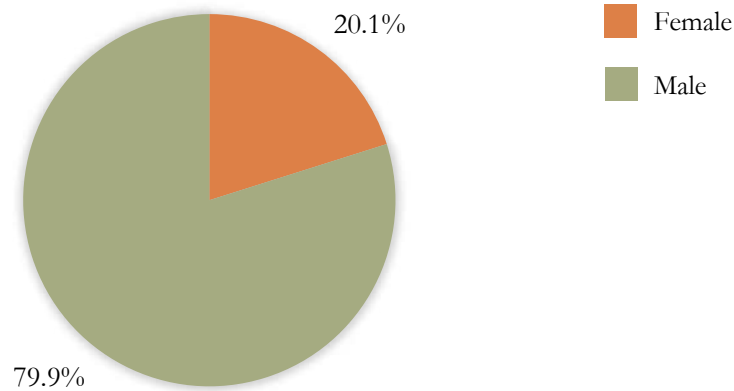
Variable	Q. Code			Question Type	Type of analysis
Dichotomous Variable	Q1.	Q2.	Q6.	Closed	Statistical Analysis
Nominal Variables	Q3.	Q4.	Q5.	Multiple Choice	Descriptive Analysis
	Q7.		Q8.		
	Q9.			Checkbox	Descriptive Analysis
	Q10.	Q29.	Q30.	Multiple Choice	Descriptive Analysis
	Q31.	Q32.	Q33.		
Ordinal Variables	Q11.	Q13.	Q15.	Rating Scale	Descriptive Analysis
	Q17.	Q19.	Q21.		
	Q23.	Q25.	Q27.		
	Q12.	Q14.	Q16.	Likert Scale	Descriptive Analysis
	Q18.	Q20.	Q22.		
	Q24.	Q26.	Q28.		
	Q34.		Q35.	Open-Ended	Thematic Analysis

The visual questionnaire targeted Saudi Millennials who studied outside Saudi Arabia. The survey was administered after conducting the pilot test, which was used to determine the survey reliability of the research instruments (see Chapter Three). The survey was distributed online in English from 18 June 2023 to 17 August 2023, with 203 responses (see Appendix I). Of the 203 participants who completed the initial survey, (n=39; 19.3%) participants were excluded for not meeting the study criteria, as they were non-Saudi (n=4; 2.0%), under 25 years of age (n=15; 7.9%), above 45 years of age (n=10; 4.9%), or did not study outside of Saudi Arabia (n=14; 6.9%). Moreover, one female participant was eliminated due to conflicting answers. Her answer to Q6 of yes, studied outside Saudi conflicted with her response to Q8 of Does not apply when asked how long have you studied outside of Saudi Arabia? The study is limited to Saudi Millennials who studied outside Saudi Arabia. Consequently, the study's remaining final number is 164 participants.

The First Section of the Visual Questionnaire. It has eight general questions that elicited the end-user's background and socio-demographical information. The pie chart presented in Figure 107 shows the responses percentage of the study target groups' gender. Most of the responses for Q1 were female, with a total of (n=131; 79.9%) of the sample, compared to male responses with (n=33; 20.1%). Even though statistics on the Kingdom of Saudi Arabia population in 2023 showed that around 57.64% of the population are male and over 42.36% are female (*Saudi Arabia (K.S.A) Population Statistics 2024 [Infographics], 2024*), female participants might have a general interest in seat design and nostalgia-related topics, which could explain why female participants more than male in this study. Furthermore, most of the participants were Saudis with (98%), and four of the respondents were non-Saudi. In Q3, respondents ages who were under 25 and above 45 were eliminated.

Figure 107

Pie chart of target groups gender percentage (Q1.)

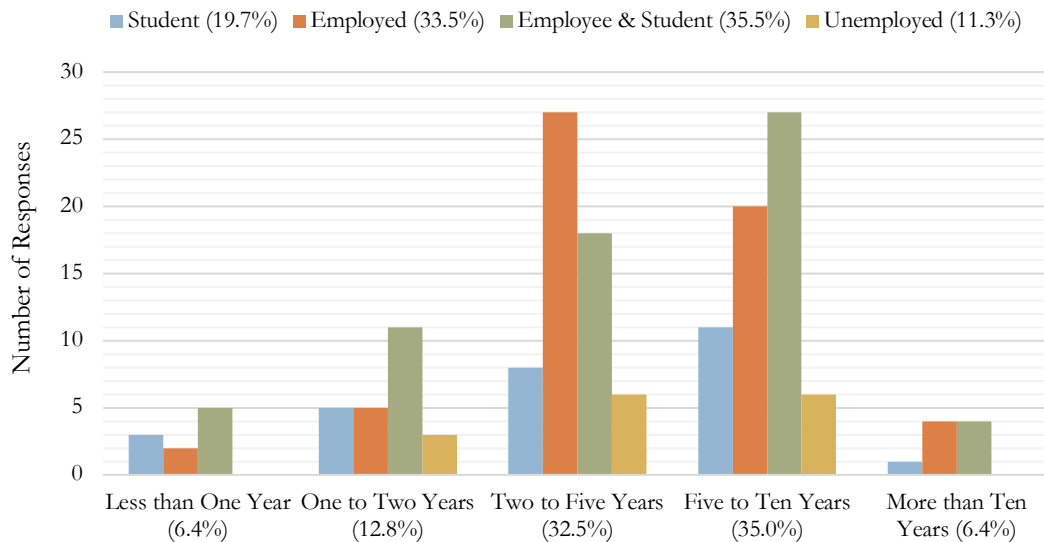


Moreover, most of the responses to Q4 showed that the participants are employees 33.5%, students 19.7%, students/employees 35.5%, and fewer are unemployed at 11.3%.

They spent around five to ten years outside Saudi Arabia, according to their responses in Q8, (see Figure 108). More than 32% of the participants have spent two to five years studying abroad, and more than (n=25) are employees but still studying outside, with an average of five to ten years. Only a few participants are unemployed, with an average of two to five years studying abroad. Additionally, more than (n=10) respondents are still studying, with an average of five to ten years. This showed that most participants had completed a quantity of time outside Saudi Arabia with an average of five years, which creates group-level differences in values to attention and responses.

Figure 108

The Saudi millennials' average time spent outside Saudi Arabia and occupation (Q4. & Q8.)

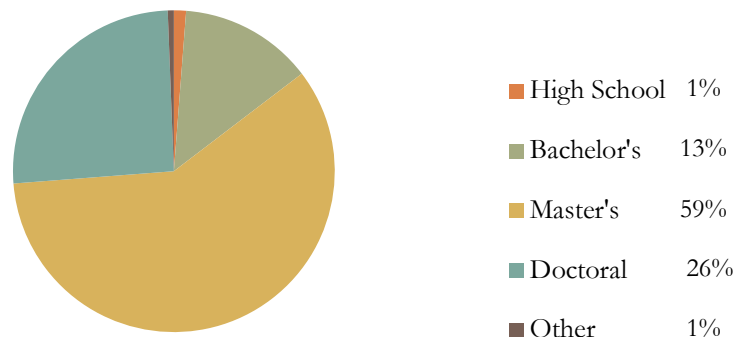


In Figure 109, the pie chart displays that most respondents have high educational degrees. Fifty-nine percent of the respondents have master's degrees, and 26% have doctoral degrees. A low percentage of respondents with bachelor's degrees might still be studying

outside of Saudi due to the average four-year bachelor's degree program of 13%. Fewer participants hold a high school diploma and others have different degrees, making up only 1% of the study participants.

Figure 109

Pie Chart Count of Saudi millennials responds to level of educational (Q5.)

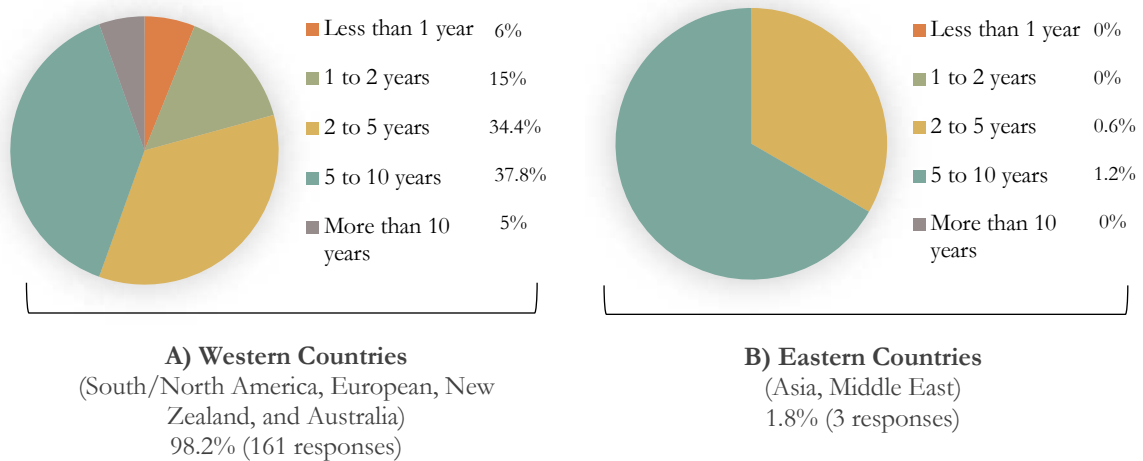


A cross-analysis of responses in Q7 and Q8 elicits information related to the culture that most participants were exposed to regarding time. In Figure 110, it is a pie chart illustrating the percentage of Saudi students exposed to Western and Eastern culture in specific periods outside Saudi Arabia. Ninety-eight and two tenths' percent of the respondents have spent quality time in Western countries such as South/North America, Europe, New Zealand, and Australia. Almost all of the respondents (n=161) were exposed to Western culture for an average of five years. Over a third (37.8%) of the respondents have spent five to ten years, and another third (34.4%) has spent two to five years. The last third is divided between students who spent more than ten years (5%), students who spent one to two years (15%), and those who spent less than one year (6%). On the other hand, only

(1.8%) of the participants studied in Eastern countries such as Asia and Middle Eastern countries, one point two of them completed five to ten years outside while (0.6%) spent two to five years. This difference in the number of participants exposed to different cultures than their own could be due to the higher interest in traveling.

Figure 110

Pie Chart Percent of the student who studied outside Saudi Arabia (Q7. & Q8.)

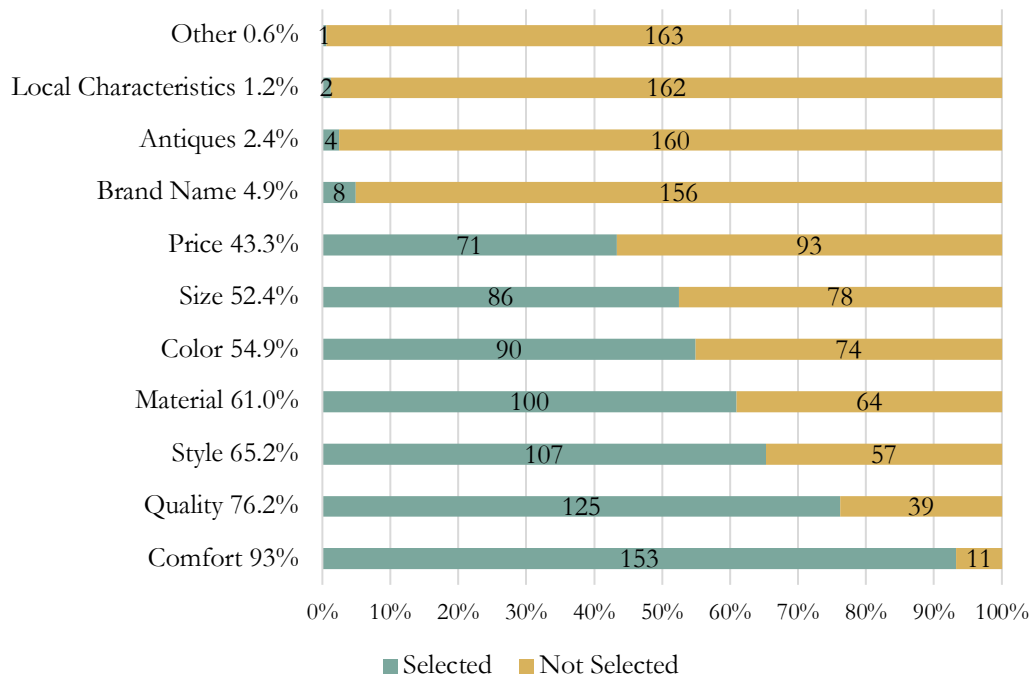


The Second Section of the Visual Questionnaire. It contains questions eliciting personal preferences when purchasing a chair for their living room space. In question 9, the participants were required to choose more than one answer among different criteria based on preferences. Figure 111 showed evidence that comfort was selected 153 times out of 164. The quality followed comfort as a second important criterion for end-users, selected 125 times. Additionally, style, materials, and color are essential criteria in making decisions besides price. On the other hand, unexpected results of the participant's responses to the

importance of local identity indicated that local characteristics are less critical for Saudi millennials only two times.

Figure 111

Saudi millennials criteria for preferring chairs for living room space (Q9).



Despite the low interest (0.6%) in local characteristics as decision-making criteria for living room seats, most participants (62.8%) preferred seats that fit their living room style and color (see Table 11). The results also showed that the participants interest in design stimulated a personal connection and feeling (18.9%), which could direct an inner connection for buying decisions. Others (7.3%) indicated that the chair must have a unique characteristic. However, there are fewer indicators of interest in local characteristics

combined with modern (6.1%), which could be due to the reflection of market trends or the need for more experience with local characteristics.

Table 11

The first thing participants look at when purchasing a chair for living room.

	N	%
...fits my living room style and color.	103	62.8%
...design stimulates a personal connection/feeling.	31	18.9%
...has unique characteristics.	12	7.3%
...is modern but has local characteristics.	10	6.1%
...is modern with no local characteristics.	5	3.0%
...is full of local characteristics.	1	0.6%
other	2	1.2%


The Third Section of the Visual Questionnaire. It has twenty-five questions that elicited the end-user's buying decision-making. This part explores participants' nostalgic level of seat design preferences among nine models. The nine models reflect varying levels of heritage design-based inspiration, explained in detail in section 4.3, to elicit different levels of nostalgia. In order to understand the Saudi millennials' nostalgia level and address the study aims, each model has two related questions. The first question has a three-point scale to explore the participant's personal experience founded on questions Q11, Q13, Q15, Q17, Q19, Q21, Q23, Q25, and Q27. The following question has a series of five statements to report individuals' opinions with the Likert scale. The Likert scale was based on a scale from Strongly Disagree (1) to Agree Strongly (5). The statement of agreement presents a high

level, and disagreements are low. These can be found in questions Q12, Q14, Q16, Q18, Q20, Q22, Q24, Q26, and Q28.

In question Q11, the three-point scale results based on the appearance of model HR1 are presented in Table 12. Although HR1 was designed based on vernacular characteristics found in the Hijazi' Karaweetah from Bait Baeshen (H3-BB), which proposes a higher historical inspiration, most responses were Neutral. In Q11-A, forty-three-point nine percent of the respondents are neutral, and more than a third (39.0%) think the model has beautiful content, while few (17.1%) have selected the model as basic. Additionally, in Q11-B, forty-three-point three percent of respondents were neutral, over one-third (38.4%) selected the design as simple, and fewer (18.3%) as complicated. While almost half (46.3%) of the responses in Q11-C are neutral, the percentage was higher toward traditional appearance with (37.8%), and less than (16%) believe the model has modern features. Overall, based on the three measurements of appearance analysis, the result showed that the HR1 model was notable as beautiful and simple chair with traditional details (see Figure 112).

Table 12

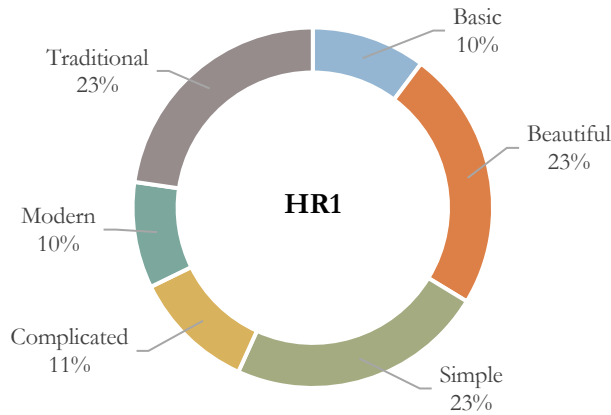
Participants personal experiences based on appearance: HR1 (Q11.)

		N	%
	Q11-A	Basic	28 17.1%
		Neutral	72 43.9%
		Beautiful	64 39.0%
	Q11-B	Simple	63 38.4%
		Neutral	71 43.3%
		Complicated	30 18.3%
	Q11-C	Modern	26 15.9%
		Neutral	76 46.3%

	Traditional	62	37.8%
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Figure 112

An illustration of the HR1 detail based on participants' points of view.



Besides the three-point scale in Q11, Q12 is the Likert scale of the five statements in Figure 113, which illustrates participants' opinions toward seat details of the HR1 model. The results showed that a third (31.7%) agreed with the statement in Q12-a, 28.0% strongly agreed, and 28.7% of participants had a neutral opinion. However, participants in Q12-b are in between agreeing and disagreeing; some believe the model is uncomfortable, with 25.7%, and some agreed with 23.2%. They most likely liked the wood as a material selection, with a higher percentage agreeing 32.3% and strongly agreeing 23.8% in Q12-c. In Q12-d, participants responded to the statement that the model HR1 has a historical characteristic that is high. Thirty-one-point-seven percent agreed, and 46.3% strongly agreed, which indicates a relation between historical characteristics and wood. However, in Q12-e, participants' opinions on buying the HR1 model are toward disagreeing 28.7%, while others (26.8%) chose neutral. Based on those responses in Q11 and Q12, most participants

understand the nostalgic element found in the HR1 model; however, their buying preferences for this model are low compared to their understanding.

Figure 113

Shows how participants responded to the details of the HR1 model (Q12.).

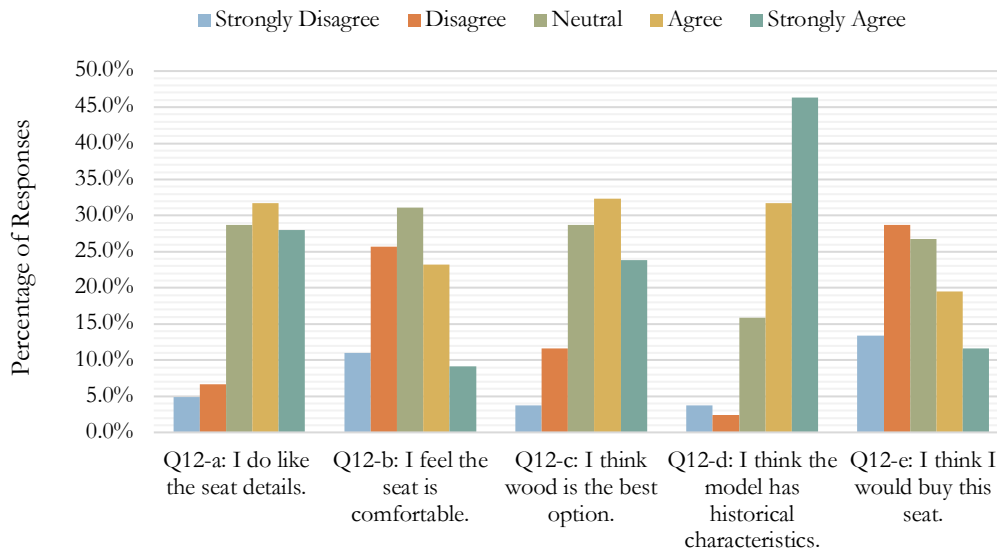


Table 13 illustrates Q13 responses to the three-point scale selection results based on the appearance of model HR2. Although HR2 was designed based on vernacular characteristics found in the Hijazi' Karaweetah from Bait Salom (H4-BS), a third (34.1%) of responses are neutral, a third (34.1%) consider the model is basic. However, less than a third (31.7%) selected the model as beautiful in Q11-A. In Q11-B, the percentage was high toward simple, near 70.1%, while others were toward neutral 25.0% and complicated 4.9%. On the other hand, most of the responses to Q13-C chose to select the model as neutral 43.9%, modern 34.1%, and traditional 22.0%. Overall, based on the three measurements of appearance analysis, the result showed that the HR2 model was distinguished by the participant as a traditional and simple chair with basic details (see Figure 114).

Table 13

Participants personal experiences based on appearance: HR2 (Q13.).


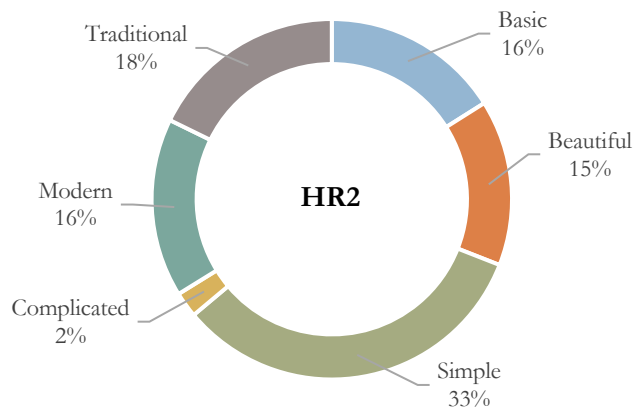
		N	%
	Q13-A	Basic	56 34.1%
		Neutral	56 34.1%
		Beautiful	52 31.7%
	Q13-B	Simple	115 70.1%
		Neutral	41 25.0%
		Complicated	8 4.9%
	Q13-C	Modern	56 34.1%
		Neutral	72 43.9%
		Traditional	36 22.0%

Figure 114

An illustration of the HR2 detail based on participants' points of view.



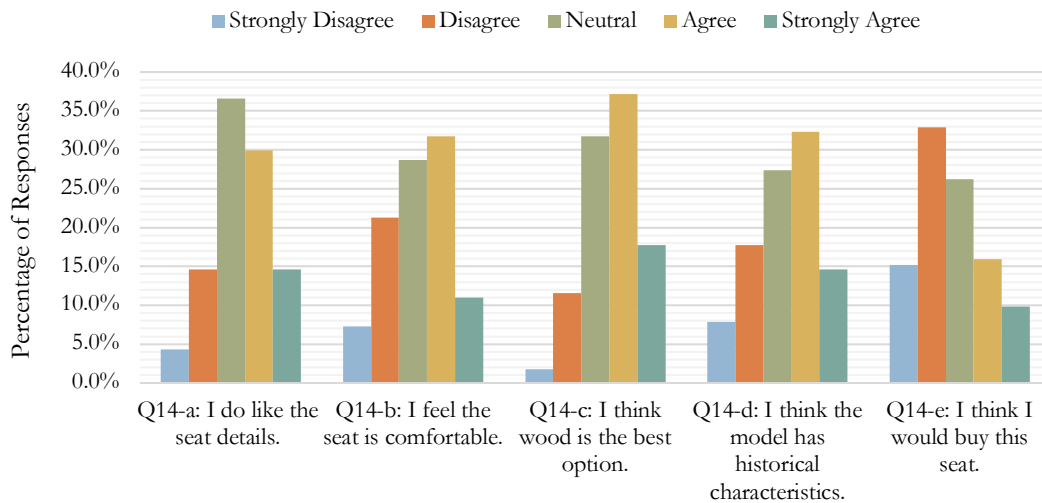
Besides the three-point scale in Q13, Q14 is the Likert scale of the five statements in Figure 115, which illustrates participants' opinions toward seat details of the HR2 model.

The result showed that a third (36.6%) of the participants had chosen neutral, 29.9%

agreeing with the statement, and 14.6% strongly agreeing in Q14-a. Additionally, a third (31.7%) of responses agreed that the model is comfortable in Q14-b. They most likely liked the wood as a material selection, with a higher percentage of agreeing 37.2% and strongly agreeing 17.7%. In Q14-d, participants responded to the statement that the historical characteristic found in model HR2 is high; 32.3% agreed, and 14.6% strongly agreed. However, in Q14-e, participants were asked if they preferred to buy the HR2 model; some had to disagree with 32.9%, while others (26.2%) chose neutral. Based on those responses in Q13 and Q14, participant understanding of the nostalgic element is high in the HR2 model, but the preferences in buying are low.

Figure 115

Shows how participants responded to the details of the HR2 model (Q14.).



In question Q15, the three-point scale results based on the appearance of model HR3 are presented in Table 14. Of these respondents, 55.5% scaled the model as basic, 25.6% as neutral, and 18.9% as beautiful in Q15-A. In Q15-B, the percentage was high

toward simple, with 76.2%, 21.3% neutral, and 2.4% selecting the design as complicated. On the other hand, responses to Q15-C chose to select the model as neutral 40.9%, modern 31.1%, and traditional 28.0%. Even though the model HR3 was designed based on vernacular characteristics found on the Hijazi' Karaweetah from Bait Matbouli (H1-BM), it showed that the HR3 model distinguished by the participant as a traditional design is low and noted as a simple and basic chair details (see Figure 116).

Table 14

Participants personal experiences based on appearance: HR3 (Q15).


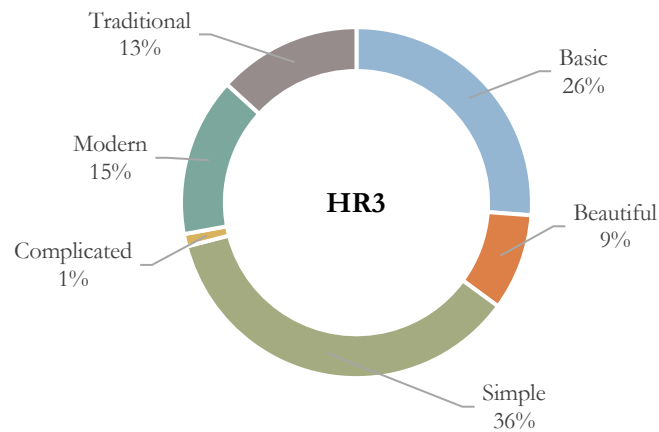
		N	%	
	Q15-A	Basic	91	55.5%
		Neutral	42	25.6%
		Beautiful	31	18.9%
	Q15-B	Simple	125	76.2%
		Neutral	35	21.3%
		Complicated	4	2.4%
	Q15-C	Modern	51	31.1%
		Neutral	67	40.9%
		Traditional	46	28.0%

Figure 116

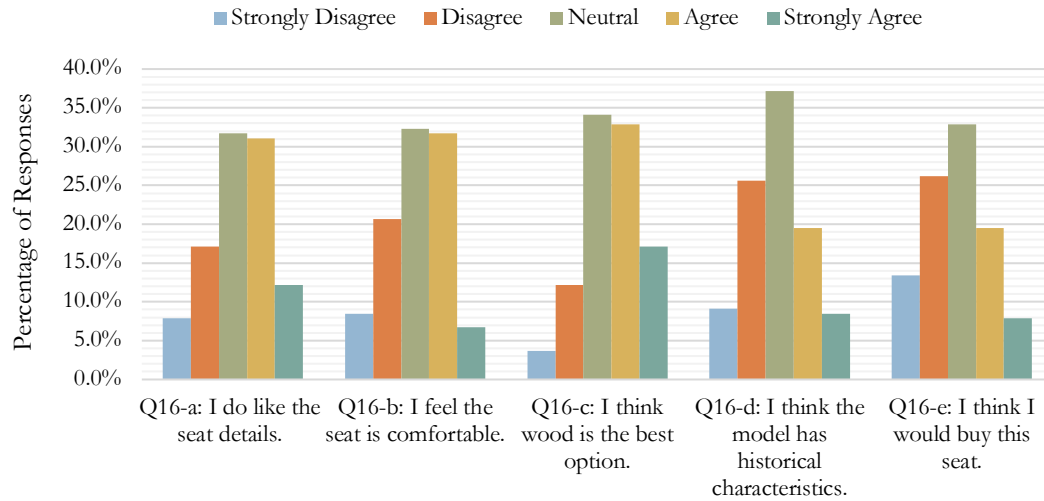
An illustration of the HR3 detail based on participants' points of view.



Besides the three-point scale in Q15, Q16 is the Likert scale of the five statements in Figure 117, which illustrates participants' opinions toward seat details of the HR3 model. The result showed that most of the respondents selected a neutral opinion. In Q16-a, a third (31.3%) of the respondents chose neutral, and a third (31.1%) agreed with a similar percentage. Some (32.2%) believe the model is comfortable in Q16-b. They most likely liked the wood as a material selection, with a higher percentage near agreeing 32.9% and strongly agreeing 17.1%. Still, some (34.1%) have a neutral opinion in Q16-c. In Q16-d, participants responded to the statement that the historical characteristic found in model HR3 is low; 25.6% disagreed and strongly disagreed with 9.1%. Still, some (19.5%) respondents agree, and most (37.2%) have a natural opinion. Nevertheless, in Q16-e, participants were asked if they preferred to buy the HR3 model; some had to disagree 26.2%, while others (32.9%) chose neutral. Based on those responses in Q15 and Q16, participant understanding of the nostalgic element is low in the HR3 model, and the preferences in buying are also low.

Figure 117


Shows how participants responded to the details of the HR3 model (Q16).



In question Q 17, the three-point scale results based on the appearance of model EH1 are presented in Table 15. Of these respondents, thirty-five-point four percent scaled the model as basic, 33.5% as neutral, and 31.1% as beautiful in Q17-A. In Q17-B, the percentage was more than half (53.0%) near simple, 35.4% neutral, and 11.6% selected the design as complicated. On the other hand, responses to Q17-C chose to select the model as modern 60.4%, neutral 29.3%, and traditional 10.4%. Although EH1 embodied the simple form of vernacular characteristics found on the Hijazi' Karaweetah, the result showed that the EH1 model is a simple modern design with a low scale of traditional elements (see Figure 118).

Table 15

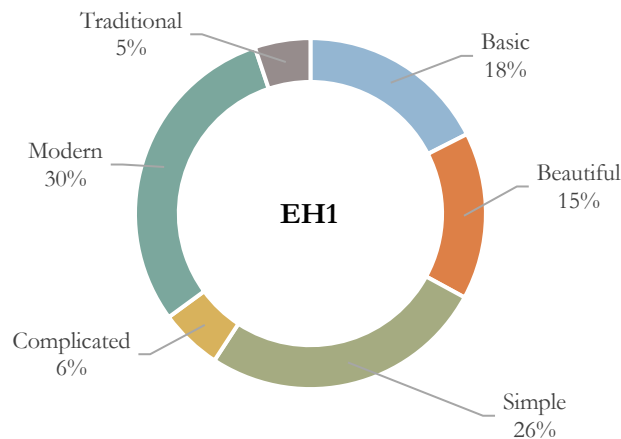
Participants personal experiences based on appearance: EH1 (Q17.)

		N	%
	Q17-A	Basic	58 35.4%
		Neutral	55 33.5%
		Beautiful	51 31.1%
Q17-B	Simple	87 53.0%	
	Neutral	58 35.4%	

	Q17-C	Complicated	19	11.6%
		Modern	99	60.4%
		Neutral	48	29.3%
		Traditional	17	10.4%

Figure 118

An illustration of the EH1 detail based on participants' points of view.

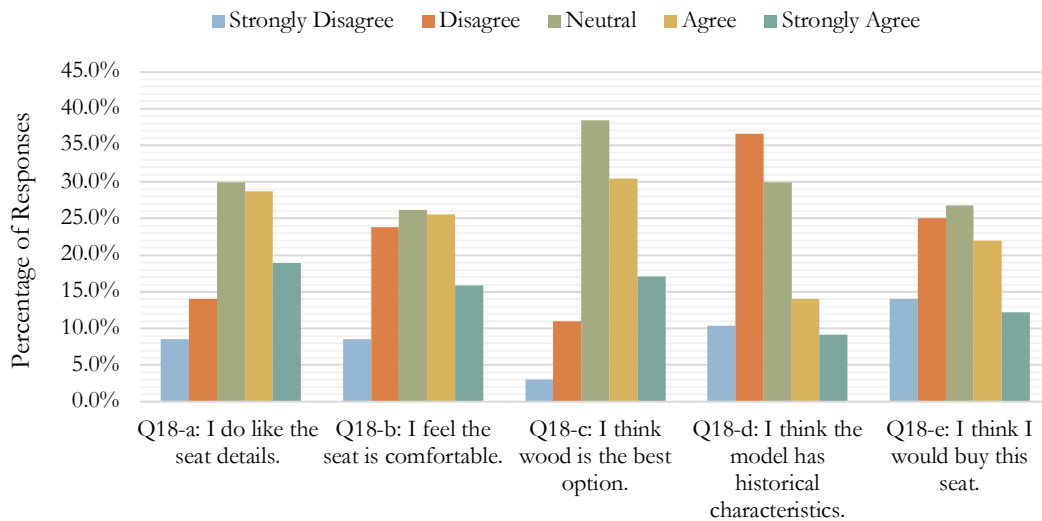


Besides the three-point scale in Q17, Q18 is the Likert scale of the five statements in Figure 119, which illustrates participants' opinions toward seat details of the EH1 model. The result showed that most of the respondents selected a neutral opinion. In Q18-a, less than a third (29.9%) of the participants selected neutral, and a similar percentage toward agreeing 28.7%. Additionally, a higher percentage near agreeing and neutral to the statement that the model is comfortable, neutral 26.2%, and agreed with 25.6% in Q18-b. They most

likely liked the wood as a material selection, with a higher percentage of agreeing 30.5% and strongly agreeing 17.1%. Still, some (38.4%) have a neutral opinion in Q18-c. In Q18-d, participants responded to the statement that the historical characteristic found in model EH1 is low; thirty-six-point six percent disagreed and strongly disagreed with 10.4%. Still, around (14.0%) of respondents agree, and most (29.9%) have a natural opinion. Nevertheless, in Q18-e, participants were asked if they preferred to buy the EH1 model; some (26.8%) had to choose neutral, while others (25.0%) disagreed and agreed with 22.0%. Based on those responses, participant understanding is high, and the potential to buy the model is low.

Figure 119

Shows how participants responded to the details of the EH1 model (Q18.).



In question Q19, the three-point scale results based on the appearance of model EH2 are illustrated in Table 16. Of these respondents, forty-five-point one percent scaled the model as beautiful, 28.0% as basic, and 26.8% as neutral in Q19-A. In Q19-B, the

percentage was higher toward simple, with 39.6%, 31.7% neutral, and 28.7% selected the design as complicated. On the other hand, responses to Q19-C chose to select the model as modern 51.8%, neutral 29.9%, and traditional 18.3%. Even though EH2 simulated the form of vernacular characteristics found on the Hijazi' Karaweetah from Bait Baeshen (H3-BB), the result showed that the EH2 model for participants is a beautiful, simple, modern design with a low scale of traditional details (see Figure 120).

Table 16

Participants personal experiences based on appearance: EH2 (Q19).


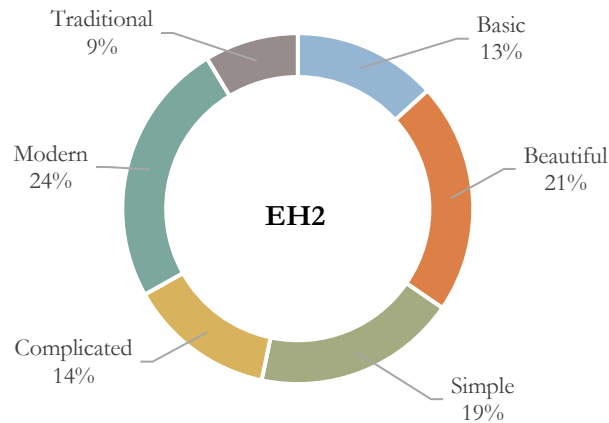
		N	%	
	Q19-A	Basic	46	28.0%
		Neutral	44	26.8%
		Beautiful	74	45.1%
	Q19-B	Simple	65	39.6%
		Neutral	52	31.7%
		Complicated	47	28.7%
	Q19-C	Modern	85	51.8%
		Neutral	49	29.9%
		Traditional	30	18.3%

Figure 120

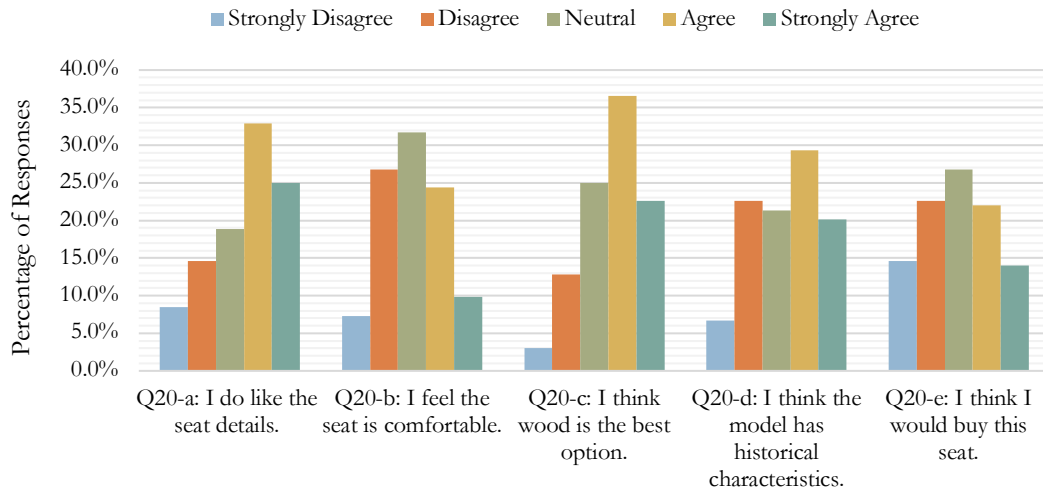
An illustration of the EH2 detail based on participants' points of view.



Besides the three-point scale in Q19, Q20 is the Likert scale of the five statements in Figure 121, which illustrates participants' opinions toward seat details of the EH2 model. The result showed that most respondents liked the model details, with the highest percentage agreeing, 32.9%, and others (25.0%) strongly agreeing in Q20-a. However, participants had neutral opinions that the model is comfortable with 31.7% and near to disagreeing 26.8%, and others chose to agree 24.4% in Q20-b. They most likely liked the wood as a material selection, with a higher percentage of agreeing 36.6% and strongly agreeing 22.6% in Q20-c. In Q20-d, participants responded to the statement that the historical characteristic found in model EH2 is high; twenty-nine-point three percent agreed and strongly agreed with 20.1%. Still, some (22.6%) respondents disagreed, and others (21.3%) had a natural opinion. Nevertheless, in Q20-e, participants were asked if they preferred to buy the EH2 model; some (26.8%) chose neutral, while others (22.6%) disagreed and agreed with 22.0%. Based on those responses in Q19 and Q20, participant understanding of the nostalgic element is high in the EH2 model, and there are possibilities in buying based on preferences.

Figure 121


Shows how participants responded to the details of the EH2 model (Q20.).



In question Q21, the three-point scale results based on the appearance of model EH3 are illustrated in Table 17. Of these respondents, thirty-four-point eight percent scaled the model as neutral, 34.1% as basic, and 31.1% as beautiful in Q21-A. In Q21-B, the percentage was higher toward simple, with 50.0%, 36.0% neutral, and 14.0% selected the design as complicated. On the other hand, responses to Q21-C chose to choose the model as modern 50.6%, neutral 37.2%, and traditional 12.2%. Although EH3 reflected a minimal form of vernacular characteristics, the result showed that the EH3 model for participants is a simple modern chair with a low rate of tradition (see Figure 122).

Table 17

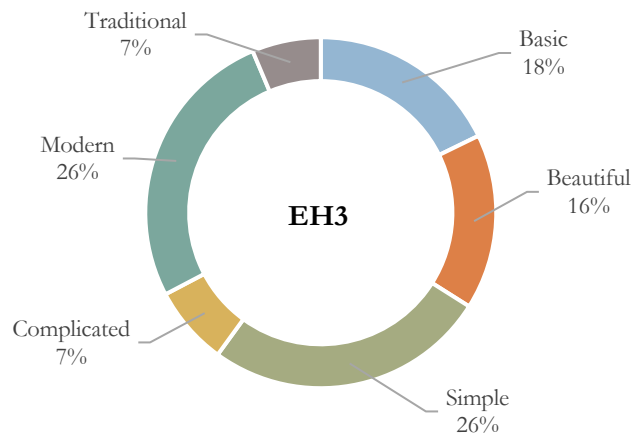
Participants personal experiences based on appearance: EH3 (Q21.)

		N	%
	Q21-A	Basic	56 34.1%
		Neutral	57 34.8%
		Beautiful	51 31.1%

Q21-B	Simple	82	50.0%
	Neutral	59	36.0%
	Complicated	23	14.0%
Q21-C	Modern	83	50.6%
	Neutral	61	37.2%
	Traditional	20	12.2%

Figure 122

An illustration of the EH3 detail based on participants' points of view.

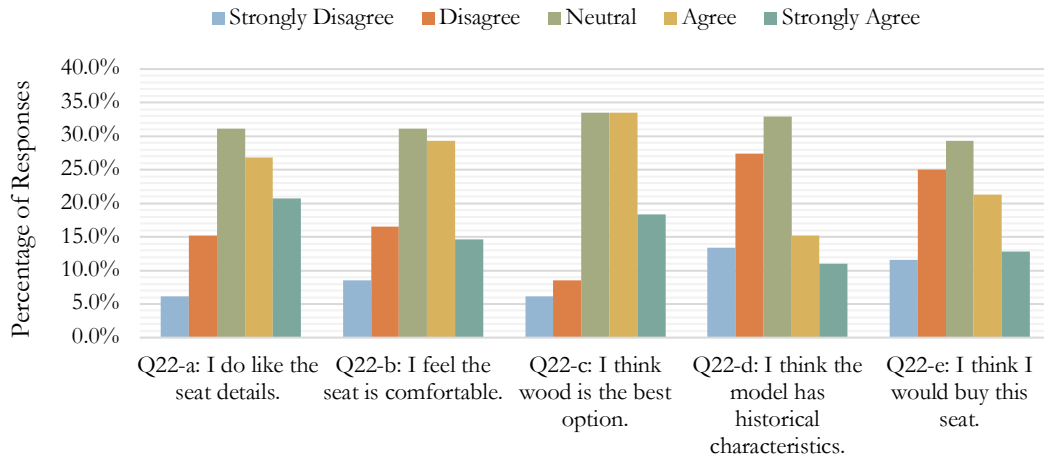


Besides the three-point scale in Q21, Q22 is the Likert scale of the five statements in Figure 123, which illustrates participants' opinions toward seat details of the EH3 model. The result showed that most respondents are neutral. In Q22-a, several (31.1%) respondents chose a neutral opinion, some (26.8%) liked the model details with a high percentage of agreeing, and others (20.7%) strongly agreed. Additionally, participants agreed that the model is comfortable, with 29.3%, others (31.1%) chose neutral, and few (16.5%) disagreed in Q22-b. They most likely liked the wood as a material selection, with a higher percentage of agreeing 33.5% and strongly agreeing 18.3%. Still, about (33.5%) have a neutral opinion in Q22-c. In Q22-d, participants responded to the statement that the historical characteristic

found in model EH3 is low; twenty-seven-point four percent disagreed and strongly disagreed with 13.4%, and others (32.9%) had a natural opinion. Nevertheless, in Q22-e, participants were asked if they preferred to buy the EH3 model; some (29.3%) chose neutral, while others disagreed with 25.0% and agreed with 21.3%. Based on those responses in Q21 and Q22, participant understanding of the nostalgic element and possibilities in buying is neutral.

Figure 123

Shows how participants responded to the details of the EH3 model (Q22.).



In question Q23, the three-point scale results based on the appearance of model FH1 are illustrated in Table 18. Of these respondents, thirty-seven-point two percent scaled the model as neutral, 34.1% as basic, and 28.7% as beautiful in Q23-A. In Q23-B, the percentage was higher toward simple, with 45.7%, 31.7% complicated, and 22.6% selected the design as neutral. On the other hand, responses to Q23-C chose to select the model as modern is high at 77.4%, neutral at 16.5%, and traditional is the lowest at 6.1%. The result showed that the FH1 model is distinguished as a modern, simple, and basic chair with a lower rate of traditional details by the study participants (see Figure 124).

Table 18

Participants personal experiences based on appearance: FH1 (Q23.).


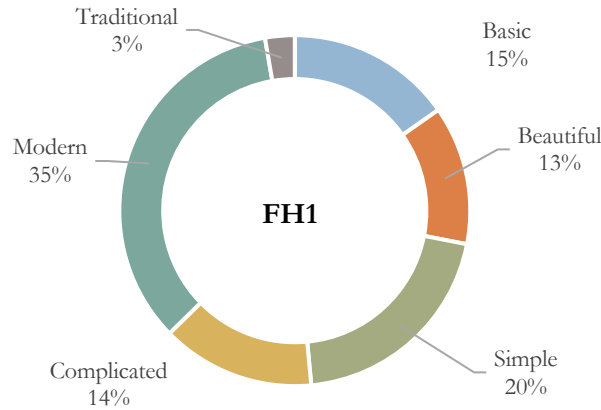
			N	%
	Q23-A	Basic	56	34.1%
		Neutral	61	37.2%
		Beautiful	47	28.7%
	Q23-B	Simple	75	45.7%
		Neutral	37	22.6%
		Complicated	52	31.7%
	Q23-C	Modern	127	77.4%
		Neutral	27	16.5%
		Traditional	10	6.1%

Figure 124

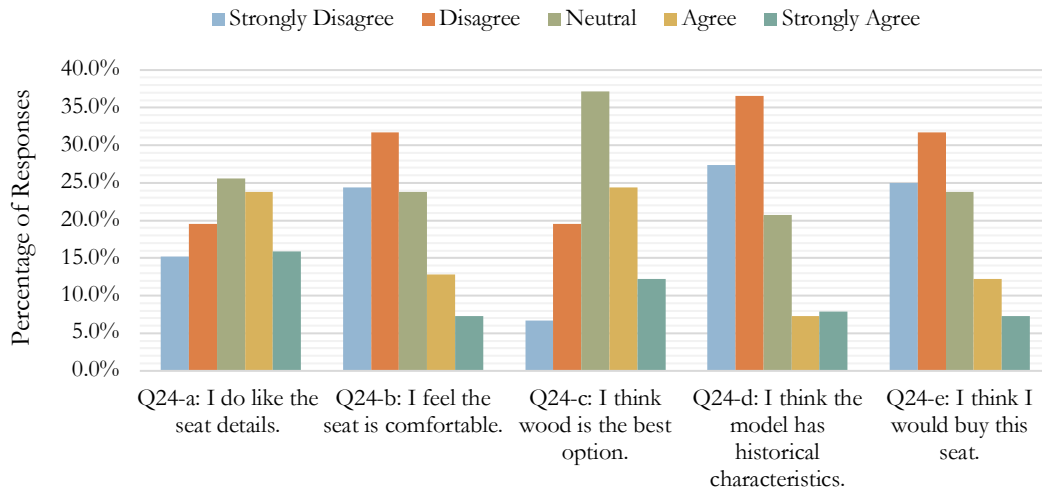
An illustration of the FH1 detail based on participants' points of view.



Besides the three-point scale in Q23, Q24 is the Likert scale of the five statements in Figure 125, which illustrates participants' opinions toward seat details of the FH1 model. The result showed most (25.6%) of the respondents chose neutral to the statement in Q24-a, while some (23.8%) agreed, and others (19.5%) disagreed. Additionally, participants disagreed that the model was comfortable with 31.7%, others (23.8%) chose neutral, and strongly disagreed 24.4% in Q24-b. They most likely liked the wood as a material selection, with 24.4% agreeing and disagreeing 19.5%. Still, some (37.2%) have a neutral opinion in Q24-c. In Q24-d, participants responded to the statement that the historical characteristic found in model FH1 is low; thirty-six-point six percent disagreed and 27.4% strongly disagreed. However, few respondents agreed with 7.3%, and others (20.7%) had a neutral opinion. Nevertheless, in Q24-e, participants were asked if they preferred to buy the FH1 model; some (23.8%) chose neutral, while others (31.7%) disagreed and strongly disagreed with 25.0%. Based on those responses in Q23 and Q24, participant understanding of the nostalgic element is high in the FH1 model since they disagreed with the statement in Q24-d. Furthermore, there are low possibilities of buying based on their preferences.

Figure 125

Shows how participants responded to the details of the FH1 model (Q24.).



In question Q25, the three-point scale results based on the appearance of model FH2 are illustrated in Table 19. Of these respondents, a higher percentage scaled the model as basic 43.9%, 31.1% as neutral, and 25.0% as beautiful in Q25-A. In Q25-B, the percentage was higher toward simple, with 43.9%, 26.8% complicated, and 29.3% selected the design as neutral. On the other hand, responses to Q25-C chose to select the model as modern is high at 76.8%, neutral at 18.3%, and traditional at 4.9%. Based on the results, the FH2 model is rated as a modern, simple, and basic chair with a low rate of traditional features, even though it's free from vernacular characteristic (see Figure 126).

Table 19

Participants personal experiences based on appearance: FH2 (Q25.).

	N	%
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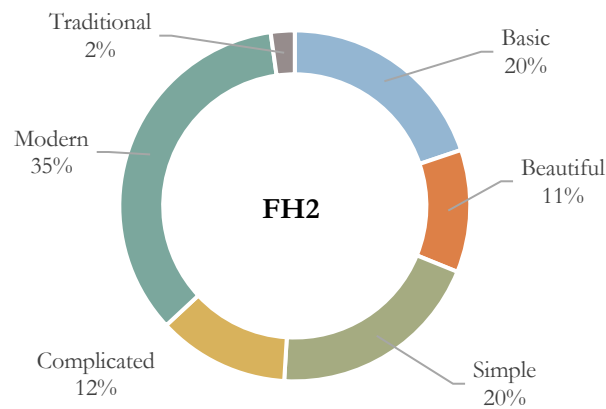
	Q25-A	Basic	72	43.9%
		Neutral	51	31.1%
		Beautiful	41	25.0%
	Q25-B	Simple	72	43.9%
		Neutral	48	29.3%
		Complicated	44	26.8%
	Q25-C	Modern	126	76.8%
		Neutral	30	18.3%
		Traditional	8	4.9%

Figure 126

An illustration of the FH2 detail based on participants' points of view.



Besides the three-point scale in Q25, Q26 is the Likert scale of the five statements in Figure 127, which illustrates participants' opinions toward seat details of the FH2 model.

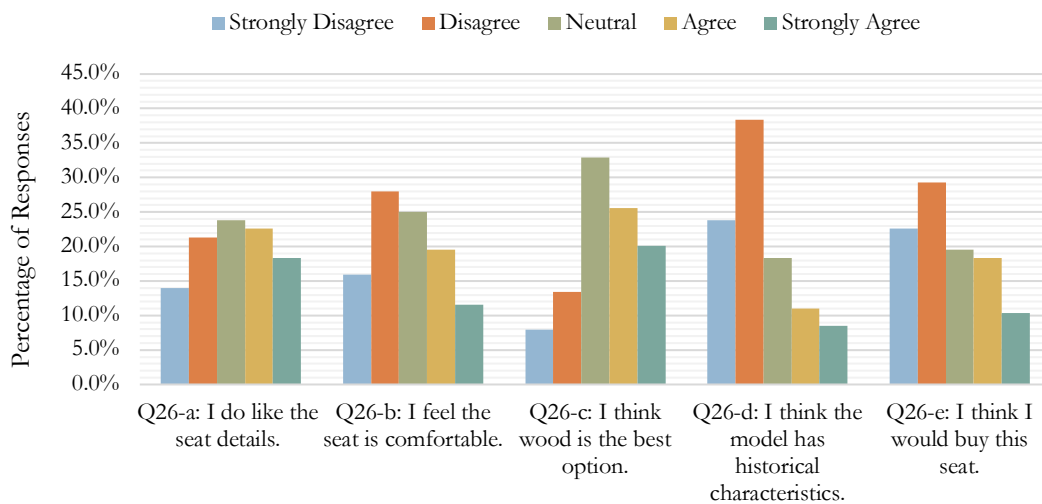
The result showed that 23.8% of the respondents chose neutral to the statement in Q26-a, several (22.6%) agreed, and others (21.3%) disagreed. Additionally, twenty-eight percent of the participants disagreed that the model was comfortable; others (25.0%) chose neutral and agreed 19.5% in Q26-b. They most likely liked the wood as a material selection, with 25.6% agreeing and strongly agreeing 20.1%. Still, some (32.9%) have a neutral opinion in Q26-c.

In Q26-d, participants responded to the statement that the historical characteristic found in

model FH2 is low; thirty-eight-point four percent disagreed and strongly disagreed with 23.8%. However, few (11.0%) respondents agreed, and others (18.3%) had a natural opinion. Nevertheless, in Q26-e, participants were asked if they preferred to buy the FH2 model; some (29.3%) disagreed and strongly disagreed with 22.6%, while others (19.5%) selected neutral. Based on those responses in Q25 and Q26, participant understanding of the nostalgic element is high in the FH2 model since they disagreed with the statement in Q26-d. Furthermore, there are low possibilities of buying based on their preferences.

Figure 127

Shows how participants responded to the details of the FH2 model (Q26.).



In question Q27, the three-point scale results based on the appearance of model FH3 are illustrated in Table 20. Of these respondents, a higher percentage scaled the model as beautiful 45.7%, basic 28.7%, and neutral 25.6% in Q27-A. In Q27-B, the percentage was higher toward complicated 47.0%, neutral 29.9%, and 23.2% selected the design as simple. On the other hand, responses to Q27-C show the majority (73.8%) selected the model as

modern. Others viewed the model as neutral 19.5%, and traditional 6.7%. Based on the result, the FH3 model is a beautiful modern chair with complicated features (see Figure 128).

Table 20

Participants personal experiences based on appearance: FH3 (Q27.).


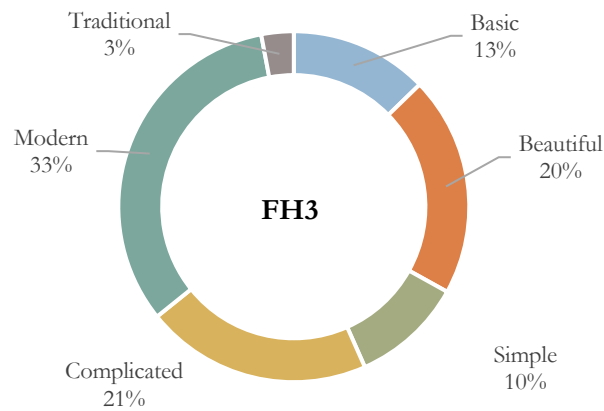
		N	%
	Q27-A	Basic	47 28.7%
		Neutral	42 25.6%
		Beautiful	75 45.7%
	Q27-B	Simple	38 23.2%
		Neutral	49 29.9%
		Complicated	77 47.0%
	Q27-C	Modern	121 73.8%
		Neutral	32 19.5%
		Traditional	11 6.7%

Figure 128

An illustration of the FH3 detail based on participants' points of view.

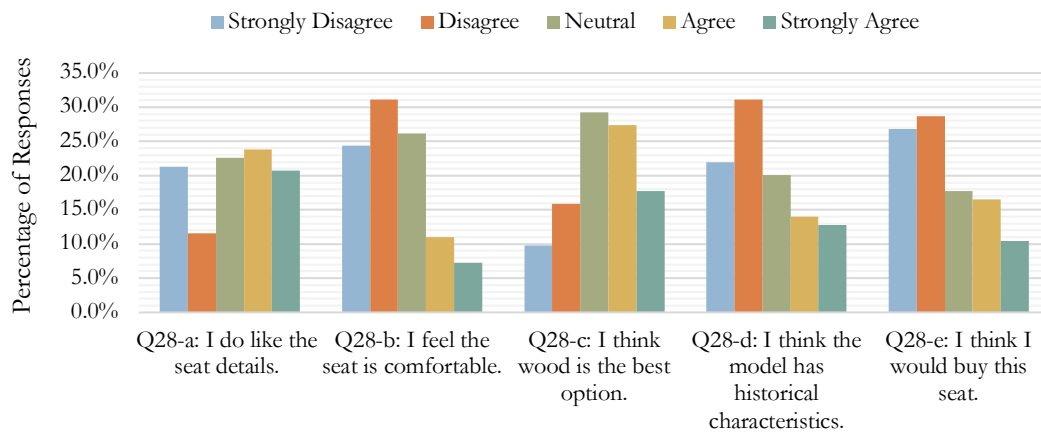


Besides the three-point scale in Q27, Q28 is the Likert scale of the five statements in Figure 129, which illustrates participants' opinions toward seat details of the FH3 model.

The result showed that 23.8% of the respondents agreed with the statement "I do like the seat details," some (22.6%) were neutral, and others (21.3%) strongly disagreed in Q28-a. Additionally, most (31.1%) respondents disagreed that the model is comfortable, while others (26.2%) had a neutral opinion and strongly disagreed with 24.4% in Q28-b. They most likely liked the wood as a material selection, with 27.4% agreeing and strongly agreeing 17.7%. Still, some (29.3%) have a neutral opinion in Q28-c. In Q28-d, participants responded to the statement that the historical characteristic found in model FH3 is low; thirty-one-point one percent disagreed and strongly disagreed with 22.0%. Nevertheless, in Q28-e, participants were asked if they preferred to buy the FH3 model; some (28.7%) chose to disagree, and 26.8% strongly disagreed, while others (17.7%) selected neutral. Based on those responses in Q27 and Q28, participant understanding of the nostalgic element is high since they disagreed with the statement in Q28-d. There are also low possibilities of buying based on preferences.

Figure 129

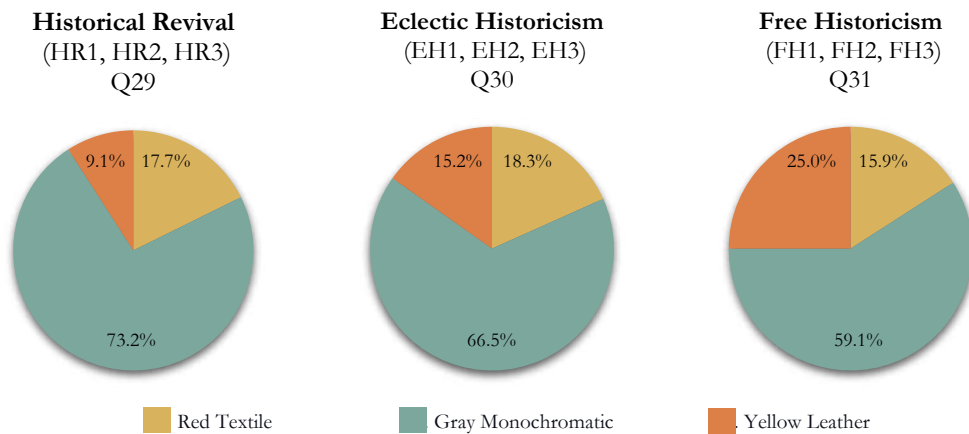
Shows how participants responded to the details of the FH3 model (Q24.).



In questions Q29, Q30, and Q31, participants were asked to choose among three different groups based on preferences of materials/themes (A, B, or C). The A Group demonstrates the traditional feelings (red textile), while the B Group proposes the natural feelings (gray monochromatic), and C Group presents the modern sense (yellow leather). The first set in Q29 tested the participant's preferences among the three historical revival models HR1, HR2, and HR3. Of the respondents, seventy-three-point two percent chose the gray monochromatic theme, 17.7% chose the red/textile, and 9.1% chose the yellow leather group (see Figure 130). The second set in Q30 tested the participant's preferences among the three eclectic historicisms, EH1, EH2, and EH3. Of the respondents, sixty-six-point five percent chose the gray monochromatic theme, 18.3% picked the red/textile, and 15.2% toward the yellow leather. Furthermore, the third set in Q31 tested the participant's preferences among the three free historicism models FH1, FH2, and FH3. Of the respondents, fifty-nine-point one percent chose the gray monochromatic theme, 25.0% picked the yellow leather, and 15.9% toward the red textile group.

Figure 130

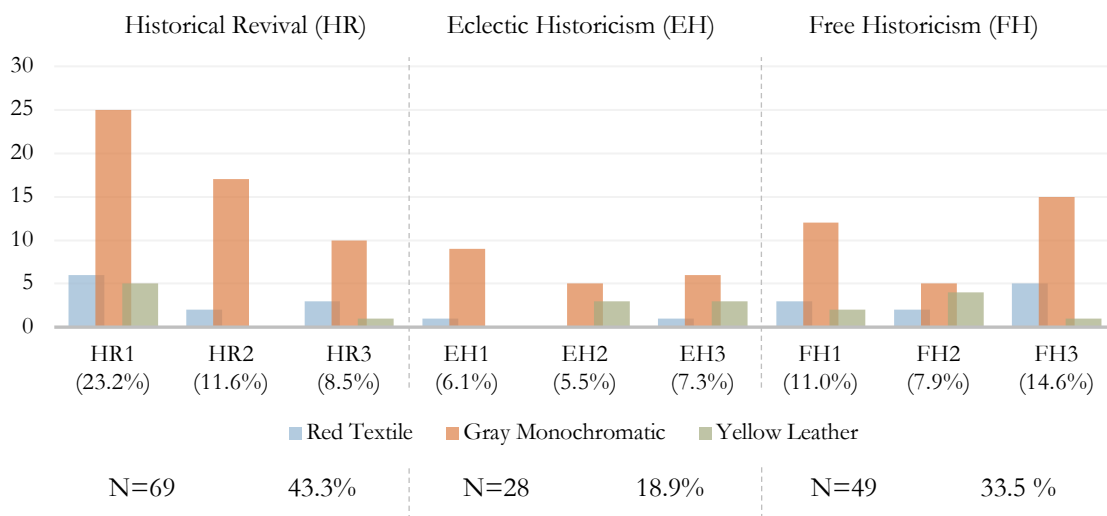
Participants preferences based on materials/themes.



After the participants explored the nine models and got a general knowledge of each design, they were asked to choose one of those models for their living room space. Ten of the participants preferred to purchase none of the models. Also, three respondents chose Other with no clarification in Q32. However, the rest of the responses exposed diverse preferences among participants. The highest percentages were between the extreme ends of the chronological order: the HR1 and FH3 models shown in Figure 131.

Figure 131

The respondents' preferences among the nine models



Of those respondents, 36 (23.2%) preferred the model HR1, which is the seating with high-level nostalgic details. A few respondents (n=6) chose the design in red textile, while a few others (n=5) liked the model with the yellow leather cushion. At the same time, a high number (n=25) preferred the gray monochromatic cushion theme design. They preferred the mixed feeling of the historical characteristic in monochromatic fabric with the HR1 model. On the other end, 21 respondents (14.7%) favored the free historical model

FH3, which is the seating free of nostalgic details. Fifteen out of twenty-one picked the model in a gray monochromatic cushion, while five selected the design in red textile and one in yellow leather. In this option, participants preferred to match the modern feeling with a gray monochromatic color that matches their personal space. The third most preferred model is HR2, which is with the historical revival models. Over 10 percent (n=19; 11.6%) selected the HR2 model, (n=17) respondents selected the gray monochromatic design, and (n=2) selected the red textile theme. It suggested that the Historical Revival (HR) group (HR1, HR2, and HR3) is the most commonly selected model among the other groups (n=69; 43.3%), while the Free Historicism (FH) group (FH1, FH2, and FH3) is less commonly selected (n=49; 33.5%) compared to the HR models.

The last two questions of the study's visual questionnaire were open-ended. Q34 and Q35 aimed to understand whether vernacular characteristics motivate the Saudi millennials' buying preferences among the nine models. In these two questions, the researcher used qualitative thematic analysis to explore the semantic relationship of words and concepts used to describe what appeals to purchasing seating based on the provided nine models. The analysis started with themes and then moved on to categories (Saldana, 2021). Furthermore, the researcher used the responses to the two questions on the Word Cloud generator website to facilitate the production of themes, codes, and patterns among data (see Figure 132).

Table 21*The code categories and subcategories of Q34 and Q35 data*

		N	%	
Themes	T1: Visual Consideration	T1-1: Style and Forms	100	61.0%
		T1-2: Physical and Feeling	67	40.9%
		T1-3: Color and Materials	37	22.6%
		T1-4: Proportions and Size	13	7.9%
		T1-5: Ergonomic and Structure	29	17.7%
	T2: Culture Valuing	T2-1: Longing for the Past	16	9.8%
		T2-2: Memories and Recall	4	2.4%

Visual Consideration (T1). It is the first category generated based on the analysis. The respondents showed the individual details of the chair that attracted them the most. The findings from this response offered under five subcategories are as follows:

1. Style and Forms (T1-2): In this subcategory, the respondents have described their reasons for selecting the model based on the model style and shape. Some explained that the traditional style motivated their selections, and others based their selection on its simplicity:

- *“Traditionally inspired seats. But also looks a bit basic in design.”*
- *“Because it is Simple, elegant and goes with different designs.”*
- *“Simplicity, design looks comfy and appealing proportions of it and the size.”*

Furthermore, participants implied that the model they selected has different characteristics than others, which makes it unique from the other seat models:

- *“Unique, fancy, and simple.”*
- *“Being modern, looking comfortable, and lovely design.”*
- *“Looking interesting and having unique details.”*

- *“Chic and comfortable.”*

2. Physical and Feeling (T1-1): The finding under this category showed that the respondents expressed their reasons for selecting the chair by feeling its comfiness, the feeling or quality of being comfortable. The most common word to express that feeling is comfy or looks comfortable. Other participants explained that looking at the chair makes them feel comfortable due to the chair design elements and form:

- *“comfortable”*
- *“I feel it’s comfy.”*
- *“The design looks comfortable.”*
- *“It looked the most comfortable among other models.”*
- *“Comfortable looking, reflecting the details of the chair.”*
- *“Simple and have beautiful details with comfortable design elements.”*

3. Color and Materials (T1-3): In this group, the result showed that the color and material of the chair were the most compelling reasons for participants to choose a chair for the living room. Some participants combined those two preferences with their feeling of warmness and comfiness:

- *“Because the colors were warm and matched well with the wood,”*
- *“Love gray color furniture and feels comfortable.”*
- *“I like the sofa when it’s mostly in one colour.”*
- *“The design, looks comfortable, and the color.”*
- *“The color is amazing with wood.”*

Likewise, others described their preference of color to match their personal space:

- *“I choose the gray color as it is a safe option and fits different living room styles.”*

- *"I think gray is a good color for a living room, it gives some brightness."*

4. Proportions and Size (T1-5): A limited number of respondents have defined their reasons for selecting one of the study models due to its size and proportions inside a space. The participants focused on the chair size and whether it fits their home space and surroundings:

- *"The size of the model,"*

- *"Size for apartment spaces,"*

- *"The size is suitable, and the design is simple and the seat looks comfortable with arms on each side 👍."*

5. Ergonomic and Structure (T1-4): Under this classification, the respondents defined their reasons for selecting one of the study models due to its structure. A few participants mentioned the importance of armrests as an essential part of their selecting criteria for living room seats:

- *"Looks more comfortable with hands and the wood match the gray color more,"*

- *"It has 2 armrests and looks more comfortable than the other one with 2 armrests."*

Other participants were specific about the details they looked at when buying a chair.

A few were specific concerning the chair back angles and smooth edges\corners:

- *"There are no edge lines."*

- *"In choosing my model, I do not look into the Design only. For me, there are many factors, like the degree of backward leaning, that ease of getting up from the seat, that pointed edges, and the support of cushioning."*

Cultural Valuing (T2). It is the second category generated based on analysis of the data. The respondents showed deeper connections in their selections. The findings from this response are offered under two subcategories as follows:

1. Longing for the Past (T2-2): a few respondents spotted the vernacular characteristic used in the designed model as a reason for selecting the model. Some have reacted based on one evocative feeling of the past. They performed some familiarity with those vernacular details and showed a high level of gratitude:
 - *“The traditional upholstery feels warmer, for it reminds me of my Najdi history, past, and tradition,”*
 - *“The red textile looks familiar,”*
 - *“I like the traditional design that represents Saudi culture that used in the textiles as well as the Masrabiya element,”*
 - *“The chair details reminded me of the structural elements holding the Roshan, they also resembled the wooden beams (ganadeel) that forms the floor structure in the old houses of Jeddah. I feel more connected to the architectural elements of historical buildings than the ornamental characteristics that’s visible in the other models.”*
 - *“The surprise element of the wood reimagined historical design; and the gray textile because it doesn’t overshadow the wood design.”*
2. Memories and Recall (T2-1): Limited participants described their interest in the chair due to the evocative feeling that the chair stimulated. The chair vernacular details reminded them of childhood memories, and they admired this feeling:

- *“It's reminded me a lot of things back home! It took me many years back remembering my childhood! I would love to have a room in my house fully of traditional and historical stuff one day inshallah.”*
- *“It looks good, artistic and it brings back memories.”*

The finding from the first category (T1) indicates that the look of the chair has guided their preference in buying a chair for their living room, such as comfort, style, and space. However, only some have indicated a specific need based on their needs, such as the size, armrest, and back angles. Besides, the second category (T2) found limited participants considered emotional connections related to the past. Some designs have stimulated childhood memories and increased familiarity with a high appreciation for tradition and vernacular elements.

Chapter Summary

The study developed a three-stage investigation: (1) A case study of the Hijazi's Karaweetah was used to generate an in-depth understanding of visual vernacular characteristics and document material culture to understand its function, construction, style, material structure, and symbolic detail. (2) The design practice and ideations are based on the first stage to generate two and three-dimensional prototypes of nine seating designs to represent different levels of heritage inspiration in chronological sequence: three designs are traditional, three are semi-traditional, and three are contemporary. (3) The visual questionnaire was designed to test the historical nostalgia of Saudi millennial consumers and its effect on these individuals' attention and purchasing preferences by using the nine seating designs created in the second stage of the research study.

CHAPTER 5.

DISCUSSION AND CONCLUSION

Introduction

This chapter is the final chapter of this research study. It includes a conclusion with the research outputs, contribution to knowledge, research challenges and limitations, and future research. The conclusion of this research is based on previous analyses and the study area described in Chapter Two, illustrating the methodological approach of the hermeneutics strategies in developing the multi-methods for the data collection in Chapter Three and the analysis of the collected data in Chapter Four. The study framework explored, analyzed, and interpreted the conventional seating known as Karaweetah to document elements of design and heritage, such as symbols, shapes, forms, and colors. Other characteristics related to making and traditional woodworking techniques are long-lasting and present original local identity. Nevertheless, this framework created two- and three-dimensional visual prototyping of nine seating models to test the nostalgic stimuli on Saudi millennials' purchasing behavior. All of this addressed the following objectives:

- To document information related to traditional Hijazi seating, the Karaweetah, from Historical Jeddah, Saudi Arabia,
- To identify elements of heritage and vernacular characteristics of the Karaweetah,
- To explore the existing guidance preserving social, cultural, and design identity in furniture design, the uses of heritage as a cultural component, and how it is incorporated into design,

- To produce a framework and a design approach that can improve and produce a unique characteristic celebrating the historical nostalgia of the past, and
- To test the historic nostalgia level of Saudi millennial consumers' preferences in regard to traditional cultural identity and heritage.

The study developed three designed phases based on the hermeneutic interpretation approach to address the lack of historical nostalgic-evoking related research studied on the Saudis consumer purchasing decisions for seating, absence of design knowledge related to traditional seating (the Hijazi Karaweetah) in response to the need for understanding the vernacular characteristics to address the research problem. As reiterated in Chapter One, the following research questions were developed to frame the research study design and discussion of the results:

1. What are the vernacular characteristics tangible and intangible values in the conventional Hijazi's seating the Karaweetah?
2. What are Saudi millennial consumers' attitudes toward preserving traditional cultural identity in seating design?
3. Can historic nostalgia-evoking seating design influence Saudi millennials consumers in buying decision-making?

Conclusions and Research Outputs

This exploratory research study aimed to address the research questions and objectives mentioned above. The study employed multiple methods to generate and interpret data, as described in Chapter 3. Specifically, the hermeneutics system was utilized to organize the data analysis and to provide a structured system for determining a qualitative approach in

phase one of the case study. It was also used to inform the practice design based on research approaches in phase two and to structure the study's visual questionnaire in phase three. Additionally, the written discussion of the study's interpretation included evidence to justify providing insights into the phenomena under study, and the analysis was carefully explained. However, it is important to note that the researcher's reflexivity to the study result is influenced by biases, values, experiences, and assumptions to maintain integrity, honesty, and transparency, as cited in Ramsook (2018).

The case study began by examining the seating at three houses: Beit Matbouli (H1-BM), Beit Salom (H4-BS), and Beit Baeshen (H3-BB). The outcome of the three house visits was five distinctive vernacular Karaweet. Each of the five Karaweet reflected different regional perceptions of traditional seat design and function. Akbar (1998) explained that a craftsman communicated with household members to determine the furniture size and shape before they became a part of the family house. Measurements were taken and analyzed, resulting in the formation of the three reflective design levels (HR, EH, and FH) and nine-seat models (HR1, HR2, HR3, EH1, EH2, EH3, FH1, FH2, and FH3).

Contribution to the Knowledge

The section above summarized the scope and content of the study, defined the study design, and explained the effort to respond to the research questions and objectives. This section interprets the data within the context of each research question.

The first inquiry of the study was: *What are the vernacular characteristics tangible and intangible values in the conventional Hijazi's seating, the Karaweetah?* The response to this question is presented in the first phase of this study. The site visits to Al-Balad, Historical Jeddah, as one of Saudi Arabia's early civilizations (Goodwin, 2001), are aimed at discovering the

conventional seat vernacular characteristics, both tangible and intangible. A wide range of local design vocabulary is expressed in the design of residential spaces, influenced by Turkish, Mamluk, Ottoman, and Cairo elements (Jomah, 1992). Furthermore, the conventional Hijazi seating is distinguished as a unique and straightforward piece of furniture. According to Akbar (1998), furniture in Historical Jeddah was multi-functional, minimal, and movable. The bench combined several parts: Karaweetah, Tawaweel, Misnad, and Madafi. Those parts might come together as one piece of furniture, sometimes only the Karaweetah with Tawaweel. There were different types of seating, such as cushions on the floor (Tawaweel) and the built-in deck of Mashrabiya seating (Khayat, 2019). However, the study focused on the movable seat: the high benches Karaweetah (see Chapter 4, Phase One).

Based on the visits, it was found that most of the Karaweet is located on the first floor. Beit Matbouli (H1-BM), the public museum, had five pieces of Karaweet, all with the same design (H1-BM-K1). One Karaweet was in the house's lobby, and four Karaweet were in the Al-Maqad. Besides, Beit Baeshen (H3-BB), the public museum and Cafe, had eleven pieces of Karaweet in three different designs (H3-BB-K2), (H3-BB-K3), and (H3-BB-K4). The public museum had six pieces of Karaweet at the house's entrance in one design (H3-BB-K2), and the Cafe had five pieces in two designs (H3-BB-K3) and (H3-BB-K4). Meanwhile, the public museum of Beit Salom (H4-BS) had seven Karaweet; all had the same design (H4-BS-K5). Two Karaweet were at the entrance, and five were in the Al-Maqad space (see Chapter 4, Phase One).

In addition to the number of pieces and area of Karaweetah found, each design has different proportions and heights. As mentioned by Akbar (1998), the size and form are adjusted to fit the family's needs when an artisan communicates with family members. The

study found that the seat height among the five designs was approximately 459mm to 604mm. This height is considered high compared to the standard height of 356mm and 490mm. Moreover, seat height was an essential factor representing a cultural behavior of respect (Akbar, 1998). Others suggest the seat's elevation is used as storage. Among the five designs found, two have a covered front with the same fabric used on the seat cushion and served as storage at Beit Matbouli (H1-BM) and Beit Salom (H4- BS). Both heights were relatively higher than the others. However, the other Karaweet found at Beit Baeshen (H3-BB) is not covered from the front side. This suggests that having a higher seat adds another functional space as storage. It is also a means to cover the front of the bench in order to hide what was underneath. Furthermore, this also indicates that the Karaweet found at Beit Baeshen (H3-BB) was relatively newer than the ones found at Beit Matbouli (H1-BM) and Beit Salom (H4- BS). This showed that the users' needs and behaviors differ from one home to another, and the artisans fulfill each of the five designs according to the users' needs (see Chapter 4, Phase One).

The Karaweet seat depth and width varied among the five designs. The depth ranged from 450mm to 717mm, while the width ranged between 1208mm and 2277mm. These variations in depth and width accommodate different uses, such as personal relaxation during the day, sleeping for guests at night, and seating for several guests during big social occasions (Akbar, 1998). The bench size could fit two or more people in one Karaweetah. However, armrests play an essential role in having a continuous seat with a second Karaweetah, which increases the seating area size.

Among the five designs, three Karaweet had one-sided armrests (H1-BM-K1), (H3-BB-K2), and (H4- BS-K5). The two other Karaweet (H3-BB-K3) and (H3-BB-K4) had two armrests. This could suggest that those two designs were the latest compared to the other

three. The armrest height was relatively average among the five designs, between 214mm and 243mm, without the cushion height. However, the armrest in (H1-BM-K1) and (H4-BS-K5) is considered the lowest compared to other designs. Those two designs are used in the Al-Maqad space, where guests sleep at night or relax during the day. Therefore, the lower height of the armrest is considered comfortable for lying on the armrest (see Chapter 4, Phase One).

Furthermore, the backrest and cushions were critical parts of the conventional seating. Between the five Karaweet, the backrest sizes ranged between 450mm and 717mm. The largest backrest size was found at Beit Baeshen (H3-BB-K3). In contrast, the lowest backrest was found among the oldest designs, in which most backrests were hidden by Misnad. While cushions on the conventional seating have three types: Misnad, Tawalah, and Madafi. Those cushions usually exist in all designs, with changes in size and shape to match the size of the Karaweetah. However, few designs contained only one type.

- Misnad: The backrest cushion covered the back of the bench in all designs except one Karaweetah (H3-BB-K3). This design features the longest backrest among others and exhibits distinctive details.
- Tawalah: The seat cushion enhanced seating comfort, as the bench was a fully wooden bench. The padding thickness varied across the designs, ranging from 50mm to 106mm. However, compared to modern cushions, these were relatively thin.
- Madafi: The seat side-lying cushion is padded with a thick sponge and has a rectangular shape. The thicknesses of Madafi ranged between 183mm and 229mm (see Chapter 4, Phase One).

Regarding the vernacular characteristics among the five Karaweet, there were markedly different design languages. All designs reflected various vernacular elements, representing the Turkish-influenced Mamluk, Ottoman, and Cairo design and craft, as noticed by Jomah (1992). Each design was also characterized by the needs and users of the house, which eventually caused a disturbance in the bench shape.

1. (H1-BM-K1): This design was likely to be the oldest, as the house was built in 1613. It has simple and minimal details. The design was a rectangular wooden bench with one- or two-sided armrests, allowing continuous sitting with a second Karaweetah. It has four linear legs. The front legs have chamfered edges and beveled cuts around the middle, while the back legs are extended to the back with the exact details near the armrest. The armrests have a demi bullnose edge for a softer edge. This design has Tawalah, Masnid, and Madafi as cushions covered by a red and white fabric (Abo-Tare أبو طير). The same red fabric covered the front of the bench and was used as storage (see Chapter 4, Table 05).
2. (H3-BB-K2): This design was a rectangular wooden bench with a one-sided armrest, allowing continuous sitting with a second Karaweetah. The design reflected the influence of Egyptian wood-turning traditional techniques on building the Mashrabiya. It is used to utilize the bench parts in two ways. The four legs were wood-turned, from top to bottom, with unique details combined with round and square shapes. The armrest was also turned into smaller pieces, combined with round and square shapes. The armrest and backrest heights are equal, making these aesthetical details unique in this design. This design has

Tawalah, Masnid, and Madafi cushions covered by a green and white fabric (Abo-Tare أبو طير) (see Chapter 4, Table 06).

3. (H3-BB-K3): This design was a rectangular wooden bench similar to a sofa size. It has four legs and armrests on both sides. This design has an extended backrest with significant details that match the armrest details, featuring a repetitive linear form with two oval shapes in the center of the back. The armrest details were small in scale compared to the back details. The four legs of this design were wood-turned with unique details that combine round and square shapes from top to bottom. This design has only Tawalah as a seat cushion covered by dark red velvet fabric (see Chapter 4, Table 07).
4. (H3-BB-K4): This design was structurally similar to the (H3-BB-K3). However, the features of the bench were more straightforward and cubical in form. It comfortably accommodates two people. The armrests are connected to the seat with no intricate details. The four legs are square-shaped, and the back legs are extended to support the backrest. Also, this design features two Tawalah, one used as a seat cushion covered by green Abo-Tare (أبو طير), and the other one used as a backrest cushion covered by dark red velvet fabric, see Chapter 4, Table 08. It seems that both designs, (H3-BB-K3) and (H3-BB-K4), are the only designs with two side armrests. This could indicate the beginning of modern influences of linear members and cubical shapes, with the elimination of using the Masnid and Madafi cushions.
5. (H4-BS-K5): This design was a rectangular wooden bench with a one-sided armrest, allowing continuous sitting with a second Karaweetah. The design

features the highest seat among other designs. Most of its joints are exposed, indicating it may be one of the oldest Karaweet due to the evident quality of the exposed and hand-cutting joints. Moreover, the two front legs are wood-turned and have unique details that combine round and square shapes from top to bottom, while the back are square-shaped legs. The seat's backrest is cross-shaped to add strength rather than for aesthetic reasons. The armrest in this design is the lowest among other designs and has a pointed shape with a soft edge. This design has Tawalah, Masnid, and Madafi as cushions covered by red and white fabric Abo-Tare أبو طير, and the same red fabric covers the front of the bench to utilize the space as storage. See Chapter 4, Table 09.

Besides the distinctive vernacular characteristics, the proportions of the Karaweetah evolved over time. Initially, the bench width accommodated the human size, allowing individuals to lie down or sleep comfortably. However, modern adaptations shifted the form towards a chair that accommodated two individuals sitting. Additionally, the height of the Karaweetah transitioned from relatively high, reflecting cultural norms of respect among male users, to a standard height chair suitable for male and female users. These changes in size and details not only reflected the local identity of residents of Old Jeddah, as it is the gateway for Hajj and Muslims from around the world (Chambers, 2019), but also the adaptation to evolving social dynamics and functional needs. Furthermore, the continuous development of new furniture pieces, such as cabinets, has contributed to changes in form and function. In conclusion, the characteristics, proportions, and functions of the Karaweetah have been continuously reshaped over time to meet changing preferences and lifestyle demands.

Identifying the vernacular characteristics of Karaweetah and understanding its tangible and intangible elements assisted the foundation for the study's second phase. In this phase, the researcher developed a practice framework based on the research. The goal was to integrate the vernacular characteristics identified in phase one into nine designed models in three reflective design levels. This approach aimed to establish a systematic design strategy that harmonizes traditional features with contemporary practices. Above that, the nine evocative seats are designed to align with the methodological approaches of the study and support the research inquiries effectively in phase three.

The second question of the study was: *What are Saudi millennials consumers' attitudes toward preserving traditional cultural identity in seating design?* A visual questionnaire was designed to address this research question in phase three. The questionnaire comprised three sections: socio-demographical information, preferences when purchasing seating, and buying decision-making based on the nostalgic-evoking nine models. Analysis of the socio-demographical information revealed that the majority of the study participants were Saudi millennials, with a higher percentage of female participants showing interest in design and furniture design topics. Additionally, most participants had spent an average of five years outside of Saudi Arabia, potentially influencing their emotional attachment to traditional elements and impacting decision-making processes (Sierra & McQuitty, 2007). When purchasing a chair, their shared preferences included comfort, style, compatibility with their living room aesthetics, alignment with color themes, and the ability to evoke personal feelings.

The nine models that evoke nostalgia were utilized to construct the third section of the visual questionnaire, aimed at understanding the attitudes of Saudi millennials towards preservation and their decision-making process when purchasing seating. Nostalgia

significantly influences consumer purchasing behavior (Gu et al., 2021; Marchegiani & Phau, 2011; Russell, 2013). The result showed a higher preference for historical revival models (HR) (see Figure 133). Specifically, the HR1 model, characterized by traditional details, garnered notable interest. Although HR2 and HR3 models also contained a high level of traditional details, participants expressed that both models exhibited a blend of simplicity and modernity. This suggests a need for participants to familiarize themselves with the vernacular features used in the models, potentially due to their unfamiliarity or lack of knowledge.

Figure 133

The Historical Revival models: HR Group



Additionally, most respondents agreed that the three designs in the eclectic historicism (EH) group were perceived as simple and modern compared to the historical

revival models (HR). Interestingly, some respondents selected the EH2 model as traditional, attributing its familiarity to the traditional details on the back of the chair. Conversely, EH1 and EH3 were perceived by other participants as a modern chair devoid of traditional details (see Figure 134). The outcome suggests that when vernacular characteristics are incorporated in an easily recognizable manner, participants find it more straightforward to identify and appreciate these details, aligning with Cotter and colleagues' (2017) notion that familiarity enhances understanding.

Figure 134

The Eclectic Historicism models: EH Group



Conversely, free historicism (FH) models were recognized as modern and not associated with nostalgia-evoking aesthetics (see Figure 135). This indicates a deeper understanding of modernity among respondents, likely influenced by exposure to various

cultures, brands, advertising, and the Internet as a source of information, as Russell (2013) posited. Consequently, modernism and modern styles emerged as the most favored styles. Moreover, prolonged periods of living abroad as Saudi millennial students and exposure to Western culture likely contributed to a better comprehension of modernity than their understanding of local design identity.

Figure 135

The Free Historicism models: FH Group



(FH1)

(FH2)



(EH3)

The third question of the study was: *Can historic nostalgia-evoking seating design influence Saudi millennials consumers in buying decision-making?* Despite having a limited understanding of the local vernacular characteristics in the second inquiry, the most preferred model among Saudi millennials mainly belonged to the traditional HR group (43.3%). Specifically, the HR1 model emerged as the top choice (23.2%) for purchasing a chair for their living spaces.

Participants cited a personal connection as the primary motivation for selecting this model, attributing it to evoking emotional memories of childhood and their home country. One participant expressed: "It reminded me of a lot of things back home! It took me many years back remembering my childhood!" Another participant remarked, "The chair details reminded me of the structural elements holding the Roshan; they also resembled the wooden beams (guanadrel)...." These responses underscore the profound impact of nostalgic elements in seating design on Saudi millennials' buying decisions, emphasizing the significance of emotional resonance and cultural connection in consumer preferences.

Furthermore, Saudi millennials also showed a preference for the HR2 model, ranking it as their third most preferred option when purchasing a chair, with 11.6% of the participants selecting this model. Their reasons for choosing HR2 included its simplicity, comfort, and incorporation of traditional features. Participants described it as "Comfortable, modern, and some traditional features" and "Comfortable, modern/historical and beautiful." This underscores Saudi millennials' desire for seating designs that blend modern comfort with traditional elements, reflecting their appreciation for cultural heritage in their living room spaces.

On the contrary, the FH3 model, free of traditional details, was the second most selected model, with 14.6% of respondents choosing it. This indicates that for Saudi millennials, the modern style represents sophistication, as Jomah (1992) explained. Participants cited the modern model's simplicity and unique details as reasons for their choice: "Because it is Simple, elegant and goes with different designs," "Being modern, looking comfortable, and lovely design," and "It looks different and interesting." While participants appreciated traditional models, they opted for the modern design to suit their living space better: "I appreciate good and vintage designs (Western and Eastern), ...you

need to re-design the whole house to fit it in." This suggests that there is a desire for traditional elements, yet the desire for compatibility with existing living space styles plays a significant role in their decision-making process.

In addition to Saudi millennials' model preferences, participants strongly preferred the gray/monochromatic fabric cushion theme across traditional models (HR1 and HR2) and the modern model (FH3). They explained that the monochromatic color scheme has a significant impact on their emotional preference, stating reasons such as: "Because the colors were warm and matched well with the wood," "Love gray color furniture," and "I like the sofa when it's mostly in one color." Others mentioned that a gray/monochromatic theme works with various living room styles: "It matches all types of spaces," and "I choose the gray color as it is a safe option and fits different living room styles." This suggests that Saudi millennials prefer one-color cushions for their living spaces, which provide a modern look over traditional detail. However, their modern living spaces appear to influence their purchasing decision despite their appreciation for traditional elements.

In brief, Saudi millennials prioritize comfort, appearance, and how well a chair fits into their surroundings when making purchasing decisions. While they value local characteristics, their primary motivation is finding comfortable and stylish chairs that complement their living room spaces. Despite their high interest in nostalgic design, they may not always recognize or appreciate vernacular characteristics in seating. This highlights the need for future consideration of spreading awareness of local details among end-users.

Research Challenges and Limitations

As with all research, this study had several limitations and challenges. The researcher faced challenges related to study sites. One of the houses at Historical Jeddah, Beit Nassif

(H2-BN), has a restricted entry (only VIPs), which limited the study's exploration of the Hijazi Karaweetah at that house. The house has outstanding features of traditional Hijazi architecture and design vocabulary, such as Mashrabiya, a courtyard, and a windcatcher. It is the oldest and most significant in the area and throughout history. Therefore, it is considered a symbol of Jeddah, and the government of Saudi Arabia owned the house since 1987. In contrast, the other three houses of the study, Beit Matbouli (H1-BM), Beit Salom (H4- BS), and Beit Baeshen (H3-BB), were easy to walk in and communicate with the people responsible for the houses.

The study focuses on heritage preservation in furniture design, specifically in Saudi Arabia. However, heritage-related studies in the country are relatively new and must be enhanced. Most ongoing projects are limited to architecture and historical building preservation (MOC.gov.sa, 2019). The absence of references related to vernacular elements in furniture design that represent Saudi Arabia's local identity has challenged researchers to gather data about vernacular characteristics. However, the data collected can establish a foundation that benefits furniture design professionals and practices for a better material-cultural understanding of vernacular furniture. Also, this study emphasizes the government of Saudi Arabia's Vision 2030, which aims to maintain local cultural identity and preserve heritage on a smaller scale, such as furniture.

Furthermore, previous research studies on the heritage and social-cultural understanding of Saudi users are limited, which suggests a need for more knowledge of subpopulations of Saudi citizens, such as the millennial age group, as one of the market segments. This age group represents 39% of the Saudi population in 2023, requiring an understanding of their buying preferences for the future development of the local furniture market. The study is limited to Saudi millennials studying outside Saudi Arabia. The study

reflection benefits the local furniture market by understanding the Saudi millennial consumer's preferences toward preserving heritage in chair design and the future development of the local furniture market identity. It is also recommended to study the influence of Western culture on the preferences of different age groups, such as Gen Z. They are living the global transformations of Saudi Arabia. As a result, their preferences may differ from those of millennials who have experienced different changes. In particular, those nostalgic for the past may have other preferences than those who have not experienced it firsthand.

In addition, the researcher faced challenges related to the online distribution of the visual questionnaire. Initially, two methods were used to distribute the questionnaire: a mass email distributed through the Saudi Arabian Cultural Mission (SACM) and the messaging application known as *WhatsApp*. SACM is a specialized agency that meets the educational and cultural needs of Saudi Arabian citizens studying in the United States. However, the agency's response was very delayed. The survey was then only distributed through WhatsApp. Despite this barrier, the application successfully reached and shared the script with the study sample both inside and outside the United States.

Recommendations and Further Research

Since the 1980s, architecture publications and scholars in the Middle East have been seeking and complaining about the loss of traditional architectural features and blaming modernity (Akbar, 1998; Al-Naim, 2006). Those publications must still publish material understanding concerning smaller-scale conventional products such as the Karaweetah. Moreover, the study results showed a need for more knowledge of vernacular elements and heritage among Saudi millennials. Therefore, it is suggested to increase the understanding of

the community's vernacular characteristics, improve the publication and research studies concerning vernacular furniture and local design identity, and preserve the local furniture design identity. More articles related to local design languages are recommended for the public and end-users to gain knowledge and increase awareness of local design elements.

Furthermore, the study developed a material cultural understanding of the Hijazi Karaweetah in phase one. It is recommended to create additional related studies that follow this study approach in documenting other conventional seating in different regions of Saudi Arabia, such as central or northern regions. Also, the systematic framework used in phase two can be extended or used as a ground strategy for more applied analytical studies in furniture design. Further research studies are recommended to focus on traditional material understanding for other objects related to users in home environments that had functioned in the past and not existed or developed in the present.

The study might be replaced with changes in surroundings and space uses. This might present a novel opportunity for further exploration of the effect of space in selecting traditional versus modern. For instance, these models can be applied to different interior spaces other than residential spaces, such as administrative spaces, and how space might affect decisions. The surrounding area could deliver significant insights. The potential for diverse model selection among participants in different spaces might add an intriguing dimension to the study.

The study could also be replicated with changes to the sample and/or methodology. Sharing the visual questionnaire with a sample of non-millennials, both inside and outside Saudi Arabia, could provide insight into the furniture purchasing preferences of other age groups. Besides, comparative research studies based on gender differences, examining how male and female buyers respond to the models, could provide valuable insights. As for

research methods, the Eye-tracking technique is another recommended research method that can capture implicit preferences. It is an interactive interface showing where and how long people look at the visual details of a product. Eye-tracking movements track the eye during image gaze tasks identified for moments of fixation and rapid movements from point to point (Martin & Hanington, 2018). This technique can help examine visual materials engaging with products. The data in this technique is used to generate heat maps, generate visual analysis office scan patterns, and distribute attention. eBay is one famous example of using eye tracking to understand where ads could be moved, which is the most practical and valuable way to share an advertising strategy (Martin & Hanington, 2018). Also, previous studies have used Eye movement to understand users' aesthetic preferences for car seats (Huang et al., 2020), chair features design (Zhang & Xu, 2020), and new Chinese furniture styles (Wan et al., 2018) (see Figure 136).

Figure 136

An example of an Eye tractor and a tracking sequence of the gaze point (Wan et al., 2018, pp. 730-734)



Furthermore, recommended research directions could investigate the psychological responses to the nostalgic nine-seat designs. The studies could explore the emotional and cognitive effects of interacting with those nostalgic seating and understand how they could impact individuals' mood, memory, and overall mental health. The research may include observational reports and in-depth interviews to understand the psychological impact. Understanding these psychological responses helps marketers and designers to develop products that have a strong emotional impact on customers.

Conclusion

This research study is designed to enhance the understanding of preferences and purchasing decision-making among Saudi millennials regarding seating designs that evoke nostalgia. The purpose is to assist the local furniture market in maintaining the Saudi local design identity while highlighting buyers' preferences of end-users. This study will help preserve the local seating design identity in ways that meet the demands of Saudi millennials.

The motivation behind this research subject matter is the limited number of publications related to furniture design and heritage in the regions of Saudi Arabia. The lack of research suggests a gap in the body of knowledge about Saudi preferences in the furniture market and heritage in seating design. Thus, the development of this study enables a better understanding of the Saudi end-users, underlining vernacular features in seating design and developing the future growth of the Saudi furniture market. The study proposed frameworks to help practitioners, students, and professionals use vernacular characteristics in modern seating design practices. Lastly, the recommended opportunity might open a vast possibility that directs other scholars to material cultural projects, integrate vernacular elements, and further research inquiries.

The methods applied in this dissertation are comprehensive and well-structured. This study involved a case study, design creativity, and a visual questionnaire developed based on hermeneutics interpretation, allowing for a holistic subject exploration. The researchers used multiple approaches to gain an in-depth understanding of Saudi millennials' preferences and purchasing decision-making regarding nostalgic-evoking seating designs. The 164 study participants also provide a diverse perspective that enhances the findings. The gender division among the participants is also noticed, with a higher representation of female respondents. The outcomes demonstrated a clear understanding of the influence of nostalgic elements in seating design on Saudi millennials' purchasing decision-making. The conclusions indicated a considerable effect of historical nostalgia on purchasing preferences while recognizing some participants' preference for modern styles. Overall, the research approaches used in this dissertation effectively address the research inquiries and contribute valuable insights into furniture design, heritage preservation, and consumer behavior.

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APPENDIX A

TIMELINE OF THE RESEARCH INVESTIGATIONS

Timeline of the research investigations:

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	
2019								Research Development Courses					
								Literature Review					
2020	Research Development Courses												
	Literature Review												
2021	Research Development Courses								Comprehensive exam				
	Literature Review												
	Define Research aim, objectives, questions, and research plan.												
2022		Prospectus Defense									Review		
	Data Collection and Analysis of Stages One and Two								Data collection of Stage Three				
	Writing and interpreting the data as soon as they have been collected.												
2023		Review							Review				
	Data analysis of Stage Three												
	Writing												
2024	Defense												
		Submit Dissertation											

APPENDIX B

SITS VISIT REPORT CHECKLIST

Date:
 Time:
 Building Name:
 Residential Space Name:

Objective of the site visit:

- 1- Illustrate the uses of the Karaweetah.
- 2- Identify the vernacular characteristics of the Karaweetah.
- 3- General and detailed photos of the Karaweetah and its elements
- 1- Measurements and dimensions of the Karaweetah

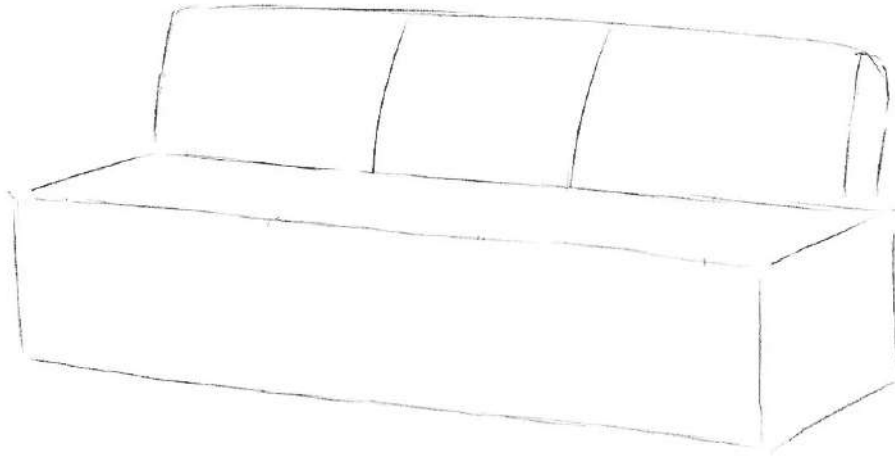
Methodology:

- 1- Taking photos
- 2- Writing notes
- 3- Taking dimensions

Main Findings:

Cultural Level	Traditional Cultural Elements		Note
Outer level (Tangible)	Structure	Form	
		Aspects	
		Joints	
	Material	Wood Species	
		Color	
		Texture	
	Dimension	Seat Height	
		Seat Depth	
		Seat Width	
		Backrest Height	
		Armrest Height	
		Seat Angle	
	Ornament	Motifs	
		Technique	
		Scale	
Other			

A three-Dimensional Drawing of the Karaweetah in outlines for faster note taking strategies:



A two-dimensional Drawing of the Karaweetah in outlines for faster note taking strategies:

General Notes:

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APPENDIX B

Sites Visit Report Checklist

Date: Jan 5, 2022

Time: 7:30 pm

Building Name: Beit Al-Matbauli / بيت المتبولي

Residential Space Name: Al-Maqad - Level (1)

Objective of the site visit:

- 1- Illustrate the uses of the Karaweta
- 2- Identify the vernacular characteristics of the Karaweta
- ③ General and detail photos of the Karaweta and its elements
- ④ Measurements and dimensions of the Karaweta

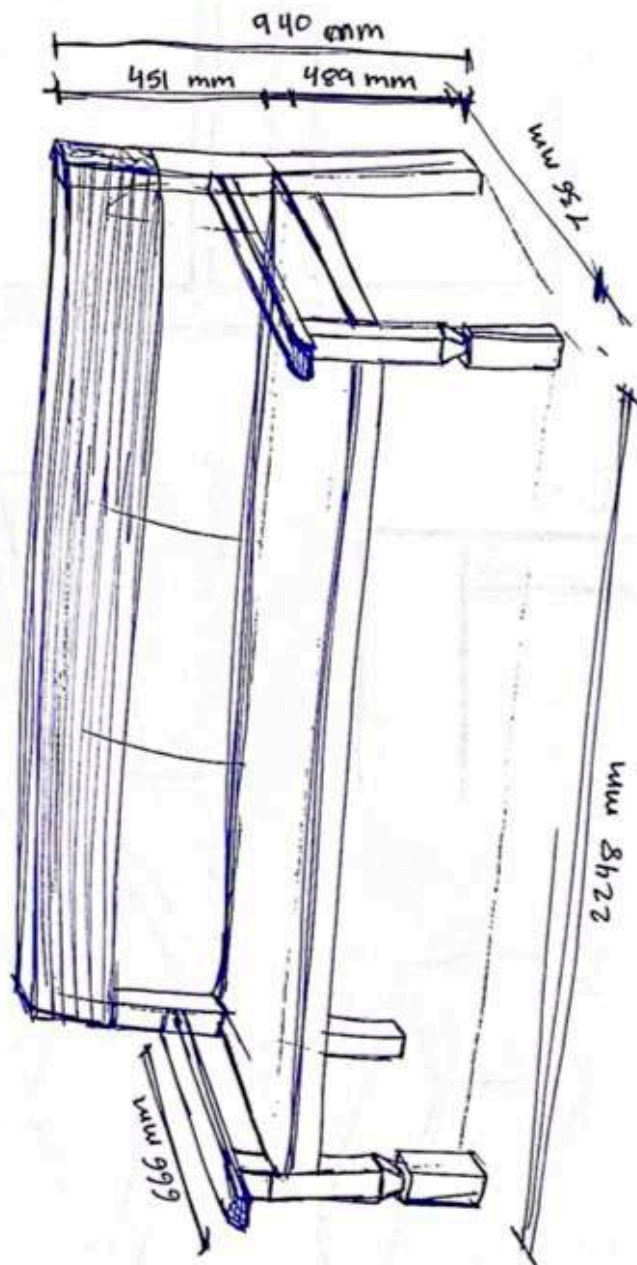
Methodology:

- ① Taking photos → iPhone 10.
- 2- Writing notes
- ③ Taking dimensions

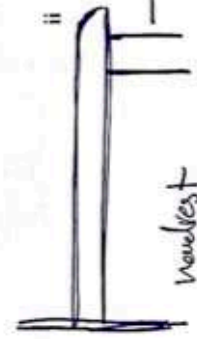
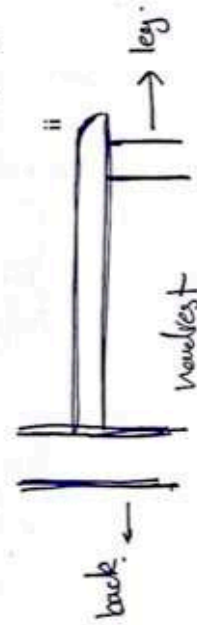
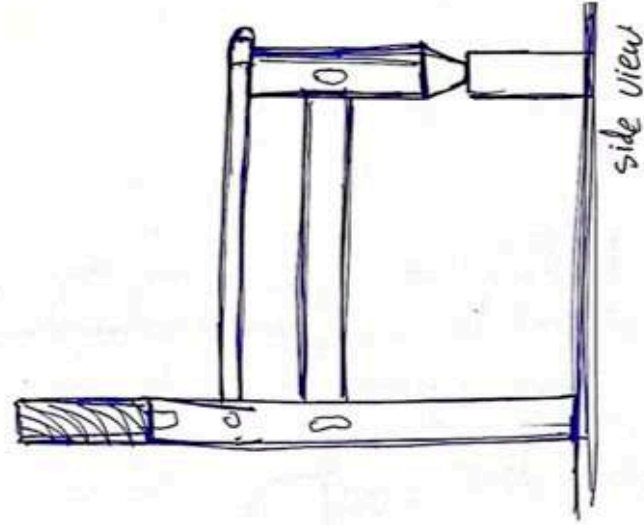
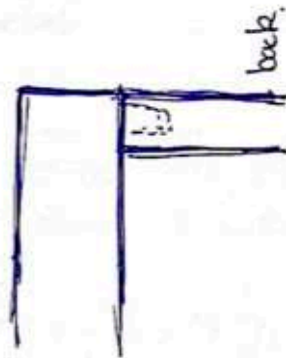
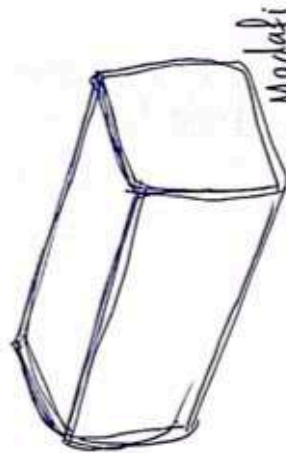
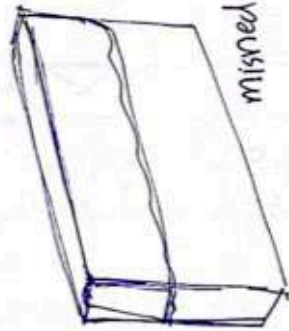
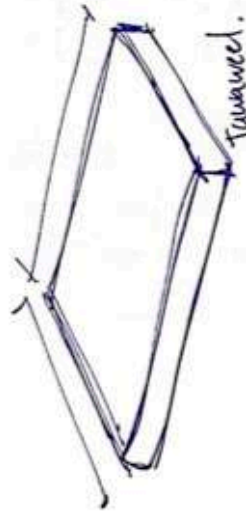
Main Findings:

Cultural Level	Traditional Cultural Elements		Note
Outer level (Tangible)	Structure	Form	simple square + straight-lines
		Aspects	fit more than three ppl.
		Joints	Hidden Joints.
	Material	Wood Species	✓ Dark wood. - stain
		Color	✓ Dark + red fabric / classic
		Texture	✓ wood + velour fabric + white top
	Dimension	Seat Height	940 mm + the seat height 489 mm
		Seat Depth	736 mm + Depth 628 mm
		Seat Width	2248 mm + width 2109 mm
		Backrest Height	451 mm
		Armrest Height	235 mm with out tawawel
		Seat Angle	90°.
	Ornament	Motifs	as Drawn
		Technique	simple + Mortise and tenon + hand shaping + wood turning.
		Scale	Two ppl. size seating.
	Other	has the original Paraweta at this space.	

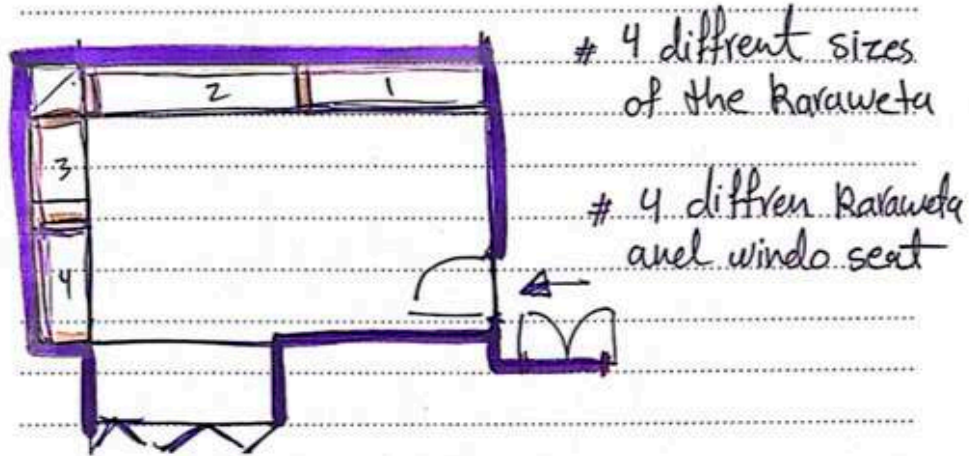
A three-dimensional drawing of the Karaweta in outlines for faster note taking strategies:



A two-dimensional Drawing of the Karaweta in outlines for faster note taking strategies:



General Notes:



4 different sizes
of the Karaweta

4 different Karaweta
and window seat

The purpose is to get general ideas of
the design language of the Karaweta.

The researcher took dimensional study of
the second Karaweta on the right,
number (2) on the map.

The sketch above shows the outline of
Al-Maqad space at the first level of
Al-Matbouli house.

H3-BB-L1
K1

APPENDIX B

Sites Visit Report Checklist

Date: Aug 15, 2022

Time: 6:27 pm

Building Name: Beit Baeshen

Residential Space Name: The entrance of the house

Objective of the site visit:

- 1- Illustrate the uses of the Karaweta
- 2- Identify the vernacular characteristics of the Karaweta
- 3- General and detail photos of the Karaweta and its elements
- 1- Measurements and dimensions of the Karaweta

Methodology:

- 1- Taking photos → I phone 13 pro
- 2- Writing notes
- 3- Taking dimensions

Main Findings:

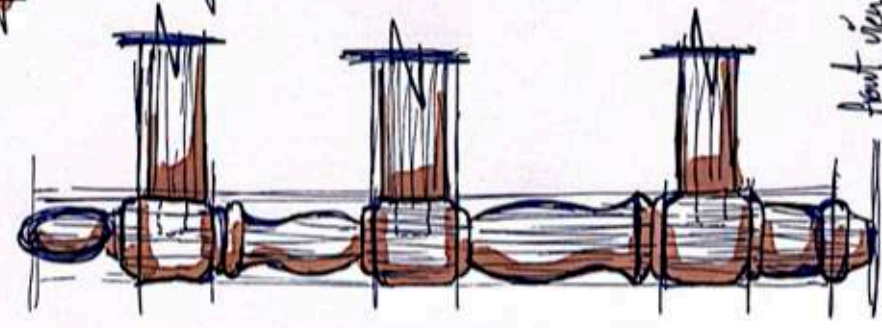
Cultural Level	Traditional Cultural Elements	Note	
Outer level (Tangible)	Structure	Form	square + straight lines + round shapes
		Aspects	seating for two + normal height
		Joints	Hidden joints (mortise + tenon)
	Material	Wood Species	stained wood / Dark
		Color	wood (Dark brown) + Green fabric ^{spat}
		Texture	(flower + Monard star + Peacock) fabric (soft + white crochet) fabric
	Dimension	Seat Height	813 mm + sit level at 459 mm
		Seat Depth	717 mm + sit area 654 mm
		Seat Width	2277 mm + without the arm ^{arm} 2214 mm
		Backrest Height	293 mm
		Armrest Height	247 mm
		back Seat Angle	In between (10° - 15°)
	Ornament	Motifs	As shown in the drawing
		Technique	wood turning (legs) + one side armrest with framed panel of Mangour work.
		Scale	Seating for more than two.
	Other	Each karaweta in the same space has different dimensions.	



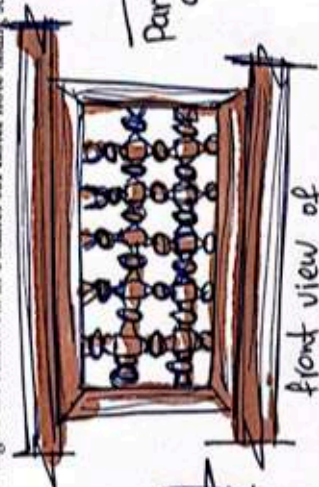
A three-Dimensional Drawing of the Karaweta in outlines for faster note taking strategies:



A two-dimensional Drawing of the Karaweta in outlines for faster note taking strategies.

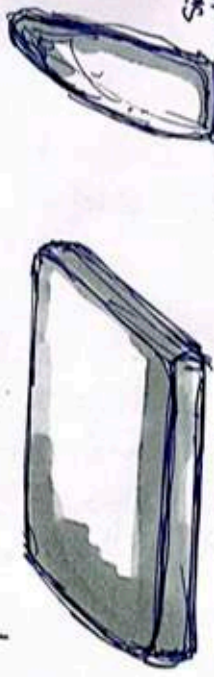


front view leg.



Parts are

front view of the Mangour work. (armrest).



Tawalala.

Masnid different than other design of Masnid.



Madafi

All three are covered by the fabric same fabric (not green) the green one

front view

General Notes:

Size of the Karaweta are dedicated to the selected space that are placed in.

The fabric used in this house are in different color comparing with the Karaweta at Biet Al-Saloom and Al-Matbolie.

Green fabric is used without the soft covered crochets.

H3-BB-L1

[R2]

APPENDIX B

Sites Visit Report Checklist

Date: Aug 15, 2022

Time: 6:45 pm

Building Name: Beit Baeshen

Residential Space Name: now it is used a coffee shop

Objective of the site visit:

- 1- Illustrate the uses of the Karaweta
- 2- Identify the vernacular characteristics of the Karaweta
- 3- General and detail photos of the Karaweta and its elements
- 1- Measurements and dimensions of the Karaweta

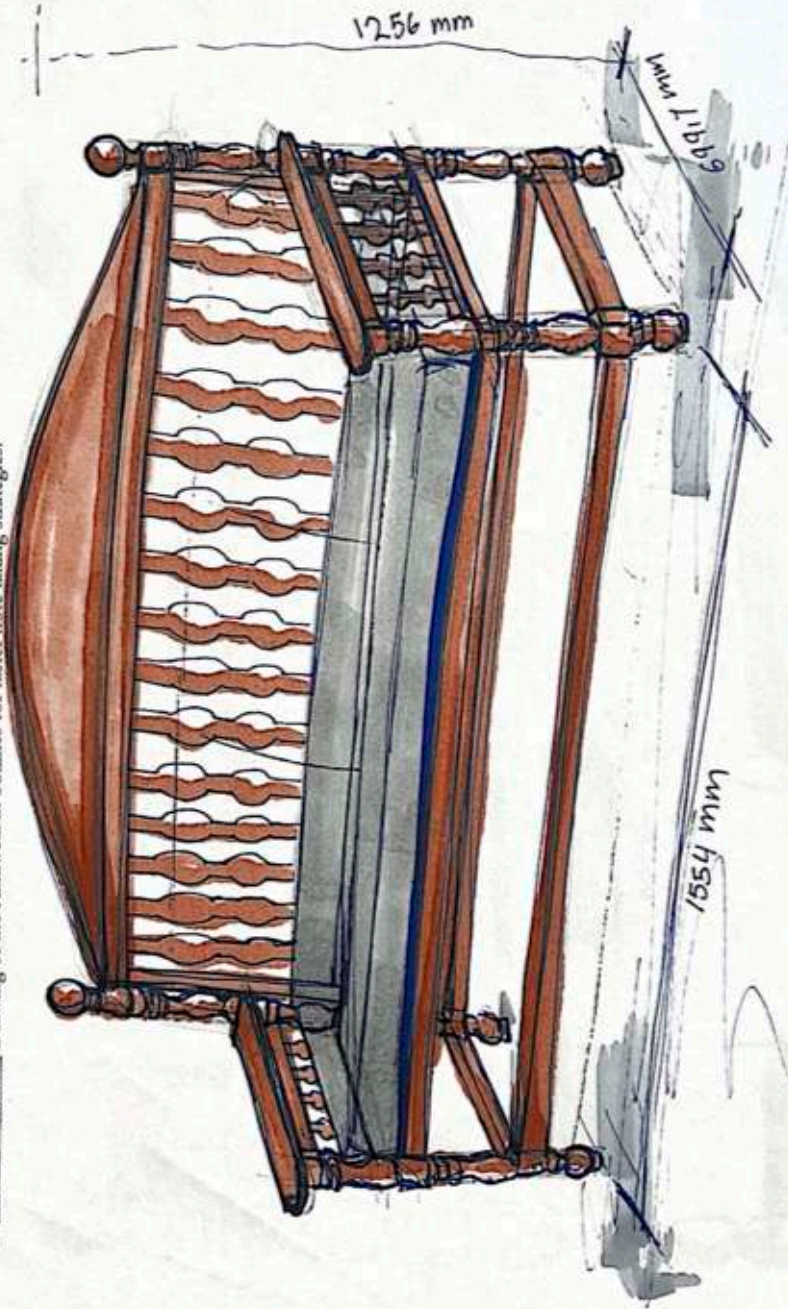
Methodology:

- 1- Taking photos → I phone 13 pro
- 2- Writing notes
- 3- Taking dimensions

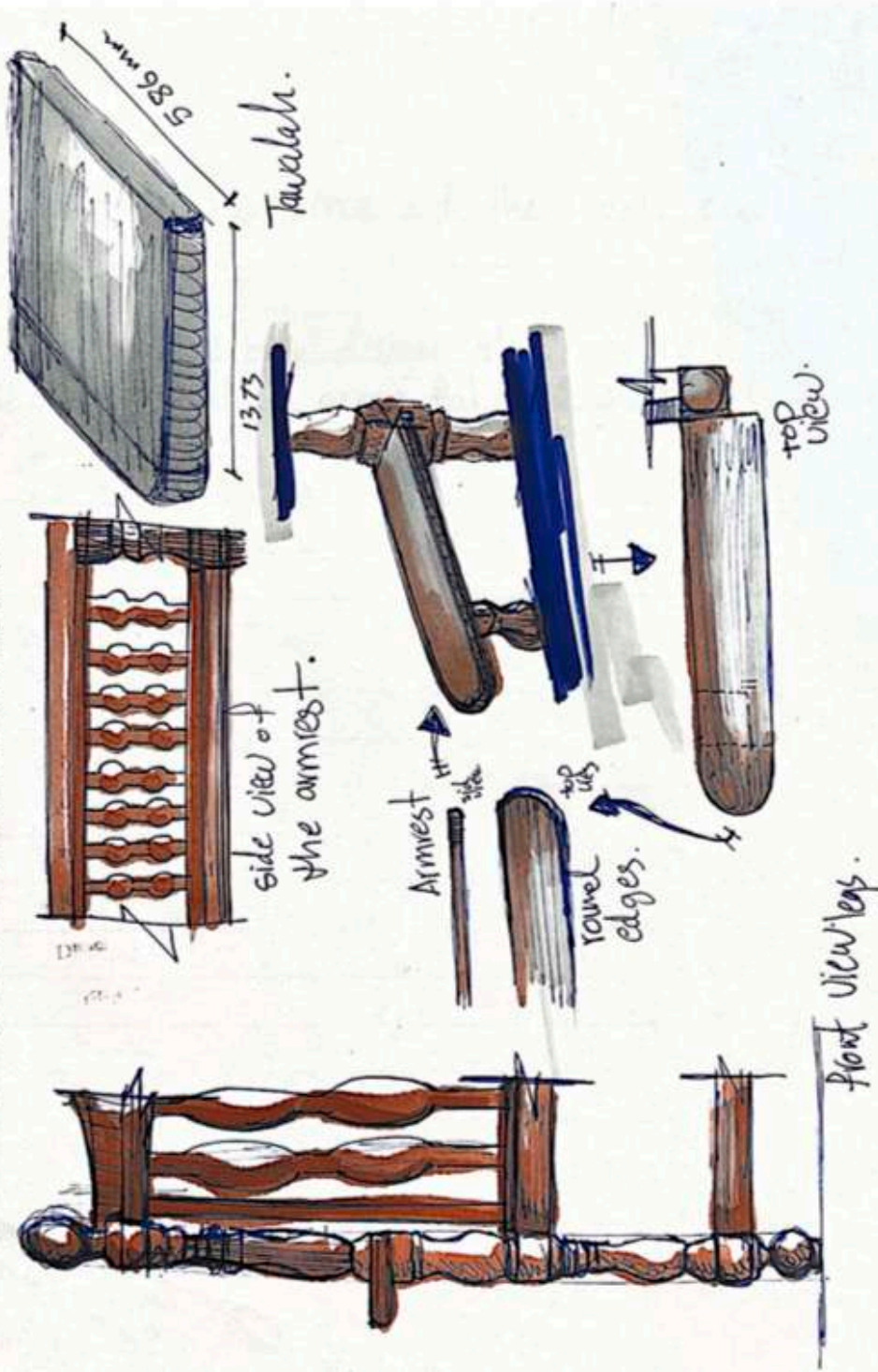
Main Findings:

Cultural Level	Traditional Cultural Elements	Note	
Outer level (Tangible)	Structure	Form	Square + straight lines + round shops
		Aspects	seating for two + normal height
		Joints	Hidden joints (mortise + tenon)
	Material	Wood Species	stained wood / Dark
		Color	Dark brown + red fabric
		Texture	(Real velvet fabric) the seating
	Dimension	Seat Height	1256 mm + sit level at 456 mm
		Seat Depth	699,7 mm + seating depth 586 mm
		Seat Width	1554 mm + without the armrest 1373 mm
		Backrest Height	800mm
		Armrest Height	230 mm
		Seat Angle	90°
	Ornament	Motifs	As show in the drawing
		Technique	wood turning (legs)
		Scale	seating for two.
Other	The space has two of this design. The back language is different design language than the previous Karaweta.		

A three-dimensional Drawing of the Karaweta in outlines for faster note taking strategies:



A two-dimensional Drawing of the Karawena in outlines for faster note taking strategies:



General Notes:

There ~~is~~ no existence of the Masnid and Madafi.

This is the only design that did not use the red and green fabric (الحرير).

H3-BB-L1
R3

APPENDIX B

Sites Visit Report Checklist

Date: Aug 15, 2022

Time: 6:54 pm

Building Name: Beit Baeshen

Residential Space Name: now it is used as a coffee shop


Objective of the site visit:

- 1- Illustrate the uses of the Karaweta
- 2- Identify the vernacular characteristics of the Karaweta
- 3- General and detail photos of the Karaweta and its elements
- 1- Measurements and dimensions of the Karaweta

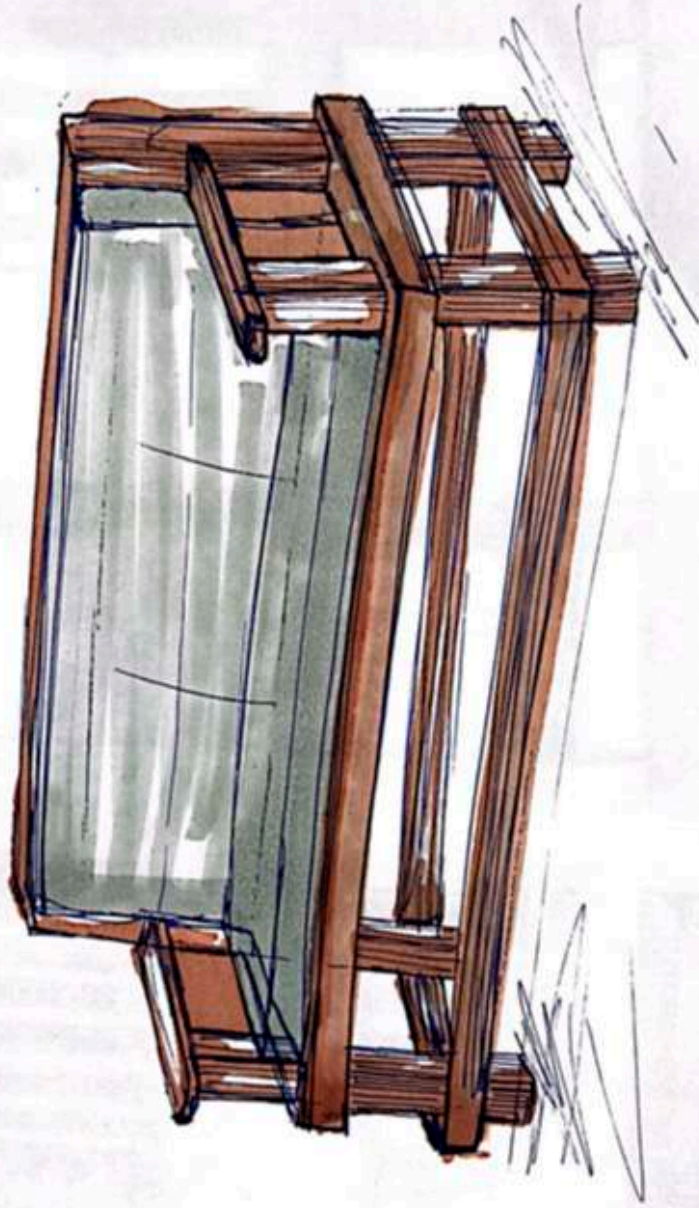
Methodology:

- 1- Taking photos → I phone 13 pro
- 2- Writing notes
- 3- Taking dimensions

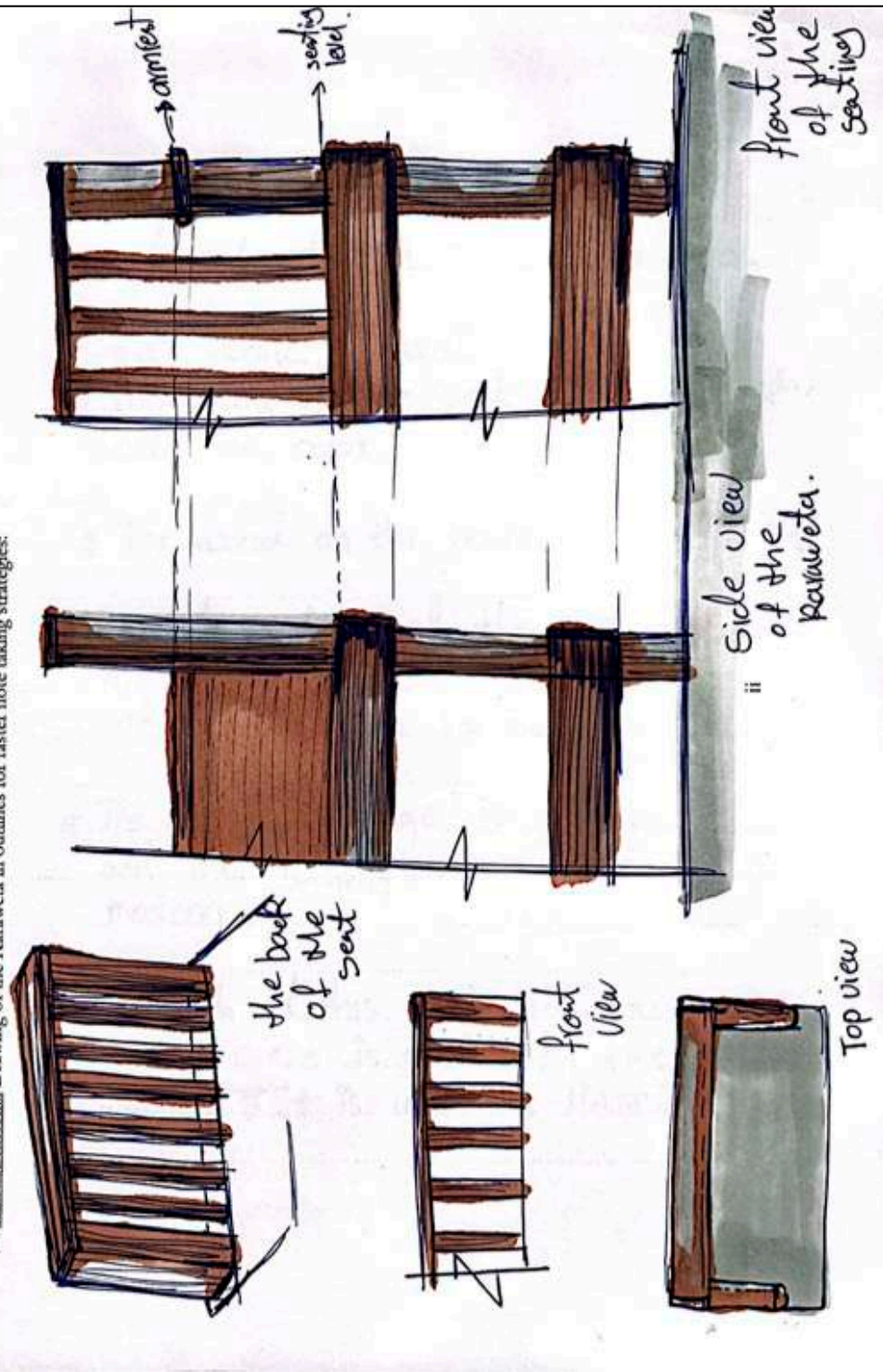
Main Findings:

Cultural Level	Traditional Cultural Elements	Note	
Outer level (Tangible)	Structure	Form	square + straight Lines
		Aspects	seating for two + normal height
		Joints	Hidden joints
	Material	Wood Species	stained wood / Dark
		Color	wood (Dark brown) + green + red
		Texture	(flower + Mon and stars + Peacock) fabric ^{the back.} (Red velvet fabric) only the back.
	Dimension	Seat Height	almost 900 mm + sit level at 450 mm
		Seat Depth	514 mm + sit level 450 mm
		Seat Width	almost 1575 1575 mm
		Backrest Height	almost 451 mm
		Armrest Height	almost 235 mm with out the ^{taukavel}
		Seat Angle	90° 
	Ornament	Motifs	As shown in the drawings
		Technique	wood joinery + siple form
		Scale	seating for two size.
	Other	only one of this shape were found.	

A three-Dimensional Drawing of the Karaweta in outlines for faster note taking strategies:



A two-dimensional Drawing of the Karaweta in outlines for faster note taking strategies:



General Notes:

Two pieces of this Karaweta Design were found at the coffee entrance.

Green fabric is used for the seat
the back of the seat used different fabric and color.

The wood on the armrest is ~~wood~~ MDF.

The dimensions of this seat ~~are~~ are approximate because the Design of the Karaweta is not original.

The design language is different and the techniques are more modern.

The Tawalah at this space is almost the same piece is used for the back rest. It is used as Masnid.

H4-BS-L1

APPENDIX B

Sites Visit Report Checklist

Date: Jan 5, 2022

Time: 8:30 pm

Building Name: Beit Al-Saloom

Residential Space Name: Al-Maqad - level (1) - on the right hand of the main entrance

Objective of the site visit:

- 1- Illustrate the uses of the Karaweta
- 2- Identify the vernacular characteristics of the Karaweta
- ③- General and detail photos of the Karaweta and its elements
- ①- Measurements and dimensions of the Karaweta

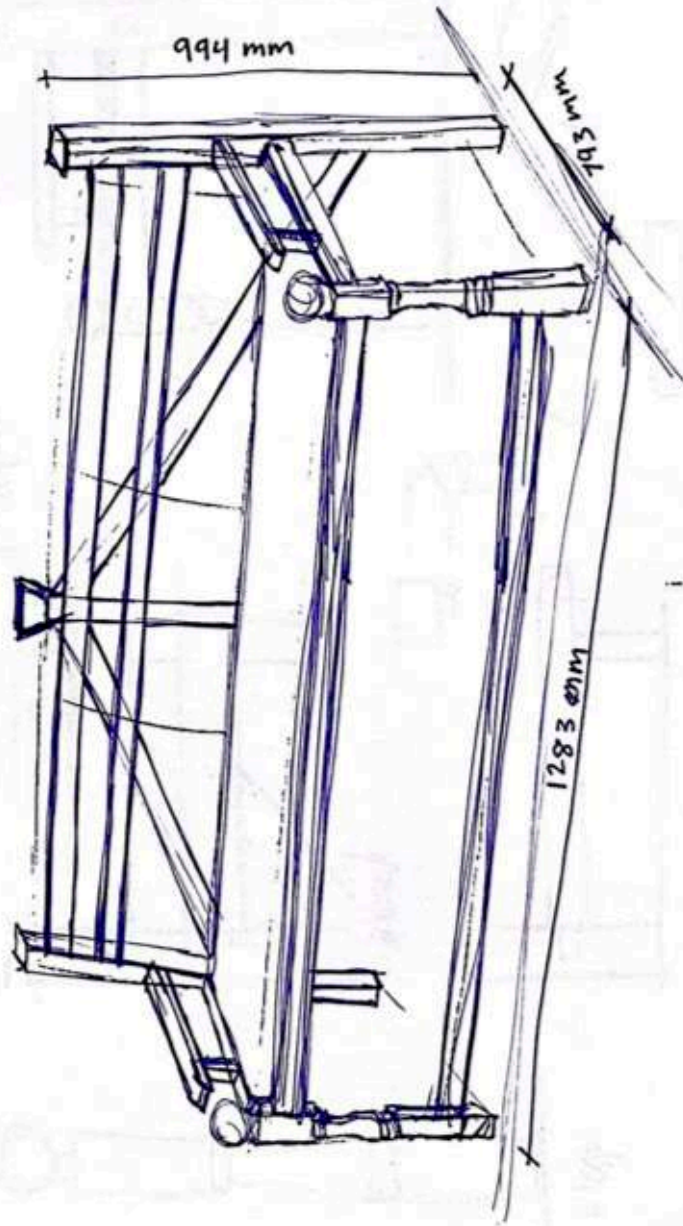
Methodology:

- ①- Taking photos → iPhone 10
- 2- Writing notes
- ③- Taking dimensions

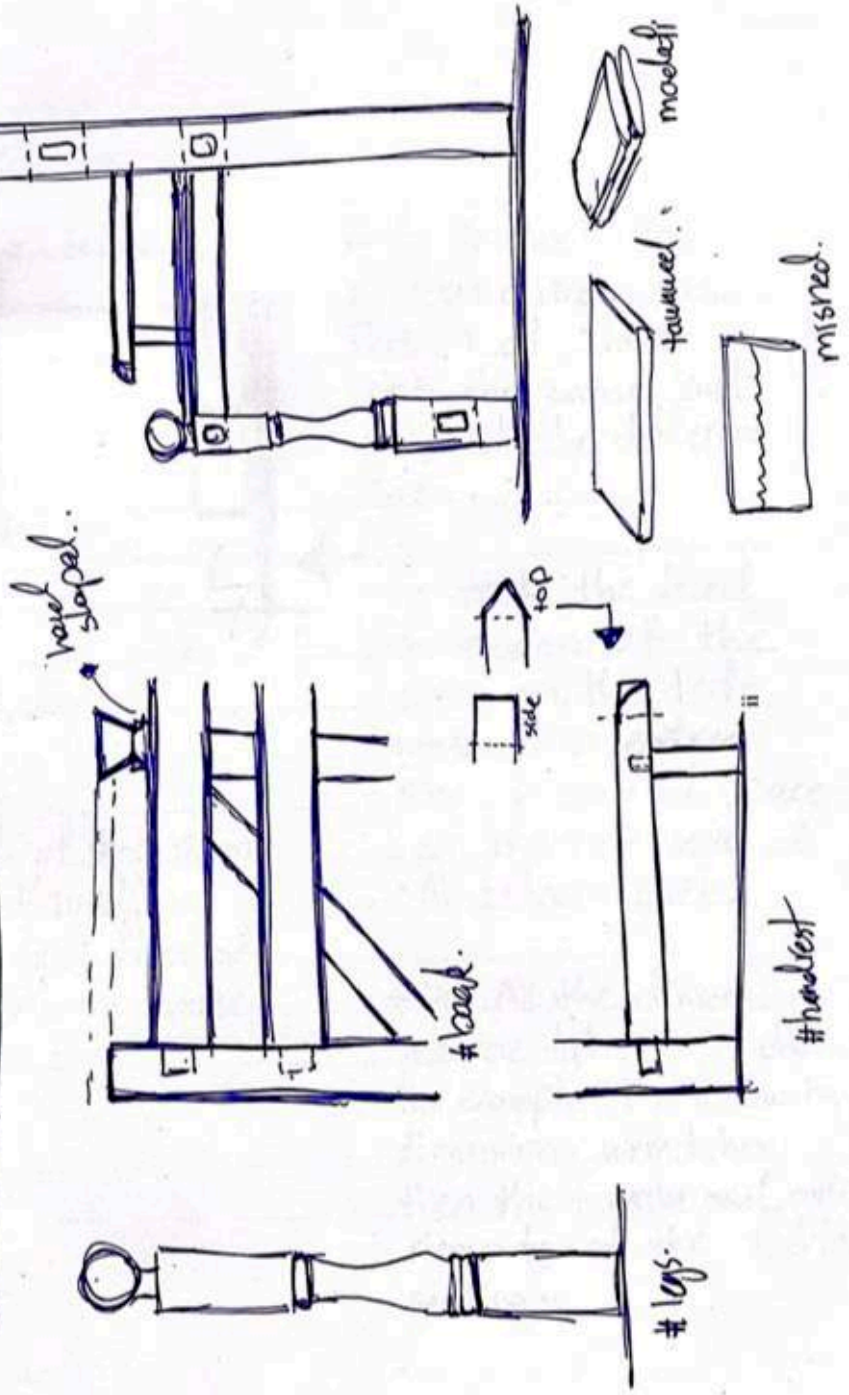
Main Findings:

Cultural Level	Traditional Cultural Elements	Note	
Outer level (Tangible)	Structure	Form	Square + straight lines + wood.
		Aspects	seating for two + higher than stander.
		Joints	Hidden joints - some are seen.
	Material	Wood Species	Dark wood + fabric (Red) +
		Color	↓ velvet + white top cover the material.
		Texture	(flower + Mon and star with peacock) fabric (soft white crocheted) fabric
	Dimension	Seat Height	994 mm + seating level at 604 mm
		Seat Depth	793 mm + seating depth 717 mm
		Seat Width	1283 mm + seating width 1208 mm
		Backrest Height	390 mm
		Armrest Height	226 mm
		Seat Angle	90°
	Ornament	Motifs	as drawn + simple structure.
		Technique	wood turning (legs) + hand carved. some details.
		Scale	seat for two size (as drawn)
Other	this house has the original karaweta at this space. 4 karawetas ii + widow seat were used in the space.		

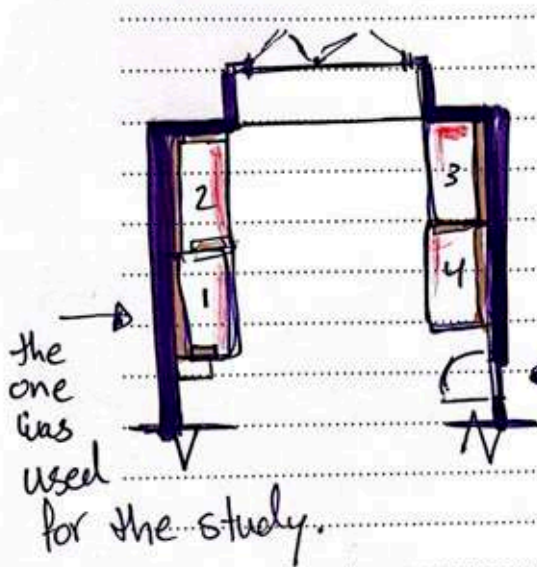
A three-Dimensional Drawing of the Karaweta in outlines for faster note taking strategies:



A two-dimensional Drawing of the Karaweta in outlines for faster note taking strategies:



General Notes:



Each Karawet has different dimensions. The 4 of them look the same but has slightly different size.

We took the ~~dimension~~ dimension of the one on the left when ones enter the Almakad space at the first level of Al-Saloom Biet.

Sketch of the room (Al-Magad) at the first floor of Al-Saloom house.

ps: All the dimensions were taken separately. For example, the karaweta dimensions were taken then the tawala and other elements of the traditional seating..

APPENDIX C

PHOTO ANALYSIS OF THE KARAWEETAH AND OTHER PARTS (Sample Sheet)

Code	Space	Conventional Seating Parts				
H1-BM	Maqad- L1	A# Karaweetah (Karaweet)				
		Perspective (3D View)	Dimension	Height	In Millimeter and Centimeter	Drawing (3D Outlines with Dimensions)
				Depth		
				Width		
				Armrest Height		
				Backrest Height		
				Back Angle		
		Vernacular Characteristics		Identification	Interpretation	Images
		STRUCTURE	Form	Drawing (3D Outlines With line analysis in red color)		Front View (3D)
			Aspect			
H1-BM	Maqad- L1	Vernacular Characteristics		Identification	Interpretation	Images
		STRUCTURE	Joints	Drawing (3D Outlines With indications of wood joints analysis in red color)		Pictor sample of the wood joints
			MATERIAL	Wood Species	Pictor sample of the material uses and color	
		Color				

			Texture			
		COMPOSITION	Scale	Front View shows the proportion of the seating in 2D.		Side View shows the proportion of the legs in 2D
			Proportion			
			Dimension			
H1-BM	Maqad- L1	Vernacular Characteristics		Identification	Interpretation	Images
		ORNAMENT	Motifs	Side View with in details ornament annalysis of the seating parts		Side View (3D)
			Technique			
			Scale			Front View (2D with hight details and 3D)

APPENDIX D
COLOR CODING ANALYSIS

Karaweetah			Legs	Seat	Back	Armrest
House Code	Design No.	3D Perspective	Side View (3D) with color lines	(3D) Isometric with color analysis	(3D) Isometric with color analysis	(3D) closeup view with color analysis
House Code	Design No.	3D Perspective	Side View (3D) with color lines	(3D) Isometric with color analysis	(3D) Isometric with color analysis	(3D) closeup view with color analysis
House Code	Design No.	3D Perspective	Side View (3D) with color lines	(3D) Isometric with color analysis	(3D) Isometric with color analysis	(3D) closeup view with color analysis
House Code	Design No.	3D Perspective	Side View (3D) with color lines	(3D) Isometric with color analysis	(3D) Isometric with color analysis	(3D) closeup view with color analysis
House Code	Design No.	3D Perspective	Side View (3D) with color lines	(3D) Isometric with color analysis	(3D) Isometric with color analysis	(3D) closeup view with color analysis

APPENDIX E
IRB APPROVAL LETTER



EXEMPTION GRANTED

Diane Bender
HIDA: The Design School
-
Diane.Bender@asu.edu

Dear [Diane Bender](#):

On 5/10/2023 the ASU IRB reviewed the following protocol:

Type of Review:	Modification / Update
Title:	"Furniture that Celebrates the Past": Exploring the Nostalgia-Evoking Seating Design on the Purchasing Behavior of Saudi Arabian Millennials in a Case Study of the Hedjaz Karaweetah
Investigator:	Diane Bender
IRB ID:	STUDY00017847
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none">• Consent Script. 01-05.2023.pdf, Category: Consent Form;• IRB.01.05.2023.docx, Category: IRB Protocol;• recruitment_methods_email_01-05-2023.pdf, Category: Recruitment Materials;• recruitment_methods_WhatsApp_01-05-2023.pdf, Category: Recruitment Materials;• Supporting documents 02-05-2023.pdf, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2)(ii) Tests, surveys, interviews, or observation (low risk) on 5/10/2023.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

If any changes are made to the study, the IRB must be notified at research.integrity@asu.edu to determine if additional reviews/approvals are required. Changes may include but not limited to revisions to data collection, survey and/or interview questions, and vulnerable populations, etc.

Sincerely,

IRB Administrator

cc: Fatmah Omar M Bamashmous
Fatmah Omar M Bamashmous

APPENDIX F

VISUAL QUESTIONNAIRE SCRIPT -PILOT STUDY

"Furniture that Celebrates the Past": Exploring the Nostalgia-Evoking Seating Design on the Purchasing Behavior of Saudi Arabian Millennials in a Case Study of the Hedjaz Karaweetah Beds

My name is Fatmah Barakatman, and I am a graduate student under the direction of Professor Diane Bender in the Design School at Arizona State University (ASU). I am conducting a research study to explore the level of historical nostalgia on purchasing preferences. The study aims to understand the level of historical nostalgia among Saudi Millennials and how nostalgic-evoking seating design might affect their buying preferences.

Nostalgia in this research study means visual objects that evoke the emotional longing for the past. This study has several questions and images related to seating design. Please complete this 15-to-20-minute questionnaire.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. You must be 18 or older to participate in the study. There are no foreseeable risks or discomfort to your participation.

Your responses will be anonymous. The results of this study will only be shared in the aggregate form. The data will not be shared with other investigators or other uses. Yet, your name will not be used or mentioned in the survey.

If you have any questions concerning the research study, don't hesitate to contact the research team at diane.bender@asu.edu or Fatmah@asu.edu. If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 945-6708. Please let me know if you wish to be part of the study.

Your completion of the survey is seen as your agreement to participate in the study.

*** Indicates required question**

General Information:

This section has general questions about your background.

1. Are you male or female?*

Mark only one oval.

- Male
 Female

2. Are you Saudi or Non-Saudi?*

Mark only one oval.

- Saudi - Skip to question 9.
 Non-Saudi

3. Which category below includes your age?*

Mark only one oval.

- Under 18
 18-24
 25-34
 35-45
 Above 45

4. What is your occupation?*

Mark only one oval.

- Student

- Employee
 Employee & student
 Unemployed

5. What is your highest educational level?*

Mark only one oval.

- High School Diploma
 Bachelor's Degree
 Master's Degree
 Doctoral Degree
 Other: _____

6. Have you studied outside of Saudi Arabia?*

Mark only one oval.

- Yes
 No

7. Where are you studying, or have you studied? Select all that apply.*

Check all that apply.

- United States of America- USA
 United Kingdom- UK
 Canada
 Australia
 Does not apply.
 Other: _____

8. How long have you studied outside of Saudi Arabia?*

Mark only one oval.

- Less than six months
 Six months to one year
 One to two years
 Two to five years
 Five to ten years
 More than 10 years.
 Does not apply.

Buying Behavior:

This section questions the reasons to select seating (seating indicates all types of chairs in your living room space). When multiple options are available, please select all that apply.

9. What are your main criteria for seating (sofa, chair, bench, stool) in your living room?*

Check all that apply.

- Comfort
 Style
 Color
 Material
 Brand Name

- Price
- Quality
- Size
- Antiques
- Local Characteristics
- Other: _____

10. When shopping for living room seating, I will pay more if... *

Mark only one oval.

- ... I can get exactly what I want.
- ... the seat is locally made.
- ... the seat was made with higher quality materials.
- ... the seat presents local cultural characteristics.
- ... the seat design is creative/new idea.
- ... the design stimulated a personal connection/feeling.
- Other: _____

11. When purchasing seating in your living room, the first thing I look at is if the seat...

Mark only one oval.

- ... presents my personal preferences.
- ... fits my living room style.
- ... is full of local characteristics.
- ... is modern but has local characteristics.
- ... is modern with no local characteristics.
- ... has unique characteristics.
- Other: _____

Purchasing Preferences:

This section has nine seating models. Rate seating models based on your personal preferences. Under each model, you have two related questions:

Model HR1:



12. Overall, I think the model HR1 is: *

Mark only one oval.

1 2 3 4 5

Bad Beautiful

13. Overall, I think the model HR1 is: *

Mark only one oval.

1 2 3 4 5

14. Overall, I think the model HR1 is: *

Mark only one oval.

1 2 3 4 5

Bad Beautiful

14. Overall, I think the model HR1 is: *

Mark only one oval.

1 2 3 4 5

Bad Beautiful

15. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I found the design pleasing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not like the back details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is not the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found one side armrest is not common.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has nine seating models. Rate seating models based on your personal preferences. Under each model, you have two related questions:

Model HR2:



16. Overall, I think the model HR2 is: *

Mark only one oval.

1 2 3 4 5

1 2 3 4 5
 Bad Beautiful

17. Overall, I think the model HR2 is: *

Mark only one oval.

1 2 3 4 5
 Sim Complicated

18. Overall, I think the model HR2 is: *

Mark only one oval.

1 2 3 4 5
 Mod Traditional

19. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I found the design pleasing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not like the back details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is not the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found one side armrest is not common.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has nine rating models. Rate rating models based on your personal preferences. Under each model, you have two related questions:

Model HR3:



20. Overall, I think the model HR3 is: *

Mark only one oval.

1 2 3 4 5
 Bad Beautiful

21. Overall, I think the model HR3 is: *

Mark only one oval.

1 2 3 4 5
 Sim Complicated

22. Overall, I think the model HR3 is: *

Mark only one oval.

1 2 3 4 5
 Mod Traditional

23. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I found the design pleasing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not like the back details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is not the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found two side armrests are common.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has nine rating models. Rate rating models based on your personal preferences. Under each model, you have two related questions:

Model ERI:



24. Overall, I think the model ERI is: *

Mark only one oval.

1 2 3 4 5
 Bad Beautiful

25. Overall, I think the model ERI is: *

Mark only one oval.

1 2 3 4 5

5m Completed

26. Overall, I think the model EHI is *

Mark only one oval.

1 2 3 4 5

Bad Traditional

27. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I found the design pleasing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not like the back details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is not the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the seat need armrests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has also rating rounds. Rate seating models based on your personal preferences. Under each model, you have two related questions:

Model EHI:



28. Overall, I think the model EHI is *

Mark only one oval.

1 2 3 4 5

Bad Beautiful

29. Overall, I think the model EHI is *

Mark only one oval.

1 2 3 4 5

5m Completed

30. Overall, I think the model EHI is *

Mark only one oval.

1 2 3 4 5

Bad Traditional

31. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I found the design pleasing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not like the back details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is not the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I like the seat without armrests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has also rating rounds. Rate seating models based on your personal preferences. Under each model, you have two related questions:

Model EHI:



32. Overall, I think the model EHI is *

Mark only one oval.

1 2 3 4 5

Bad Beautiful

33. Overall, I think the model EHI is *

Mark only one oval.

1 2 3 4 5

5m Completed

34. Overall, I think the model FH1 is: *

Mark only one oval.

1 2 3 4 5
 Min Traditional

35. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I found the design pleasing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not like the back details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is not the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I like the seat with armrests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has nine seating models. Rate seating models based on your personal preferences. Under each model, you have two related questions:

Model FH1:



36. Overall, I think the model FH1 is: *

Mark only one oval.

1 2 3 4 5
 Bad Beautiful

37. Overall, I think the model FH1 is: *

Mark only one oval.

1 2 3 4 5
 Slim Comfortable

38. Overall, I think the model FH1 is: *

Mark only one oval.

1 2 3 4 5

Min Traditional

39. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I found the design pleasing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not like the back details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is not the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I like the seat without armrests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has nine seating models. Rate seating models based on your personal preferences. Under each model, you have two related questions:

Model FH2:



40. Overall, I think the model FH2 is: *

Mark only one oval.

1 2 3 4 5
 Bad Beautiful

41. Overall, I think the model FH2 is: *

Mark only one oval.

1 2 3 4 5
 Slim Comfortable

42. Overall, I think the model FH2 is: *

Mark only one oval.

1 2 3 4 5
 Min Traditional

43. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I found the design pleasing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not like the back details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is not the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I like the seat with armrests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences

This section has nine rating models. Rate rating models based on your personal preferences. Under each model, you have two related questions.

Model F15



44. Overall, I think the model F15 is: *

Mark only one oval.

1 2 3 4 5

Bad Beautiful

45. Overall, I think the model F15 is: *

Mark only one oval.

1 2 3 4 5

Simple Complicated

46. Overall, I think the model F15 is: *

Mark only one oval.

1 2 3 4 5

Modern Traditional

47. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I found the design pleasing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not like the back details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is not the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I like the seat with armrests.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences

This section has groups of rating models. Rate the groups based on your personal preferences:

48. Of the three options shown, which one of the groups is your most favorite? *



Mark only one oval.

- Group A (Eclectic (Red/White))
- Group B (Monochromatic (Gray))
- Group C (Leather (Brown/Yellow))

49. Of the three options shown, which one of the groups is your most favorite? *



Mark only one oval.

- Group A (Eclectic (Red/White))
- Group B (Monochromatic (Gray))
- Group C (Leather (Brown/Yellow))

50. Of the three options shown, which one of the groups is your most favorite? *



Mark only one oval.

- Group A (Eclectic (Red/White))
- Group B (Monochromatic (Gray))
- Group C (Leather (Brown/Yellow))

51. If you were asked to choose one firetable model to buy, which one would you choose? *



Mark only one oval.

- HIR1
- HIR2
- HIR3
- IRI1
- IRI2
- IRI3
- IRI4
- IRI5
- IRI6
- IRI7
- IRI8
- None of the above

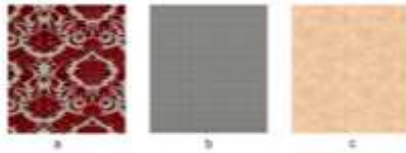
52. As a fire table, please select the model that appears to you as the most desirable. Why did you choose it as your favorite? *

53. Any additional comments about what motivates you in purchasing seating, or about these proposed designs, would be appreciated.

The content in this survey was created by Google.

Google Forms

52. Which type of upholstery would you desire? *



Mark only one oval.

- (a) Textile (Red/White)
- (b) Monochromatic (Gray)
- (c) Leather (Brown/Yellow)
- None of the above
- Other _____

APPENDIX G
RECRUITMENT SCRIPT

Hello,

My name is Fatmah Bamashmous, and I am a graduate student under the direction of Professor Diane Bender in the Design School at Arizona State University (ASU). I am conducting a research study to explore the level of historical nostalgia on purchasing preferences. Nostalgia in this research study means the longing for the past, which could be an object, smell, or touch.

I am inviting your participation to complete an online survey link:

<https://docs.google.com>

Your participations should take approximately 15-20 minutes. You have the right not to answer any question, and to stop participation at any time.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. You must be 18- to 45-year-olds Saudi citizens to participate in the study. There are no foreseeable risks or discomfort to you participation.

Your responses will be anonymous. The results of this study will only be shared in the aggregate form. The data will not be shared with other investigators or other uses. Yet, your name will not be used or requested on the survey.

If you have any question concerning the research study, please contact the research team at diane.bender@asu.edu or Fbamashm@asu.edu. If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788. Please let me know if you wish to be part of the study.

Your completion of the survey is seen as your agreement to participate in the study.

Thank you!

Fatmah Bamashmous

APPENDIX H
EMAIL AND WHATSAPP SCRIPTS

Email

This Script will be emailed to all participants from the Saudi Arabian Cultural Mission (SACM), which is a specialized agency to meet the educational and cultural needs of Saudis who are studying in the United States.

Hello,

I am conducting a research study on “Furniture that Celebrates the Past.” I would appreciate your help with my research.

If you are interested, please answer the questions at this online survey site.

<https://docs.google.com>. Your voluntary and anonymous participation should take approximately 15-20 minutes.

Thank you for your help!

Fatmah

Sincerely,

Fatmah Bamashmous

Ph.D. Candidate in Design, Environment, and the Arts

Herberger Institute for Design and the Arts/ The Design School

Arizona State University

fbamashm@asu.edu

WhatsApp

This script will be sent by WhatsApp groups and will ask individuals to share it with others.

Hello,

I am conducting a research study on “Furniture that Celebrates the Past.” I would appreciate your help with my research.

If you are interested in participation, please answer the questions at this online survey site.

<https://docs.google.com>. Your voluntary and anonymous participation should take approximately 15-20 minutes.

Please share this survey with others who had\have studied abroad.

Thank you for your help!

Fatmah Bamashmous

APPENDIX I

VISUAL QUESTIONNAIRE OF THE STUDY

"Furniture that Celebrates the Past": Exploring the Nostalgia-Evoking Seating Design on the Purchasing Behavior of Saudi Arabian Millennials in a Case Study of the Hedjaz Karaweetah Beds

My name is Fatmah Basantman, and I am a graduate student under the direction of Professor Diane Bender in the Design School at Arizona State University (ASU). I am conducting a research study to explore the level of historical nostalgia on purchasing preferences. The study aims to understand the level of historical nostalgia among Saudi Millennials and how nostalgia-evoking seating design might affect their buying preferences.

Nostalgia in this research study means visual objects that evoke the emotional longing for the past. This study has several questions and images related to seating design. Please complete this 15-to-20-minute questionnaire.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. You must be 18 or older to participate in the study. There are no foreseeable risks or discomfort to your participation.

Your responses will be anonymous. The results of this study will only be shared in the aggregate form. The data will not be shared with other investigators or other uses. Yet, your name will not be used or requested on the survey.

If you have any questions concerning the research study, don't hesitate to contact the research team at diane.bender@asu.edu or Fatmah@asu.edu. If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance at (480) 945-6700. Please let me know if you wish to be part of the study.

Your completion of the survey is seen as your agreement to participate in the study.

* Indicates required question

General Information:

This section has general questions about your background.

1. Are you male or female? *

Mark only one oval.

- Male
 Female

2. Do you live in Jeddah? *

Mark only one oval.

- Yes
 No

3. Are you Saudi or Non-Saudi? *

Mark only one oval.

- Saudi Skip to question 10
 Non-Saudi

4. Which category below includes your age? *

Mark only one oval.

- Under 18
 18-24
 25-34
 35-45
 Above 45

5. What is your occupation? *

Mark only one oval.

- Student

- Employee
 Employee & student
 Unemployed

6. What is your highest educational level? *

Mark only one oval.

- High School Diploma
 Bachelor's Degree
 Master's Degree
 Doctoral Degree
 Other: _____

7. Have you studied outside of Saudi Arabia? *

Mark only one oval.

- Yes
 No

8. Where are you studying, or have you studied? Select all that apply. *

Check all that apply.

- United States of America-USA
 United Kingdom-UK
 Canada
 Australia
 Does not apply.
 Other: _____

9. How long have you studied outside of Saudi Arabia? *

Mark only one oval.

- Less than one year
 One to two years
 Two to five years
 Five to ten years
 More than 10 years
 Does not apply.

Buying Behavior:

This section questions the reasons to select seating (seating indicates all types of chairs in your living room space). When multiple options are available, please select all that apply.

10. What are your main criteria for seating (sofa, chair, bench, stool) in your living room? *

Check all that apply.

- Comfort
 Style
 Color
 Material
 Brand Name

- Price
- Quality
- Size
- Aesthetics
- Local Characteristics
- Other: _____

11. When purchasing seating in your living room, the first thing I look at is if the seat...

Mark only one oval.

- ... fits my living room style and color.
- ... has unique characteristics.
- ... is full of local characteristics.
- ... is modern but has local characteristics.
- ... is modern with no local characteristics.
- ... design stimulates a personal connection/feeling.
- Other: _____

Purchasing Preferences:

This section has nine seating models (Living room). Rate seating models based on your personal preferences. Evaluate each model, you have two related questions.

Model HR1:



12. Overall, I think the model HR1 is:*

Mark only one oval.

- 1 2 3
 Bad Beautiful

13. Overall, I think the model HR1 is:*

Mark only one oval.

- 1 2 3
 Size Complicated

14. Overall, I think the model HR1 is:*

Mark only one oval.

- 1 2 3
 Modern Traditional

Modern Traditional

15. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I do like the seat details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has nine seating models (Living room). Rate seating models based on your personal preferences. Evaluate each model, you have two related questions.

Model HR2:



16. Overall, I think the model HR2 is:*

Mark only one oval.

- 1 2 3
 Bad Beautiful

17. Overall, I think the model HR2 is:*

Mark only one oval.

- 1 2 3
 Size Complicated

18. Overall, I think the model HR2 is:*

Mark only one oval.

- 1 2 3
 Modern Traditional

19. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I do like the seat details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has nine seating models (Living room). Rate seating models based on your personal preferences. Under each model, you have two related questions.

Model HR3:



20. Overall, I think the model HR3 is: *

Mark only one oval.

1 2 3
 Bad Beautiful

21. Overall, I think the model HR3 is: *

Mark only one oval.

1 2 3
 Sim Complicated

22. Overall, I think the model HR3 is: *

Mark only one oval.

1 2 3
 Mod Traditional

23. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I do like the seat details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I do like the seat details.

I feel the seat is comfortable.

I think wood is the best option.

I think the model has historical characteristics.

I think I would buy this seat.

Rating Preferences:

This section has nine seating models (Living room). Rate seating models based on your personal preferences. Under each model, you have two related questions.

Model EHI:



24. Overall, I think the model EHI is: *

Mark only one oval.

1 2 3
 Bad Beautiful

25. Overall, I think the model EHI is: *

Mark only one oval.

1 2 3
 Sim Complicated

26. Overall, I think the model EHI is: *

Mark only one oval.

1 2 3
 Mod Traditional

27. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I do like the seat details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I think the model has historical characteristics.

I think I would buy this seat.

Rating Preferences:

This section has nine rating models (Living room). Rate rating models based on your personal preferences. Under each model, you have two related questions.

Model ER2:



28. Overall, I think the model ER2 is: *

Mark only one oval.

1 2 3

Bad Beautiful

29. Overall, I think the model ER2 is: *

Mark only one oval.

1 2 3

Simple Complicated

30. Overall, I think the model ER2 is: *

Mark only one oval.

1 2 3

Modern Traditional

21. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I do like the seat details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has nine rating models (Living room). Rate rating models based on your personal preferences. Under each model, you have two related questions.

Model ER3:



32. Overall, I think the model ER3 is: *

Mark only one oval.

1 2 3

Bad Beautiful

33. Overall, I think the model ER3 is: *

Mark only one oval.

1 2 3

Simple Complicated

34. Overall, I think the model ER3 is: *

Mark only one oval.

1 2 3

Modern Traditional

35. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I do like the seat details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has nine seating models (Living room). Rate seating models based on your personal preferences. Under each model, you have two related questions:

Model FH1:



36. Overall, I think the model FH1 is: *

Mark only one oval.

1 2 3

Bad Beautiful

37. Overall, I think the model FH1 is: *

Mark only one oval.

1 2 3

Simple Complicated

38. Overall, I think the model FH1 is: *

Mark only one oval.

1 2 3

Modern Traditional

39. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I do like the seat details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has nine seating models (Living room). Rate seating models based on your personal preferences. Under each model, you have two related questions:

Model FH2:



40. Overall, I think the model FH2 is: *

Mark only one oval.

1 2 3

Bad Beautiful

41. Overall, I think the model FH2 is: *

Mark only one oval.

1 2 3

Simple Complicated

42. Overall, I think the model FH2 is: *

Mark only one oval.

1 2 3

Modern Traditional

43. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I do like the seat details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preferences:

This section has nine seating models (Living room). Rate seating models based on your personal preferences. Under each model, you have two related questions:

Model FH3:





44. Overall, I think the model FB2 is: *

Mark only one oval.

1 2 3
 Bad Beautiful

45. Overall, I think the model FB2 is: *

Mark only one oval.

1 2 3
 Sim Complexed

46. Overall, I think the model FB2 is: *

Mark only one oval.

1 2 3
 Mod Traditional

47. Rate your level of agreement with each statement. *

Mark only one oval per row.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I do like the seat details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find the seat is comfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think wood is the best option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think the model has historical characteristics.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think I would buy this seat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Rating Preference:

This section has groups of seating models. Rate the groups based on your personal preference:

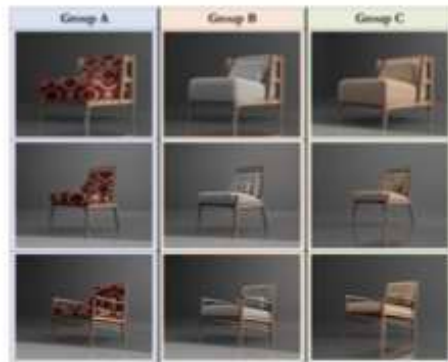
48. Of the three options shown, which one of the groups is your most favorite? *



Mark only one oval.

Group A (Tessile (Red/White))
 Group B (Monochromatic (Grey))
 Group C (Leather (Brown/Yellow))

49. Of the three options shown, which one of the groups is your most favorite? *



Mark only one oval.

Group A (Tessile (Red/White))
 Group B (Monochromatic (Grey))
 Group C (Leather (Brown/Yellow))

50. Of the three options shown, which one of the groups is your most favorite? *





Mark only one oval.

- Group A (Tortile (Red/White))
- Group B (Monochromatic (Gray))
- Group C (Leather (Brown/Yellow))

51. If you were asked to choose one favorite model to buy, which one would you choose?*



Mark only one oval.

- HR1
- HR2
- HR3
- EH1
- EH2
- EH3
- FI1
- FI2
- FI3
- None of the above

52. Which type of upholstery would you desire? *



Mark only one oval.

- (a) Tortile (Red/White)
- (b) Monochromatic (Gray)
- (c) Leather (Brown/Yellow)
- None of the above
- Other: _____

53. In a few words, please describe what appealed to you in **this** selected model. Why did you choose it as your favorite?

54. Any additional comments about what motivates you in purchasing seating, or about these proposed designs, would be appreciated.

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APPENDIX J
VISUAL QUESTIONNAIRE CODE

Code	The Questions	The Question Type	Variable		Frequency	Percent
The First Section						
Q1.	Are you male or female?	Closed	Statistical Analysis Dichotomous Variable	Male	47	23.2%
				Female	156	76.8%
Q2.	Are you Saudi or Non-Saudi?	Closed	Statistical Analysis Dichotomous Variable	Saudi	199	98.0%
				Non-Saudi	4	2.0%
Q3.	Which category below includes your age?	Multiple Choice	Descriptive Analysis Nominal Variable	Under 18	1	0.5%
				18-24	15	7.4%
				25-34	95	46.8%
				35-45	82	40.4%
				Above 45	10	4.9%
Q4.	What is your occupation?	Multiple Choice	Descriptive Analysis Nominal Variable	Student	40	19.7%
				Employee	68	33.5%
				Employee & Student	72	35.5%
				Unemployed	23	11.3%
Q5.	What is your highest educational level?	Multiple Choice	Descriptive Analysis Nominal Variable	High School	7	3.4%
				Bachelor's	39	19.2%
				Master's	107	52.7%
				Doctoral	48	23.6%
				Other	2	1.0%
Q6.	Have you studied outside of Saudi Arabia?	Closed	Statistical Analysis Dichotomous Variable	Yes	189	93.1%
				No	14	6.9%
Q7.	Where are you studying, or have you studied? Select all that apply.	Checkbox	Descriptive Analysis Nominal Variable	United States of America- USA	132	61.4%
				United Kingdom- UK	46	21.4%
				Canada	8	3.7%
				Australia	18	8.4%
				Other	11	5.1%
Q8.	How long have you studied outside of Saudi Arabia?	Multiple Choice	Descriptive Analysis Nominal Variable	Less than 1 year	13	6.4%
				1 to 2 years	26	12.8%
				2 to 5 years	66	32.5%
				5 to 10 years	71	35.0%
				More than 10 years	13	6.4%
				Does not apply	14	6.9%
The Second Section						
Q9.	What are your main criteria for seating (sofa, chair, bench, stool) in your living room?	Checkbox	Descriptive Analysis Nominal Variable	Comfort	153	93%
				Style	107	65.2%
				Color	90	54.9%
				Material	100	61.0%
				Brand Name	8	4.9%
				Price	71	43.3%
				Quality	125	76.2%
				Size	86	52.9%
				Antiques	4	2.4%
				Local Characteristics	2	1.2%
Q10.	When purchasing seating in your living room, the first thing I look at is if the seat...	Multiple Choice	Descriptive Analysis Nominal Variable	... fits my living room style and color.	103	62.8%
				... has unique characteristics.	12	7.3%
				... is full of local characteristics.	1	0.6%

				... is modern but has local characteristics.	10	6.1%
				... is modern with no local characteristics.	5	3.0%
				... design stimulates a personal connection/feeling.	31	18.9%
				Other	2	1.2%
	The Third Section					
Q11.	Overall, I think the model HR1 is:	Rating Scale	Descriptive Analysis	A. Basic	28	17.1%
				Neutral	72	43.9%
				Beautiful	64	39.0%
				B. Simple	63	38.4%
				Neutral	71	43.3%
				Complicated	30	18.3%
				C. Modern	26	15.9%
				Neutral	76	46.3%
				Traditional	62	37.8%
Q12.	Rate your level of agreement with each statement.	Likert Scale	Descriptive Analysis	a. I do like the seat details.		
				1. Strongly Disagree	8	4.9%
				2. Disagree	11	6.7%
				3. Neutral	47	28.7%
				4. Agree	52	31.7%
				5. Strongly Agree	46	28.0%
				b. I feel the seat is comfortable.		
				1. Strongly Disagree	18	11.0%
				2. Disagree	42	25.7%
				3. Neutral	51	31.1%
				4. Agree	38	23.2%
				5. Strongly Agree	15	9.1%
				c. I think wood is the best option.		
				1. Strongly Disagree	6	3.7%
				2. Disagree	19	11.6%
				3. Neutral	47	28.7%
				4. Agree	53	32.3%
				5. Strongly Agree	39	23.8%
				d. I think the model has historical characteristics.		
				1. Strongly Disagree	6	3.7%
				2. Disagree	4	2.4%
				3. Neutral	26	15.9%
				4. Agree	52	31.7%
				5. Strongly Agree	76	46.3%
				e. I think I would buy this seat.		
				1. Strongly Disagree	22	13.4%
				2. Disagree	47	28.7%
				3. Neutral	44	26.8%
				4. Agree	32	19.5%
				5. Strongly Agree	19	11.6%
Q13.	Overall, I think the model HR2 is:	Rating Scale	Descriptive Analysis	A. Basic	56	34.1%
				Neutral	56	34.1%
				Beautiful	52	31.7%
				B. Simple	115	70.1%
				Neutral	41	25.0%
				Complicated	8	4.9%
				C. Modern	56	34.1%
				Neutral	72	43.9%
				Traditional	36	22.0%
Q14.		Likert Scale	Descriptive Analysis	a. I do like the seat details.		
				1. Strongly Disagree	7	4.3%

	Rate your level of agreement with each statement.			2.	Disagree	24	14.6%
				3.	Neutral	60	36.6%
				4.	Agree	49	29.9%
				5.	Strongly Agree	24	14.6%
				b. I feel the seat is comfortable.			
				1.	Strongly Disagree	12	7.3%
				2.	Disagree	35	21.3%
				3.	Neutral	47	28.7%
				4.	Agree	52	31.7%
				5.	Strongly Agree	18	11.0%
				c. I think wood is the best option.			
				1.	Strongly Disagree	3	1.8%
				2.	Disagree	19	11.6%
				3.	Neutral	52	31.7%
				4.	Agree	61	37.2%
				5.	Strongly Agree	29	17.7%
				d. I think the model has historical characteristics.			
				1.	Strongly Disagree	13	7.9%
				2.	Disagree	29	17.7%
				3.	Neutral	45	27.4%
				4.	Agree	53	32.3%
				5.	Strongly Agree	24	14.6%
				e. I think I would buy this seat.			
				1.	Strongly Disagree	25	15.2%
				2.	Disagree	54	32.9%
				3.	Neutral	43	26.2%
				4.	Agree	26	15.9%
				5.	Strongly Agree	16	9.8%
Q15.	Overall, I think the model HR3 is:	Rating Scale	Descriptive Analysis	A.	Basic	91	55.5%
					Neutral	42	25.6%
					Beautiful	31	18.9%
				B.	Simple	125	76.2%
					Neutral	35	21.3%
					Complicated	4	2.4%
				C.	Modern	51	31.1%
					Neutral	67	40.9%
					Traditional	46	28.0%
Q16.	Rate your level of agreement with each statement.	Likert Scale	Descriptive Analysis	a. I do like the seat details.			
				1.	Strongly Disagree	13	7.9%
				2.	Disagree	28	17.1%
				3.	Neutral	52	31.7%
				4.	Agree	51	31.1%
				5.	Strongly Agree	20	12.2%
				b. I feel the seat is comfortable.			
				1.	Strongly Disagree	14	8.5%
				2.	Disagree	34	20.7%
				3.	Neutral	53	32.3%
				4.	Agree	52	31.7%
				5.	Strongly Agree	11	6.7%
				c. I think wood is the best option.			
				1.	Strongly Disagree	6	3.7%
				2.	Disagree	20	12.2%
				3.	Neutral	56	34.1%
				4.	Agree	54	32.9%
				5.	Strongly Agree	28	17.1%
				d. I think the model has historical characteristics.			
				1.	Strongly Disagree	15	9.1%
				2.	Disagree	42	25.6%
				3.	Neutral	61	37.2%

				4.	Agree	32	19.5%
				5.	Strongly Agree	14	8.5%
				e. I think I would buy this seat.			
				1.	Strongly Disagree	22	13.4%
				2.	Disagree	43	26.2%
				3.	Neutral	54	32.9%
				4.	Agree	32	19.5%
				5.	Strongly Agree	13	7.9%
Q17.	Overall, I think the model EH1 is:	Rating Scale	Descriptive Analysis	A.	Basic	58	35.4%
					Neutral	55	33.5%
					Beautiful	51	31.1%
				B.	Simple	87	53.0%
					Neutral	58	35.4%
					Complicated	19	11.6%
				C.	Modern	99	60.4%
					Neutral	48	29.3%
					Traditional	17	10.4%
Q18.	Rate your level of agreement with each statement.	Likert Scale	Descriptive Analysis	a. I do like the seat details.			
				1.	Strongly Disagree	14	8.5%
				2.	Disagree	23	14.0%
				3.	Neutral	49	29.9%
				4.	Agree	47	28.7%
				5.	Strongly Agree	31	18.9%
				b. I feel the seat is comfortable.			
				1.	Strongly Disagree	14	8.5%
				2.	Disagree	39	23.8%
				3.	Neutral	43	26.2%
				4.	Agree	42	25.6%
				5.	Strongly Agree	26	15.9%
				c. I think wood is the best option.			
				1.	Strongly Disagree	5	3.0%
				2.	Disagree	18	11.0%
				3.	Neutral	63	38.4%
				4.	Agree	50	30.5%
				5.	Strongly Agree	28	17.1%
				d. I think the model has historical characteristics.			
				1.	Strongly Disagree	17	10.4%
				2.	Disagree	60	36.6%
				3.	Neutral	49	29.9%
				4.	Agree	23	14.0%
				5.	Strongly Agree	15	9.1%
				e. I think I would buy this seat.			
				1.	Strongly Disagree	23	14.0%
				2.	Disagree	41	25.0%
				3.	Neutral	44	26.8%
				4.	Agree	36	22.0%
				5.	Strongly Agree	20	12.2%
Q19.	Overall, I think the model EH2 is:	Rating Scale	Descriptive Analysis	A.	Basic	46	28.0%
					Neutral	44	26.8%
					Beautiful	74	45.1%
				B.	Simple	65	39.6%
					Neutral	52	31.7%
					Complicated	47	28.7%
				C.	Modern	85	51.8%
					Neutral	49	29.9%
					Traditional	30	18.3%
Q20.	Rate your level of agreement with each statement.	Likert Scale	Descriptive Analysis	a. I do like the seat details.			
				1.	Strongly Disagree	14	8.5%
				2.	Disagree	24	14.6%
				3.	Neutral	31	18.9%

				4.	Agree	54	32.9%
				5.	Strongly Agree	41	25.0%
				b. I feel the seat is comfortable.			
				1.	Strongly Disagree	12	7.3%
				2.	Disagree	44	26.8%
				3.	Neutral	52	31.7%
				4.	Agree	40	24.4%
				5.	Strongly Agree	16	9.8%
				c. I think wood is the best option.			
				1.	Strongly Disagree	5	3.0%
				2.	Disagree	21	12.8%
				3.	Neutral	41	25.0%
				4.	Agree	60	36.6%
				5.	Strongly Agree	37	22.6%
				d. I think the model has historical characteristics.			
				1.	Strongly Disagree	11	6.7%
				2.	Disagree	37	22.6%
				3.	Neutral	35	21.3%
				4.	Agree	48	29.3%
				5.	Strongly Agree	33	20.1%
				e. I think I would buy this seat.			
				1.	Strongly Disagree	24	14.6%
				2.	Disagree	37	22.6%
				3.	Neutral	44	26.8%
				4.	Agree	36	22.0%
				5.	Strongly Agree	23	14.0%
Q21.	Overall, I think the model EH3 is:	Rating Scale	Descriptive Analysis	A.	Basic	56	34.1%
					Neutral	57	34.8%
					Beautiful	51	31.1%
				B.	Simple	82	50.0%
					Neutral	59	36.0%
					Complicated	23	14.0%
				C.	Modern	83	50.6%
					Neutral	61	37.2%
					Traditional	20	12.2%
Q22.	Rate your level of agreement with each statement.	Likert Scale	Descriptive Analysis	a. I do like the seat details.			
				1.	Strongly Disagree	10	6.1%
				2.	Disagree	25	15.2%
				3.	Neutral	51	31.1%
				4.	Agree	44	26.8%
				5.	Strongly Agree	34	20.7%
				b. I feel the seat is comfortable.			
				1.	Strongly Disagree	14	8.5%
				2.	Disagree	27	16.5%
				3.	Neutral	51	31.1%
				4.	Agree	48	29.3%
				5.	Strongly Agree	24	14.6%
				c. I think wood is the best option.			
				1.	Strongly Disagree	10	6.1%
				2.	Disagree	14	8.5%
				3.	Neutral	55	33.5%
				4.	Agree	55	33.5%
				5.	Strongly Agree	30	18.3%
				d. I think the model has historical characteristics.			
				1.	Strongly Disagree	22	13.4%
				2.	Disagree	45	27.4%
				3.	Neutral	54	32.9%
				4.	Agree	25	15.2%
				5.	Strongly Agree	18	11.0%

				e. I think I would buy this seat.		
				1. Strongly Disagree	19	11.6%
				2. Disagree	41	25.0%
				3. Neutral	48	29.3%
				4. Agree	35	21.3%
				5. Strongly Agree	21	12.8%
Q23.	Overall, I think the model FH1 is:	Rating Scale	Descriptive Analysis	A. Basic	56	34.1%
				Neutral	61	37.2%
				Beautiful	47	28.7%
				B. Simple	75	45.7%
				Neutral	37	22.6%
				Complicated	52	31.7%
				C. Modern	127	77.4%
				Neutral	27	16.5%
				Traditional	10	6.1%
Q24.	Rate your level of agreement with each statement.	Likert Scale	Descriptive Analysis	a. I do like the seat details.		
				1. Strongly Disagree	25	15.2%
				2. Disagree	32	19.5%
				3. Neutral	42	25.6%
				4. Agree	39	23.8%
				5. Strongly Agree	26	15.9%
				b. I feel the seat is comfortable.		
				1. Strongly Disagree	40	24.4%
				2. Disagree	52	31.7%
				3. Neutral	39	23.8%
				4. Agree	21	12.8%
				5. Strongly Agree	12	7.3%
				c. I think wood is the best option.		
				1. Strongly Disagree	11	6.7%
				2. Disagree	32	19.5%
				3. Neutral	61	37.2%
				4. Agree	40	24.4%
				5. Strongly Agree	20	12.2%
				d. I think the model has historical characteristics.		
				1. Strongly Disagree	45	27.4%
				2. Disagree	60	36.6%
				3. Neutral	34	20.7%
				4. Agree	12	7.3%
				5. Strongly Agree	13	7.9%
				e. I think I would buy this seat.		
				1. Strongly Disagree	41	25.0%
				2. Disagree	52	31.7%
				3. Neutral	39	23.8%
				4. Agree	20	12.2%
				5. Strongly Agree	12	7.3%
Q25.	Overall, I think the model FH2 is:	Rating Scale	Descriptive Analysis	A. Basic	72	43.9%
				Neutral	51	31.1%
				Beautiful	41	25.0%
				B. Simple	72	43.9%
				Neutral	48	29.3%
				Complicated	44	26.8%
				C. Modern	126	76.8%
				Neutral	30	18.3%
				Traditional	8	4.9%
Q26.	Rate your level of agreement with each statement.	Likert Scale	Descriptive Analysis	a. I do like the seat details.		
				1. Strongly Disagree	23	14.0%
				2. Disagree	35	21.3%
				3. Neutral	39	23.8%
				4. Agree	37	22.6%
				5. Strongly Agree	30	18.3%

				b. I feel the seat is comfortable. 1. Strongly Disagree 26 15.9% 2. Disagree 46 28.0% 3. Neutral 41 25.0% 4. Agree 32 19.5% 5. Strongly Agree 19 11.6% c. I think wood is the best option. 1. Strongly Disagree 13 7.9% 2. Disagree 22 13.4% 3. Neutral 54 32.9% 4. Agree 42 25.6% 5. Strongly Agree 33 20.1% d. I think the model has historical characteristics. 1. Strongly Disagree 39 23.8% 2. Disagree 63 38.4% 3. Neutral 30 18.3% 4. Agree 18 11.0% 5. Strongly Agree 14 8.5% e. I think I would buy this seat. 1. Strongly Disagree 37 22.6% 2. Disagree 48 29.3% 3. Neutral 32 19.5% 4. Agree 30 18.3% 5. Strongly Agree 17 10.4%
Q27.	Overall, I think the model FH3 is:	Rating Scale	Descriptive Analysis	A. Basic 47 28.7% Neutral 42 25.6% Beautiful 75 45.7% B. Simple 38 23.2% Neutral 49 29.9% Complicated 77 47.0% C. Modern 121 73.8% Neutral 32 19.5% Traditional 11 6.7%
Q28.	Rate your level of agreement with each statement.	Likert Scale	Descriptive Analysis	a. I do like the seat details. 1. Strongly Disagree 35 21.3% 2. Disagree 19 11.6% 3. Neutral 37 22.6% 4. Agree 39 23.8% 5. Strongly Agree 34 20.7% b. I feel the seat is comfortable. 1. Strongly Disagree 40 24.4% 2. Disagree 51 31.1% 3. Neutral 43 26.2% 4. Agree 18 11.0% 5. Strongly Agree 12 7.3% c. I think wood is the best option. 1. Strongly Disagree 16 9.8% 2. Disagree 26 15.9% 3. Neutral 46 29.3% 4. Agree 45 27.4% 5. Strongly Agree 29 17.7% d. I think the model has historical characteristics. 1. Strongly Disagree 36 22.0% 2. Disagree 51 31.1% 3. Neutral 33 20.1% 4. Agree 23 14.0% 5. Strongly Agree 21 12.8% e. I think I would buy this seat. 1. Strongly Disagree 44 26.8%

				2.	Disagree	47	28.7%
				3.	Neutral	29	17.7%
				4.	Agree	27	16.5%
				5.	Strongly Agree	17	10.4%
Q29.	Of the three options shown, which one of the groups is your most favorite?	Multiple Choice	Descriptive Analysis	1.	Group A	29	17.7%
				2.	Group B	120	73.2%
				3.	Group C	15	9.1%
Q30.	Of the three options shown, which one of the groups is your most favorite?	Multiple Choice	Descriptive Analysis	1.	Group A	30	18.3%
				2.	Group B	109	66.5%
				3.	Group C	25	15.2%
Q31.	Of the three options shown, which one of the groups is your most favorite?	Multiple Choice	Descriptive Analysis	1.	Group A	26	15.9%
				2.	Group B	97	59.1%
				3.	Group C	41	25.0%
Q32.	If you were asked to choose one favorite model to buy, which one would you choose?	Multiple Choice	Descriptive Analysis	1.	HR1	38	23.2%
				2.	HR2	19	11.6%
				3.	HR3	14	8.5%
				4.	EH1	10	6.1%
				5.	EH2	9	5.5%
				6.	EH3	12	7.3%
				7.	FH1	18	11.0%
				8.	FH2	13	7.9%
				9.	FH3	24	14.6%
				10.	None of the above	7	4.3%
Q33.	Which type of upholstery (cushion) would you desire?	Multiple Choice	Descriptive Analysis	1.	Group A	23	14.0%
				2.	Group B	109	66.5%
				3.	Group C	19	11.6%
				4.	Other	3	1.8%
				5.	None of the above	10	6.1%
Q34.	In a few words, please describe what appealed to you in this selected model. Why did you choose it as your favorite?	Open-Ended	Thematical Analysis	1.	Answer	156	96.1
				2.	No Answer	8	3.9
Q35	Any additional comments about what motivates you in purchasing seating, or about these proposed designs, would be appreciated.	Open-Ended	Thematical Analysis	1.	Answer	61	30.0
				2.	No Answer	142	70.0

APPENDIX K

PRIZE OF SEAT DESIGN COMPETITION 2023



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APPENDIX L

ARABIC TRANSLATION OF TITLE PAGE AND ABSTRACT

"الأثاث الذي يحتفل بالماضي":

استكشاف تصميم المقاعد المثيرة للحنين الي الماضي
السلوك الشرائي لجيل الالفية في المملكة العربية السعودية
في دراسة حالة للكرابوينة الحجازية

بواسطة

فاطمة عمر محمد بامشموس

أطروحة مقدمة في الاستيفاء الجزئي
من متطلبات درجة الدكتوراه
دكتوراه في الفلسفة

تمت الموافقة عليه في مارس ٢٠٢٤ من قبل
لجنة الأشراف على الدراسات العليا:

ديان بندر، رئيسة
كينيث بروكس
ساو كوان

جامعة ولاية اريزونا

ماي ٢٠٢٤

نبذة مختصرة

الأثاث هو رمز الحضارات ويعكس الهوية الاجتماعية والثقافية. في المملكة العربية السعودية اكتشاف النفط والتغيرات الجذرية في نمط الحياة أثرت على اشكال الأثاث واستخداماته. بالإضافة الى تأثير المستثمرين الدوليين على الثقافة الاجتماعية المحلية والهوية التقليدية للمملكة. في حين تهدف الرؤية السعودية ٢٠٣٠ الى الحفاظ على الهوية المحلية في العناصر المعمارية، الأثاث يجب ان يدخل في نطاقها ايضا. تهدف الدراسة الى استكشاف المقاعد التقليدية (الكرويتة الحجازية) في المباني السكنية القديمة في البلد كمصدر للإلهام في تصميم الأثاث والمنتجات الثقافية والحفاظ عليها. استخدمت الدراسة طرق بحثية متعددة الأساليب تعتمد على فلسفة التفسير التأويلي (hermeneutics)، والتحقيق في تأثير المقاعد المثير للحنين التاريخي على تصورات وقرارات الشراء لجيل الالفية من السعودية. شمل البحث دراسة تحليلية للكرائيتة الحجازية لفهم خصائصها ووظيفتها المحلية، تليها أفكار تصميمية تعتمد على نماذج أولية ثلاثية الابعاد لتسعة مقاعد تمثل مستويات مختلفة من الإلهام التراثي. وأخيرا تم اجراء استبانة لاختبار الحنين التاريخي لدي جيل الالفية السعودي وتأثيره على تصوراتهم وتفضيلاتهم الشرائية.

بلغ عدد المشاركين في الدراسة التحليلية ١٦٤ سعودي من جيل الالفية قضاوا ما بين سنتين الى خمس سنوات خارج المملكة العربية السعودية. كان معظم المشاركين من الاناث بأجمالي عدد ١٣١ أي بنسبة ٧٩.٩٪ في حين الذكور اقل نسبيا بعدد ٣٣ أي بنسبة ٢٠.١٪. كان للعناصر المثير للحنين في تصاميم المقاعد تأثير عميق على قرارات الشراء لدي جيل الالفية السعوديين بنسبة ٤٣.٣٪، بينما فضل آخرون الطراز الحديث بسبب بساطته وتفاصيله الفريدة بنسبة ٣٣.٥٪. حافظت نتائج الدراسة على جوهر تصميم المقاعد التقليدية بينما تستفيد أيضا من التصميم من خلال توفير معلومات عن التراث التقليدي واستكشاف الحاضر والحفاظ على مستقبل تصميم المقاعد على أساس الخصائص العامية في المملكة العربية السعودية. تساهم الدراسة في المعرفة عن طريق الإطار المقترح في ممارسة تصميم الأثاث في تحديد الخصائص العامية والحفاظ على المنتجات الثقافية. كما توفر معلومات قيمة عن قرارات الشراء التي يتخذها جيل الالفية السعودي وتأثير تصاميم المقاعد التاريخية التي تثير الحنين الى الماضي.

في الختام في حين ان الأثاث التقليدي يحتاج حاليا الى أدرجه في الحفاظ لتحقيق الروية السعودية ٢٠٣٠ فان
الدراسة يمكن ان تؤثر على جهود الحفاظ على الهوية الاجتماعية والثقافية للأثاث المحلي.

الكلمات المفتاحية: الكراوية الحجازية، اثاره الحنين الي الماضي، تصميم المقاعد، الخصائص العامية، التراث، جيل
اللفية في المملكة العربية السعودية، المستهلكون السعوديون، تفضيلات الشراء