BAŞKENT ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
İÇ MİMARLIK VE ÇEVRE TASARIMI ANABİLİM DALI
İÇ MİMARLIK VE ÇEVRE TASARIMI TEZLİ
YÜKSEK LİSANS PROGRAMI

MERGING OF CULTURE: AN INQUIRY OF CULTURE SUSTAINABILITY THROUGH INTERIOR ARCHITECTURE

(A Case Study of National Museum of Qatar)

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ANKARA-2022

BAŞKENT ÜNİVERSİTESİ

SOSYAL BİLİMLER ENSTİTÜSÜ

YÜKSEK LİSANS / DOKTORA TEZ ÇALIŞMASI ORİJİNALLİK RAPORU

Tarih: 15 / 03 / 2022

Öğrencinin Adı, Soyadı:Tasabeeh I. A. Abualfateh

Öğrencinin Numarası:21810509

Anabilim Dalı: İç Mimarlık ve Çevre Tasarımı Ana Bilim Dalı

Programı: İç Mimarlık ve Çevre Tasarımı Tezli Yüksek Lisans Programı

Danışmanın Unvanı/Adı, Soyadı: Prof. Dr. Gözen Güner Aktaş

Tez Başlığı: MERGING OF CULTURE: AN INQUIRY OF CULTURE SUSTAINABILITY THROUGH INTERIOR ARCHITECTURE (A Case Study of National Museum of Qatar)

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Tarih: 15 / 03 / 2022

Öğrenci Danışmanı Unvan, Ad, Soyad, İmza:

Prof. Dr. Gözen Güner Aktaş

ACKNOWLEDGEMENT

I thank my Lord Allah Almighty for giving me an endless blessing and letting me through all the difficulties, I felt your gaudiness day by day.

I would like to extend my gratitude to several people whose help was very valuable in this journey.

I express my appreciation to my supervisor Prof. Dr. Gözen Güner Aktaş who guided me through m thesis process.

A debt of gratitude is owed to my family, my parents Dr. Ibrahim Abualfateh and Mrs. Fathia Yaqub whose love and guidance are with me in whatever I pursue. My siblings Hussam, Tassnim, Tuqa, and Hisham for their continuing support. I am also grateful to my husband Alaalddin Mohammed for his love and patience while I was writing my thesis on our honeymoon, without all of you none of this would indeed be possible.

Finally, I would like to thank myself for pushing further through everything and working hard with a positive attitude and enthusiasm.

ABSTRACT

Since the early 20th century, the theory of the management of renewable resources resulting in the term ‘Sustainability’ to come to light with the focus of sustaining the biological systems. While the sustainable theory has been applied through to the disciplines of its three pillars social, economic, and environment, this study defines the subsequent of leaving culture out of the equation of sustainability and carry its belief that culture sustainability is important to construct a good form of sustainability through explaining its immanent relationship as the fourth pillar alongside the classic pillars of sustainability. This learning object also outlines the comprehensive action of culture sustainability mapping the terrain of it emerging acquainted with its policy of sustaining contexts (cultural identity, heritage, culture visuality, ethnicity, …etc). Further, this analysis aims to indicate the relationship with culture, sustainability, and community, that in mind this thesis will inspect different litterateur through three lenses: theoretical, conceptual, and policies to reveal the underpinnings of cultural sustainability. This study also explores the museum cooperation in aiding culture sustainability and offers a theoretical model for sustainability with designing appropriate culture policy for museums in mind. With the selection of the National Museum of Qatar as the case study, the final chapter shall identify, display, and demonstrate cultural sustainability within a border of the museum environment.

Keywords: Sustainability, Four pillars of sustainability, Cultural sustainability, Cultural identity, National Museum of Qatar.

ÖZET

20. yüzyılın başlarından itibaren, Sürdürülebilirlik terimi ile sonuçlanan yenilenebilir kaynakların yönetimi teorisi, biyolojik sistemlerin sürdürülmesi odağıyla gün ışığına çıkmıştır. Sürdürülebilir teori, sosyal, ekonomik ve çevre olmak üzere üç ayağı olan disiplinlere uygulanırken, bu çalışma kültürün sürdürülebilirlik denkleminin dışında bırakılmasından sonra nelerin geldiğini tanımlar ve kültürün sürdürülebilirliğinin iyi bir şekil oluşturmak için önemli olduğuna inanmaktadır. Sürdürülebilirliğin ve klasik sütunlarını dördüncü bir çizgi olarak içkin arasındaki ilişkiyi açıklayarak sürdürülebilirlik. Bu öğrenme nesnesi aynı zamanda, bağlamları (kültürel kimlik, miras, kültürel görsellik, etniklik, …vs) sürdürme politikasıyla tanışmış olarak ortaya çıktığı araziyi ve kaynaklandığı toprakları kapsamlı kültür sürdürülebilirliği eyleminin ana hatlarını vermektedir. Ayrıca, bu analiz kültür, sürdürülebilirlik ve topluluk ile olan ilişkiyi göstermeyi amaçlamaktadır ve bu tezin farklı edebiyatçıları üç mercek üzerinden inceleyeceği düşünülür: kültürel sürdürülebilirliğin temellerini ortaya çıkarmak için teorik, kavramsal ve politikalar. Bu çalışma aynı zamanda kültürel sürdürülebilirliğe yardımcı olabileceğini beklenir, müze işbirliğini araştırıyor üstelik akılda müzeler için uygun kültür politikası tasarlayarak sürdürülebilirlik için teorik bir model sunuyor. Vaka çalışması olarak Katar Ulusal Müzesi'nin seçilmesiyle, son bölüm müze ortamının bir sınırı içinde kültürel sürdürülebilirliği belirleyip gösterecektir.

Anahtar Kelimeler: Sürdürülebilirlik, Sürdürülebilirliğin dört ayağı, Kültürel sürdürülebilirlik, Kültürel kimlik, Katar Ulusal Müzesi.

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CHAPTER 1. INTRODUCTION

Culture and Sustainability, these two phrases define an area that encompasses a wide range of interests and disciplines. Both are reflected in the rapid changes in design and are the center of an ongoing discussion as there is an increasing number of theoretical methods those are relevant to. In academic terms, cultural and architecture studies have investigated the intricate relationship between culture, sustainability, and the future on a theoretical level. Nevertheless, when it comes to design, it is essential to understand the importance of the relationships between culture, designer, and time. The difficulty factor in grasping that relationship is to understand the concept of culture since, as a term, it has different usage and definition. For instance, Edward Tylor in his work Primitive Culture (1870) stated "Culture is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society." (As cited by Spencer & Oatey, 2012). As a result, culture in this learning object will be defined as a pattern that denotes human activity expressed through arts, music, sculpture, theatre, dance, cinema, fashion, design, food, and architecture (Design culture, 2011).

Furthermore, various authors offered their views on the dramatic changes that were occurring at the turn of the millennium, as well as the implications that this had for the future. Thus, writing a narrative of the embodiment of culture and sustainability according to Kagan (2012) requires metaphorical or allegorical language rather than analytical language. It needs a language that allows for interpretation and seeks for apprehension rather than cognition, a language like this, is more akin to the arts than the sciences. That in mind this study shall deliberate 'Culture' in a traditional sense where it is said to be exceptional, distinguishable, and represented as the 'ethos of a civilization', and the complexity, beliefs, and degree of enlightenment of it are all honored.

Culture indeed can be regarded as a fundamental issue, however, the conceptual and theoretical within the context of sustainable design, and our notion of 'culture' is still hazy. So, to grasp the full picture of culture, and to widen this study's horizon when comes to culture this study will also be operating with the anthropological stated by Skrede (2016) conception of culture as a 'whole way of life', as it is a broad distinction of culture, it leads to the open discussion; 'If culture is a whole way of life, then sustainability must already be included in it' (Skrede, 2016)

Here it's important to note that since 'Sustainability' as a policy concept has its origin in the frequently cited definition from the United Nations World Commission on Environment and Development (1987): "Sustainable development is development that fulfills the demands of the present without jeopardizing future generations' ability to meet their own needs." In other words, sustainability is primarily concerned with the integration of environmental health, social equity, and economic vitality to generate vibrant, healthy, diverse, and resilient communities for this generation and future generations. Sustainability practice recognizes how these difficulties are interconnected and need a systems approach as well as an embrace of complexity. Nonetheless, with the previous definition of culture and after reading through various publications, it is discovered that; Culture is rarely considered expressly in the context of sustainability, and while sustainability may serve as the perfect link to connect culture with the future, when it comes to it, we find frequent discussion of culture's sustainability.

However, some writers support the importance of culture in sustainability, as we may find in Horlings, L.'s book 'Culture In Sustainability' (2017), 'Sustainability' is primarily concerned with the future(s) we desire. This raises concerns regarding probable future(s) and human development paths. What goals can be met? How may we resolve conflicts between opposing values?

As it is becoming clearer that incremental change is insufficient for long-term sustainability, and that a fundamental transformation of human systems as a whole is required. This would be a watershed moment for modern humanity as a whole, a quest for a paradigm based on the option of a life lived humanely within planetary bounds, not only physically, but also socially, politically, and spiritually. As a result, a deeper understanding of the role of culture in achieving and maintaining sustainability is needed. (S. Asikainen & others, 2017)

To be precise, whereas social and cultural dimensions of sustainability may capture various aspects of sustainability, culture is sometimes referenced or regarded as a part of the social dimension. Though, as mentioned earlier, researchers around the world are implementing and demonstrating that the preservation of culture, cultural heritage and cultural identity enhances environmental, social, and economic sustainability. Still, we find the preservation of culture is often understood as a barrier to development.

This study thrives to debate the previous statement of culture, aiming to be part of the open discussion that started slowly gaining currency in designer-led communities by designers and

developers nowadays. The main question; How to successfully strike a balance between sustainable designs and culture while aiming to the future? While at the same time, this study aims to recognize the importance of local culture and identity while exploring the concept of its sustainability through architecture and interior architecture as an attempt to reach a balancing point where cultural sustainability is brought into the practice of museum designs.

1.1 Hypothesis & Objectives of the Study:

This study has been conducted to investigate and discover the link between culture and different elements of design in relation to sustainability. Exploring the influence of culture on products and the impact of commodities on culture, as well as how culture may be integrated into the design process is essential. According to Razzaghi & Ramirez (2005), the issue of culture and sustainability has already been observed in the area of design, albeit not from the same angle as we are looking at in this research. The relationship between culture and design has also been the topic of research from a variety of perspectives, including the context of usage, satisfaction, interculturality, sustainability, usability, user-centered design, and spiritual elements of design.

With that in mind, in this regard, the hypothesis of the study suggests that Designers increasing desire to move closer to the future indeed heading toward losing the factor of diversity in design in general and interior design in specific. That being said, this learning object aims to experience the perception of culture in interior architecture while investigating the impact of culture on sustainability. In that sense, the objectives of this study are as follows:

1. Culture is the reflation of identity in interior architecture and design can be a means for users' satisfaction. Cultural identity may be viewed as a source of "a sense of shared origin, as well as common views and values" and serves as the foundation for "self-defining in-groups." As time passes, design becomes the symbolic totem for presenting culture; this is what is meant by 'Designers are interested in Culture.' For, we may also consider designers to be cultural creators and guardians.

2. Culture is a resource for designing inspiration; It is recognized as a trendsetter since it observes how the design of objects impacts individuals from other cultures in many ways, such as product aesthetics, which encompasses color, materials, and styles. Which is one culture, may be difficult to gain desirability.

3. Culture is a balancing force against unidentifiable globalized interior architecture and design. Implementing Culture in design through sustainable interior architecture and design can be a basic means to avoid getting lost in the trend of the globalized sustainable movement. Meaning, there is a need for presenting a demonstration of a wide understanding of cultural diversity in the global market through sustainable design. As although through time, cultural traits of uniqueness and diversity have been eroded, the consequence has been a vaguely recognizable picture, but one that is dreadfully devoid of a meaningful feeling of identity.

1.2 Scope of the Study:

The movement of sustainability emerged at the beginning of the 20th century as an important phenomenon that influenced and changed many areas in interior architecture and design. Its concept is, frequently encountered in this era as an indispensable element in the design. This movement while aiming toward the future, and influenced by time, and the desire to apply innovative design ideas, noticeably with or without intention targeted the forms and functions of buildings, to replace it with new dynamic forms and functions. This been the approach there might not be a clear dominant line to describe the sustainable impact on a building's interior architecture and design. Rather, it discusses a diverse variety of theoretical viewpoints, evaluating their strengths and limitations considering the current developments theoretical and actual developments regarding merging culture into sustainable design. Instead, it explores several theoretical approaches, analyzing their strengths and limits considering current theoretical and empirical advancements surrounding the incorporation of culture into sustainable design. With that in mind, we will examine the notion of cultural sustainability as it relates to design and the potential influence of culture in this research. By exploring a culturally influenced sustainable design example to be able to see the mix of future-inspired structure, linked by the principle of sustainability and contrasted with simple lean cultural design.

Throughout the duration of this study, it shall search and answer how design works technically under the influence of sustainability while considering culture? And do sustainable design usher toward new cultural possibilities? At the same time, while covering the concept of 'Culture sustainability' this study is limited to exploring 'Museums' role in cultural sustainability. Also

exhibiting the case study of the National Museum of Qatar, located in Qatar/Doha. Focusing on; design concepts, forms, used material, and the application of culture through interior architecture and design.

1.3 Study's Methodology & Structure:

Concepts such as culture and cultural identity have many studies in the literature of interior architecture and design devoted to it. As it is obvious, these concepts affect various aspects of the interaction between user and place. This study defines the movement of sustainability, and its newly produced design movements, such as green designs and futuristic designs, by explaining the factors that may reflect on them if culture is in the equation, in an attempt to pursue the goals of this study.

Along these lines, an objective investigation comprised of literature reviews, questionnaires, and analyses of a case study. The two methods of information, and data collection used is qualitative and quantitative, with a mixture of advantages and disadvantages associated with each approach. Qualitative research is, "The meanings, conceptions, definitions, traits, metaphors, symbols, and descriptions of things," according to the definition of Berg (2009). Hence, this study approach adopts relevant literature, publications, and studies to be reviewed to get in-depth information on futurism in general and culture in particular.

Furthermore, the study also uses Quantitative research, which is defined as social research that employs empirical methods and empirical statements. Stating that an empirical statement is defined as a descriptive statement about what "is" the case in the "real world" rather than what "ought" to be the case (Sukamolson, 2007). By doing so, key players including the case study are to provide qualitative information on the design concepts, forms, and used materials. Finally, the information obtained shall be analyzed and processed, and controlled against information obtained from literature and survey.

That being said, for us to consider culture's reflection on sustainability the first chapter is to be composed of theoretical and conceptual consideration of culture, and cultural identity. Where we as about the fundamentally different conceptions, progression, and the nature of culture itself. Followed up by defining the terms of culture and space identity, the study carries on with a deeper

investigation of its key player ‘Sustainability’ its perception and application, while intending to cover the numerous concepts, theories, and many viewpoints on how the concept of involving culture in sustainability is approached and interpreted, aiming to show the diverse discussion and takes of culture in sustainability. After completing a full understanding of all the above the third chapter will discuss ‘Cultural sustainability’ and its application to be able to inspect the case study of the National Museum of Qatar’s design in the fourth chapter to later be able to come out in the conclusion with a list of recommendations and suggestions in case found.

CHAPTER 2. FORMULATING AND RE-READING CULTURE:

This chapter addresses a significant gap in the available literature on the subject of culture instead of a technique for constructing a set of items concepts and meanings to the challenge of thinking of culture. In order to understand both the representation and the meaning of culture which falls under different perspectives. This part of the study begins by drawing upon the studies of culture and cultural identity. And further, a drew upon some philosophical debates are to be explored to understand "how humans experience the culture?". This is done to first emphasize the significance of culture. And second, to explore how its relationship to design demonstrates how design aids individuals in constructing surroundings of culture and cultural identity. This is expressed by incorporating more intentional activities that are likely to be visually portrayed and obtain a futuristic sequence.

This study argues that culture goes a long way and has a tight relationship with societies, which it depends on when it comes to sustainability. This attempt to chart a new course of sustainability using and regenerating the visuality construction of culture is likely to be the key figure to emerge cultural sustainability, as it is critical of an already developing field of cultural studies. Furthermore, the course of this thesis enters some areas that may not appear linked and perhaps emerge out of this study's framework, yet it needs to be considered as they effectively help to further the discussion of culture and relocates it away from its false portrayal, replacing it with a more mediated conception of culture and its essential process through sustainability. Centrally the conversation of culture along with the false conception of its process beside the objectivation of its sustainability is traced and displayed in this study. Following this chapter, the study will trace the ability of culture to be sustainable and investigate further revealing the discourse of culture which has a sign on the visuality of cultural sustainability.

2.1 Frame of Culture:

In the world's heritage, culture can be found largely communicated and celebrated yet it comes largely figured and fixed as a contextualized concept. Even so, the field of cultural studies has been progressed in ways related to cultural and social anthropology as a complex yet unexpectedly

flowing concept. With that in mind, the concept of culture is not easy to grasp if not embraced on all levels.

In a perspective assuming that everyday life takes place on a micro-level (Individuals in their social contexts, or small groups on a local level), in contact with one's own surroundings on a symbolic level (Relating to a symbol, illustration, or a figure). Furthermore, the variety of cultures taken into consideration results in un unifying culture at that micro-level, allowing for the use of amplification in the promotion of culture. This relates to Marja Laine (2016), perception of culture or what she calls 'Culture-in' which is a strategy of culture that has a positive impact on understanding other customs, languages, and cultures in a globalizing society, creativity preparedness, self-expression skills, hand, body skills, and identity are all addressed. While Bozkurt Güvenç (1979), an architect and anthropologist, identified four distinct applications of the term "culture"; in the scientific area, culture is civilization; in the social field, it is the output of training processes; in the fine arts, it is aesthetics; and in the technological and biologic domains, it is a production and agriculture reference (Table 2-1).

The applications of the term culture	
• *Culture in the scientific area.*	*Civilization.*
• *Culture in the social field.*	*The output of training processes*
• *Culture in fine arts.*	*Aesthetics.*
• *Culture in the technological and biologic domains.*	*A production and agriculture reference.*

Table 2-1: Bozkurt Güvenç's four applications of the term "culture"

Source: (Abualfateh, 2022)

Raymond Williams, a Welsh theorist, academician, and critic; defines culture as a developed frame of mind, as in a cultural person; the procedures of that development, as in 'cultural interests' and as 'cultural activities'; the means of those procedures, as in culture as 'the arts' and 'human intellectual work'; and as a 'whole way of life,' as in culture as 'a system of signs' by which a social structure is communicated, reproduced, and experienced (As cited by Postalci & Atay,2019). This indicates that what is perceived and described as culture evolves throughout time

and relates to the perspectives of individuals. As a result, scholars and researchers offer numerous approaches to the idea of culture, particularly when it comes to preserving components of cultural beliefs, cultural practices, and heritage conservation.

Further, culture definitions vary, from, the aesthetic, moral, and spiritual aspirations of society being expressed via culture, to its view of the world and of life itself; where both preserve and create the past (M Australia, 2003). It's essential to remember that culture is a methodology that can't be condensed to physical characteristics, collections of things, and or ancestry.

Kevin Coffee (2008) argues that we employ cultural practices to communicate with one another, explain reality, and influence ourselves and our communities in general. While according to Garner (1998), 'Culture' is a concentrated network of individuals connected by ancestral lineage and contemporaneous physical reference place share and preserves a set of patterns, beliefs, behaviors, institutions, symbols, and rituals (As cited by Fong & Chuang, 2004). To enhance our understanding of the concept of culture different approaches are examined in this chapter, providing insights into culture following by exploring cultural structure, identity, and its visuality through design.

2.1.1 Cultural format:

We pick information and prioritize re-action options in our judgments utilizing codes, values, and norms. D Brocchi (2008) argues that every culture distinguishes between the social structure and the environment, inclusion or exclusion, or socially expected behavior and social deviance. Therefore, culture threads boundaries do not exist physically yet; they are not graspable or visible yet. On the same aspect, identity is learned and formed via social interaction, rather than emerging spontaneously from within an individual. In accordance with Vygotsky's (1960) signalization, the passive reflection of natural linkages between diverse kinds of agents cannot be used to explain 'humans' active environmental adaptability, and their evolving character. It necessitates the purposeful creation of such links, which is unachievable with merely natural behavior. They denote behavior and, with the help of signals, establish new neural connections in the brain, resulting in external impact.

This dialectical link between people and social behavior has been proven by scholars since Vygotsky. According to Griffin (2006), while much cultural transfer is deliberate and intentional,

there are times when it is unintended or unconscious, and specialized instruments are adopted for new purposes, frequently masking the original purpose and symbolic intent. However, each of these cultural practices incorporates patterns derived from wider social interactions, such as in-group and out-group conceptions, status conferences, or social norms such as race, gender, age, and so on argues K Coffee (2008).

Culture mainly positions heritage, culture visuality, and cultural identity as some of its main components which are related to feelings of belonging. It may be influenced by representations of heritage and culture visuality providing a script for what it spouse to mean and essentialize in a way that increasingly led to contemporary distancing and detaching culture. While at the same time it is identified and found as an important component of belonging. Accordingly, these practices exist concurrently as an expression and a component of larger systems of acculturation. By so, there needs to be an investigation of the ways within the engagement of certain symbols that are used to promote ideological systems and thus fortify identity.

2.1.2 Culture visuality and design as a parameter:

Culture cannot have any effect if it is not communicated, through a medium, and the first medium is people. Another medium for cultural development is social institutions (museums, libraries, schools..etc.). “The media is the message,” wrote Herbert Marshall McLuhan in his book Understanding Media: The Extensions of Man (1964). What does this implicate? It means that the media is a font and product of cultural ideals in and of itself. There is a continuous relationship between cultural contents and cultural media (As cited by D Brocchi, 2008).

Experts encouraged designers to focus on culture and cultural heritage. They may even find it necessary to analyze, materialize and visualize culture, thus they resorted to designing as a medium for culture interpretation, presentation, and representation. It appears that culture is usually visualized through fashion, art, and buildings all related to design. Visualizing culture through design is essential to achieve an intangible, and clear representation of culture. Design is highlighted as a medium for culture which explores strategies to reconstitute the past in the present and carry it into the future.

Nevertheless, according to Emma Waterton & Steve Watson (2010), as scholars, we have been encouraged to focus on culture despite the fact that it is generally used for deconstruction and

critical analysis, materiality and its associated representation practices have the focus on representations and representational practices, rather than the dynamics that might be investigated in the gaps between representation and response, may have led to a focus on representations and representational practices. This emerged the idea regarding the scene of culture as well as the subjective interaction process. In this regard, David Brett (1996) tracked the visuality of cultural legacy over millennia, explaining that, organizations construct buildings, parks, museums, and displays with their own ideas and assumptions embedded in their products. Because they have been given tangible shape. These goods are prescriptive and normative; their guiding objectives (conscious or not) can frequently be analyzed rather accurately.

The intersection of culture and design draws commoditization of culture on a global scale. It seems the narratives of the global economy assigned a symbolic and aesthetic value of cultural materiality. This implies that cultural worth becomes a commodity to be traded and consumed in the same way that, any other tangible commodities or services are. This believes to have stripped culture of its meaning and advertise it as an economic product. Consequently, the images used to present, promote culture were often the cultural symbols of elite social groups and societies, with no regard to the other so-called rabble groups and societies. Nonetheless, this identifies culture visuality as a particular engagement of culture and design, with a perpetuating power relationship presented through the lenses of architecture, art, and fashion. Culture has been the main guide of these approaches, through which the objects of the design largely focused on national identity. Nonetheless, culture has been the main guide of these approaches, through which the objects of the design largely focused on national identity. This in a way identifies culture visuality as a particular engagement of culture and design, with a perpetuating power relationship presented through the lenses of architecture, interior architecture, design, art, fashion, customs, and beliefs.

In the same sense, “Culture visualization” is a way where the past is established in the present. The processes that create meaning, that frame, reveal, and frame the history we see around us, are basically visual in nature. As Emma Waterton and Steve Watson (2010) argued that our ties to the past are typically tactile or reliant on materiality that makes them legacy objects, and visual culture is what gives these items the means of representation and meaning attainment. With that in mind, it’s safe to assume that these images are usually highlighted as a communicating medium for

understanding which is acquainted with the present, promote, and, at the end of the day, create legacy experiences that are basically cultural emblems which presented as a visual of the past.

In many resources, scholars handled heritage as a resort and associated it with presentation, representation, interpretation and defined it as an ascendant discourse that is both resilient and powerful. Yet following the objectives of this study I believe Waterston and Watson (2010) viewed the two major problems of these discourses; the first is how the fascination with material culture, clearly perceives the reification of the social ties that generate, sustain, preserve, and replicate heritage objects as self-contained entities that convey their own history and tale of the past, which is stated, restricted, and fulfilled by their sheer materiality. The other problem is that heritage's reification in a way academics were urged to be just as equally focused on materiality and its associated representation practices, instead of the actual essence of heritage and culture that lays far from the material framework they seem to operate on as a base to their expression and visualizing of culture.

2.2 Cultural Identity:

The term 'Identity' is a chameleon notion with a variety of connotations. According to Weigert (1986), 'identity' is defined by the inquiry "Who am I?". Identity is defined in three fundamentally distinct perspectives of which Weigert called 'basic modes' identification: 'subjective identity' ('I'), 'objective identity' ('Me'), and 'intersubjective identity' ('We') (Rekom & Go, 2006).

Through the different references cultural identity appears to be an umbrella term that subsumes racial and ethnic identity culture, according to Orbe and Jarris (2001), is a set of shared and acquired values, beliefs, and behaviors that pervades a group of people; culture shapes a group's identity and helps it survive; race is culture, but a person's culture is far more than his or her race.

Cultural identification was described according to Lustig and Koester (1999) by, being part of a given cultural or ethnic group is defined as a feeling of belonging. It involves learning about and embracing the culture's traditions, heritage, language, religion, ancestry, aesthetics, thinking habits, and social structure as a result of belonging to that culture.

Another definition of 'Culture identity', according to Mary Fong and Rueyling Chuang (2004), is "the recognition of communications of a shared system of metaphorical verbal and nonverbal

behavior that is meaningful to group members who have a sense of belonging and who share traditions, heritage, language, and similar norms of appropriate behavior."

The main target of cultural identity involves encouraging diversified cultural competency and awareness of one's own cultural history, as well as assisting communities in developing their own cultural identity and capital. The formation of cultural identity is mentioned in the transversal competence objectives. According to Laine's (2016) work, cultural competence is acknowledged as one of the seven competency objectives. In her writing, she described culture as "appreciating and exploiting the nation's cultural legacy and national languages, as well as one's own cultural, linguistic, religious, and life position variety." Meaning the right to one's own language and culture is mentioned as a basic right in discussions on cultural diversity.

Furthermore, "Cultural identity" has three stages: unexamined cultural identity, exploration of cultural identity, and attainment of cultural identity. Culture is often not explored or questioned during the 'unexamined cultural identity' stage, instead being taken for granted. However, 'cultural identity search' as communities experience personal events that trigger a question about their ethnicity, race, and culture. The awareness of culture, ethnic, and race differences led communities to recognize and explore all aspects of identity. Two key features of cultural identity development were highlighted. 'Subjective identity' relates to one's perception of oneself, especially in terms of ethnic, cultural, or racial connotations. The concept of 'objective identity' refers to how others view a person's cultural, ethnic, or racial group(s) based on visible features such as physical and behavioral expressions. Individuals who've already acquired a level of confidence, understanding, respect, and acceptance of their cultural identity have progressed to the last phase, referred to as 'culture identity achievement (Fong & Chuang, 2004). It could be argued that amidst culture identity integration and adaption process culture can become overcast and blurry as culture and cultural identity borders and boundaries going through transformations, as we'll learn later on in this chapter.

2.2.1 Local, national, and global identity:

Culture is mainly distinguished in three main themes: local/regional culture, national culture, and global culture. However, though these themes are an expression of culture; culture is still considered an interchanging and exceeding concept. Therefore, it needs to be taken into account

and deliberate. For instance, ethnic practices and globalization are some of the main factors that threats the preservation and further transition of identity and culture.

Cultural practices of researchers emerge from and demonstrate innovation and diversity, but cultural stereotypes are artificial containers imposed on demographic groups that reflect and sustain uneven socio-economic relationships. The concept of 'national culture,' which, as explained by K. Coffee (2008), is a theatre of capital involving market, labor, fixed assets, finances, and so on, originally evolved alongside the political ascendancy of the bourgeoisie in Europe and America in the seventeenth and eighteenth centuries. Because capital is not bound by territory, ruling elites use social practices to engage citizens in certain ideologies and social roles to ensure a geographic and demographic base of support. In the same aspect, national identity refers to a person's legal position or citizenship in relation to a country. People may have a greater feeling of their national identity than their ethnic or cultural identity, depending on the circumstances, and vice versa. However, a person's ethnic and national identities might overlap at times. Other times, a person's national identity takes precedence over their ethnic identity, and vice versa (Fong & Chuang, 2004). While as for local identity, it would seem to result from the individuals' connection to the regional identity of their nation or country.

Johan van Rekom and Frank Go (2006) express that, globalization may be defined as thinking together around the world through distance abolishing technologies of cultural, political, and economic events. Localization, on the other hand, is concerned with preserving one's sense of identity, home, and community. This in a sense shines the light on the rising debate of whether globalization will successfully lead to the loss of the local and national identity came to light by anti-globalists who argue that globalization results in deconstructed nationalism and localism thereby creating a systemic rareness of national -local- culture, and prevalence of global -western – culture. In such an assumption, the status of the local identity is depending on its community in terms of values, if within this contest local identity will preserve itself and by so resist globalization.

As the framework of this thesis needs to investigate and address the process by which local and national identity can be absorbed by another globalize identity as it predicts the directness of local and national identity to vanish. Further, this discussion will clarify why some cultures succumbed

to the global -western- culture while others appear to be more resistant to globalization. Which serve as the foundation for cultural regeneration and by so culture sustainability.

The global society exists through various organized systems that extend imperfectly and unevenly in the twenty-first century. The western approach has spread as the dominant paradigm in the world, unevenly but effectively around the world, and the focus of that spread was the faith in industrial since and technology. In part, this was because the colonial history took part in removing local institutions and fundamentally changing the social rules of the colonies, resulting in changing the infrastructure used in the societies, and removing people's local identity and culture. All of which are major issues when handling culture in connection to sustainability as supported by Peter Jacques (2021) in his book "Sustainability the Basics" altered the course of history in the colonized areas. In other sense, cultural heritage is regarded as a deposit of cultural capital inherited from past generations and worthy of being passed down to future generations.

Culture was divided into seven categories by Soini and Birkeland (2014), they discussed the concern of 'cultural vitality', 'cultural services', and 'cultural heritage' ability to adapt to the changing demands of their users and to ensure that cultural heritage is accessible in a sustainable manner. In connection to economic viability, they explain the adaptation of heritage as a resource for economic vitality emphasizes the need for a dynamic perspective on culture and its replication. Moreover, according to Laine (2016) 'cultural diversity' is an instrumental conception of culture that recognizes the range of values, perceptions, attitudes, and tangible cultural expressions. Furthermore, the fifth category 'locality' is connected to cultural variety in different content because it accentuates the notion of cultural rights, ethnic minorities, and indigenous peoples, as well as a greater awareness of local cultural practices in preference to global development. 'Eco-cultural resilience' and 'eco-cultural civilization' are the last two types. Eco-cultural resilience aims for a harmonious coexistence between humans and the environment. As a result, it cannot be conducted without taking into consideration the local livelihood development. Eco-culture civilization, on the other hand, refers to a shift in people's attitudes and behavior towards the environment.

Whereas these categories view culture as a valuable instrument, nonetheless, it is important to note that some categories have different perspectives, for instance, culture diversity illustrates a

globalization approach where locality is usually anti-globalist. This attitude towards globalization though is present does not play a role in sustaining culture.

The oppose of globalization and culture as instrumental values will not play a similarly important part in this study; therefore, acceptance of culture is considered as crucial in fostering progress in order to achieve environmental goals, which has led to culture being driven by globalization and technology. As in Loukola's (2007) approach of the previously mentioned 'Culture-in' where it is visible in considering cultural identity, cultural heritage, multiculturalism, and local culture. This raised the question of how much change can affect culture and culture identity?

As scholars emphasize the character of cultural identity as being relational, flexible, adaptable, multifaceted, and contextual. An important thing to note is the fluidity of cultural identity proposed through Kim's (1995) model of 'cross-cultural adaptation theory', this approach contends that human beings are adaptive as Kim asserts that the cultural adaptation process is dynamic, multidimensional, and interdependent (As cited by Fong & Chuang, 2004).

This process according to Kim suggests that culture's elements and patterns can be carried through a new host being in this case interior design. However, as this process is carried through a passenger or a host it is likely to lose its original form, and by so it may also impute culture from its root and insensibly or cognitively transform it to a new form and shape.

2.2.2 Cultural identity & visuality of culture in interior architecture:

Cultural identification is defined as the acknowledgment of a shared system of exemplification of significant verbal and nonverbal conduct in a group that share common practices, traditions, heritage, language, and other behaviors. Over time, cultural identities endure changes to the changing demands of economic, social, psychological, and political factors, and other contextual factors which influence individuals.

As we experience cultural identity at a local, national, and global level, in our more privatized and fragmented postmodern society, cultural identity emerges as a vivid, complicated, and extremely contentious idea. When expressing the term cultural identity, it appears that individuals belong to distinct categories with shared beliefs, behaviors, norms, and cultural practices. Further, streamers

of culture and culture identity entrepreneurs emphasize them, arguing if the identity disappears societies' culture will also be disintegrated.

We find in the work of Gunther Kres and Theo van Leeuwen (2006) The Grammar of Visual Design, and Gillian Rose (2007) Visual Methodologies: An Introduction to the Interpretation of Visual Material, a collection of significant resources on the power of images and their potential to create, generate, transmit, and form the world in meaning in a variety of social contexts. This appears to find new ground in the existing debate of culture using the visual aspect of design to both explore, represent, and respond to culture. Keenly aware of the unequal engagements of culture in relation to design, they reveal the visual of culture like; forms of landscapes, fashion, architecture, and design, which helps to act as an important representation draw attention to interior architecture, what it represents, why and how? This process of encoding of culture in interior architecture contingent an intersubjective understanding of culture and embedded in different essences of culture. So, is the previously stated engagement of design and culture able to refigure and challenge the misconception of the latter?

Culture's formation as a process is tied to its identity, place, discordance, and performance. That said, without compromising the complexity and thus its conceptual essence, design can trajectories the image of culture to form a knowledge-bearing design with a significant story. The model of David Crouch's theoretical exploration of the visual, as cited by Waterton & Watson (2010), attempts to dislodge it from the formalized and privileged status it has had in cultural theory in general. This exploring of culture as a term of design will contribute to creating narratives for social and economic constraints leading to a linguistic interpretation of culture. These resulting narratives can be read and comprehended as a constitution that is situated in relation to the society it exists. Nonetheless, this approach brought theories that explore "how culture is experienced as either representational or non-representational?" This approach seems to offer a debate on the experience which meld the visual and performance of culture in relation to design.

While emphasizing the importance of the visual, in culture the subject of its engagement may imply the designs that with the non-representational narratives to be assumed more significant over the merely representing design with the future intimation of any little scrutiny of the past. In the context of what might be described as urbanism. Culture has been figured in an attempt to

commodify space in signification to the post-industrial generation as it relates to the intersection of global and local change and was further usually evaluated as an overlooked and replicable aspect in design by some of the followers of the futuristic movement, who on some occasions practically established and marketed the falls conception of culture as 'uncivil' practice. Nonetheless, in the case of using culture as a reference in design, the images usually used to present it was likely to be the cultural symbols of an elite social group.

As the previous passage explained, culture is a process of expression and representation, thus the ideological implications of culture and design provided a rule for designers in expressing culture through aesthetics of national identity. Designers are clearly translators that engage in the re-configuration of space in a way that effectively promotes a model of a cultural renaissance. Designers' construct meaning through the engagement of place with cultural identity. Thus, design in generals and interior architecture in specific dependents on the involvement and the representation of the users' identity. Although some people may criticize the fluidity of this dynamic model of interior architecture are representational practices for cultural identity and visuality that should not strive to simplify cultural intricacies, but rather to highlight them.

2.2.2.1 Identity of place:

The review of literature explored the versatile meanings of space identity, these meanings knitted the foundation for the physical environment. It claimed that people's identification with a location may be reflected in the identity's attribution to the place, which can then be integrated into their own identities. This is supported by Zimmerbauer (2012) and by Gieseking (2014) Place identity is at the core of many psychological theories on human-environment relationships, which is a diverse notion. This was further stated by Haartsen (2000), "Individuals' subjective conceptions of geographic space are illuminated by the social constructivist notion of place identity." Which may be used in geography, sociology, psychology, environmental sciences, ecological research, public administration, and spatial planning, among many other fields. Ptoshansky (1978) described place identity as; those dimensions of self that define an individual's personal identity, in connection to the physical environment through a compound pattern of conscious and unconscious ideas, feelings, values, targets, preferences, expertise, and behavioral tendencies relevant to a specific environment.

Following Harold M. Proshanksy an environmental psychologist track, scholars thought it is critical to distinguish two components of a place's identity: place identity and people's identity of place. Science, politics, cultural activism, local marketing, tourism, governance, and religious or political regionalization all have discourses and classifications. For instance, Anssi Paasi a political geographical refers to the characteristics of nature, culture, and people that separate one location from another. The latter refers to the association of people with a certain location. Early leading scholars from various disciplines (As cited by J. Peng &others, 2020). Such as Proshansky and Paasi, defined place identity in a variety of ways, which impacted the structure of the diverse meanings of place identity to a large extent

Few studies reviewed these two aspects of place identity, the expressions of place's interactions with people, and people's interaction with place identity. The relationships between place identity and other concepts in environmental psychology, such as sense of place, rootedness to place, place attachment, place reliance, and place satisfaction, provide a further understanding of place identity. This positions 'place' in a complex way and led to a different understanding by different people. It's safe to assume that the board's understanding of the term 'place' is mostly geography, nonetheless, in recent years, the idea of place went through a few changes resulting from the infusion of the digital age and technology.

A 'place' usually holds personal meanings and represents other symbols for a variety of social groups while maintaining many levels and aspects of identity. When White (2008) investigated the impact of previous the effects of setting experience and site connection on visitors' perceptions of recreational effects, he found that they viewed place identity and place dependency as two categories of place attachment. While Antonsich (2010), highlighted the terminological complexity of these place-based ideas, stating that "place attachment is sometimes considered as a synonym for place identity, connected with it, or subsumed inside it, or even as a necessity." Others regard place identity to be a type of attachment or both identity and attachment to be characteristics of a sense of place (J. Peng &others, 2020).

According to Paasi, place identity refers to the natural, cultural, and geographical characteristics of life (inhabitants, people, or population) that set one area apart from others. Even more, people do not observe places in the same way, in agreement with Peterson (1988) People interpret place identities differently and distinguish them using a variety of factors such as physical

characteristics, cultural aspects, historical associations, and experience ties. Kanapp (2006) adds in agreement that not only does place identity have a physical foundation, but it also has a "mental sphere." So, what is the place identity of a place? Following the flow of time place identity changes and so its concept and understanding. Meaning, 'Place identity' is a combination of physical manmade structures and meanings implemented to them. In other words, 'Place identity' is often established after the place achieves status in the society's social awareness and its spatial structure. In short, anything that can make a place identifiable within the dimensional system is what forms 'place identity'.

As stated so far in this thesis, culture is a broad term that includes beliefs, art, fashion, costumes, architecture, interior architecture, and design. Though culture is treated as a matured frame of mind, it cannot have any influence until it is communicated through the different media of social institutions (museums, libraries, schools...etc) and people. Another point raised in this chapter is the significance of cultural identity, and while it appears to be complex and authentic when investigated, the term appears to belong to distinct categories with shared ideas, attitudes, norms, and cultural practices of individuals. Furthermore, the following chapter of this research will examine another key element "Sustainability," it will carry discusses sustainability in an attempt to designate what is deemed sustainable and unsustainable. It will also investigate the origins of sustainability its philosophy, concept, framework, and connection to culture.

CHAPTER3. THE ASPECTS OF SUSTAINABILITY:

Starting with the philosophy of sustainability and sustainable development, this chapter shall begin with the definition of sustainability in different literature and its application on the environment, society, and economy, to create guidelines to sustainability's strategies, methodologies, priorities, and outlines. While there are various definitions of sustainability it seems to be a process more than an idea or a concept. With that in mind, this chapter reviews the basic principles, ideals, processes, and concepts of sustainability particularly outside of its environmental goals suggesting that sustainability should be persuaded as a goal housing all aspects and constructing the absence of its limit in its present status. On the same aspect, the chapter carries out the discussion of promoting sustainability and how it attempts to label what is considered sustainable and unsustainable.

Although, as this thesis displays, the aim of sustainability is to construct well-designed systems that have a minimal impact on society, environment, and economy by incorporating their methodologies that promote sustainability. Yet, this part of the study debates the tangible impact of the current standards and practices of sustainability which does not take into account its undesirable impact on culture that is visible only after the construction of the long-term consequences of not taking culture into account when coming to sustainability is made. Further, while exploring the framework of sustainability this chapter also aims to exhibit the connection between the three main pillars of sustainability (Social- Environmental- Economy) and deliberate the introduction of "Culture" as the fourth pillar of sustainability, to move on into presenting the possibility of cultural regeneration through sustainability and the relationship of cultural regeneration and sustainable design.

3.1Philosophy of Sustainability and Sustainable Development:

According to literature the words "sustainability" and "sustainable" come from the Latin 'sustinēre', which means "to maintain," "to sustain," "to support," and "to survive." From Latin, the word became a 'sostenir' in Old French, and then 'soutenir' in contemporary French. Later, the verb "to sustain" was coined from the French term. The adjective "sustainable" entered popular usage around (1965), according to the Oxford English Dictionary, through an economics dictionary that utilized the term "sustainable growth." "Sustainability" became a word in English

in the early (1970s). The creation of these neologisms is a strong indicator that by the late twentieth century, the verb "to sustain" had evolved into a distinct idea (the long-term maintenance of human society). (Caradonna, 2014).

This chapter intends to give a conceptual base for "sustainability", starting in the early modern periods since it is clear that there is a direct link between the twenty-first century's modern sustainability movement and the practices it promotes developed in recent years. Nonetheless, the root of sustainability appears to have started in the eighteenth century, especially in Europe, the emergence of an unsustainable, growth-based, industrialized society has been observed. The eighteenth-century is special to the movement of sustainability because it was the beginning of recognizing and responding to some unsustainable practices.

However, the emerging of term sustainability has first emerged as an and environmental, social, and economic idea in the late '70s and early '80s (1770-1800) in the late eighteenth century, Thomas Robert Malthus was an English cleric, scholar, and influential economist in the fields of political economy and demography, he contended that population expansion would ultimately outpace Earth's capacity to supply that population, resulting in a catastrophic breakdown of human and natural systems, as Malthus predicted (Portney, 2015). Even so, while to Malthus the effective way to solve this issue is by becoming a sustainable world Malthus' view of natural limits, according to Karl Marx a German philosopher, economist, historian, political theorist, and revolutionary socialist, and Friedrich Engels a German philosopher, social scientist, and journalist, was oppressive and conservative, justifying social injustice while ignoring the possibilities for scientific and technological advancement, they stated that "natural limits could always be overcome by science and progress" (S. Dresner, 2002). This suggests that the accumulation of knowledge and technological advancement would enhance the capacity of natural resources, yet sustainability requires that before that the world needs to provide equal acquire to resources and redirect technological efforts to safeguard the environment.

The contemporary idea of sustainability was initially introduced by western environmentalists in (1974) and utilized by the World Council of Churches. In (1980), the International Union for Conservation of Nature and Natural Resources proposed the notion of sustainable development. By the 1990s, the term "sustainability" had also become familiar across the world. "We now live in the Anthropocene," argues Jeffrey D. Sachs (2008), referring to the period in which "human

activity" has become the major driver of the natural world. He goes on to say that the term "sustainability" is used to contrast climate change and the environment. As a result, it's a method of admitting how humanity has thrown the world into disarray (As cited by Caradonna, 2014).

The term "sustainability" has several different definitions, but the most publicized definition to them all is that of the Brundtland Commission, which is also known as the World Commission on Environment and Development (WCED) 'sustainable development' is defined as "development that fulfills present needs without compromising future generations' ability to meet their own needs," according to Norwegian prime minister Gro Harlem Brundtland's definition in (1987).

In cases where the activities and their significant consequences cannot be avoided, future generations must be compensated for whatever expenses they experience. The concept of limitations imposed by the status of technology and social organization on the environment's capability to fulfill existing and future needs was also stressed by the Brundtland Commission (M Australia, 2003) and (M. Redclift, 2005).

In later years many start seeing sustainability as a continually evolving process and started the mention of the "natural environment", "economy", and "society" – in general, all these three – were largely rather than conserving life exactly as it is today, about the changes that occur in the natural environment and the need of ensuring equity between generations.

Sustainability is defined as "the persistence over a seemingly infinite future of certain essential and desired features of the socio-political system and its natural environment," according to Robinson, Francis, Legge, and Lerner (1990) (As cited by Portney, 2015). Further, sustainability entails thinking forward and rejecting anything that compromises the lives and well-being of future generations, according to sustainists, they span from engineers and scientists to economics, educators, lawmakers, and social advocates Developing a "green," "low-carbon," and "resilient" economy that relies on renewable energy and does not promote growth that jeopardizes humans' and other organisms' capacity to survive on Earth in perpetuity. (Caradonna, 2014).

According to different literature, the practice of sustainability is a result of the emerging realization of the relevance of living in biophysical systems and the need to minimize resource excessive consumption. Further, the concept and distinct definitions of sustainability have been used to communicate various statements, each highlighting a different trait that should be sustained. "Sustainable biological resource use," "sustainable agriculture," "carrying capacity," "sustainable

energy," "sustainable society and sustainable economy," and "sustainable development," according to Brown et al. (Table.3-1). Ultimately, these six meanings are set around two main aspects one emphasizes ecology and the other emphasizes economics (Portney, 2015).

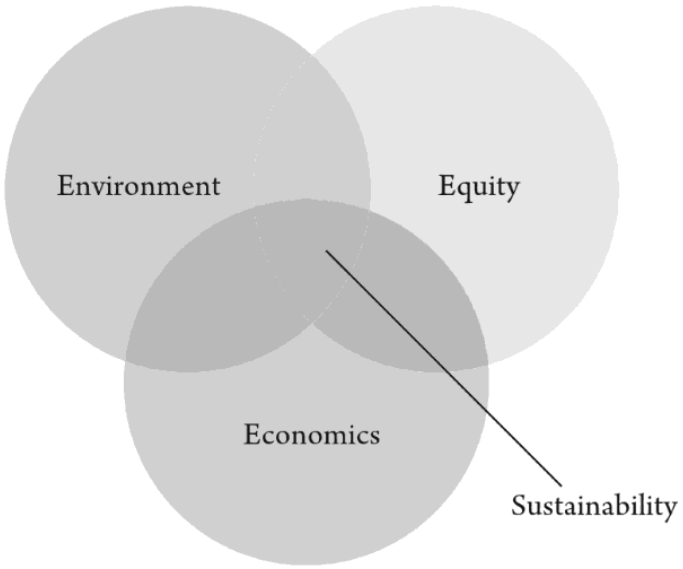
Six roots of sustainability[a]	Points of emphasis	Six definitions of sustainability[b]	Points of emphasis
Ecological/ carrying capacity	Maintenance of natural systems so that they can support human life and well-being	Carrying capacity	Optimum and maximum ability of Earth's systems to support human life and well-being
Resource/ environment	Promoting economic growth only to the extent and in ways that do not cause deterioration of natural systems	Sustainable use of biological resources	Maximum sustainable yield from natural systems, such as forests and fisheries
Biosphere	Concern with the impacts of humans on the health of the Earth and its ability to support human populations	Sustainable agriculture	Maintaining productivity of farming during and after disturbances such as floods and droughts
Critique of technology	Rejection of the notion that science and technology, by themselves, will protect and save the Earth	Sustainable energy	Renewable alternatives to fossil fuel reliance to produce heat energy
No growth–slow growth	Limits to the ability of the Earth to support the health and well-being of ever growing populations	Sustainable society and economy	Maintaining human systems to support economic and human well-being
Ecodevelopment	Adapting business and economic development activities to realities of natural resource and environmental limits	Sustainable development	Promoting economic growth only to the extent and in ways that do not cause deterioration of natural systems

a. from Kidd 1992
b. from Brown et al. 1987

Table 3-1: A summary of the foundations and definition of sustainability.

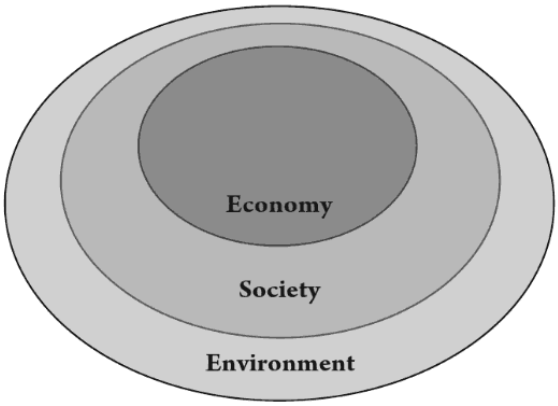
Source: (K.E. Portney, 2015)

Sustainability has traditionally been described as standing on the three pillars of economy, society, and economy. These three according to Leslie P. Thiele (2016) stand or fall together, you cannot have one without the other two. Though the importance of sustainability its meaning remains unsettled, in recent years nearly all the definitions of sustainability emphasize an ecological point of view, presuming that the term ‘sustainability’ implies that humans and their economic systems are inextricably tied a tripartite Venn diagram illustrating the interdependence of the "Three Es": environment, economics, and equity or social equality has emerged as a popular model of sustainability in recent years (Graf 3-1). Later, a newer model reimagines the diagram is depicted as a set of concentric rings, with the environment functioning as the foundation for sustainability and society and the economy nestled within (Graf 3-2). This approach reflects the criticisms of Sustainability economists such as Peter Victor and Herman Daly argue that the environment sustains society, and the economy, and that they would cease to exist without it, and so the environment, therefore, should take priority in any model of sustainability (Caradonna, 2014).



Graph 3-1: The three Es of sustainability represented in a diagram. A “sustainable” society requires a balance between and equal concern for environment, social equality, and the economy.

Source: (Caradonna, 2014)



Graph 3-2: the placement of the environment at the foundation of the model.
Emphasizing that human society and the economy cannot exist without the environment,
and therefore, it takes conceptual priority.
Source: (Caradonna, 2014).

As previously stated, in the late 1980s, the United Nations' World Commission on Environment and Development produced a report titled "Our Common Future", which has given sustainability and sustainable developments increased recognition and legitimacy. That document was published and intended, to resources and develop a worldwide agenda for global environmental protection, or to sustain and increase the world's environmental resource basis, as mentioned in the study. It offered the broad notion of sustainable development as economic growth that serves the needs of the present without risking future generations' capability to meet their own needs as part of the process. To put it another way, sustainable development entailed both intergenerational and intragenerational equity (S. Dresner, 2002 – Portney, 2015).

In accordance with K.E. Portney (2015), sustainability was stated as having three co-equal pieces or elements in the Brundtland Commission's (1987) report as the "Three Es." These three elements, often known as the concept's three pillars, have formed the basis for disaggregating and extending sustainability. This shows that preserving the environment, maintaining economic growth, and promoting equity may all be accomplished at the same time. The vital point, as per, this broad concept is that sustainability aims to reach all the related pillars, and that should not be accomplished by sacrificing another. Nonetheless, this in a sense leads the field of sustainability and sustainable development to generate an overlapping definition of social, economic, and

environmental sustainability, emphasizing the specific objectives of sustainability, i.e. what is supposed to be sustained.

3.1.1 Concept of sustainable development:

The United Nations (UN) has long promoted 'sustainable development' as a strategy for global stability, and woe to the city resident who does not strive for 'sustainable living.' (As cited by Caradonna, 2014). Ever since the UN defined 'sustainable development', the concept of sustainability has been a source of contention, with some publications claiming that it is vague and broad.

For most researchers, the understanding of sustainability starts with looking at the definition provided by the World Commission on Environment and Development (WCED) in (1987), sustainability is an economic development activity that "meets the requirements of the present without compromising future generations' ability to fulfill their own needs," as noted by Portney (2015). This definition provides an expedient departure point to have a broad understanding of sustainability's abstract concept.

Michael Redclift (2005) suggested in the same aspect that, "humanity has the potential to make progress sustainable." This implies that the idea of sustainable development does not refer to absolute boundaries, but rather to constraints imposed on environmental resources by current technological and societal structure, besides the ability of the biosphere to absorb the effects of human activities. Furthermore, a famed statement of 'Our Common Future' "Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising future generations' ability to meet their own needs" is a well-known integrational language definition of 'sustainable development' (Caradonna, 2014).

Sustainable development has also been defined as "the integration of conservation and development to ensure that modifications to the earth do actually secure the survival and well-being of all people." (Dresner, 2002). Moreover, Sustainable development according to Brown et al., incorporation nations of eco-development is a viewpoint that encourages businesses and industries to pay more attention to making the best use of natural resources (Portney, 2015).

Richard Heinberg's five axioms of sustainability ("self-evident truths") are as follows: (1) Any society that continues to unsustainable use of essential resources will collapse. (2) Population growth and/or resource consumption rates can no further be sustained. (3) For renewable resources to be sustainable, they must be used at a rate that is less than or equal to the rate of natural replenishment. (4) To be sustainable, nonrenewable resource usage must drop at a rate that is larger than or equal to the rate of depletion. (5) To be sustainable, chemicals released into the environment as a result of human activity must be limited and rendered harmless to biosphere function (Table 3-2).

Richard Heinberg's five axioms of sustainability "self-evident truths"	*1. Any society that continues to unsustainable use of essential resources will collapse.*
	2. Population growth and/or resource consumption rates can no further be sustained.
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	5.To be sustainable, chemicals released into the environment as a result of human activity must be limited and rendered harmless to biosphere function.

Table 3-2: Richard Heinberg's five axioms of sustainability "self-evident truths".
Source: (Abualfateh, 2022)

However, at the Tome Summit (1990) the term 'sustainable development' with a commitment to environmental protection to ensure 'sustainable growth'. This made the way for Maastricht Treaty to promote economic and social progress which sustainable (Redclift, 2005). It would seem that the mixed-use of the terms of 'sustainable growth', 'sustainable development', and 'sustainable progress' led to having an unclear meaning, which was argued by different scholars to be result by the different expectations, and the early vagueness or the early wording of the and the

inconsistency in the terminology, the variety of terms used in this case seems to be the main reason for confusion. Nonetheless, the different terminology means its flexible to change and adapt, which in a way support the perception of sustainability as a movement that aims to the future while taking care of the present.

In the discussion of sustainability and sustainable development, it is evident they are normally thought of as a general concept as they both share the core of focusing on the conditions of Earth's biophysical environment, especially with the ongoing depletion of natural resources. The basic basis of sustainability is that natural resources shall not be damaged, used, and drained indefinitely. Nonetheless, as 'Sustainability' and 'Sustainable Development' are the focuses of this thesis, it could be argued that they are not the same as the environmental protection movement and is not the same as conserving or preserving natural resources, although it is argued by scholars that they are the roots of sustainability. In essence, "Sustainability" and "Sustainable Development" is not a fixed state of harmony, but rather a continuous dynamic process of technological development, institutional change, and exploitation of resources that need to be made consistent with future needs as the present.

3.2 Framework of Sustainability:

"Sustainability is a lifestyle designed for permanence" (Chris Turner,2010).

Sustainability is an idea whose time has come all around the world where developers, scientists, engineers, architects, and interior architectures are all working to understand and standby it to reflect and market it as a new approach that they must change the way they proceed their specific departments. A large and diverse literature has appeared in the late years discussing sustainability and the different views and approaches to it. Further, its vocabulary and concept integration within individuals reflected on design, architecture, engineering, and more through different policies, laws, and even were integrated into international protocols and agreements.

Nonetheless, sustainability now is advocated by organizations, corporations, educational institutions, and governments. In addition to that, according to different schoolers in the twenty-first-century sustainability has become a phenomenon with an impact on the economy, society, technology, and culture. The most significant difference between environmental protection and sustainability, according to Kent E. Portney (2015), is that the previous focuses on environmental

repair and preventing particular environmental concerns, whereas the latter is significantly highly proactive and comprehensive, focused on dynamic processes throughout time. Sustainability refers to the process of utilizing, developing, and safeguarding resources at a rate and in a way that allows people to satisfy their current requirements while also ensuring that future generations would be able to meet their own. In the same way, sustainability necessitates fulfilling environmental, economic, and community requirements at the same time.

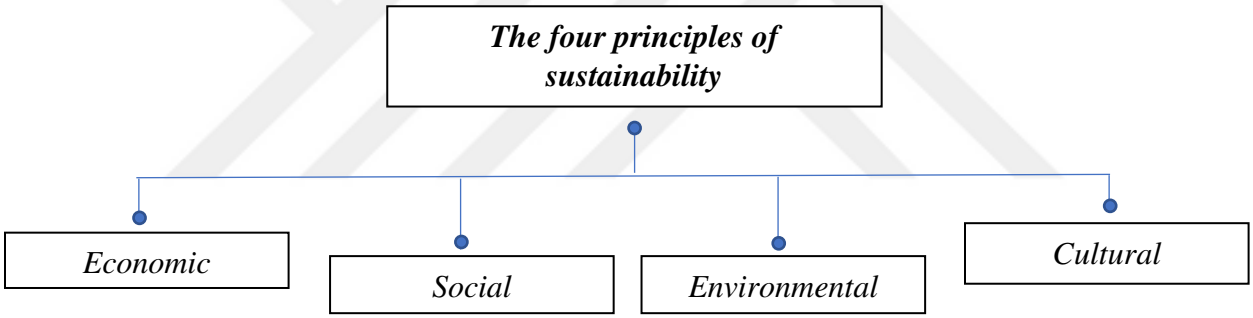
In essence, the master principle behind the movement of sustainability is its attitude towards climate, environment, and human well-being. And at its heart is the rejection of the modern metaphor of replacing nature. It is not possible to be sustainably developed and create an environmental burden in which often people do not see the connection between the action and the result. In the same line, according to John S. Dryzek and environmental politics researcher, sustainability presupposes human action instead of a passive attitude in which we anticipate someone else to address our challenges (As cited by Mclennan, 2004). For, sustainability and sustainable development identified a framework for sustainability and by so often navigated all related projects.

The discussions of sustainability cited above produced a basic base to understand the framework of sustainability. Following these statements, two questions come to mind; Do only natural sources need to be sustained? If not, what else is considered sustainable and by so in needs to be sustained? There is a need for change that holds the concerns and slowly takes environmental effects into account and the ability to work and prevent environmental damage. Yet, there is also a need to take account of cultural diversity and the economic aspiration of the society. In that regard, it is safe to assume that the priority of sustainability is to widen its concept of protecting the environment to create a clear link between the economy, society, culture, and environment in order to achieve a common ground that will be the base for sustainability, as it will be discussed further in the following part of the study.

3.2.1The four dimensions of sustainability:

Sustainability focuses on addressing present human needs while not jeopardizing future generations' capacity to meet their own. The sustainability model has traditionally included the relationships between humans and their economic, social, and environmental components of life.

(Scammon, 2012). However, sustainability is involved with more than just 'the environment'; it is also concerned with social sustainability and sound economics, as well as the interdependence of these three key areas. In this aspect, many researches demonstrate that it is possible to have a concept for the complicated relationships between social well-being, the environment, and the economy. This statement is a demonstration of the thinking of sustainability. Generally, the movement of sustainability functions with four principles; economic, social, environmental, and cultural (Graf 3-3). Yet there is a debate about the specific borders of the sustainability movement. This is mainly resulted in my belief in the different viewpoints that arise under the umbrella term 'sustainable'. Still, if the goal of sustainability is accepted then there are fundamental requirements that need to be set as a principle to be able to reflect the concept of sustainability on every dimension (cultural, economic, social, environmental).



Graph 3-3: The four principles of sustainability.

Source: (Abualfateh, 2022)

As stated earlier in this chapter according to Leslie P. Thiele (2016) the three pillars of the economy, ecology -environment-, and society stand or fall together. However, there seemed to be a problem with these formulas, for, a suggestion that sustainability requires a static, rigid balance. Nonetheless, sustainability requires innovation and imagination by insisting on 'cultural creativity' as the fourth component of sustainability which underlined the fact that our identities, practices, relationships, and institutions respond to change.

Including culture in the already well-known three dimensions of sustainability as the fourth dimension can create an utter approach to sustainability. As stated by D. Scammon (2012) as the notion of sustainability evolves, cultural sustainability will become a part of conversations about

culture and its connections to the environmental, economic, and social dimensions of society. Thus, in this thesis of cultural sustainability, we work to find culture's link to the other three dimensions of sustainability.

The vast literature review sustainability is being considered as a four-dimensional entity; those are, economy, society, environment, and culture which is later added as the fourth biller, where there were multiple reasons for being added to the classic three-pillar of sustainability. According to Luiza Pop and other schoolers (2019), the reason for culture being the fourth biller is that it encompasses a society's beliefs, values, practices, and aspirations; the way in which values are expressed and applied concretely in that society's day-to-day life; and the processes and mediums through which values are preserved and further transmitted. For, according to that statement in order to reach sustainability's main goal of economic development, environmental responsibility and social justice asset of values and behaviors should be developed, and that can be achieved by adding culture into the equation. As sustainability depends on taking not only the environmental, social, and economic environments but also the cultural environment must be taken into consideration. Thus, Luiza pop has cited this. "A sustainable society cannot exist without culture." (As cited by Loach, K. & others, 2017) [1].

Since thinking about sustainability is not a matter that we can simply agree on. From these perspectives it presumed sustainability suggests it is hard to have it all, this led to some trade-off's culture inclusivity, social equality, economic growth, and environmental protections. This requires the ethical question of how to divide privilege on the different interests of sustainability?

- **Economic Sustainability:**

The link between sustainability and economic development as a whole became a major policy issue in the 1970s when several international development programs were under criticism for allegedly abusing their massive financial resources to encourage environmental deterioration in poor nations in the name of economic growth. By the late 1970s, the United National Environmental Program had incorporated the concept of environmentally sensitive economic growth into its missions (Portney, 2015). Though sustainability was accused to be anti-economic

[1] Quoted from Loach, K.; Rowley, J.; Griffiths, J. Cultural sustainability as a strategy for the survival of museums and libraries. Int. J. Cult. Policy **2017**, 23, 186–198.

growth in some early texts, sustainability is argued to be about the coexisting between environment and economic development and promotes growth that is not at the expense of the environment to the point of having economic as one of its main principles. That perception was supported by The Brundtland report (1987) which argued that, there is a mutual interlinkage between the economy and the environment. The report stated in the past, we have expressed worry about the environmental consequences of economic growth. We now have no choice but to worry about the implications of environmental stress. We now have to get used to a growing ecological interdependence between nations. Ecology and economics are becoming progressively interwoven — locally, regionally, nationally, and globally – in a seamless matrix of causes and consequences (As cited by Dresner, 2002).

Furthermore, Michael Redclift (2005) explains economic activity has multiplied in recent years and could grow more in the coming century. This has far-reaching consequences for the biosphere. Much of the economic growth involves the extraction of raw materials from forests, soils, oceans, and rivers. Besides, new technology is a major driver of economic growth, and it has the ability to decrease the dangerously fast use of scarce resources.

The primary goal of economic policy is the expansion of productivity. Traditionally Productivity is described as the economic output per unit of input, which might include capital, labor, land, or energy (Ferguson, 2016). The requirement for substantial productivity growth is a key component of economic policy discussions. Yet in certain cases, pursuing productivity growth may hinder sustainability. For instance, when inputs like energy and raw materials are minimized, productivity growth can lower the environmental effect. However, the 'rebound effect,' which annuls out efficiency improvements through increasing production, frequently negates this (Saunders, 2012).

In the mid-twentieth century, economists and ecologists started to raise concerns about economic expansion and population increase. Donella Meadows, Dennis Meadows, Jrgen Randers, and William W. Behrens III argued in their book The 'Limits to Growth that if present trends in world population', industrialization, pollution, production of food, and depletion of resources progress, the planet's growth limits will be surpassed during the next 100 years. The most likely effect will be a pretty abrupt and uncontrolled drop both in terms of population and industrial capability, they add on the same aspect (As cited by Mclennan, 2004).

Yet, while increased labor efficiency, mostly attained through mechanization, has been the primary source of productivity increases. It is unknown if increased worker productivity inevitably reduces environmental efficiency. This 'productivity trap' is a key impediment to sustainable transitions, and it can only be circumvented in one of two ways: by raising unemployment or by degrading the environment (Jackson & Victor, 2011).

The basic idea of the previous statement appears to be that humans need to live within limits under the assumption of economic sustainability. This was supported by Leslie Paul Thiele (2016) as he stated that advocates of environmental protection appear uncompromising as they insisted that economic opportunities be kept in balance with the preservation of old-growth forests and the protection of endangered species. In addition, Fritz Schumacher, who served as the National Coal Board's senior economic counselor, J. F. Mclennan (2004) wrote; it is self-evident that individuals structured into tiny groups would take more precautions of their piece of land or other natural resources than anonymous corporations or megalomaniac governments who believe the entire world is their legitimate quarry (As cited by Mclennan, 2004).

To be sure, Schumacher's economic philosophy had an effect on the sustainability movement; a critique of economic development did not appear out of nowhere in the late eighteenth century. There were critics of economic liberalism who were able to link shifting economic policies to social and environmental issues. The main idea of economic sustainability is that there are limits to how much traditional economic growth the earth and its natural resources can support. This engages several issues not readily incorporated into other definitions, including the question of whether economic well-being is the same as human well-being (does higher economic growth really translate into a better quality of life?) (Portney, 2015).

In sustainable development, the biophysical environment and its ecological services are critical and maybe irreplaceable components of economic output. Economic growth is impacted when the environment and those services are affected and degraded. One perspective suggests that such a comprehension of the link between economic growth and the quality of the environment is a mere artifact of the use of GDP (Gross Domestic Product) as the primary measure of economic growth and, ultimately, of human well-being. Stern (2006) a mainstream economist argued the idea that economic growth, as traditionally defined, is not the same as human well-being, that the

relationship between traditional growth and human well-being needs to be better understood (As cited by Portney, 2015).

As the economy focuses on where societies achieve long-term continuous development and growth. Further, through the previous deliberations, we reach the realization that economic development and environmental challenges are inextricably linked; many types of development rely on environmental resources, and as the environment degrades it can undermine economic development. Therefore, any attempt to solve environmental problems is an indirect contribution to economic development and growth, and this realization in my assumption The global economy and global ecosystem are intertwined.

- **Social Sustainability:**

At an ecumenical research conference, the notion of a 'sustainable society' surfaced on Since and The World Council of Churches was convinced of the need for technology for human development. It was noted that; A sustainable civilization demands a level of human activity that is undisturbed by the world's never-ending large and frequent natural global climatic variations (Dresner, 2002). Society is considered the source of the environmental issue, the connection between the four pillars of sustainability, and the core solution to it. As the anthropologist, Marvin Harris argues, in his study of human culture, 'Cannibals and Kings', all through both prehistory and history we can find only a few human societies that were able to sustain their technology, organization, economic patterns, and institutions for even few centuries. Harris goes on to argue that all the world's cultures have had their origin in that repeated failure of sustainability, he explains that a new culture emerges whenever people manage to get out of their resource setting and invent a new infrastructure, based on a different set of resources or a different approach to resources use (Redclift, 2005). This means innovation whether cultural or technological is likely to be an outcome of ecological depletion.

"Society is a partnership, not only between those who are alive, but between those who are living, those who are dead, and those who are to be born," stated Edmund Burke (1790). The focus of social or sustainable society according to Kent E. Portney (2015) definition on society and social conditions rather than environment or aspects of the environment, per se; to create more sustainable societies. Leslie Paul Thiele (2016) states that "it requires significant changes in the

way we live, organize our communities, and do business and change a radically. Meaning, Sustainability at its start was argued to be like socialism as they share the belief that they both are about the human race consciously we must take control rather than permitting capitalist progress to continue unabated into the future (Dresner, 2002). Nonetheless, according to Denise Scammon (2012), "social sustainability" refers to the ability of a community to equip its members with personal health tools, appropriate shelter and food, work and education freedom to participate in civic affairs. The degree to which a community serves the needs of its people is referred to as social capital.

With that in mind following the path of different scholars, it's safe to say that sustainability in its current form works on increasing people's living standards and, the well-being of the least advantaged in societies while avoiding future costs. On the same aspect, as the modern world gained the power to reconcile human affairs within the environmental limits, increasing demand for enforcing our cultural heritages, and economic growth started surfacing. Advocates of sustainability assume infinite substitutability resources, economic growth, and social well-being. In other words, Michael Redclift (2005) explained if society adopts the desire for sustainability, it must expand economically and socially in a manner that the consequences of current actions are minimized, and future generations bear the costs. And as explained by Peter Jacques (2021) what thrives in global human sustainability is not met if there are a group of people who are not 'sustained' even as some improvements have been made for some societies.

- **Environmental Sustainability:**

In 1960s the new environmental movement sparked off by Rachel Carson a writer and scientist in her book 'Silent Spring' to draw attention to the destruction of wildlife and revealed Carson also claimed that human activities might have major environmental effects, and he criticized technology 'quick fixes' for their lack of foresight (Dresner, 2002).

Caring about the environment has a long history, and whiles surveying the idea of sustainability it became clear that the reason for its emergence is the environment and the fear that if the current abuse of the environment continues, future inhabitants of the earth will face a disruptive climate, vastly diminished biodiversity, short supply of natural resources, and more. This realization led environmental advocates to become uncompromising. Charles Kidd (1992) The primary challenge

of sustainability, according to Pints, is the loss of natural resources. The environmental strain basically states that resource depletion and a deteriorating environment would hinder economic growth (As cited by Portney, 2015).

Environmental activists argued that squandering natural resources was wasteful. This approach to the environment was known as 'wise use', it went on to become the foundation of official environmental thinking. This conception was criticized by preservationists who argued against the destruction of nature and loss of aesthetic value. In his book, 'A Sand County Almanac', Aldo Leopold an American author, philosopher, naturalist, scientist, ecologist, forester, conservationist, and environmentalist who often regarded as the founder of wildlife ecology concluded that, the situation was more serious and advocated for a 'land ethic.' The earth, according to Leopold's intuition, was an undivided living organism, with each species contributing to an indivisible whole, and humans were simply one component of the community. According to the 'land ethic', a thing is ethical when it adds to the integrity, stability, and beauty of the biotic community.

Nevertheless, Leopold supported the land ethic in terms that were anthropocentric – essentially, Leopold argued that a healthy ecosystem served the long-term human interest better than purely economic criteria, even if purely economic criteria served the short-term interest better- this is the current case for adopting 'sustainability' criteria; Leopold also claimed that removing a species from an environment without understanding what the long-term repercussions would be was not reasonable from our point of view (Dresner, 2002).

The interest in environmental protection spans varied groups, for instance, Affluent groups in accordance with Peter Jacques (2021) wanted to continue economic growth even if at expense of the environment, while others still sympathize with the environment. It appears that the idea of accepting an application of environmental limits will not function as a brake on economic development, yet on the contrary, it's rather a balancing approach to economic growth with environmental consideration. Through the cited literature in this study, the main concept and goal of sustainability appear to be achieving 'ecological sustainability' aiming to serve human demands while reliving the stress of natural resources.

- **Cultural Sustainability**:

To practice sustainability is to promote adaptive change. That is why Leslie Paul Thiele (2016) argues that sustainability can only be pursued by way of cultural creativity grounded. To pursue sustainability, we need to understand it is not a destination to be reached, it is a lifelong practice. Heritage, shared places, social capital, public art, educational opportunities, and public policies are all utilized to reinforce our cultural identity and sense of place in environmentally, economically, and socially sustainable methods (Scammon, 2012). In other words, cultural sustainability inspects ways to amplify cultural identity through all the educational opportunities of costume, fashion, art, architecture, interior architecture, heritage, and public knowledge.

As per Marja Laine (2016), the Cultural Sustainability (CS) inquiry conducted transdisciplinary work on the idea and practices of CS. A three-role approach to defining CS was established as a result of this collaboration: culture as, in, and for sustainable development. Culture is defined as the base or core of sustainability in the 'culture as sustainable development' approach, which is a method that creates sustainability. The 'culture for sustainable development' approach, according to Laine, sees culture as the 'glue' that holds the ecological, social, and economic pillars together. The disadvantage is that this definition is not well-known. In addition to ecological, economic, and social sustainability, the 'culture in sustainable development' concept considers culture to be a distinct entity and an autonomous function as the "fourth pillar" of sustainable development (Laine, 2016).

The previous analysis of Laine presents a utilized culture finding a new perspective on individual placement in the context of sustainability and highlighting the human role in discovering the culturally sustainable ways of living. This point of view highlights local culture and culture identity, and other aspects of culture expanding our view of cultural sustainability. M Australia (2003) following the increasing recognition of culture as a key role in sustainability states that many factors including cultural diversity, environmental quality, and human social well-being are found integral to making sustainability a reality (M Australia, 2003).

In the early study of Laine (2013) the approach of 'cultural sustainability' was supplemented by observing the separate role of culture while taking sustainability and sustainable development into account, this brought eight subthemes to light: creativity, cultural customs, cultural heritage, and historical knowledge, cultural landscapes, intergenerational contact, internationality, and location,

as well as multiculturalism and diversity are all factors to consider (M. Laine, 2016). Culture has a crucial role to play in constructing a sustainable future. when combined with the environmental approach, which considers culture's instrumental value (cultural change), and the Cultural Sustainability approach, which is based on the pillar model, which acknowledges the fundamental worth of culture and defines cultural sustainability.

3.3 Concept of Cultural Regeneration in Sustainable Design:

Traditionally, architecture, interior architecture, and design used to deal with factors such as functionality, cost, and aesthetics. Yet in the last decade sustainability worked on this fact of adding more layers with a wider set of perspectives aiming to install a sense of responsibility back into the community, interior architecture, design, and architecture. Living in a sustainable manner is seen as a requirement. Culture the value basis of basic education and the transversal competency goals both highlight sustainability as one of the characteristics of a sustainable way of life (NBE, 2014).

The notion of sustainability is quite simple yet complex, to sustain something as cited previously is to keep it going, which is conceptually simple. Many commentators on culture are faced with various challenges in the context of sustainable design, they would debate that the approaches, and requirements of sustainability involve ethical judgment about the role of culture in the present and future. Another issue for debate is the behavior of sustainability and sustainable design and the extent of exploration and analysis regarding culture.

Supporters of culture claim that sustainability and sustainable design is corroding the moral context of the society that is presupposed by the movement. According to Daly (1992), environmental analysis should be through the 'scale' which he defines as a "materials-balance sense in terms of the throughput of matter/energy in economic system". This means all human activities should relate to the natural capacities of the environment. Yet there is some debate as to the impracticability of some of the alternative adaptations of humans.

During this era of environmental responsibility, the world commenced to transform itself to restore and rebuild a healthy balanced model of environmental recovery, with a clear message that as a society there is a role need to be taken in restoring and conserving it. However, a trend of developing the concept of sustainability in a way that ignored cultural uniqueness. As it seems

with every new sustainable project the word ignores its own uniqueness. As it was put by David James Kunstler (1993) in his book 'Geography of Nowhere' "Here was a community with a geological and industrial history unique to the world with a banal and ugly architecture that ignored its own uniqueness".

The philosophy that underlies the expanding trend that seeks to redefine how buildings need to be more responsive to the environment in the way they are designed, built, and operated. There is a need to go in this part and slice the pie of sustainable design and note, that according to different scholars it goes with different names such as the terms "green design," "green architecture," "ecological design," and "environmentally friendly design" which are all used interchangeably. Which all have a similar meaning; a design concept that seeks to improve the quality of the built environment while reducing or eliminating negative impact on the natural environment, which is according to a definition of Sustainable Design (J. F. Mclennan, 2004).

That suggests sustainable design is a philosophical approach to design instead of an aesthetic implementation, thus it cannot go out of style, and by so it can be used as a concept that can transcend on any project under design, as it appears to have no barriers on its physical scale adoption. With that in mind, it would appear that the major role of this movement is to lessen our environmental impact and eliminate negative environmental impact, yet it also establishes the fact that one of this movement main goals is to enhance the quality of life, this suggests that the purpose of sustainable design is to seek to enhance every aspect of life through creating a physical artifact that benefits people.

The movement of sustainable design started sometime in the early seventies according to some scholars as a response to the oil crisis leading to concerns of solar and energy conserving. While for some other scholars it is believed that sustainable design commences through centuries and may be seen in indigenous architecture all over the world earlier in different forms. This was demonstrated through our ancestors who illustrated ideas and inspired examples of biomimicry and sustainability long before we were introduced to it as a concept. However, these locally built indigenous examples of culture were understandably not trying to build sustainable design or architecture, as they were merely a try to provide safety and comfort as a result of their close relationship with the environment and through the existing tools and techniques which were available in time. In a sense, our ancestors could not have recognized the relationship between

their actions and the environment. As result, this could not have been the complete beginning of the sustainable design movement.

As once said by John Stuart Mill (1806-1873) an English philosopher and economist “Every great movement must go through three stages: criticism, discussion, and adoption.” In sustainability it is no longer viewed as a passing vogue on contrast it became a movement with principles that become a scale to every aspect of since in accordant with Jason F. Mclennan (2004) The development of sustainable design took four stages:

1. The Biological Beginning of Sustainable Design.
2. The Origins of Sustainable Design is in Indigenous Vernacular
3. The Industrial Beginning of Sustainable Design.
4. The Modern Beginning of Sustainable Design.

Though over the last two hundred years our ancestors’ moderate comfort, in modern times numerous technologies have been invented in quest of seeking comfort, and significant changes were made to architecture.

3.3.1 Sustainability within design:

A realization of the indigenous environmental design solutions through time lead to a growing consciousness of our environmental heritage came to light, as the escalating acceptance of the idea that man-made technologies carried risks and limitations. This is most ways guide designers and architects to start a series of countless experiments to begin to look for ways to reduce energy demand, waste, and be more cost-efficient. This accordant with Jason F. Mclennan (2004) lead to some events emerging:

1. Interior architects and designers reinvented passive, climate-responsive, and bioregional design strategies, which are still the base of sustainable design.

2. Interior architects, architectures, and engineers adopted appropriate technologies into architecture. Designers began incorporating alternative energy and waste technologies into their architecture. The first solar panels and a wind turbine got to debut. People like Michael Reynolds began experimenting with other building materials such as scrap tires and bottles.

3. A public impression of what energy conservation design looked like and how it worked was developed.

4. Many of the leaders in sustainable design experienced their sustainability initiations. Sustainable design leaders are defined as individuals whose ideas are helping to shape the way we design, construct, and operate our buildings (Mclennan, 2004).

Later to these stages, the interior architectural style took a new approach as postmodernism, which approach is that buildings need to be built the same regardless of location, climate, and culture. This admittedly in away striped spaces leads to a setback from the development of the sustainable design. Still, as a reaction to the decline in environmental health, the movement of sustainable design got back on track in the past decade aiming to make a significant change.

It symbolizes a transformation in how we approach, develop, build, and operate spaces, according to Bill Browning and Dianna Lopez Barnett's description in their 'Sustainable Design Primer'. This implies responsibility and regard for natural resources, for systems, and for people, while, searching for solutions that balance aesthetics, comfort, and cost with environmental concerns. The term 'Sustainable design' is found to be usually used as an umbrella term to narrate a set of components, technologies, and techniques that improve quality and lower environmental impact. These component categories, according to Jason F. Mclennan (2004), include, but are not limited to:

- Daylighting.
- The quality of the air within your home.
- The use of passive solar heating.
- Natural ventilation is a must.
- Efficient energy use.
- Energetic Embodiment.
- Reduction of construction waste.
- Water Talk.
- Solid Waste Management is a term that refers to the management of waste.
- Renewable sources of energy.
- Natural Landscaping/Xeriscaping.
- Preservation of the site.

This notes that the movement of sustainable design is directed to improve different factors in buildings in relation to the environment, which offers the traditional features of buildings of daylighting, indoor air quality, thermal comfort, connection to the outside, and the general control of indoor environmental quality.

Despite the growing interest in sustainability and sustainable design, few words in the design industry have been used as that of; Green architecture' and 'Sustainable design' have gained many misconceptions that helped create barriers instead of solutions part of the challenge, according to Jason F. Mclennan (2004), is that the phrase 'sustainable design' is completely insufficient to represent the movement and concept underlying it. In the dictionary, the word 'sustainable' means 'able to be maintained.' As a result, the need to modify our link with the natural world is poorly depicted. Among designers' sustainable design can be the intuitive process that can successfully integrate its principles into the design's process. In the same aspect a question occurs, how can sustainable design connect with human well-being? This was answered by the movement of sustainable design integration psychological, and spiritual principles as sustainable design seek to preserve these characters and sites design professionals tried finding ways to encourage connecting sustainable design to nature and culture heritage.

All scholars began to concentrate on a single primary idea of appreciation of cultural diversity and traditions. This realization broadened our view of sustainability within broad categories of interest (environmental, economic, social, cultural). These components have been seizing over the last decades (1980-2020), public concern has grown.

With that in mind, un understanding sustainable design as a process that uses the natural capacity to have local, and global environmental quality while creating a beautiful design that meets all the applicable standards and codes to have designs that are accomplishing every aspect within the frame of sustainability, however, it's not an easy endeavor sustainable design seems to be though as a new perspective of the design process. To add, designs as its conceived today build on the principles of sustainability and add to them the technological advances, exhibiting opportunities to build and inspire timeless environmental products of design.

3.3.3 Cultural regeneration:

"Regenerative practice is about releasing the potential of people in place by listening closely into the tale the land and its people want to tell" (Wahl,2019).

Daniel C. Wahl (2019) also argues that regenerative practices are about discovering how to bring each community's unique bio-cultural essence to life in ways that address human needs while also enhancing and mending the wider biological community in which we are embedded. A regenerative human culture is healthy, resilient, and adaptive; it cares for the earth and for life, knowing that this is the most efficient way to ensure a bright future for all of mankind. Human, ecosystem, and planetary health must all be considered while designing. This will enable us to move faster from unsustainable "business as usual" to regenerative and restorative technologies that will enable our transformation to a regenerative culture. We have an opportunity to make it through the eye of the needle and build a regenerative civilization if we can address the challenge of lowering global consumption whilst replenishing resources utilizing regenerative design and technology (URL1).

Cultural policy, according to Phil Northall (2008), was considered as a reaction to globalizing corporate structures as well as the collapse of the Fordist accumulation system, which attempted to expand the economic foundation of cities. As part of a 'cultural turn,' a dependence on the 'creative industries as the new economic foundation replaced the previous industrial one. He continues to explain that as cultural policy began to largely become based in the world resulting in the creation of mixed-use cited – influenced by a mix of modern and cultural concepts-. Several European towns, including Stockholm, Copenhagen, Stuttgart, Lyon, and Vienna, and others, have adopted a 'rediscover your city' strategy for locals, with the primary goal of 'counteracting trends toward social atomization' and 're-establishing the role of the city center' as a stimulant of civic identity, public sociability, and cultural identity.' (Northall,2008).

That expresses that government departments should be reorganized to guarantee that the principal sectors of cultural production are interconnected and coordinated in recognition of their vital significance in communicating the meaning, identity, and purpose of our society and its members (Scammon, 2012).

That suggests that ‘Regeneration of Culture’ can aid on social, economic, and environmental levels; for instance, economic interventions are to some extent driven by culture, which has aspired to create a new creative sector comprised of a diverse variety of cultural producers who make a major contribution to the economy. While in social terms, different components of culture such as art may be the main instrument used by practitioners of regeneration and renewal to accomplish broader regeneration aims to breed greater community cohesion between all parts of the community. As for the environmental terms, culture may be a powerful instrument for enhancing a community's sense of pride, aiming to improve the perception of the local area.

That is to say, if we change our perspective, we may see life as “a continual process of deeper, more diverse, and mutually advantageous interactions.” Developing a regenerative system requires more than a technological, economic, ecological, or social transformation; it necessitates a fundamental shift in how we think about ourselves, our interactions with one another, and life in general.

However, the debate of culture aided by regeneration summoned few changes in other departments of sustainability; For instance, the most anticipated benefit is the increasing number of tourists. Nonetheless, products of economic may become largely driven by the work of the department of culture, which ought to define the new perspective of creativity that includes a significant amount of contribution of cultural products. This leads to a unique character resulting in an increasing number of demands. On the same aspect, cultural regeneration in a perspective is primarily empowered by utilizing the tool of social practitioners to achieve widespread. Yet, when coming to the environmental department, the regeneration of culture can become an effective tool in improving the perception of the locals and empowering citizens regarding their identity. It might even benefit in creating a local motivation towards the local/regional environment aiming to help save, guard, and renovate the local environment (Table3-3). And even when comes to the commonly overlooked department of design culture regeneration can even easily go past that and have a direct influence on the whole creative process of design, art, and fashion, leading to a new age of cultural diversity and innovations.

Departments of sustainability	*Regeneration of culture*
Environmental sustainability	• *Increasing of environmental thinking.* • *Wider appreciation for environment.* • *Creation of environmental based infrastructure.* • *Resurrection of environment.*
Social sustainability	• *Enhancement of local societies conditions.* • *Improvement of the local image.* • *Wide appreciation of identity.* • *Motivation of cultural change*
Economic sustainability	• *Opportunities for unique projects and products* • *Creation of more jobs.* • *Enhancement of export opportunities.* • *Opening for inward investments.*

Table 3-3: Anticipated benefits of Regeneration of culture on the departments of sustainability.
Source: (Abualfateh, 2022)

While this chapter focused on the notion of sustainability addressing the needs of current people without risking future generations' capacity to meet their own needs. It also looked at the concept of sustainability and its reflection on its 'three pillars of sustainability' – economic, social, and environmental -. It also presented the relationship between culture and sustainability. Furthermore, this chapter examined sustainable design and explored the possibility of cultural regeneration. Only to be able to move forward in the following chapter and present culture as the fourth pillar of sustainability, and fundamentally debating culture sustainability and its ability to be reflected through architecture and interior architecture.

CHAPTER 4. CULTURAL SUSTAINABILITY:

As described in the preceding chapter, sustainability primarily focuses on serving the needs of current people without risking future generations' ability to meet their own necessities. Traditionally according to literature, the border of the sustainability model includes human connections with the economic, social, and environmental aspects of living. Nonetheless, in the last decade, the attempts of several international organizations and scholars to process culture through sustainability across different approaches and policies.

A cultural connection to the three pillars of sustainability as deliberated in the previous chapter is unavoidable, however, this proposition needs to be well expressed. Therefore, this chapter aims to propose a framework that helps identify the many different roles of culture in relation to sustainability and present how culture is becoming a widely accepted addition to the three pillars of sustainability. This chapter intends to engage in a debate about the concept of cultural sustainability in relation to identity and design. All while exhibiting the relationship between design and cultural sustainability to relay as a characteristic, the concept of cultural sustainability in design.

As it appears that culture and the notion of cultural sustainability are indeed related as previously discussed in this study. According to, Ndidi Nnoli Edozien (2007), the issue that Western nations' dominant worldview obstruct information transmission regarding sustainable development across (other) cultures have surfaced "the balanced interaction between the individual and the society; between the sacred and the secular; between the present and the future offers an opportunity for continuity." This statement calls the need to turn an important component, 'time', before engaging their components; as both – culture and sustainability- tend to consider the distances of past, present, and the future. Therefore, in this part, this study argues that 'Culture re-branding' can be done through the engagement of 'culture performativity' through time as it can be advertised and re-emerged through re-associating it in the frame of sustainability through products like fashion, buildings, and food, in a sense of its potential relation to society and the notion of sustainability.

4.1 Cultural Connection to Sustainability:

As proposed at the end of the previous chapter, cultural dimensions of society connect with environmental, economic, and social dimensions. In that discussion, we discovered evidence of culture's connection to the economy through employment and income generation; while culture is linked to social engagement; and to the environment using cultural capital is needed to enhance environmental knowledge and accountability.

Furthermore, in the light of different considerations by researchers of culture as a sustainable element; In 2001, UNESCO (The United Nation Educational, Scientific and Cultural Organization) made 'The Declaration on Cultural Diversity' ushered in a process aimed at incorporating culture as the fourth pillar of sustainability. That implies that the development of cultural sustainability shall take place in a way that respects culture, heritage, and the value of society. In that aspect, this dimension of sustainability is mostly concerned with confirming the continuity of culture that links the past, present, and future. Therefore, in my assumption following the previous statement cultural sustainability was based under the philosophy of sustainability, and by so, the current generation can utilize and alter cultural heritage only to the degree that future generations' lives, values, and meanings are unaffected.

Culture here appears to be an essential source for sustainable designs and was placed by different researchers on equal ground with other pillars of sustainability environment, society, and economy. Nonetheless, culture role in sustainability is explained by Izabela L. Pop and other scholars through a different approach, one is explained by its significance in the preservation, conservation, and maintenance of various types of cultural capital, as it may be used to achieve the social, ecological, and economic goals of sustainable development, but only after taking the required steps to preserve it (2019). Another perspective is to think of culture as an overarching component of sustainability that includes the other three pillars of sustainability and leads to development as a cultural process.

Yet, as the four-pillar concept of sustainability was discussed and its many expressions in various regions of the world, the ability of culture to stand equal to the other three pillars of sustainability was questioned, merely answered, and mainly challenged in the early stages of presenting culture as the fourth pillar alongside with economy, social, and environment in the new model of sustainability.

Through the literature review, regarding culture, sustainability the connection between culture, sustainability, and the other three pillars of sustainability and sustainable development appeared to be challenged in some parts and not validated. To be more specific, communities must have a deeper understanding of the economics, ecology, and social and cultural interactions in order to detect sustainable and unsustainable practices. People will be challenged, according to M Australia (2003), to envisage a sustainable future to recognize what to aim for and how to accomplish it while taking into account the consequences of their decisions and behavior. As a result, museums are in a unique position to contribute greatly to this process.

As the notion of sustainability evolves, cultural sustainability is becoming a part of conversations about culture and its connections to social, environmental, and economic dimensions of society, cultural sustainability, heritage, social capital, public art, shared spaces, educational opportunities, and public policies. As per to Denise Scammon (2012), examine the methods to strengthen our cultural identity and sense of place through terms of promoting environmental, economic, and social sustainability. Bill Read (2007) also stated Sustainability is a movement toward a functional understanding that everything is interrelated; that the systems of commerce, building, society, geology, and nature are truly one system of interconnected interactions; and that such processes are co-participants in life's evolution.

Rather than focusing on reducing environmental damage, it is critical to investigate how humans can collaborate with the environment — using the health of ecological systems as a foundation for design. Reed states "The biggest jump our civilization must make — framing and comprehending interrelationships of living systems in an integrated fashion — is from a mental model of a whole system from a fragmented viewpoint. One method to obtain this insight is through a place-based approach. As designers our job is to change our connection such that an entire system of mutually beneficial partnerships emerges." (URL1)

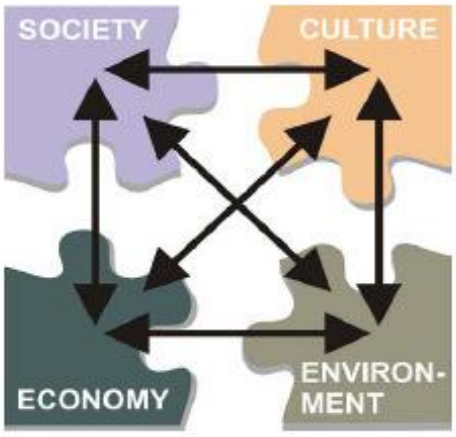
In this context, the Ministry of Culture and Heritage of New Zealand (2006) developed a community wellbeing model with four interrelated and interdependent dimensions: cultural, environmental, social, and economic well-being (Graf 4-1). The Ministry urged local governments to address all four forms of well-being in order to achieve long-term development through this paradigm. "Participation in recreation, creative, and cultural activities; and the freedom to

preserve, interpret, and express their arts, history, heritage, and traditions" by communities and individuals were characterized as cultural vitality (Duxbury & Jeannotte, 2010).

Graph 4-1: New Zealand: The four well-beings of community Sustainability.

Source: (Duxbury & Jeannotte, 2010).

Another concept of sustainability included culture as the fourth pillar. Since then, owing to Infrastructure Canada's policy requiring municipalities to prepare long-term Integrated Community Sustainability Plans (ICSP), many local governments have generated ICSPs to lead the long-term sustainable development of their communities (ICSPs) that mirror this concept. A local sustainability plan, (Graf 4-2) shows an example of a graphical depiction of this approach.



Graph 4-2: Canada: The four pillars of sustainability, viewed as pieces of a puzzle.

Source: (Duxbury & Jeannotte, 2010)

Looking at these perceptions of culture and sustainability together they appear to be a work in progress; “There is a dearth of studies and writing that articulate a cultural theory of a sustainable city in which (local) culture becomes a value in and of itself, not just as a means of resisting and responding to globalization, or as a source of economic value, or as a postmodern reading of a text” write Nadarajah and Yamamoto (2007). Nonetheless, an additional challenge is the absence of a clear expression of the concept of sustainable development, as while recent literature still appears to struggle with understanding the peripheral treatment of culture in terms of social development differs with the emphasis perspectives of economic growth that diverge with sustainability between industrialized and in developing countries.

Although there was noticeable progress in the comprehension of the ideals that culture offers to society and culture began to be absorbed as an instrument for social cohesion and economic development; culture continued to play an advancing role within the notion of sustainable development.

Kagan and Kirchberg (2008), said to comprehend and place the culture in the context of community sustainability strategies, four conceptual threads have been proposed:

(1) culture as capital.

(2) culture is a process and way of life that interacts with the environment.

(3) culture plays a crucial role as a major tying factor that supplies the values that underpin sustainable (or unsustainable) activities.

(4) culture as creative expression that provides environmental/sustainability insights on concerns.

Various perspectives on culture and sustainability have been taken up in study literatures across a wide range of situations, including sociology of art (As cited by Duxbury & Jeannotte, 2010).

According to Duxbury & Jeannotte (2010), just approximately half of the guides articulated what they meant when they talked about cultural incorporation or integration into plans of community sustainability. Even fewer participants mentioned primary elements or noticeable local cultural conditions that may have an impact on how communities engage with culture in their initiatives. That planning instructs that included a definition of culture suggested a range of interpretations, varying from anthropological (focusing on community identity and values) to expressive (focusing on both heritage infrastructure and a variation of arts and culture activities and resources) to a

mixture of the two (focused on both anthropological aspects, such as beliefs, language, and ways of living together, and ways that society communicate itself through the arts and letters).

4.1.1 Re-branding culture:

"We inherit this sum of visible and intangible cultural capital from previous generations and pass it on to the next." (Gražuleviciut, 2006).

This viewpoint is prevalent in discussions about built heritage in the context of sustainable development planning.

The word "Culture" has always been encumbered with an abundance of differences resulting in it to has multiple definitions and layers, this benefited in widening the frame of culture leading to the possibility of cultural sustainability to look at methods to use heritage to promote cultural identity sense of place, spatial design, public art, social capital, educational opportunities, and leading public policies in such promote economic, environmental, and social sustainability.

Concerns regarding the relative disregard of cultural considerations in sustainability discourses and customs intensified, according to literature, as sustainability became the dominating paradigm for both local and larger macro planning and policy contexts in the late 1990s. (Duxbury & Jeannotte, 2010). These concerns gave impetus to planting roots of initiatives more focused and attention to culture within the policy of sustainability around the world. For instance, in Asia, the Kanazawa Initiative (2000-2002), emphasized the omission of cultural issues in the literature on sustainability and city planning and investigated the role of culture in the development of sustainable Asian cities. Sustainability was characterized as a three-dimensional system that included environmental, economic, and sociocultural aspects, with the latter defined as a system that "seeks to improve the human dimension through harmonizing social relationships and cultural multiplicity." Further, The Fourth Sustainability Pillar: The Significance of Culture role in Public Planning, by Jon Hawkes (2001) was commissioned by the Cultural Development Network. The model of sustainability it articulated was based on concepts from a variety of international institutions and experts, and the four interconnected aspects were environmental responsibility, economic health, social equity, and cultural vitality.

In the light of the challenge of cultural identity in the rapidly urbanized cities an additional was put forward by Choe (2007) concluded that the 'urban cultural system' was found to be insufficient

in achieving a culturally responsive, long-term urbanism. As a result, he concentrated on integrating culture into five distinct sectoral/functional systems or action domains: government, environment, economy, spatial-physical (urban structure and development patterns), and social systems (As cited by Duxbury & Jeannotte, 2010). It appears that the one proposition that seems to emerge from these different initiatives was the assessments of essential cultural impact under the notion of sustainability.

As the researchers focused on analyzing and identifying practical ways in which culture could be preserved and modeled in a way that followed the general objectives of sustainability, the concept of cultural sustainability began to emerge, as culture is one of the best solutions for preserving and extending the collective.

In the same aspect, Sasaki's study of Kanazawa, Japan, focuses on the implementation of a local difference in the quest of "real globalization with harmony and moderation" through a new "global yet varied" social and production system model (2007); Three key factors for a sustainable city were identified:

(1) Particular characteristics and specialties based on the traditions and culture of a city.

(2) Ability to adapt to changing conditions and innovation.

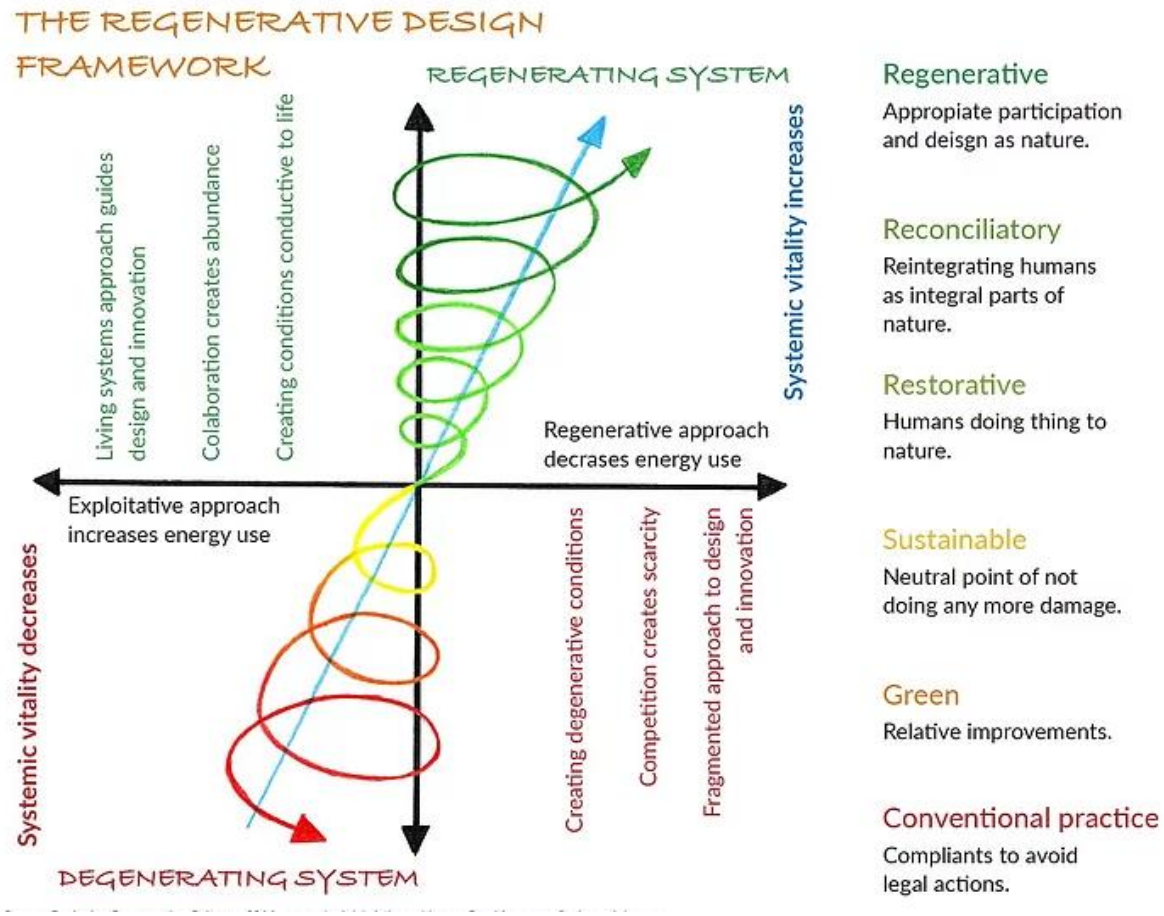
(3) Residents and local government cooperating together (As cited by Duxbury & Jeannotte, 2010).

Nevertheless, the recent attention to the relation of sustainability to culture takes attention to its dynamic contingent characters. Keith Nurse (2006) recognized this viewpoint, proposing that culture should be viewed as the "fourth but central pillar" of sustainable development, and therefore should be "fully integrated" with the economic, social, and environmental pillars. This acknowledges that "how the environment is perceived and lived in is shaped by people's identities, signifying systems, cosmologies, and epistemic frameworks."

In the previous passage Nurse appears to be contextualizing the model of culture within the frame of sustainability emphasizing 'cultural diversity'. This approach of culture to sustainability appears to prioritize not only cultural identity, but also focuses on social justice, and ecological balance. The cultural identity pillar in accordance with Nurse (2006) Among the five topics addressed were cultural identities, intangible and tangible assets, cultural pluralism, cultural industries, and geo-culture. Nurse argues that it is important for this study to proceed beyond discussing only about

heritage and art in the argument over sustainability, to incorporate broad definitions of culture as a "whole way of life".

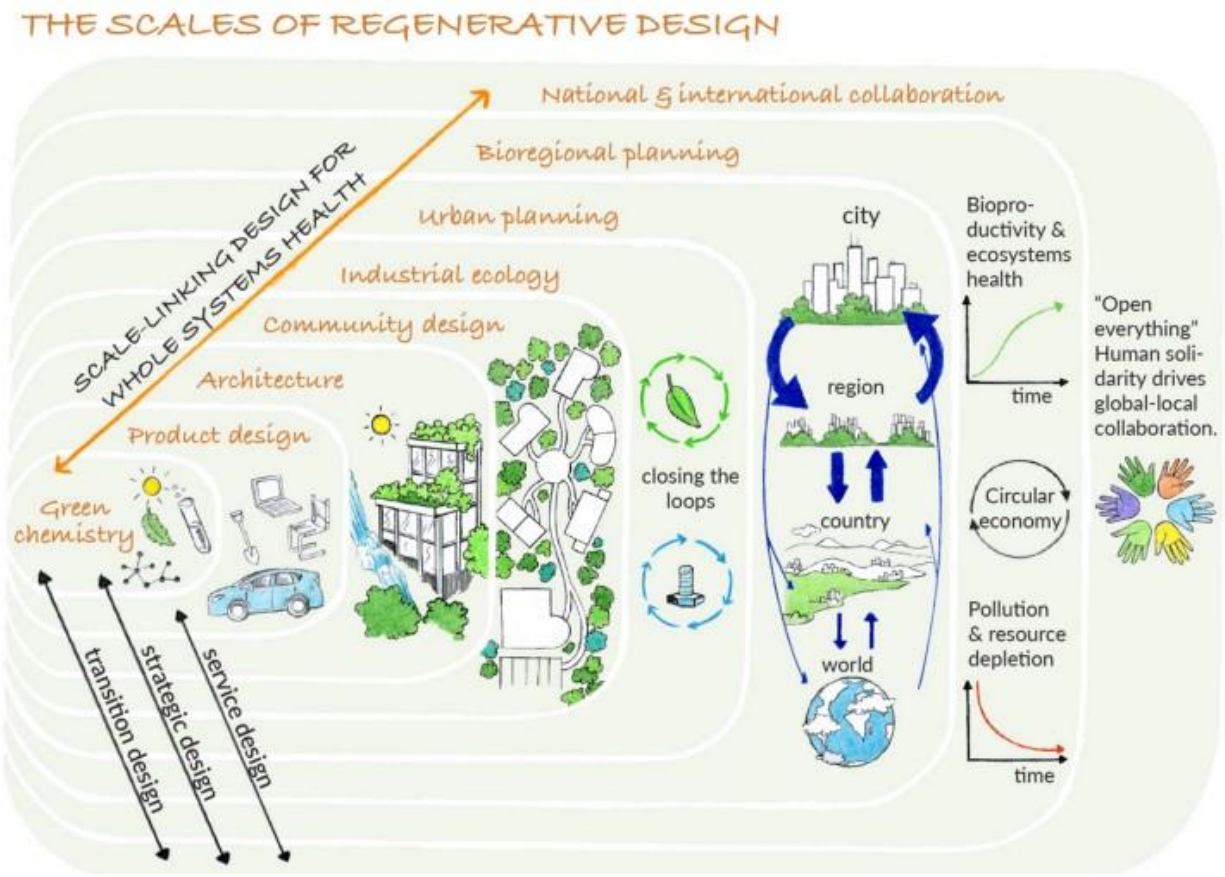
In the same aspect, according to scholars such as Bill Reed (2007) and Danile C. Wahl (2016) when comes to design we shall aim to foster regenerative cultures that exceed and include sustainability they stated: “Restorative design attempts to restore healthy self-regulation to local ecosystems, whereas reconciliatory design goes a step further by emphasizing humanity’s active participation in life’s processes and the unity of nature and culture.” Regenerative design cultivates regenerative cultures capable of continuous learning and transformation in response to an expectation of change. For future generations of mankind and for life, regenerative cultures protect and expand biocultural abundance (Graf 4-3).



Graph 4-3: Trajectory of Environmentally Responsible Design Adapted from Reed (2007)

Designing regenerative cultures.

Source: (Wahl, 2016)



Graph 4-4: The Scales of Design & Scale-linking Design for Whole Systems Health reproduced.

Source: (Wahl, 2016).

The emerging new cultural narrative seems to be able to procreate and shape a fully regenerative human culture. This so-called regenerative culture appears to emerge from the discovery and practice of new ways of connecting to oneself, others, and life; and at the core of the creation of regenerative cultures is the need to have a scale to design this new system of cultural regeneration in which Wahl (2016) used the notion of 'scales of design' and 'scale-linking design' (Graf 4-4) which takes a global and local approach that pays attention to facilitating health across scales.

According to Wahl (2020), the measure of good design is whether it improves systemic health reflected in the health of individuals, communities, ecosystems, and the biosphere. At the bioregional scale, we can reintegrate urban development into the biophysical processes that maintain ecosystems' health and stabilize climate patterns. We can do so in place-sourced ways that pay attention to manifesting the potential inherent in the bio-cultural uniqueness of people and place.

4.1.2 Regional identity & city image:

Sustainability began to have an increasing effect when the world is viewed as one global community comprised of many local ones. Nonetheless, as there are different cultures there are communities and each community has its own traditions, values, and beliefs. Therefore, each community works to find methodologies that preserve its own culture and identity. Regardless, one can be flexible to the way cultural traditions are enacted in a changing world can be problematic, knowing identity place in culture enables the examination of what matters in individuals' life and its connection to culture's beliefs and values. This began to bring focus and attention to culture within the initiatives of sustainability fueling the perspectives of developing of the four-pillar model of sustainability; Nonetheless, efforts were made by diverse entities to include local citizens to broadcast one main global message that can be understood by the international communities regarding culture sustainability, and it is within communications that shifts and informs the relations between it and identity.

Since as discussed previously, models of sustainability need to begin at the local level of any cultural group, that is also where the communications between culture and sustainability should concentrate until a particular transformation in viewpoint occur towards cultural sustainability is used to engage and motivate citizens to sustain a community's culture and sense of self-identity at the local level.

Meanwhile, communities maintain their tangible and intangible visible and invisible cultural identities, through preserving cultural capital for current and future usage. Incorporating cultural, economic, environmental, and social sustainability into community growth and identity preservation, has a favorable impact on shifting the broader viewpoint of sustainability. Because each group concentrates on its own identity rather than being compelled to accept the cultural identity of another, these good benefits arise. Heritage conservation is concerned not only with conserving cultural objects that are limited in availability and once gone, cannot be replicated. Powter and Ross write, however, it also directly contributes to sustainable development and community sustainability (As cited by Scammon, 2012).

While Julia B. Corbett (2006) writes in 'Communicating Nature: How We Create and Understand Environmental Messages,' "Our sense of place – in addition to childhood experiences and

historical and cultural settings –shapes how we perceive, experience, and value the natural world and, eventually, influences all our whole belief systems."

Simon Guy and Graham Farmer (2000) discuss some of the issues surrounding sustainability from a qualitative, rather than quantitative, approach. The "symbolic logic," as they call it, tackles the concerns of regional and local culture as a critical feature of sustainability: Rather than calling for a universal, drastic change in attitudes, symbolic logic promotes a profound reorientation of values to meet both environmental and cultural challenges. The primary problem is authenticity and the idea that truly sustainable structures must be more intimately correlated to the concept of place and community. Our ethical obligations include resisting contemporary culture's universalization problem. Current technology-based sustainable architecture techniques and design processes are not always in sync with a region's or people's cultural values (As cited by McMinn & Polo, 2005). In the same vein, Guy and Farm (2000) conclude in their article that "if contemporary architecture is to be sustainable, it must seek a greater knowledge of local culture." This viewpoint is bolstered by the idea that buildings must be relevant and functional to the communities they serve throughout time in order to be truly sustainable. Influence from indigenous and vernacular building structures, which are viewed as examples of how culture adapts to the constraints of a specific environment [Drawing on] the holistic aspect of traditional construction, wherein physical, spiritual, and environmental concerns were incorporated within the broader framework of social organizations. Procurement of locally accessible materials and regional building procedures that make use of local labor capabilities are also viable solutions for lowering the ecological footprint of construction projects on a more strategic level.

The quest of modern architecture that responds to the difficult balance between local place identity and global architectural culture. Furthermore, regional approaches of famous architects, such as Hassan Fathy from Egypt (Figure 4-1) and Charles Correa from India, show concern for cultural sustainability, continuity of spatial features, use of local materials, and suitable responses to nature. (Figure 4-2).

New Gourna Village (Figure 4-1) Hassan Fathy, an early visionary of sustainable architecture, reinterprets a typical urban and architectural context in this work. The New Gourna Village aims to provide sustainability both in culture using local building techniques and materials and its sensitivity towards the environment and climatic problems. It was in Fathy's belief that

architecture was all about bridging the gap between new and traditional architectural approaches. (As cited by Kultur,2012). This perception can be noticed throughout the Gourna Village where Fathy worked on bringing back the use of mud-brick (Adobe) with a particular old technique that keeps buildings cooler during the day and warmer during the night. These techniques are energy efficient and sustainable helping villagers in reducing their dependency on modern technologies, which are besides being expensive have negative effects on the environment and local culture.

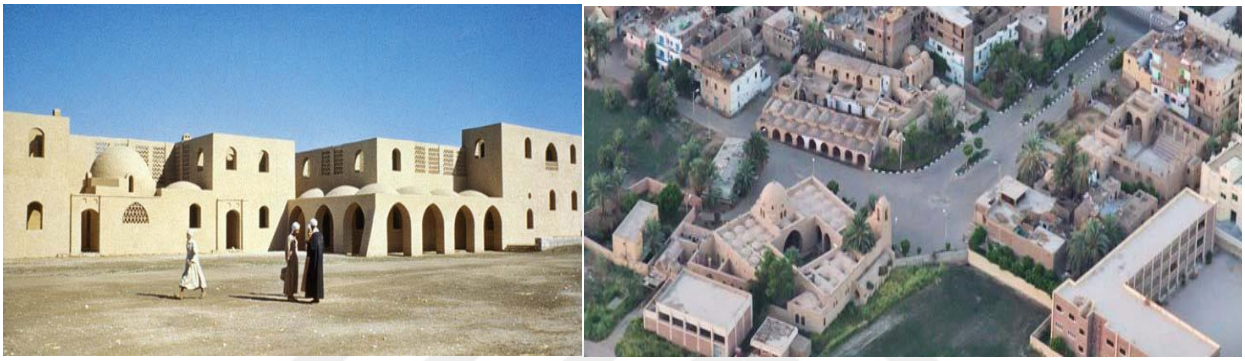


Figure 4-1: Gourna Village in Egypt by Hassan Fathy.

Source: (Kultur,2012)

Another example is Kanchanjunga Apartments which although it bears a similar characteristic to western high-rise apartment buildings; The garden terraces of Kanchanjunga Apartments, on the other hand, are a contemporary rendition of the traditional Indian “Bungalow’s” “verandah.” Which are functioning as a protection for the high-rise units against the monsoon rains and the effects of the sun.

Figure 4-2: Kanchanjunga Apartments in India by Charles Correa.

Source: (Kultur,2012)

In the same aspect, the correlation between cultural demands and interior design is frequently portrayed in the collection of components in the space when it comes to interior architecture. The

interior space of the Islamic style is an example of an aspect that may be employed to meet the cultural and traditional demands. As the Islamic interior design incorporates exquisite components, most notably writing and geometric patterns in vibrant colors. While these designs are only cosmetic, some components, such as the railing, arches, columns, ironwork, and tiles, are functional (Abdulqader, 2019). The Royal Mansour in Marrakech/Morocco by OBMI architecture is a remarkable example of the incorporation of Islamic themes. The hotel strikes the ideal balance between traditional Moroccan architecture and Islamic design style. (Figure 4-3).

Figure4-3: Decorative element of geometric pattern in the Royal Mansour in Marrakech-Morocco. Source: (Leach, 2017)

Correspondingly, in accordance with Sinem Kultur (2012), the rise of the notion of sustainability coincided with many discourses on sustainable architecture and culture methodology, resulting in the formation of a diversity of methodologies following diverse logics for sustainable design, one of which is “Eco-cultural logic.” Which means according to Kultur “The importance of culture’s sustainability to be offered via design in architecture, which claims that there is a fundamental relationship between culture and environment through which they constantly redefine each other” (Table 4-1) (Kultur,2012).

Logic	Image of space	Source of environmental knowledge	Building image	Technologies	Idealized concept of place
Eco-technic	global context macrophysical	technorational scientific	commercial modern future-oriented	integrated energy efficient high-tech intelligent	Integration of global environmental concerns into conventional building design strategies - Urban vision of the compact and dense city
Eco-centric	fragile microbiotic	systemic ecology metaphysical holism	polluter parasitic consumer	autonomous renewable recycled intermediate	Harmony with nature through decentralized, autonomous buildings with limited ecological footprints - Ensuring the stability, integrity and "flourishing of global and local diversity
Eco-aesthetic	alienating antropocentric	sensual postmodern science	iconic architectural New Age	pragmatic new non-linear organic	Universally reconstructed in the light of new ecologically knowledge and transforming our-consciousness of nature
Eco-cultural	Cultural context regional	phenomenology cultural ecology	authentic harmonious typological	local low-tech commonplace vernacular	Learning to "dwell" through buildings adapted to local and bioregional physical and cultural characteristics
Eco-medical	polluted hazardous	medical clinical ecology	healthy living caring	passive non-toxic natural tactile	A natural and tactile environment which ensures the health, well-being and quality of life for individuals
Eco-social	social context hierarchical	sociology social ecology	democratic home individual	flexible participatory appropriate locally managed	Reconciliation of individual and community in socially cohesive manner through decentralized "organic", nonhierarchical and participatory communities

Table 4-1: The competing logics of sustainable architecture.

Source: (Kultur, 2012).

4.2 Parameters of Cultural Sustainability:

In the Culture in the Sustainable Society, a 2008 SALAR (Swedish Association of Authorities and Regions) position paper, takes a wide approach to the issue of sustainability, discussing the relevance of culture for local and regional prosperity, social sustainability, and the establishment of a pleasant and sustainable living environment. This study argues for the significance of culture in long-term sustainable development but may lack the specifics that would help local planners operationalize that role. Meanwhile, during the approach of connecting culture as a new principle in sustainability, Stren and Polèse (2000) defined social sustainability as "fostering an environment

that allows for the harmonious coexistence of culturally and socially varied groups while also encouraging social integration, resulting in improved quality of life for all segments of the community."

Definitions of Culture elucidate the sorts of tangible assets (artworks, residences, clothes); beliefs, values, and attitudes (language, worshiping nature, tribal rites); and activities (dance, music, hunting) that help to describe what culture is. Cultural sustainability is impacted by the same kinds of knowledge we have about social, economic, and environmental factors, and it looks for methods to better our lives while also leaving a viable legacy for future generations. (Scammon, 2012).

While, as stated in the first chapter of this study, Raymond Williams defined culture as "a developed state of mind, as in a person of culture; the process of this development, as in "cultural interests" and "cultural activities"; the means of these processes, as in "culture as the arts" and "human intellectual work"; and as a "whole way of life," a "signifying system," through which social order is communicated, reproduced, experienced, and explored (As cited by Postalci & Atay,2019).

What we understand is that the description of culture can change with time meaning culture is rather timeless and able to exist on several levels which are not only national and regional levels but also global. Thus, researchers and academics were able to explore diverse approaches to the notion of cultural sustainability and link it to heritage conservation, cultural practices, and cultural beliefs. Further, in accordance with aspects like cultural practices and cultural continuity are considered as indicators of cultural sustainability in design. In their paper "Rethinking on Cultural Sustainability in Architecture: Behruz Çinici Projects (Figure 4-4)," they explain. Cultural continuity refers to the transmission of cultural meanings and value qualities over time and generations, as defined by the social sciences; The transmission of cultural heritage from one generation to the next is referred to as cultural continuity, as well as how that transmission is carried out. They carry on saying "Every society has cultural scripts that describe the preferred patterns of thinking and behavior that are held up as cultural ideals. When groups relocate from one nation to another, the scripts follow them. During the shift, these texts became an important source of cultural continuity. Cultural aspects may be lost if values or the environment change, resulting in a loss of cultural continuity. Continuity can only be achieved through evaluating change and forging a human-based link between the past and the future." (Postalci & Atay,2019).

(a) (b) (c)

Figure 4-4**:** Morphology in the resort villages of Çinici (**a**) the Ar-Tur Holiday Resort the Çapa Holiday Village, and I the Tatsan Resort Town.
Source: (Postalci & Atay,2019).

Further, not just in art and literature, but also in agriculture, industry, recreation, war-making, child-rearing, and behavioral sciences, cultural practices cover all those individuals do above and beyond innate or unconditioned behaviors. Social orientation and spatial behaviors are shaped by cultural practices. This is relevant to the consumers in our scenario and the habits they've established while utilizing the place, such as the proximity of the room, the use of open and semi-open regions, seaside rituals, interacting with neighbors, and so on. Previously, studies on cultural sustainability viewed continuity as cultural heritage in aspects of objects made by man, landscapes, and joint man-nature systems, whereas it is now considered as cultural heritage in terms of cultural diversity, practices, representations, expressions, knowledge, objects, skills, instruments, artifacts, and cultural spaces associated with cultural practices, such as values, tradition, identity, spirituality, and aesthetics (Axelsson & others, 2013).

Nonetheless, coming back to culture as the fourth pillar of sustainability in accordance with Denise Scammon (2012), the addition of cultural sustainability as the fourth pillar is not contentious, although culture has only recently been included in conversations about sustainability on its own grounds, rather than as part of one of the other three pillars, as indicated by a search of current research in that topic. On the other hand, sustainability according to Tom Wessels (2006) in his book "The Myth of Progress: Toward a Sustainable Future" seam to there are three sustainability laws: the law of growth limitations, the second rule of thermodynamics, and the law of self-organization in complex systems. Drawing a connection to Wessels' proposition suggests that all

dimensions of sustainability function as a whole rather than each part separately functioned as a compelling argument for culture's inclusion as the fourth pillar of sustainability. furthermore, this also culture does not create a fourth law parallel to sustainability's three laws, yet rather it becomes a dimension of sustainability that uses the same terminology that apprises the environmental, social, and economic pillars of sustainability.

"To exchange ideas about sustainability at the local level might require just as much strategic planning as at the global level," expresses Scammon (2012). Local institutions must take a more active role in building a sense of place and identity that is consistent with the region's cultures. Whenever communities and individuals are provided with social activities to increase cultural capital, they experience cultural well-being. In order for communities to maintain a complete sense of place and identity, in order to ensure cultural sustainability, tangibles need not be prioritized above intangibles. Intellectual and spiritual encounters are equally as significant as heritage structures and art to one's sense of well-being." (Scammon. 2012).

In a study titled "Sustainable Architecture as a Cultural Project," John McMinn and Marco Polo (2005) emphasized the same argument Creating a cultural discourse around the sustainability paradigm paves the way for a more comprehensive basis for design that incorporates and builds on important standards already set in current sustainable practice models. Herein, is architecture's potential, as it evolves from a contributor to the puzzling difficulties of human impact on the global ecosphere to a long-term solution to its, and our, viability. This implies that in order for sustainability to properly grasp hold and achieve results, it must be considered within the context of the large cultural context that it plainly includes.

4.2.1 Impact of culture-led sustainable design:

No development is sustainable until 'culture' is embraced and "complete integration of culture into sustainable development policies" is achieved, according to the United Nations Educational, Scientific, and Cultural Organization (UNESCO) (2014). Because sustainability encompasses more than environmental policies, economic progress, and equal social services. The values and cultural heritage of a community are equally important aspects of sustainability. According to the literature, embracing the four pillars model of sustainability contributed to a paradigm change in mindset toward sustainability, which included conversations concerning cultural sustainability in

methods that did not compromise our environment, ecosystem, or social well-being. The concept of diversity, which is so important in the natural world, plays an equally important role in cultural systems, Throsby writes (As cited by Scammon,2012).

Actions and obstacles influence how individuals and organizations accomplish their essential needs, adapt, and define economic success and development, according to economic sustainability. As per to a diagram promoting the sustainability theories of environmental activist Adam Werbach released 'The Living Principles for Design' on his website, environmental sustainability is to reduce nonrenewable resource use and energy consumption, as well as eliminate waste to landfills. It's focused on "activities and challenges that have an impact on natural systems, such as climate change, preservation, carbon footprint, and natural resource restoration." The goal of social sustainability is to meet all, or as many, of a community's requirements, such as providing enough facilities for the elderly, children, and cultural groups. Poverty, violence, injustice, education, healthcare, safe housing, labor, and human rights are all examples of actions and issues that touch all aspects of society. Acts and situations that have an impact on how groups manifest their identity. In addition to that, traditions must be preserved and strengthened, while belief systems and common values must be developed as all are part of cultural sustainability. while as for cultural identity it is fluid since the world is continuously changing, and it derives from self-awareness and acceptance of both inclusion and distinctiveness within cultural groups, offering a framework for one's status in society (As cited by Scammon,2012).

This calls for a combination of notions and designs which needed to meet the goals that cover every single pillar of the four pillars of sustainability; expressing the places we live and work while examining to see if they are economically feasible and environmentally conscious? And how do they affect cultural identity and sense of place?

Tradition, identity, values, cultural diversity, spirituality, and aesthetics were originally considered of cultural heritage in aspects of man-made objects, landscapes, and man-nature systems, and yet now tradition, cultural diversity, identity, values, spirituality, and aesthetics are all considered cultural heritage in aspects of behaviors, representations, expressions, skills, knowledge, instruments, artifacts, objects, and cultural spaces associated with cultural practices. These are

expected to include technologies and abilities that will transform the planet in the future in terms of sustainability (Postalci & Atay, 2019).

With that in mind, it is safe to assume that the significance of designing under cultural sustainability, is continuity for cultural practices execute Cultural sustainability is transparent in the built environment. Which means, the goal of designing a product, building, or physical environment is not just to preserve cultural heritage.; but also, to serve as a platform for cultural practices to take place. That in mind, as cultural practices grow and occur in both built and natural contexts, cultural references in the spatial criteria investigate the elements of the built environment that allow for the continuation of culture and cultural activities. And, while it shapes cultural practices, the environment is changed by the habits of its people, and as a result, cultural practices change through time, even if the constructed environment does not.

Furthermore, in the worldwide world of conventional products, services, and locations, local experiences that are unique are becoming increasingly appealing. To meet the need for authenticity, many cultural objects and services have been already adapted for the global market. Cultural characteristics are also exploited in spatial design to establish product identity on a worldwide scale, which frequently ends up being kitsch. With the rapid flow of cultural goods and characteristics, this loss of meaning becomes the fundamental concern. Cultural practices, in this sense, are more vital than ever in the search for true representation. As a result, Postalci and Atay (2019) explain that we may conclude that historic building preservation is insufficient to ensure the long-term maintenance of cultural activities. The spatial dimensions of built environments are concerned about where cultural activities occur and how design methods contribute to cultural sustainability. As an architectural and interior architectural product, the built environment reflects the culture of the people who live in it. —architects, users, and investors. Also, we must also account for current technologies, natural disasters, and the authority's penalty power.

These prior assertions, in line with Scammon (2012), guarantee that any changes in environmental, economic, or social policies that affect a community's cultural features are documented, if feasible, be led by the community's cultural values. Using global principles to formulate local policy runs the risk of homogenizing our world's diversity and complexity. The history as well as the character of anything that gives a community a sense of place should be respected. Whatever it is about a location that signifies a community's past, whether it is a physical landmark or a ritual, should

guide public policy. A feeling of a place is derived from the individuals who make up a community, not from the government.

To summarize, culture is linked to social, environmental, and economic through societies. However, when it comes to culture's connection to sustainability and its addition as the fourth pillar. Culture does not create a fourth law parallel to sustainability's three-pillar but rather becomes a dimension of sustainability that uses the same terminology that informs the environmental, social, and economic pillars of sustainability. Nonetheless, when discussing regional identity and city image, the concept of cultural sustainability advocates the way culture is flexible when integrated into a place, knowing identity place in culture enables the examination of what matters in individuals' lives and its connection to culture's beliefs and values. Similarly, the growth of the idea of sustainability corresponded with different discourses on sustainable architecture, interior architecture, and culture methodology, leading to the formation of a diversity of methodologies for sustainable design, one of which is "Eco-cultural logic." Keeping this in mind, the next chapter analyzes cultural sustainability in connection to museums and museum design, before diving into the design of the case study of the National Museum of Qatar (NMoQ).

CHAPTER 5. SUSTAINABILITY IN CULTURE WITHIN MUSEUM DESIGN:

Since exhibiting the obvious connection between culture and sustainability throughout the previous parts of this study; This chapter will look at how museums fit into cultural sustainability and how they may support in various aspects of cultural sustainability. In this regard, while tracing the cultural references in museum design by exhibiting the spatial concepts and its interaction with culture, and sustainable design based on the critics discussed in the previous chapter; will also exhibit a model of museum's sustainable development and the process of designing museums with cultural sustainability in mind and demonstrate where the case studies have strengthened and identified the gaps in cultural sustainability. That being said, the role of cultural state policies that have significant commitments to decreasing exclusion, promoting individual self-esteem, providing lifelong learning opportunities, and contributing to community acknowledge the importance of sustainability in accomplishing broader social development goals.

To attain the goal of cultural sustainability in relation to museums this chapter is divided to four sections as follows:

1. An overview of museum architecture, interior architecture, and design, with a focus on cultural sustainability in museum design.
2. Analysis of the study's survey data, as well as presentation of the study's model of sustainability pillars.
3. This section employs the recommended policies and features to identify and assess the case studies' strengths and weaknesses in achieving cultural sustainability.
4. Recap all of the findings and chart a new course for future studies on cultural sustainability.

The case study was selected with the consideration of its built environment and whether it meets the parameters of sustainability and its exhibition of cultural policies. As to the case study a model of cultural sustainability will examine the interpretation of the parameters of cultural sustainability and cultural policies of museum design, further, this study object shall examine the interior architecture, design concept, used materials, identity, the practice of the policies of cultural sustainability, and the spatial characteristics of the specified spatial criteria in the case study.

Further, after reviewing the previous criteria, this chapter will analyze the survey result on the case study to find out if it serves as a stage for cultural practices and cultural sustainability.

5.1 Characteristics of Sustainable Museum Design:

Museums are public institutions with the general mission of serving society. Related to that purpose, museums look to have a relation to sustainability. According to many studies, in the long run, a museum's ability to fulfill its cultural purpose is defined by organizational sustainability, which involves both institutional and intergenerational elements. According to Arts Council England (2011), one of the key objectives of museums is to preserve cultural assets for the benefit of their communities; however, a sequence of challenges has put these institutions' long-term viability in jeopardy in recent years, with repercussions for the cultural assets under their care. (As cited by Loach, 2017).

However, for museums to play a more integrated role they need to evaluate their exhibitions and exhibits in accordance with cultural policies. According to different literature, for this to take place, museums would need to be a reassessment of whether it is people, or objects, that are at the center of the museum's mission. Moreover, there would need to be a serious diversification of communication modes for exhibitions within the museums' public programming stream. Ideally, these exhibition modes need to be constructed allowing the flow of ideas, feelings, and experiences both into and out of the museum. Nonetheless, the process is required to integrate culture aiming toward honoring the sense of the past, the reality of the present, and options for the future.

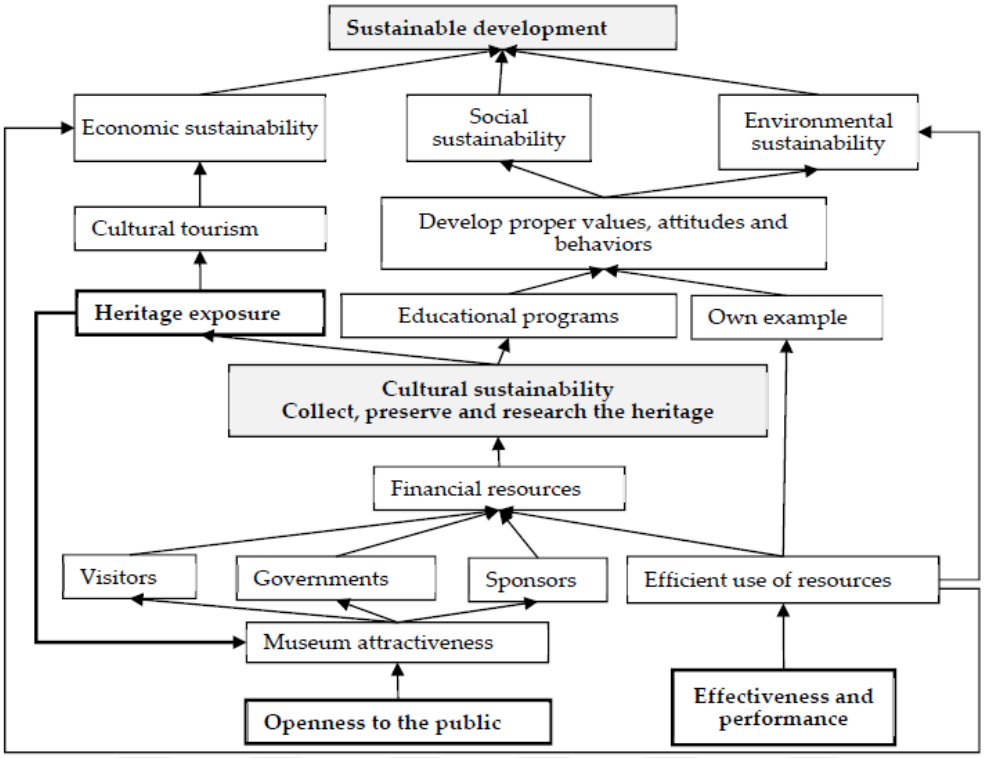
Coming from my readings it's in my belief that, the connection between museums and sustainability has been established, nonetheless, the studies on museums related to sustainability are usually limited to the sustainable museum design, some academics concentrated their efforts on emphasizing how museums partake in the goal of sustainable development by becoming an instrument for the classical three sustainability pillars -thus they can be approached as an instrument for culture sustainability -.

According to Davies and Wilkinson (2008), museums devote substantial efforts to preserving the legacy of previous collections, information, and experience and passing it on to future generations. As cited by Theopisti S. Lambert, Nikolaos Boukas, and Marina C. Terali (2013), the concrete linkages between the past, present, and future are formed by what museums collect, conserve, and

show as they are at the heart of cultural sustainability. Museums are also seen as objective entities that represent a place's tradition or culture. This statement in itself provides a clear indication that museums are the perfect presenter of sustainability in general and cultural sustainability in specific.

Throsby (2011) outlines five basic sustainability ideas that were originally established to help in the sustainable management of natural resources, but due to parallels, it might even be utilized in the preservation of cultural assets. Which include guaranteeing equitable access to cultural resources for present and coming generations, promoting cultural diversity, and maintaining cultural assets according to the precautionary principle to prevent irreversible harm or loss. Furthermore, maintaining, understanding, and recognizing the interconnection of the social, cultural, economic, and environmental systems, are the potential implications of any actions made while managing cultural assets on other concerns of sustainability, and are regarded to be critical.

Moving from Luiza pop's model of sustainable development in connection to sustainability, culture, economy, society, and the environment all work together to build an ecosystem for long-term growth. At different times in the cycle, all of these structures are resources/instruments, as well as destinations/goals. (Graf 5-1). This model in more of a way supports the significance of cultural sustainability in connection to the other three components of sustainability leading to an important question; Do the museums serve as a tool in order to accomplish cultural economic, social, and environmental sustainability?



Graph 5-1: The input-output approach of cultural sustainability in museums

Source: (Luiza pop & others, 2019).

Museums have an intrinsic role in implementing and promoting sustainability in society. As they have a profound and far-reaching connection to their communities. Therefore, in my perspective museums need to display for employees and visitors their endeavors to work towards sustainability.

Given what has previously been stated a question arises; where is culture placed within the framework of sustainable museums?

It is possible that cultural sustainability issues are natural within museum activities; nonetheless, until recently, cultural sustainability was seldom considered as a final consequence within sustainability studies and policy. However, the influence of museums on the other three pillars of sustainability – social, economic, and environmental – began to be explored and valued, maintaining the assumption that culture can only be valued in terms of its auxiliary advantages. This approach, on the other hand, denies cultural perceptions the possibility of being appreciated for their contributions to sustainable development in comparison to the social, economic, and

environmental pillars of sustainability that explicitly recognize cultural sustainability is a pillar of sustainability in and of itself.

On the other hand, recent museum research has taken positive advances. Stylianou-Lambert (2014) performed their research in the Cyprus museum sector, also developed a model to assist cultural policymakers in identifying “weaknesses or gaps” in important areas of cultural sustainability within various museum settings; presenting a theoretical paradigm for evaluating museum sustainability in terms of all four domains of sustainability, with an emphasis on detecting gaps in "cultural sustainability parameters." This model’s goal is to provide a list of museums’ primary duties in the realm of cultural sustainability, which is split into seven different categories:

1. Heritage preservation.
2. Cultural skills and knowledge.
3. Memory/identity.
4. New audiences/inclusion.
5. Cultural diversity/intercultural dialogue.
6. Creativity/innovation.
7. Artistic vitality. (As cited by Loach, 2017).

5.1.1 Museum impact on culture sustainability:

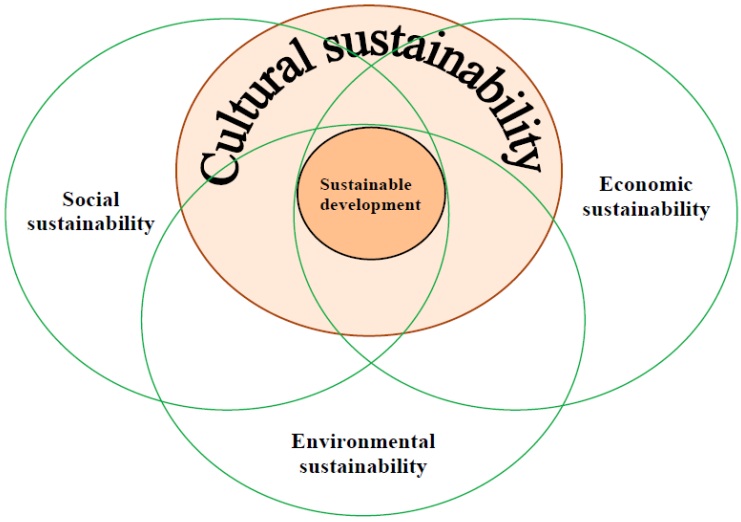
As discussed in the previous chapter of this study, culture sustainability is increasingly being perceived as one of the main dimensions of sustainability and sustainable development. Even further, some studies have been orating the ways in which culture sustainability can lead to social, environmental, and even economic benefits. For, culture is successfully added to these three classic pillars of sustainability and sustainable development. Museums as a tool of culture represent cultural diversity promote cultural identity, and successfully support and strengthen the cultural connection to sustainability.

As per Soini and Birkeland’s (2014) assessment of the scientific conversation surrounding cultural sustainability, regardless of the fact that it is still “at an early stage in its conceptual evolution,” the need to shield cultural heritage and strengthen cultural vitality have emerged as two key “Story lines” within the literature surrounding the term. These issues are believed to constitute the ‘fourth,

cultural pillar of sustainability,' which sits parallel to the environmental, social, and economic pillars. (As cited by Loach, 2017).

Three speculative approaches are described in the Hangzhou International Congress (2013): (1) Culture is regarded as a cross-cutting concern for all development projects, alongside human rights, equality, and sustainability. (2) Along with peace and reconciliation, transversal culture is included into the aims of the three pillars of sustainable development as well as (3) a self-contained cornerstone of sustainable development. Culture is considered the fourth pillar of sustainability, alongside the environmental, social, and economic pillars. All of these perspectives on culture in the context of sustainable development urge for a greater focus on culture in strategic planning. (As cited by Lambert & others, 2014).

In this study's view culture sustainability in a way influences economic, social, and environmental sustainability, and at the same time, culture can be a resource and a result of the other three pillars of sustainability through time. So, what are the factors affecting and influencing cultural sustainability in museums? To my knowledge, as the role of culture with the other three pillars of sustainability is greatly debated in different literature, this study will follow a different approach by proposing a different base for discussion where the three classical pillars – economic, social, environmental- of sustainability work together aiding museums in supporting the fourth pillar culture sustainability Graf (5-2).



Graph 5-2: The four pillars of sustainable development in museums.

Source: (Luiza pop & others, 2019).

Studies regarding culture sustainability scarcely highlighted the role of museums in helping to attain the core of culture and its sustainability. Thus, this thesis aims to fill the gap between sustainability and culture by developing a model that explains the influence of culture and heritage exposure on the public's environmental and sustainable behavior, which by default, leads to effective performance on researching new ways to sustain culture and cultural heritage especially when it comes to designing a space -This will be thoroughly deliberated in the following part of the study-. Nonetheless, to advance the current role of the museum as a place to exhibit and present culture we find the need to create a comprehensive framework for explaining the interconnection between the different variables for culture, along with placing the role of cultural sustainability within the framework of sustainability and sustainable development.

Because of their ability to develop participation and social networks, cultural institutions, according to Jenson (2002), have a role to play in improving social cohesiveness and reducing social marginalization. According to Chris Smith, the first Labour Minister for Culture, Media, and Sport, the evidence shows that museums, galleries, and archives are capable of doing more and acting as agents of social change in the community, increasing the quality of people's lives through outreach initiatives. By motivating and guiding that function, this strategy aims to urge museums, galleries, and archives to adopt a proactive stance on social inclusion (As cited by Scott, 2006).

A museum, according to the International Community of Museums (ICOM), is a non-profit, permanent institution accessible to the public that obtains, conserves, researches, communicates, and exhibits humankind's as well as the environment's tangible and intangible heritage for the purposes of education, study, and gratification. As a result, museums serve as a vital link between the past, present, and future. They are a solid source of knowledge for scholars and a fun way to teach history and other topics to youngsters. They also let visitors to view a variety of original old artworks and artifacts. Most significantly, museums are a popular stop for visitors who want to learn about the culture and history of the country they are visiting. (As cited by Sharif-Askari & Abu-Hijleh,2018).

Similarly, museums' function in offering "access to the past" adds to a sense of communal identity and serves as a benchmark for evaluating development across generations. While exposure to the new and unfamiliar at museums contributes to and provides an opportunity to share the experience

with others, it also leads to enhanced comprehension and social cohesion, providing a community with a better understanding of the world that we all share.

For many, museums have a key role in shaping a sustainable future, since the given mission of museums is to collect, preserve, and search. Working as a tool used by culture for the simple purposes of education, and enjoyment, “Museums have the task of preserving heritage and making these resources known to present and future generations,” according to Izabela Luiza pop (2019). Nonetheless, museums can be considered a practice of culture as it is shaped by both the social relationships besides those of the museum.

We are working on a theoretical exercise to conceptualize the role of culture in sustainable development when it comes to museums, which is portrayed in (Graf 5-3) This diagram was created combining broad conversations on culture as the fourth pillar of sustainable development, museum association guidelines, as well as the most latest debates on diversity, inclusivity, and community participation Four overlapping circles, of each of the pillars of sustainable development, contain considerations to consider while developing cultural policies for the long-term sustainability of museums. Because certain parameters are shared by several pillars, the circles cross (Lambert & others, 2014).

Graph 5-3: Theoretical model for the sustainable development of museums.
Source: (Lambert & others, 2014).

Furthermore, as Hawkes (2001) points out, cultural sustainability, which was long seen to be many people regard it as a component of social sustainability, although it is increasingly commonly recognized as a separate component of equal relevance to other concerns of sustainability. Indeed, alongside social, economic, and environmental factors, several models of sustainable development increasingly include culture as the "fourth pillar." That being said, proceeded to say despite the fact that culture has battled to gain acceptance alongside other sustainability goals, it is necessary for the entire sustainability movement. Culture is not only necessary for civilization or society to exist in the first place, but it is also what allows us to 'understand' and 'implement' the lifestyle necessary changes to build a more sustainable society.

Meanwhile, bearing in mind that according to Lambert, Boukas, and Christodoulou (2014): (1) culture is a component of a larger social, economic, and ecological context; (2) culture is time and site-specific; and (3) certain individuals and organizations have more tools and power than others to promote their cultural objects and ideas. Religions, languages, music and song, visual art, architecture, agriculture, skill contests, dramaturgy, scientific disciplines, educational systems, and many more acts that embody such linkages are all documented in museums.

Museums constitute another of these practices as a repository of ideologies and cultural practices; collections of characters that have been deemed normative, and also interpreters of why and how to perceive such symbolizations (K Coffee, 2008). In the same aspect, museums should examine strategies to involve new audiences in order to conserve and comprehend the past in an inclusive manner which is supported by Misiura (2006). While it is important of promoting cultural variety and intercultural conversation in their displays. And as they face these challenges, museums also have a societal component to them, since they serve an important role in fostering creativity and invention, as well as aesthetic life.

5.1.2 Space identity and visitor's experience:

Museums, in general, symbolize practices and emerge as a part of the visitor's inclusive shared narratives with the museums and between the visitors and museums. Further, museums' main contribution to the sustainability of culture is through its policies and interpretive practices, perform a formative role in creating and replicating culture's social ties. As a result, it is critical to consider how museums are created, utilized, and who uses them, since these are also determined by this web of interactions.

The contribution of museums to cultural sustainability forms of building new relations with the communities, to obtain an intercultural acceptance and understanding of culture. As previously mentioned, collecting, and preserving culture besides the knowledge and skills of culture, and the identity that can be passed on, are some of the fundamental tasks of museums. Nonetheless, through museums' functions that contribute to sustaining culture, it's further transmitted and reflected on the community. Having said that, a focus on the general well-being of local communities and the creation of a feeling of the place is emphasized in the museum's social dimension.

As Misiura (2006) points out, museums are civic and communal places, therefore emphasizing open, transparent, and accessible techniques for both locals and tourists from other countries is essential. (As cited by Lambert & others, 2014). Therefore, the museum's specific practices, such as in recent years, has been having a discussion about what objects it selects to collect, the presence or absence of certain interpretations, how such interpretations are outlined, how it reaches out to underserved communities or potential users, as well as the ergometric used to determine effective design or architecture.

There are many reasons for people to visit museums. According to one typical assumption, users pick museums from a variety of entertainment or leisure activity options. Another viewpoint is that museums are appreciated for the informal and formal learning opportunities and social context they give to visitors (K Coffee, 2008). These views prioritize the museum' elucidative role encouraging social consistency through visitors' affective and cognitive experiences.

On a different aspect, while museums preserve culture, they also create culture, and that makes a differing organization with a unique approach to culture and cultural sustainability. Through their existence reflecting environmental changes through its design, they engage they place the visitors in the mid of a growing debate of environmental sustainability, which influences people's attitudes towards their natural environment. This in a way, results in a positive impact on the local biodiversity leading to supporting cultural sustainability.

Conversely, the hypothesis is that visiting decisions are usually dependent on particular leisure activity qualities and how users are to socialize toward certain types of activities. Yet, the perspective of Prentice, Davies, and Beeho (1997) who viewed museums through the lens of the marketplace, is that museum use is considered as a form of commodity circulation, visitors are stereotyped, and museum use is perceived as one of the numerous comparable purchasing patterns. Many advocates of this analytical perspective seek a 'multicultural marketing theory' that may be used to drive 'culture specific' promotional methods aimed at certain demographic groupings (K Coffee, 2008).

Related to sustainability, to fulfill their mission of economic, environmental, social, and cultural sustainability efficiency, museums tend to use modern technologies using different innovations when comes to the museum's exhibits leads in my opinion to a high level of involvement in discussing culture, as technological innovation allows museums to become more engaging with

visitors and by so more attractive, and if these resources were to be used more efficiently the museums' increased exposure will help advertising culture and make a noticeable increase number of visitors will rise the museums' own income. This is more than a way to help museums to better representation of sustainability in general and to better conservation of cultural sustainability in specific. Thus, sustainability can be a tool that helps museums preserve culture and heritage by satisfying the visitors' expectations and contributing to cultural sustainability.

As a result, according to Jean Tétreault (2011), museums, should be socially responsible organizations that promote active citizenship, inclusion, and engagement. The function of museums in urban planning and regeneration, as well as landscape design, may all be considered in the environmental dimension. It shall also involve initiatives by museums to conserve the environment through eco-buildings and energy-saving methods.

Literature has often underlined museums with cultural and artistic relevance are likely to have a level of public success. Thus, a question comes to mind; is there is a link between museums' type to the number of visitors and does the number of visitors by default affect cultural sustainability? According to Luiza Pop and Borza (2019), a large number of visitors helps a museum's financial prosperity (which helps it to take all necessary measures to keep the heritage in good condition), but it can also pose a risk to the proper conservation of the exposed objects, particularly if the exhibiting area is small. Since museums are a mechanism for enculturation; there is a need to consider serves to indicate that users and non-users have similar conceptions of the function of a "museum" as a location to save and exhibit rare, ancient, or privileged things or knowledge. According to K Coffee, (2008), non-users do not create substantial connections between museums and themselves, but regular users seek those attributes through museums.

Further, museums' ideological impact is amplified by their role as archives for normative instances of varied historical aesthetic taste, expression, and ideology. However, in my opinion, there is a downside to this pressure to meet the visitors' anticipations by becoming economically, environmentally, and socially sustainable can lead to the neglect of their main mission of culture acquiring, preserving, and presenting. In this context, this in a way shows the potential of museums to achieve cultural sustainability as impacted by aspects of their social and economic performance while indicating environmental behavior.

Carol Scott (2006) explained "with the cumulative influence of intermediate outcomes culminating in longer-term consequences" in his research Museums Impact and Value. One of the benefits of visiting museums, for example, is that a person has access to a "singular learning experience", which may lead to "the growth of individual knowledge "in the long term if the user decides to take advantage of it. Similarly, the museum experience gives direct "access to the past," which may, in the long run, this will serve to promote "community, culture, identity, and pride". He also inquired about the long-term effects of museums on communities. What sets museums apart from other organizations and services in terms of their influence? While both cohorts created results linked to creating jobs, drawing visitors, purchasing services, earning revenue, and having 'locally significant economic effects, both indirectly and directly through multipliers,' these questions were placed in an area of impact where the two cohorts differed (public respondents & professional cohort) (Table 5-1). Only the professional group produced replies that reflected the ability of museums' "cultural credit" to be translated into positive economic benefits over time (Table5-2). Museums provide alliances and connections that contribute to the community's ability to be culturally sustaining and vibrant (Scott, 2006).

Beneficiary	Longer-term impacts	Professional cohort	Public cohort
Economy	• Urban regeneration and development • Civic branding • Cultural credit attracts investment • An enlightened society is the foundation for a productive society • Building community capacity through partnerships	Museums contribute to urban regeneration: • The development of new museums stimulates the development of local infrastructure • Museums stimulate economic, cultural, and social renewal and regeneration in depressed areas Museums contribute to civic branding. • Signature museum architecture can become the brand for an entire city • Museums can promote a positive image for city/town The cultural credit of museums attracts investment • Because they acquire the tangible evidence of human experience over time, museums are imbued with significance and power. • Museums attract investment through sponsorship and grants Museums contribute to an enlightened society • Museums serve to enlighten communities and the long-term economic value of enlightened communities is enormous • Museums build the cultural capacity of communities through partnerships • Museums build relationships with local, state and federal governments through ongoing operations and special projects • Museums foster goodwill with governments of other countries through collaboration on joint projects	Museums contribute to an enlightened society • Museums help us to foster our creative imagination in a multitude of ways. Passionate people are productive people.

Table 5-1: The Economy as Beneficiary of Long-Term Impacts of Museums.
Source: (Scott, 2006).

Beneficiary	Intermediate outcomes	Professional cohort verbatim responses	Public cohort verbatim responses
Individuals	• Personal learning within a unique set of conditions • Inspiration and pleasure	Museums provide a unique type of learning experience • Museums provide a free choice environment to pursue individual interests and discovery learning. • Museums have an important role as mediators and translators in an era of information overload Museums provide inspiration • Museums provide inspiring examples of other people's lives, disappointments, and achievements. • Museum collections provide a unique source of creative inspiration for artists and designers. • Museums provide personal validation through reflecting experiences relating to one's family, community, work, or individual meaning. • Museums inspire and validate personal interests.	Museums provide a unique type of learning experience • The visual representation of facts makes museums more accessible and interesting to visit for many more people. • Museums create a great 'hands on' learning experience. • Museums provide information for all five senses. • Museums provide an environment that is quiet, not intrusive yet offering assistance when required. • In museums, people can spend as much time as they want ordering over an item. Museums provide inspiration • When I get the rare chance to visit a museum, it's worth the time and the effort as it's fascinating to learn about the world. • Museums raise questions about why, how, and where without travelling all around the world. • Museums enable you to get close to see all the detail in a painting or sculpture, and to stand in awe of the genius of some people's work.

Table 5-2: Individuals as Beneficiaries of Intermediate Outcomes and Longer-Term Impacts of Museums. Source: (Scott, 2006)

Cultural strategies are frequently the outcome of progressively reacting to the requirements of cultural producers without the supervision of a broad strategic plan, according to Lambert and other experts (2014). Nonetheless, the accreditation system is a collection of standards and codes of conduct that demonstrate the basic needs of activities to be performed in museums, according to my literature assessment. Following them will assist in defining the extent of great quality procedures and raising the quality of numerous museums. According to Sharif- Askari and Abu-Hijleh (2018), the Southwest Fed strategy for establishing environmental sustainability for museums focuses on the following factors inside museums and explains how to approach them:

- Materials used/sold.
- Utilities.
- Waste.
- Energy conservation.
- Transportation.
- Public programs.
- Environmental sustainability concerns awareness.

Nevertheless, Lambert (2014) also explained, in recent years the need for long-term strategy implementation in the form of a comprehensive cultural policy has become visible as individuals choose which components of their cultures to conserve, protect, and promote within themselves and others. In the same aspect, this study will discuss the culture policy of Qatar as part of its case study.

Furthermore, the above findings reveal that, like other sustainability methods, the practice of upgrading museums into sustainable projects requires a broad scope and is not confined to a narrow region. Furthermore, museums can have a bigger influence on encouraging and motivating cultures to adopt sustainable practices because of their cultural significance and educational role. As a result, museums are expected to take the lead on ecologically responsible initiatives. (Sharif-Askari & Abu-Hijleh, 2018).

That being said, an important question comes to mind; How can cultural policymakers create regulations that relate to museums while also considering cultural sustainability? The following (Table 5-4) was presented by Lambert, Boukas, and Yerali (2014) outlining a suggested five-step process of museum relation to cultural policies and by so cultural sustainability.

The effects and repercussions of museums are felt by individuals. Museums provide a 'free-choice' learning environment that stimulates the senses and gives inspirational instances of human inventiveness and tenacity as noted in (Table 5-3). These encounters can have a long-term influence on the development of new information, skills, and perspectives.

Beneficiary	Longer-term impacts	Professional cohort	Public cohort
Individuals	• Developing perspective. Development of personal knowledge and skills	Museums help to develop personal perspective • Museums help people see destinations beyond their local horizons. Museum learning can develop personal knowledge and skills • Local museums are particularly important in providing an avenue for the personal development of women in remote or isolated places • Museums offer opportunities for training through museum competency standards • Working as a museum volunteer can result in skill building in planning/organizing and communicating, increased confidence through working with groups and being a part of a team, reinforcement of cultural identity, career direction	Museums help to develop personal perspective • Museums bring home to us the size and appearance of many animals (some extinct) that we will probably never see in the flesh • In museums, seeing how people interacted in the past may better help us to understand ourselves in the present. • Museums make you realize you do not live in a cocoon and that you are part of a bigger picture. • Museums give people an insight into others' lives and the opportunity to see things from others' perspectives. • Museums help to put the process of change into perspective. Museum learning can develop personal knowledge and skills • Museums help to stimulate individual curiosity and interest in seeking further information on a subject.

Table 5-3: Individuals as Beneficiaries of Intermediate Outcomes and Longer-Term Impacts of Museums.

Source: (Scott, 2006)

Steps	Description	Parameters for consideration
1.	Consider cultural sustainability Parameters	• Heritage preservation • Cultural skills and knowledge. • Memory/identity • New audiences/ inclusion • Cultural diversity/ intercultural dialogue • Creativity and innovation. • Artistic vitality.
2.	In depth examination of local or national museum environment	• Curren cultural policies. • Stakeholders. • Type of museums. • Force of creation.
3.	Identify strengths and gaps in cultural sustainability.	
4.	Design policies for museums which reinforce strengths and encourage filling in the gaps.	
5.	Evaluate effectiveness of new cultural policies and, if necessary, redesign.	

Table 5-4. Designing appropriate cultural policies for museums with cultural sustainability in mind. Source: (Lambert & others, 2014).

The previous table suggests that to design a museum that serves cultural sustainability and obeys its policies one must follow a five-step process. The first is comprehending the parameters of cultural sustainability, then second while requiring a thorough examination of national or local museum's environment an investigation of cultural policies influencing museums, which can be obtained by a deep understanding of the complex environment of museums, and by so the identification of the aspects of cultural sustainability will be easier resulting in the third step to be accomplished. Subsequently, leading to the fourth, where one is to be able to design fitting cultural policies reinforcing the parameters of cultural sustainability. This may be accomplished in two methods, according to Lambert, Boukas, and Yerali (2014).

Cultural policies may guarantee that the museum environment generates a system or ecosystem that contributes to cultural sustainability on all levels. Also, cultural policies may urge individual museums to consider all aspects of cultural sustainability, even if they prefer to focus on one or two. Finally, the fifth and final phase involves evaluating the efficacy of cultural policies in terms of cultural sustainability and museum design, as well as any required redesigning.

5.2 Case Studies:

Learning from different literature, museums definitely make substantial contributions to cultural sustainability and have preserved a diverse range of cultural assets for generations through time. Many museums have a varied range of cultural items in the care of many of its institutions, varying from archaeology, anthropology, and natural history. It is not enough, however, to have a "generalized sense that a museum offers public benefit by just existing," as the Museums Association's project explains (Museums, 2020). Nonetheless, there is currently a variety of legislation and research to help museums and other cultural preservation institutions become more sustainable, and institutions are continuously being used to align their practices and objectives with broader sustainable development agendas.

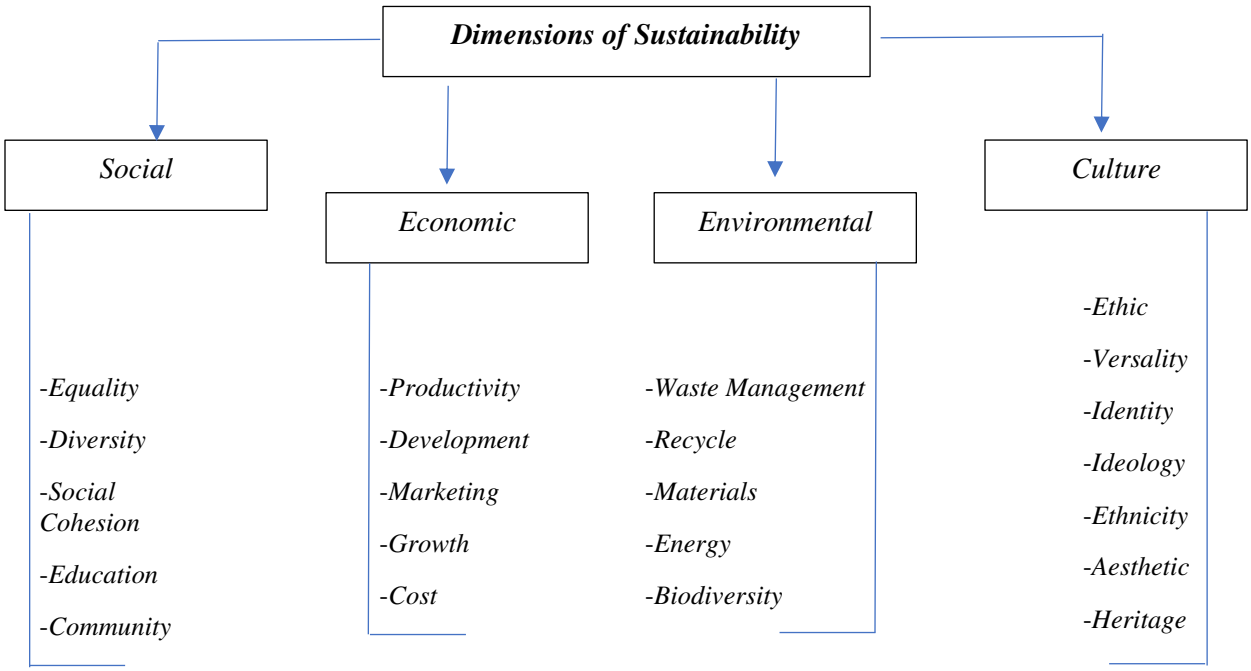
Museums, for example, are required to 'deliver better social outcomes and effect,' according to the Museums Association (2013). Environmental issues also need to be addressed, with objectives set for museums to assist them in becoming greener and more sustainable institutions. These programs are unmistakably concerned with long-term sustainability. However, while adopting this strategy may assist to assure an institution's overall future, it does not allow for proper acknowledgment of museums' particular role in preserving cultural heritage for their communities. "Preserving but also generating culture makes museums' fundamental mission different from that of any other medium, cultural organizations, commercial companies, and industrial firms," states Campolmi (2013). (As cited by Loach & others, 2017).

For three primary reasons, this thesis adopts the perspective culture is an autonomous fourth pillar of sustainable development. To begin, as Hawkes (2001) argued, it allows cultural industries, producers, and politicians to push for the incorporation of culture into all public activities. This part of the study shall examine the National Museum of Qatar-Doha as a case study so as to respond to the following questions:

1. What are the present cultural policies that have an impact on the interior architecture, and design of museums in Qatar?
2. What kinds of museums is generally opened when targeting cultural sustainability?
3. What cultural sustainability characteristics are emphasized or ignored by designers and individuals?

With that in mind, the next part being the concluding of all the previous parts of this study will be approached in the case study in three steps. First, it starts by exhibiting the cultural policy of Qatar and its parameters in relation to sustainability and sustainable design, so to follow it in the second step within depth display of National Museum of Qatar design, concept, materials, ethnicity, cultural identity, and exhibitions. To carry in the final (fourth) step and compare the finding of the National Museum of Qatar (NMoQ) to this study's dimensional model of sustainability (Figure 5-4) through a checklist of the proposed model parameters which are obtained through surveying individual on their perspectives regarding the National Museum of Qatar and its relationship with cultural sustainability.

Furthermore, the following model was put forward with two main thoughts in mind, the first was built in accordance with considering culture as a fourth pillar and the main link between the other three pillars of sustainability. In this model, a cultural perspective is the sole and approached as an equal to the other three classic pillars of sustainability (Social, economic, environmental). The second thought is to allow a clearer perception of the interconnections between all aspects of sustainable development and culture while aiming to make a clear connection between culture and the other three pillars of sustainability.



Graph 5-4: Dimensional model of Sustainability.

Source: (Abualfateh, 2022)

That being said, the following part is a qualitative assessment made by the author based on the articles, websites, and data found online regarding the case study looking into their design and cultural sustainability tendency.

5.2.1 Qatar and the process of cultural sustainability:

In this part, the study investigates Qatar-Doha in an attempt to deeply scrutinize cultural sustainability and learn what is needed from nations to help incorporate culture, heritage, and identity into different urban and sustainable planning initiatives.

According to Ali A. Alraouf (2016) in its planning and strategy, Qatar notably chose a new cultural approach. For instance, in the twenty-first century, Qatar's strategy has notably evolved from conventional to new planning policy, which is more engaged in cultural planning that meets the needs of sustainability in the modern world. In that sense, mobilizing architecture, interior architecture, and design to start a solid, unique notion serving that purpose by drawing on local culture as an inspirational tool. Where the emergence of culture-inspired design is creating a national image based on rooted symbolism. Because of that approach Qatar in general, and the National Museum of Qatar (NMoQ) in specific, is a good case study for the subject of cultural sustainability.

Gulf urbanity in the latter two decades of the twentieth century was primarily defined by a resolve to use oil profits to swiftly turn primitive, modest, and basic Gulf communities into contemporary status. With a vast transformation of unending deserts into real estate megaprojects combined with a qualitative improvement of city infrastructure to prepare them for a new contemporary state.

As expressed by A.Alraouf (2016), Doha is widely regarded as the most advanced city in the Middle East in terms of adopting the knowledge economy as the conceptual foundation for its 2030 goal, according to various metrics. Qatar has undergone a significant transition to get beyond the stereotype of a Gulf metropolis reliant on seemingly limitless oil and gas resources. The new intended identity for the Gulf State is to become a regional hub for education, information, and culture (Figure 5-1).

That being said, in this part after following the constructing process of the new vision of Qatar, and its ruling of a new knowledge-based project in substantiating perception of sustainability all while utilizing the findings of the evaluation and critical examination of the case study's selected

project; this section of the study will examine the function of culture-based urban development in reaching a new paradigm by changing from old heritage to building a new traditional motion as well as producing an alternative heritage within the parameters of cultural sustainability policies by examining Qatar's process of developing a new identity.

According to A. Alraouf (2016), Qatar is currently attracting the world's attention with its outstanding success in balancing global aspirations and local requirements. Doha, the capital, is envisioned as a future center in a variety of fields, including a cultural hub with museums and cultural events. And without a question, architecture and interior architecture are wonderful instruments for cities to carve out a position in the global marketplace. A. Alraouf (2011-2016) writes those traditional dwellings, which represent local adaptations to the surrounding physical and socio-cultural circumstances, made up the majority of Doha's built environment until the mid-1960s. Doha was turned into a modern metropolis in the 1970s and 1980s. The wealth generated by Qatar's oil and gas exports has driven a development boom in Doha and its surrounding regions. This resulted in massive growth all across the board, from urban development to infrastructure to cultural and educational services.

Figure5-1: Gulf coast and Doha before (right) and after (left) economic growth of Qatar.
Source: (A. Alraouf, 2016).

Despite its small size, Qatar has an abundance of archaeological sites and ethnographic materials that represent the country's diverse and multidimensional cultural legacy and identity. Today, its wealth and economy are quickly growing as a result of fast modernization and participation in globalization processes. This progress will help the country in a variety of ways; yet such rapid expansion and worldwide exposure pose a serious threat to the country's culture, tradition, and national identity.

To combat such a threat, the government has strengthened its strategy and approach for conserving and maintaining national identity and heritage. That proposed the aim in building Doha's architecture looks to be a well-balanced blend of local and global methods. This shows the city's rising urbanity with several projects that conserve, preserve, and educate local culture as well as architectural heritage while showcasing traditional architecture and evoking the feeling of traditional Qatar heritage. In the face of contemporary buildings devoid of any cultural character, effective rehabilitation exposes the dignity and wisdom of the region's historic architecture. (A. Alraouf, 2016).

5.2.1.1 The National Museum of Qatar (NMoQ):

As stated by Mariam I. A-Hammadi (2018), national museums' functions typically center on identifying national culture and national identity; national museums may be viewed as a trademark and expression of the nation and its identity, cultural heritage, and customs. This brings the discussion of the new National Museum of Qatar's approach to displaying and interpreting Qatari identity; as an instrument that will play an important role in Qatar's current and future development processes.

National museums have grown to become a regional phenomenon. Within this phenomenon is the goal of the countries to showcase their national identities, a difficult task in terms of expressing the varied national groups; such a focus reflects the crucial responsibilities that museums play in cultural politics. The National Museum of Qatar (NMoQ) is dedicated to preserving the history of Qatar and its people. It vigorously promotes Qatar's rich heritage and culture, as well as the country's extensive international network of connections with other nations and individuals (URL 5).

The "Qatar National Development Framework (QNDF)," a new culture policy framework for Qatar's urban development, is the result of Qatar's urban planning agency and its focus group conceptualizing the Qatar National Master Plan (QNMP). The framework's primary pillars propose a new urbanism style for Qatar, emphasizing sustainable planning, urban development, compacted settlements, mixed-use urban hubs, transit-oriented, walkability, and positive public realm. Similarly, iconic projects with a brilliantly balanced combination of local and global urbanism, e.g., Education City, National Library, Qatar Science, and Technology Park. Nevertheless, Qatar National Museum (QNM), and Museum of Islamic Art (MIA), which can be seen all around Doha as architectural and urban evidence of the emerging trend toward knowledge-

based urbanization (Figure5-2) (Figure5-3). MIA and QNM are two museums built with the goal of involving the community in a range of activities, some of which go beyond the museum's conventional role as a storage facility for art. (A. Alraouf, 2016).

Figure 5-2: Museum of Islamic Art, Doha, Qatar.

Source: (A. Alraouf, 2016)

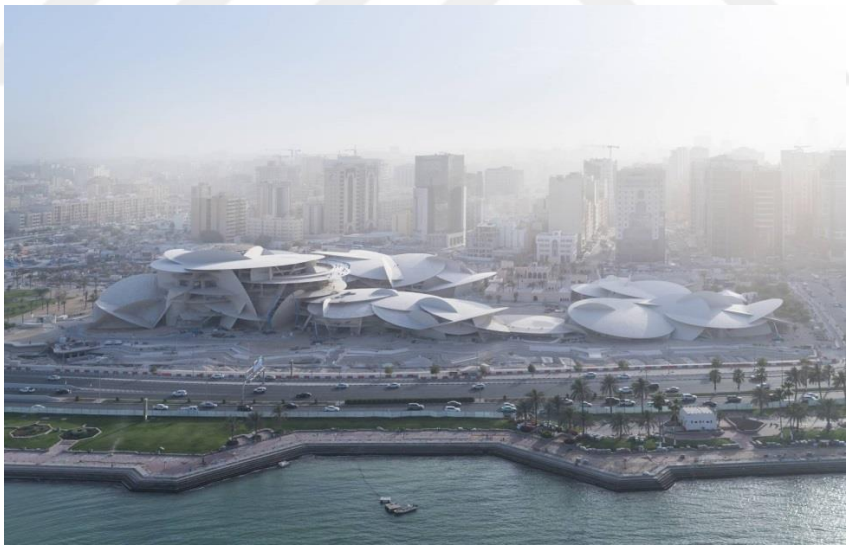


Figure 5-3: Qatar National Museum.

Source: (URL 4)

These two museums work to create experiences that highlighted Qatari heritage, identities, communities, and culture, differentiating Bedouin and Hadar, two unique expressions of Qatari identity linked to living on the shore (Hadar) and life in the desert (Bedouin). The museum was

created to convey Qatar's past via artifacts and archaeology. Museums have evolved into vehicles for the construction and articulation of new forms of society and identity, as well as areas of conflict where parties battle for acceptable expression, translation, and interpretation. Museums have played a significant part in the formation of nation-states and national citizens in this regard (Al-Hammadi, 2018).

The National Museum of Qatar rises out from desert sands that span all the distance to the sea. The Royal Palace of Sheikh Abdullah bin Jassim Al Thani also stands on the site, a twentieth-century monument of significant heritage importance for Qatar. Qatar's history is commemorated in the National Museum. Its architecture, symbolically, recalls the desert, its quiet and everlasting character, as well as a modernist and bold spirit that has come along and disturbed up what appeared unbreakable. As Jean Nouvel stated, "that's what I've tried to evoke here: the paradoxes in that history." (URL 4).

Qatar Museums (QM), which serves as the umbrella organization for MIA and other museums, seems to have its own cultural model of development for Qatar, according to the official website of (NMoQ). As a result, building museums will support Qatar's ambition for Doha is growing as a knowledge hub among Gulf countries. Qatar Museums (QM) has revealed its ideas for a new National Museum of Qatar, as depicted in a striking and evocative design by Pritzker Prize-winning architect Jean Nouvel, marking the next step in their plan to transform Qatar into a cultural and communications hub for the Gulf region and the rest of the world. The project is also considered as an expression of Doha's and other Qatari cities' knowledge-based urban development trends. The (NMoQ) is situated on a 1.5 million-square-foot piece of land near the southern end of Doha's Corniche, where the previous museum was located in the city's center.

- **Design concept of Qatar National Museum:**

When the NMoQ's iconic building, built by French architect Jean Nouvel, debuted in 2019, it made a stunning addition to the Doha landscape. It encompasses Sheikh Abdullah bin Jassim Al-original Thani's palace, which served as his family's house and the government's seat for 25 years. This historically significant structure has been lovingly renovated and preserved so that tourists and future generations could embrace it (URL 8).

It’s safe to argue that the main cultural policy of National Museum of Qatar is as Sheikha Amna bint Abdulaziz bin Jassim Al Thani, the Director of the National Museum of Qatar stated “We intended to establish a museum representing the past, present, and future. This is the essence of the museum's narrative and experience.” (URL 8). which can be noted clearly through the attempt of heritage preservation while constructing and exhibiting a sense of national identity. As a result, it’s safe to assume that cultural sustainability will be achieved by presenting its core principles of cultural diversity, inclusion, and intercultural dialogue.

According to his official website, in line with local tradition, Jean Nouvel aspired to construct a building that represented the local geography (Figure 5-4). Guarantee that it provides optimal sun protection. With this in mind, he created a structure that was influenced by the necessity to portray three distinct storylines. The first tells the narrative of the peninsula and its people over a lengthy period of time. The second section delves into coastal and desert lives, as well as the pearling business, while the third section delves into the kingdom’s astonishing acceleration. The desert rose, a flower-like collection of mineral crystals found exclusively in arid coastal locations is nature’s earliest architectural structure, formed over millennia by the interaction of wind, sea spray, and sand. It’s a very intricate and poetic piece (URL 4).

Figure 5-4: The courtyard at NMOQ, which forms part of Sheikh Abdullah bin Jassim Al Thani’s Old Palace. Source: (URL 5)

The architect states that the building’s architecture was influenced by a mineral deposit seen in the Gulf region’s deserts. As minerals crystallize inside the crumbly soil near to the surface of a shallow salt basin, they produce the “Desert rose” (Figure 5-5). The interconnecting disks that form a necklace around the old castle appear as if it’s been grown organically. It has exhibition

galleries placed in an elliptical circle around a central court, the ‘Howsh,’ where outdoor cultural activities are being held. The desert-rose shape is reminiscent of Qatar’s culture and climate. It appears from the earth and blends in with it. The overhanging features produce shadows allowing people to walk around outside while still shielding the inside from sun and heat as the sand-colored concrete coating blends well with the surrounding landscape (URL 7).

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Figure 5-5: Dessert rose

Source: (URL 9)

The museum’s architecture according to Mariam Ibrahim Al-Hammadi (Figure 5-6) was designed by the well-known and Pritzker Prize-winning architect Jean Nouvel, whose design (inspired by a Qatari mineral formation) was dubbed the “Desert Rose.” Hence, Nouvel’s design was made up of 539 intersecting discs. He described his design as “almost a geometric game” from both the inside and outside, as well as “quite rhythmic,” with the rooms flowing into one another seamlessly (Al-Hammadi, 2020).

Figure 5-6: The Desert Rose architecture positioned at the forefront of the historical building of the Old Emiri Palace.
Source: (Al-Hammadi, 2020)

- **Architecture of Qatar National Museum:**

The new museum, located on a prominent 147,425 m2 site, offers about 52,000 m2 of enclosed space, including 7,000 m2 for permanent collections and 1,700 m2 for temporary exhibitions. These areas are connected in an elliptical arrangement around a central courtyard. The public reception facilities and lobbies take up around 3,000 m2 on two floors. The auditorium has 213 seats and is positioned close to the main public lobby. Nouvel created the building complex with a 400 m x 250 m area and a maximum height of 40 m. The structure is made up of 600 unique discus-shaped components that intersect with each other. Jean Nouvel states that using the desert rose as a launching-off point proven to be a progressive, if not idealistic, approach. “I say ‘utopian’ because it required 350 meters to build a structure with big inward-curving disks, intersections, and cantilevered elements.” “The museography that arose from this unique history and these precise issues delivers an architectural, spatial, and sensual experience all at once,” he added. Inside, you’ll find areas that don’t exist anywhere else in the world since the structure is made up of the interlocking of all these disks, both inside and out. The end effect is a geometric space building.” (URL 4).

Figure 5-7: National Museum of Qatar.

Source: (URL 14)

The museum tour takes you on an oval circle that rises and descends slowly, mirroring the region's natural undulations. Visitors may see the 'Howsh,' the museum's gardens, along with Doha Bay via large windows. In eleven galleries, regular exhibitions detailing Qatar's environmental, cultural, and political history from the dawn of time onward are on display.

The trip lasts around two hours in total. The voyage ends in the old historic palace of the former Royal Palace, which has been renovated and from which you may enter the "Howsh" at certain points. The Howsh offers a sense of the Royal Palace's size. The museum is constructed around it, creating a sheltered place. It also provides shade thanks to disks tilted at various degrees. Outdoor events, performances, theatrical pieces, and activities related to the exhibitions can all be accommodated in this space. The Howsh is also connected to the previous palace's external grounds (URL 4) (URL 6).

Internally, the museum has a 1.5-kilometer-long round track that circles an inner courtyard called Howsh in Arabic (Figure 5-8). Nearly 8,000 objects, including books, archaeological artifacts, textiles and garments, artworks, decorative and applied art objects, jewels, natural history specimens, boats, machinery, and historical documents, are on display in the permanent exhibition,

also audiovisuals and interactive installations, to present Qatar's history through eleven interconnected galleries (URL 6).

In addition to its innovative design and attractive gallery spaces, the museum offers a 220-seat theater, two cafés, one in the midst of the permanent collections one near the entrance. The upper story houses a panoramic restaurant and kitchen. Visitors can shop at the two museum shops. Another component of the museum is listed as follows:

- Staff facilities:
  - -Conservation laboratories.
  - -Staff offices.
  - -Collection management.
  - -Storage areas.
- Service facilities:
  - Toilets.
  - -Baby-change facilities.
  - -Prayer rooms.
  - -Support staff offices.
  - -Storage areas.
  - -Loading areas.
  - -Service room

The two restoration/conservation laboratories are on the second and third floors, respectively. Administrative offices and meeting rooms may accommodate up to 150 people. School groups and VIPs have their own facilities. Further, next to the main public lobby, there is a VIP drop-off and receiving space. There is a school drop-off and orientation space adjacent to the main public lobby, as well as a separate room for schools and learning activities.

The museum Is surrounded by a manicured park of 112,000 square meters that reinterprets Qatar's surroundings. The public park features kiosks and an artificial lagoon, as well as concrete dunes and cultivated areas. While the 430-car parking area is seamlessly integrated into the park. The parking area includes roadways and parking bays for staff, visitors, buses, tourist coaches, and emergency and delivery vehicles. The museum now has a new research center and laboratories for

academics and students, as well as access to digital archives. Visitors may also learn about Qatar's indigenous plants by exploring and learning about them and their importance in Qatari culture in the park at NMoQ (URL 5)(URL 13).

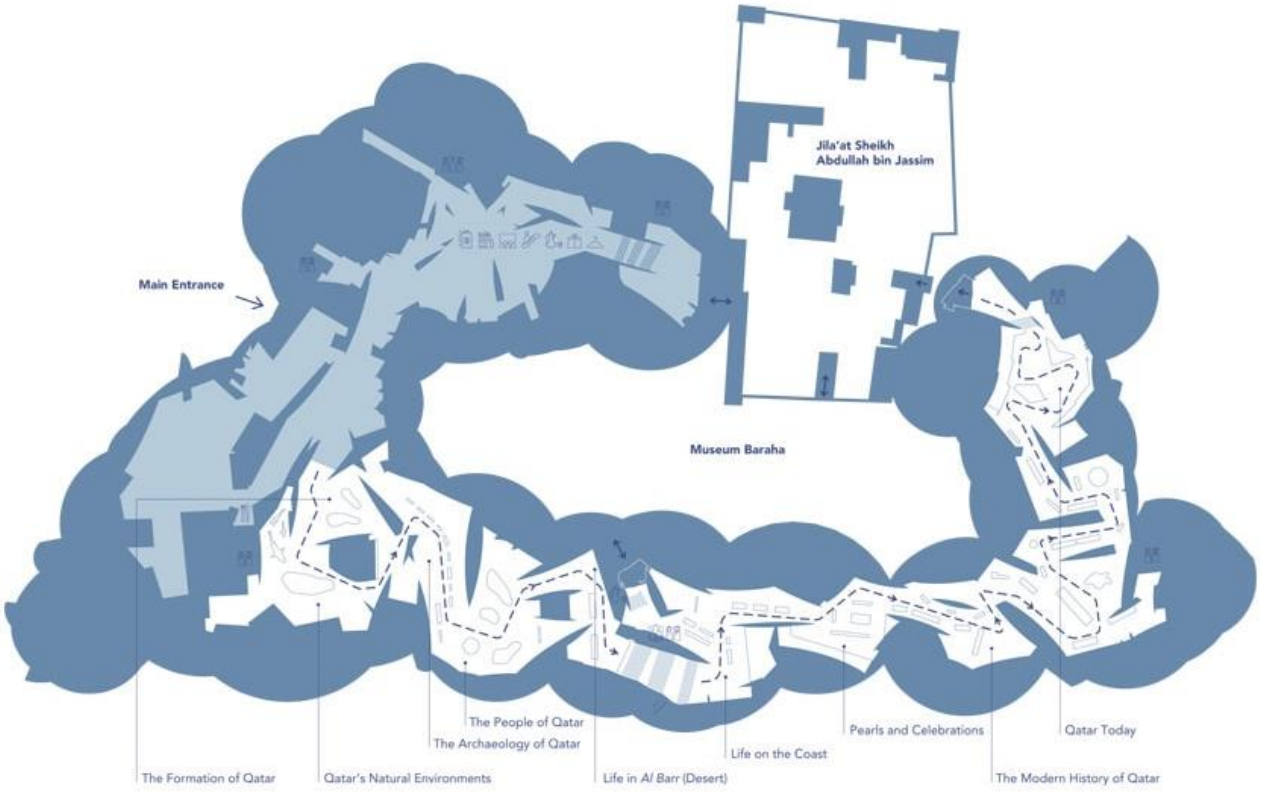


Figure 5-8*:* Plan of the museum; image courtesy of National Museum of Qatar.

Source: (URL 6)

When observing (Figure 5-8) it appears that visitors are expected to walk a long path from the museum's entrance to the first-floor exhibits. When visiting the museum Al-Hammadi (2020) describes that, the museum's interior architecture clearly demonstrates that it is both globalized and westernized. She added, the museum's architectural language is focused on the concept that people arose and evolved. The building, as well as the displays within, provide tangible and visual evidence of Qatar's evolutionary advancement on economic, social, and political levels.

When comes to the nostalgic value of the culture-inspired museum design, the museum appears to receive some criticism. For instance, Al-Hammadi in her article titled National Museum of Qatar:

New Architectural language, New Vision (2020), argued that the architect Nouvel does not appear to recognize or understand such a cultural treasure in his design of the new structure. As a result, the significant historical building of Sheikh Abdullah bin Jassim Al Thani's Old Palace was not incorporated into the new design. She argues that Nouvel solely envisioned it as a location for outdoor festivals and activities. The palace's sentimental value and characteristics have been purposefully ignored here.

Coming to the exhibition part of the museum, as previously stated the museum has a sequence of eleven interlocked galleries, nonetheless, the exhibition is divided into three permanent thematic areas called "Chapters" (Figure 5-9) organized as follows:

- Chapter 1 – Beginnings: The three galleries are: Qatar's Formation, Qatar's Natural Environments, and Qatar's Archaeology.
- Chapter 2 – The four galleries of the exhibition are The People of Qatar, Life in Al Barr (Desert), Life on the Coast, and Pearls and Celebrations.
- Chapter 3 – The Modern History of Qatar through four galleries this chapter examines the country's recent past and imminent future. The first gallery covers Qatar's history from 1500 to 1913, the second gallery 1913-1972, the third gallery 1972-2013, and the fourth gallery, Qatar Today, covers the country's recent past and imminent future (URL 6).

Figure 5-9: National Museum of Qatar, interior views of the permanent exhibition galleries.

Source: (URL 6).

Figure 5-10: An interior view of the museum.

Source: (URL 6) (URL 14)

The tale of Qatar is recounted along the museum trail in a magnificent cinematic environment generated by a series of eight art films created specifically for NMoQ by famous international filmmakers in partnership with the Doha Film Institute These massive video projections track the surfaces of the galleries' bending and flowing walls. They are projected on the museum's interior walls using a wide range of projectors and video servers designed specifically for the museum's

requirements. Approximately 3,000 m2 of projection surfaces for film viewing, including 120 distinct 4K and 8K video projectors.

Figure 5-11: National Museum of Qatar.Designed by Ateliers Jean Nouvel Life in Al Barr (Desert) gallery showing the Bait Al Shar (tent) and Abderrahmane Sissako film in the background.
Source: (URL 13)

- **The interior architecture of Nathinal Museum of Qatar:**

Koichi Takada Architects designed the interiors of the National Museum of QatarTheir portfolio includes Museum Shops, Desert Rose Café, I 875, and Jiwan Restaurant. Koichi Takada Architects' forms and materials were created to mirror and compliment Jean Nouvel's architecture. The interior design concept "desert-scapes" was methodically developed to provide indeviduals with a local cultural experience while paying tribute to Jean Nouvel's architectural masterpiece. The desert rose mineral formation, which gives a link to nature, has impacted the architecture. Each interior room represents a different era in Qatari history, with the objective of enhancing and fulfilling museum visitors' cultural and unique experiences (URL 13).

The timber walls of the museum shop were inspired by the Dahl Al Misfir (Cave of Light) (Figure 5-12), a magnificent underground sanctuary made largely of fibrous gypsum crystals that emit a mild, moon-like, phosphorescent radiance. Gypsum may form clusters, such as the well-known

'desert rose,' but it can also crystallize in a variety of bright and translucent patterns, responding with light and changing the area as the day progresses.

Figure 5-12: Dahl Al Misfir (Cave of Light).

Source: (URL 20)

Figure 5-13: National Museum of Qatar, the Museum Shops interior design by Koichi Takada Architects.

Source: (URL 13)

The organic style recalls Koichi Takada's concept of reintroducing nature into interior architecture by forging ties between humans and nature via design. The interiors are crafted from 40,000 wooden pieces that fit together to form a three-dimensional puzzle. Koichi Takada Architects created a design with evocative curves and surfaces (Figure5-13) using cutting-edge 3D modeling tools.

Café 875 was also influenced by traditional Qatari gold jewelry, such as medallion rings. The number '875' represents the fineness or purity of gold. It's tough to come by, and it's exclusively accessible in Arab nations. Two of the four medallions may be found within the Café, allowing guests to experience the unique Majilis, a traditional setting from the Qatari Bedouin nomadic lifestyle, and enduring hospitality (Figure5-14). The wooden elements of the seating medallions are angled to complement the ceiling of architecturally outstanding interlocking discs towering above the main lobby and café. The medallions also have a one-of-a-kind up-lighting appearance that mimics the brilliance of 875 gold. Each medallion is designed to reflect a ring of light onto the architectural ceiling, tempting guests to walk to the mezzanine and locate the 'invisible' café. The two medallions give customers with more traditional contemporary café seating. The fabric features a circular design for the banquette seats and combines the classic black and white patterns of the Al Sadu textile legacy, gradually fading to depict the voyage into contemporary Qatar.

Figure 5-14: National Museum of Qatar Café 875.

Source: (URL 13)

The Desert Rose Café is hidden behind a large architectural disk, with a low ceiling that gives the illusion of entering a cave. It has accessibility to both the bay (on the Corniche side) and the

Caravanserai yard. The mild ambient floor lighting is created within the interconnected discs of the banquette seating, distracting the visitor's attention away from the otherwise confined nature of this location. The lighting idea provides a gentle glow similar to the magnificent twilight light in the desert and soothes the intensity of the strong natural daylight, providing visitors with a break similar to an oasis in the desert and a pleasant transition into the ongoing tour, providing guests with a suitable mid-way resting area to break up their tour through the galleries. Desert Rose Café's design (Figure 5-15) is a clear tribute to Jean Nouvel's amazing metropolitan size, reproducing the interconnecting disc pattern on a smaller-human scale, exactly like the naturally occurring Desert Rose mineral formation that bursts out as a crystallizing gem from an otherwise immense and unending desert (URL 13).

Figure 5-15: Desert Rose Café interior designed by Koichi Takada.
Source: (URL 13)

Jiwan Restaurant, the Qatari term for "perfect pearl," is located on the fourth level of the National Museum of Qatar (NMoQ). While visitors may see Jean Nouvel's desert rose-inspired building and the renovated Palace of Sheikh Abdullah bin Jassim Al-Thani from the outside terrace, which offers stunning views. The small eating pods are inspired by the sand dunes of Khor Al Adaid's inland sea, provide visitors with the greatest vantage point to enjoy the slowly fading light of dusk and sunsets over the sea. Around four million pearl-like crystal pearls are strung from the ceiling and gently dance with the breeze

or as people walk. The gentle movement overhead gives guests the impression that they are diving under the waves (URL 16).

Figure 5-16: Jiwan Restaurant.

Source: (URL15)

A 112,000-square-meter public park with minimal landscaping, a 900-meter-long artificial lake, gardens with wide green areas, paths, and walkways developed by French landscape architect Michel Desvignes encircle the museum (URL 13). The park recreates Qatari habitats such as low dunes, flooded pastures, and gardens influenced by sabkhas and oases. It has a historical garden of traditional flora and extensive grassland spaces. Where all of the dense plantings, including some gigantic trees, are native species.

Figure 5-17: The park of National Museum of Qatar by Michel Desvignes.
Source: (URL 12) (URL 13)

- The sustainable design of Qatar National Museum:

As stated by Gulf Organization for Research & Development (GORD) the National Museum of Qatar in Doha was the first in the world to get both LEED Gold and GSAS (Global Sustainability Assessment System) sustainability accreditation. The NMoQ's building materials were 50 percent purchased from recyclable sources, and 98 percent of the garbage generated during construction was diverted from landfills (URL 12) Keeping this in mind, the National Museum of Qatar has gained the following important sustainability credentials:

1. Energy efficiency:

   The 'desert rose' design of NMoQ appears to be unexpectedly practical: it serves to insulate the building's façade, while thermal mass helps to reduce the need for excessive energy

consumption during the summer months. The top façade, which resembles the petals of a desert rose, also offers shade to shelter the majority of the structure from direct sunlight, decreasing the need for additional electricity use while cooling the interiors (URL 8).

In other words, the structure is incredibly energy efficient while considering environmental sustainability and climate. The museum's structure is made up of heavy disks create a cushioned barrier that performs as a sunscreen. The disks produce lengthy protective shadows when the sun strikes the structure from the east or west. The structure has few openings, and the ones that it does have are situated back such that they are constantly out of the sun's reach. Consequently, the interior rooms are air-conditioned more cost-effectively. The building's outer skin is likewise built of high-performance glass fiber-reinforced concrete, which is the same sandy beige hue on the interior and outside (Figure 5-18).

Figure 5-18: High-performance glass fiber-reinforced concrete.
Source: (URL 4).

2. Construction Management:

The NMoQ according to Gulf Organization for Research & Development (GORD) was built in an ecologically responsible manner. Through recycling and reusing, 98 percent of the garbage created during construction, totaling about 58,350 tons, was avoided from landfills. Before building began, a waste management strategy was in place to sort garbage before transferring it to a material recovery plant (URL 18). Another During the project development stage, another program was devised to assist reduce pollutants, soil erosion,

canal sedimentation, and airborne dust. Among the steps used to achieve this goal are the use of gravel to cover temporary walkways, the prevention of soil erosion, and the management of dust. Before leaving for the cities, vehicles used on-site were cleaned on a regular basis.

3. Procurement of material:

In terms of resources, 20 percent of the project's building materials were gathered, processed, and manufactured locally, within 800 kilometers of the museum's site, to reduce its carbon footprint during the construction period. Among the materials utilized were gutters, palm trees, sand, a waterproofing membrane, and a concrete mix. Similarly, 50 percent of the project's building components, such as concrete mix, gypsum board, and metal items, came from recycled sources. The steel used to construct the framework of the crystal-like discs is 25 percent recyclable (Figure5-19).

The finishes are monochromatic and n'utral. The flooring is polished concrete with tiny mineral pebbles in a sand color. Stuc-pierre, or stone stucco, is classic gypsum and lime-blend plaster that gives vertical walls the impression of stone. The ceilings are covered with a microporous acoustic plaster applied to mineral wool (URL 7) (URL 6).

4. Building structure:

The structure is enclosed in 2m2 ultra-high-performance glass fiber-reinforced concrete (UHPC) panels that are fastened to a steel frame that spans an insulated waterproof superstructure. The gaps between the disks are filled with glass panels whose frames are sunk into the ceilings, floors, and walls, providing the panels the illusion of being frameless. The total area of the UHPC floor cladding is 115,000 m2. Mullions partition big glass walls into parts that may be readily made and carried, while the discoid visors block the sun's rays. The museum's structure is made up of enormous (539) interlocking disks, spherical in section, with variable sizes and curvatures. The smallest disk diameter is 14 m, and the largest disk diameter is 87 m. Some disks are 'horizontal' and rest on other disks. While the 'vertical' disks serve as the building's support and carry loads of the horizontal planes to the foundation (URL 11).

Figure 5-19: The “disks” of the museum consist of a steel frame clad with prefabricated UHPFRC panels. Source: (URL 6)

5. Water preservation:

The museum's lagoon collects rainwater from impermeable surfaces and roof structures, as well as planting portions that allow for straightforward stormwater drainage. The lagoon, with a total capacity of 17,500 m3, acts as an attenuation basin, collecting storm water to preserve the land from flooding. The recovered water is then put to good use. Low flush sanitary technology in the museum's kitchens and toilets has led in a 32% decrease in water usage. These fittings employ high pressure to produce more water flow while using less water. The museum also takes pride in its revolutionary cooling towers, which save up to 10% of the water necessary in a standard cooling system (URL 19).

6. Drip irrigation system:

Plants growing throughout the museum are watered using a drip irrigation system, as opposed to traditional ways. This sustainable watering approach decreases the quantity of water dissipated via the soil surface while also eliminating the chance of water waste by giving water straight to the roots. Water used in drip irrigation is retreated and recycled from other uses (URL 18).

7. Indoor Environment:

NMoQ has used materials with low volatile organic compound (VOC) concentrations to ensure a healthy indoor atmosphere. The VOC content of the adhesives, sealants, paints, coatings, carpet systems, composite wood, and Agri fiber utilized throughout the museum is considered. The facility also contains an excellent filtering system to keep the air free of impurities throughout the operational period (URL 13). It's important to note that the structure doesn't have many openings, and the few windows it does have are situated back far enough that they're always out of the range of the sun.

Figure 5-20: Indoor environment of the National Museum of Qatar features materials low in volatile organic compounds (VOCs) concentration.

Source: (URL 19)

8. Urban Heat Island Effect:

According to Gulf Organization for Research & Development (GORD, the phrase “urban heat island effect” refers to the temperature difference between urban and rural regions. Cities, in contrast to natural landscapes, are warmer owing to land surface alteration and secondary heat generated by the built environment. Green roofs or light-colored facades that imitate the natural surfaces of the geographical environment are one technique to decrease the heat island effect. This explains why NMoQ interlocking discs are light in color, reflecting more sunlight and absorbing less heat. As a result, less energy will be consumed for interior cooling (URL 19).

It appears the present competitive global environment, Qatari authorities opted to promote the state by creating a new image that incorporates cultural heritage as a vital component. Place promotion necessitates the reconstruction of a national image capable of attracting tourists as well as welfare and social investments. As a result, Nouvel's design, with its inspiring aspect, fits extremely well in the holistic place pictures that Qatar is presently focused on. Such comprehensive visuals would aid Qatar in becoming a viable contender in the global economy, as well as in recruiting potential international investments and a knowledge-based workforce (Al-Hammadi, 2020).

Because this study takes the position that culture is an autonomous fourth pillar of sustainability. The previous research of the case study and its parameters regarding cultural sustainability and sustainable design in respect to the suggested dimensional model of sustainability in (Graph 5-1) previously in this chapter can be summarized as follows (Table 5-5). The following section is conducted to provide a clearer perception of the interconnections between all aspects of sustainability and culture when designing (NMOQ). Through the analysis of this thesis survey, the study will assess whether cultural sustainability is achieved throughout its design while aiming to make a clear connection between culture and the other three pillars of sustainability.

Dimensions of Sustainability		
Social	***Equality***	• *As a national museum it offers equal opportunity to learn and be part of different activity.*
	Diversity	• *The museum helps locals to see beyond their local horizon and develop knowledge of the world.*
	Social cohesion	• *It works as a mediator between one era and another.* • *It appears to build a base for more inclusion in the society.* • *It fosters people multitude activities.* • *Its attempt of heritage preservation while constructing and exhibiting a sense of national identity.*
	Education	• *It helps to stimulate individual curiosity and aid in providing advance knowledge on different subjects.* • *Develop individuals' knowledge and skills through its programs.* • *It provides a unique learning experience.*
	Community	• *It strengthens and encourage filling the gaps in community by regenerating the lost social norms.* • *The museum provides an example relating to the community.*
Economy	***Productivity***	• *Museum built a partnership between its local visitors/tourist and its economic value.*
	Development	• *The new museum simulates national economy and call for the development of the infrastructure.*
	Marketing	• *The cultural credit of the museum seams to attract investments.*
	Growth	• *The museum appears to have competency offering opportunity for economic growth.* • *The museum can help regenerate and renew the depressed areas of the community as it contributes to rebranding it.*
	Cost	• *The desert rose design reportedly costed $400 million to build.*

Table 5-5: Dimensions of sustainability reflection on NMoQ design.

Source: (Abualfateh, 2022)

Dimensions of Sustainability		
Environmental	***Recycle***	• *Sedimentation and erosion management strategy decreasing pollutants, soil erosion, canal sedimentation, and airborne dust.* • *50% of the project's building components, including concrete mix, gypsum board, and metal objects, were sourced from recycled sources.*
	Materials	• *A steel frame is covered in fiber-reinforced concrete.* • *Flooring is polished concrete with tiny mineral pebbles in a sand color.* • *Stone stucco, classic gypsum and lime-blend plaster that gives vertical walls the impression of stone.* • *Ceilings are covered with a microporous acoustic plaster applied to mineral wool.* • *The outside skin of the structure is also made of high-performance glass fiber-reinforced concrete, which is the same sandy beige color inside and out.* • *The materials that were utilized, to lessen its carbon footprint throughout the construction period, 20% of the project's building materials were harvested, processed, and manufactured locally.*
	Energy	• *The 'desert rose' design of NMoQ serves to insulate the building's façade, while thermal mass helps to reduce the need for excessive energy consumption during the summer months.* • *The disks functions as a sunscreen and offer shade to shelter the majority of the structure from direct sunlight, decreasing the need for additional electricity use while cooling the interiors.*
	Biodiversity	• *It's safe to assume the museum considered biodiverse looking from the mention of natural history exhibit and the museum's park which aimed toward visitors to be able to explore Qatar's indigenous plants.*
	Waste Management	• *Through recycling and reusing, 98 percent of the garbage created during construction, totaling about 58,350 tons, was avoided from landfills.* • *The steel used to construct the framework of the crystal-like discs is 25 percent recyclable.*

Table 5-5: Dimensions of sustainability reflection on NMoQ design.

Source: ((Abualfateh, 2022)

Dimensions of Sustainability		
Culture	***Ethics***	• *As a strong advocate of its culture policy the museum showcases its traditional manners by its handling assets, artifacts, historical documents display in its permanent exhibition.*
	Versality	• *As it works on enlighten its visitors, the museum communicates different cultures through its tendency to partnerships with several regions thanks to its exhibitions capacity to host various exhibits in its venue.*
	Identity	• *It helped in providing a personal perspective for individuals within its community.*
	Ideology	• *The museum s built on the idea of culture capacity of its national community through a collaboration between the government and the local society.*
	Ethnicity	• *The building branding as a cultural institution with its authentic connection to the land and its people through its design or exhibition assets.*
	Aesthetic	• *Following the unique shape of the 'rose dessert' the building design and finishing patter appears to accomplish its aesthetic goal.*
	Heritage	• *The museum's unique concept and philosophy of design is no doubt served cultural sustainability and treasured the heritage of the land's nation and people.* • *The preservation of the old museum and embracing the original shape of land nonetheless serves as another point in heritage and cultural sustainability.*

Table 5-5: Dimensions of sustainability reflection on NMoQ design.

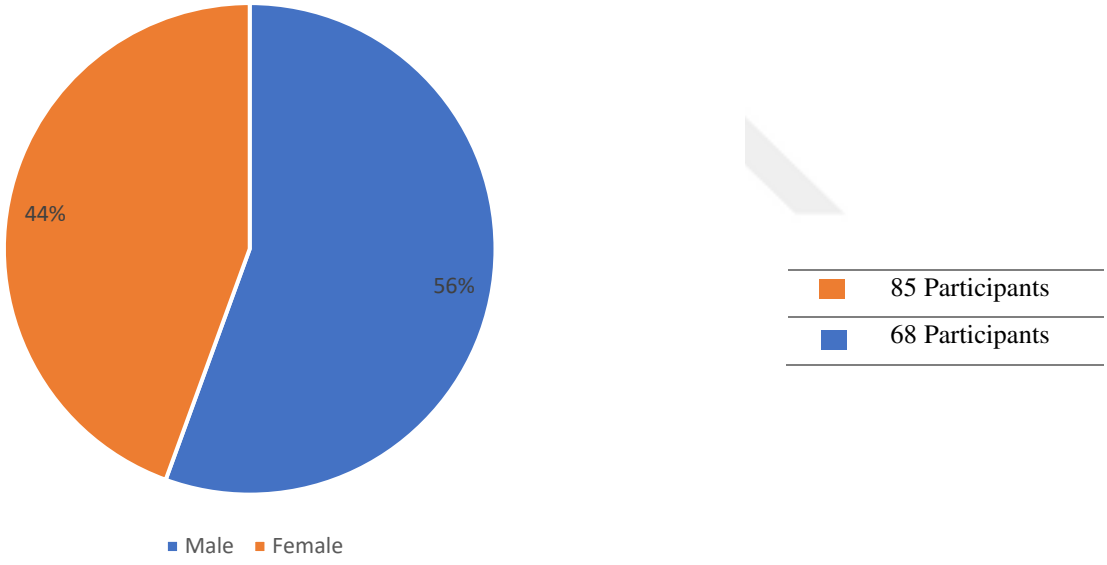
Source: (Abualfateh, 2022)

5.2.1.2 Analysis of Survey Data Within the Scope of Research:

The conducted survey under this study was organized for the purpose of covering the subject of cultural sustainability presentation through interior architecture. Which was accomplished by analyzing the case study of the National Museum of Qatar's (NMoQ) connection to cultural sustainability through the perception of the participants.

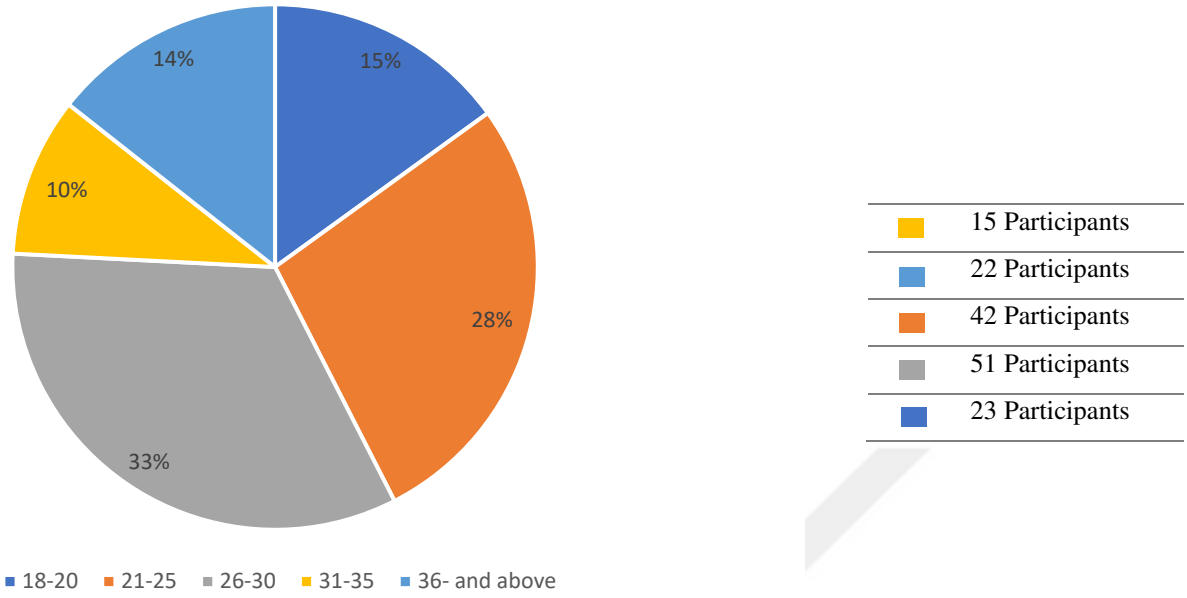
This survey has the participation of 153 participants from different, genders, nationalities, age groups, and educational backgrounds (Graph 5-5) were asked to answer several questions with the aid of video tours and figures. Through its 18 questions that divers between targeting culture, cultural identity, and cultural sustainability in specific, to analyzing the design concept of the case study and its interpretation of culture throughout its building.

The questions in the survey study are listed and analyzed below in order.



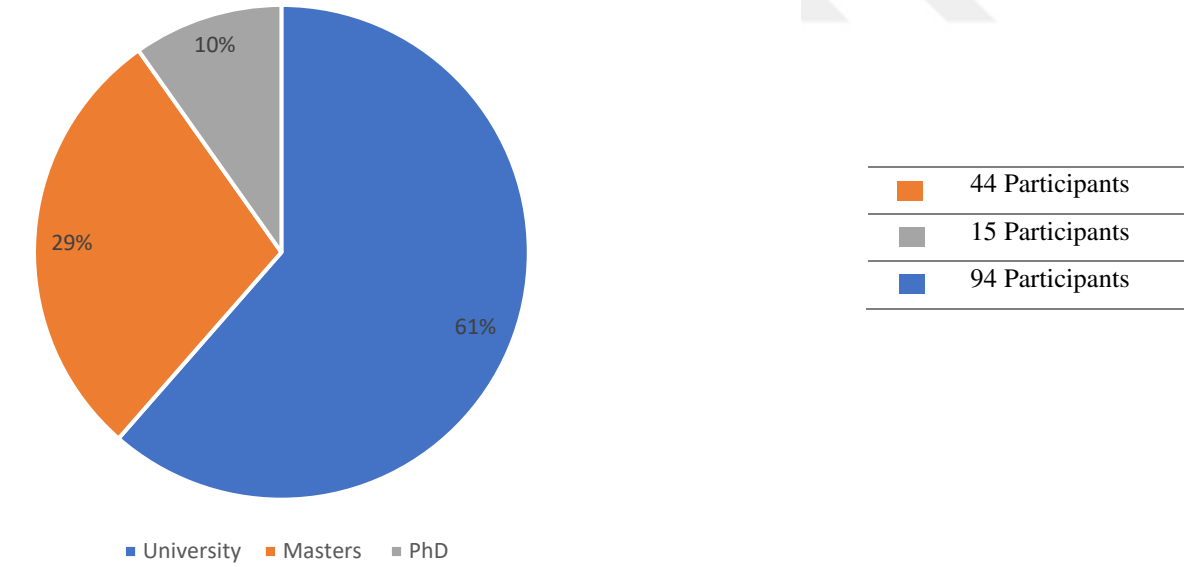
Graph 5-5: The participants gender graph.

Source: (Abualfateh, 2022)



Graph 5-6: The participants age group graph.

Source: (Abualfateh, 2022)

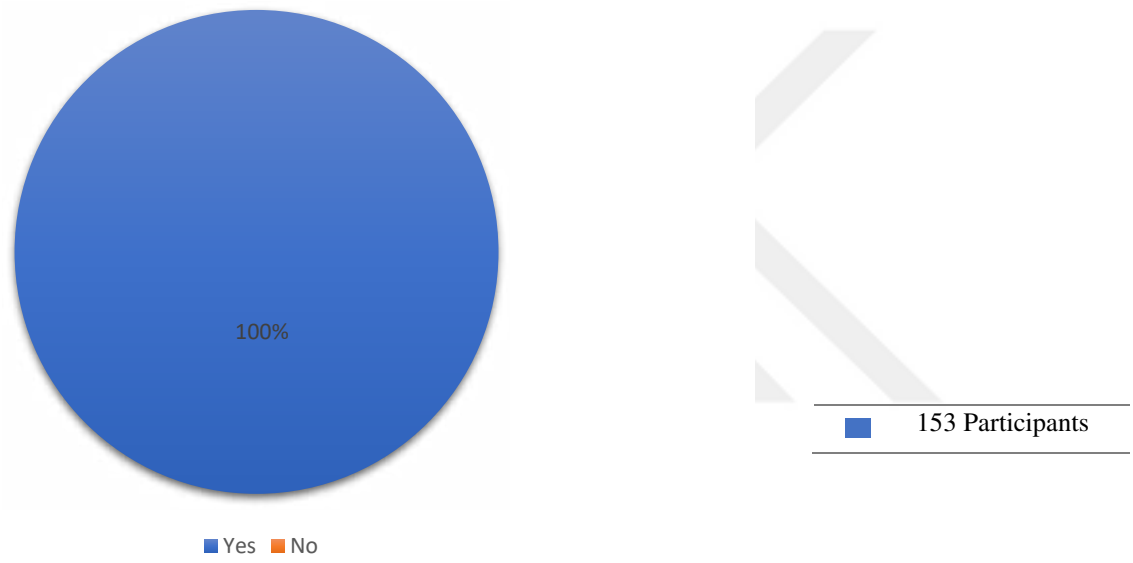


Graph 5-7: The participants level of education group graph.

Source: (Abualfateh, 2022)

1. Believes, costumes, literature, fashion, art, design, architecture, and interior architecture are all components of culture.

The purpose of asking this question is to learn whether the participants are able to recognize 'Culture' and its different components. This statement within the survey had a (100%) yes response by all the153 recipients. Making the preliminary understanding for culture in this study to be able to recognize it and cretic its application if found in the case study. The result showed a clear perception of culture and its component from all the participants.



Graph 5-8: Response graph of the survey's 1st statement.
Source: (Abualfateh, 2022)

2. Museums can serve as cultural institutions.

This question was aimed to create a connection between museums and culture, so the participants are able to grasp the purpose of museums within the frame of cultural representation and cultural sustainability, meanwhile pointing to the importance of museums in relation to culture. All participants were able to respond with yes (100%) to this statement.

Graph 5-9: Response graph of the survey's 2nd statement.

Source: (Abualfateh, 2022)

3. Culture connects societies' past to its future.

When responding to this statement, 147 (96%) participants responded with yes while 6 (4%) answered no. Here the diversity of the participants' perception of culture when it becomes connected to a specific timeline, meaning when it's used as a tool to connect one society's past to its future most of the participants agree to its capability to do so.

Graph 5-10: Response graph of the survey's 3rd statement.

Source: (Abualfateh, 2022)

4. According to the provided figures the museum design is a good interpreter of its concept.

This statement was responded to with yes by 128 (84%) participants while 25 (16%) choose to respond with no. With the aid of visuals, the participants were able to decide whether the concept of desert rose was successfully reflected in the design of the NMoQ. This statement's purpose was to obtain the participants' understanding of the design concept and their perception when reflected on the case study.

Graph 5-11: Response graph of the survey's 4th statement.

Source: (Abualfateh, 2022)

5. This design concept connects the environment to culture, society, and economy.

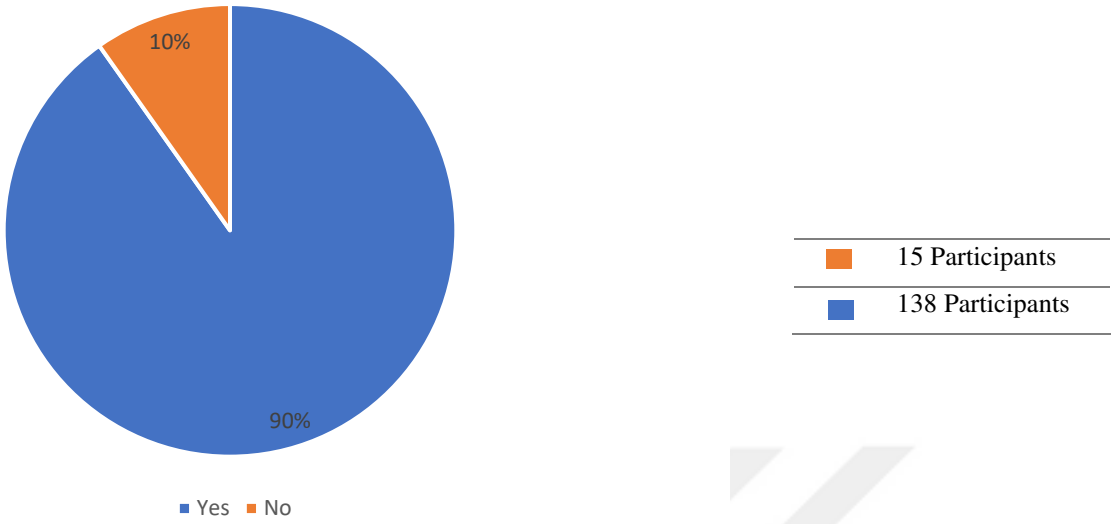
Through this statement, the survey made a connection between culture and the three classic pillars of sustainability within the frame of the case study, and also with the line of the condition of culture as the fourth pillar of sustainability. That being said, 132 (86%) participants responded with yes, while 21 (14%) responded with no.

Graph 5-12: Response graph of the survey's 5th statement.

Source: (Abualfateh, 2022)

6. Culture reflects identity in the case of the National Museum of Qatar (NMoQ).

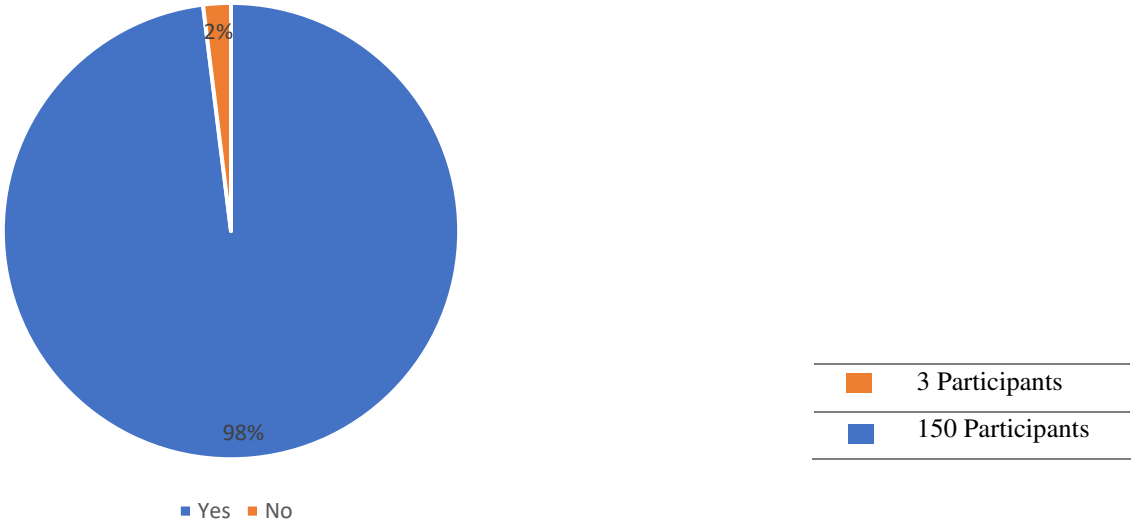
This statement aimed to learn the perception of culture and identity and its integration throughout the case study. According to these statistics, out of the 153 participants,138 (90%) participants responded to this statement with yes, while 15 (10%) chose to respond with no. According to these results, the NMoQ appears to be able to integrate culture and present the identity of the region through its design. Which is a good step taken pointing towards cultural sustainability.



Graph 5-13: Response graph of the survey's 6th statement.
Source: (Abualfateh, 2022)

7. Cultural identity is vital to groups, individuals & society.

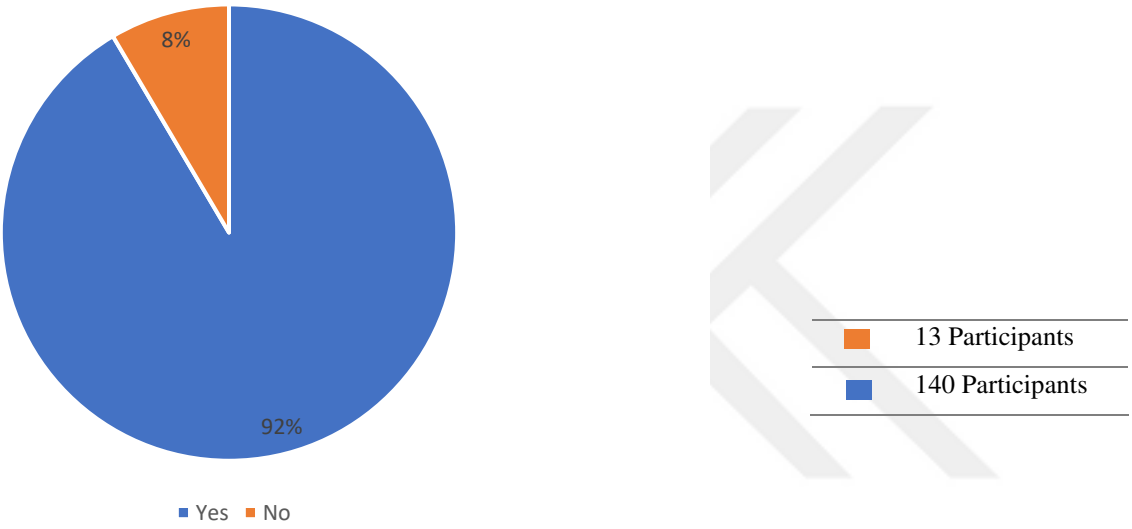
This statement was put into this survey to explore the understanding of the participants' perception of cultural identity. Which was responded to with yes by 150 (98%) participants and no by 3 (2%) participants. Indicating that the majority of participants believe in the vitality of cultural identity in relation to the different parts of society.



Graph 5-14: Response graph of the survey's 7th statement.
Source: (Abualfateh, 2022)

8. Believes, ethics, design, fashion, architecture, art, and interior architecture are all considered as a component of culture while designing the NMoQ.

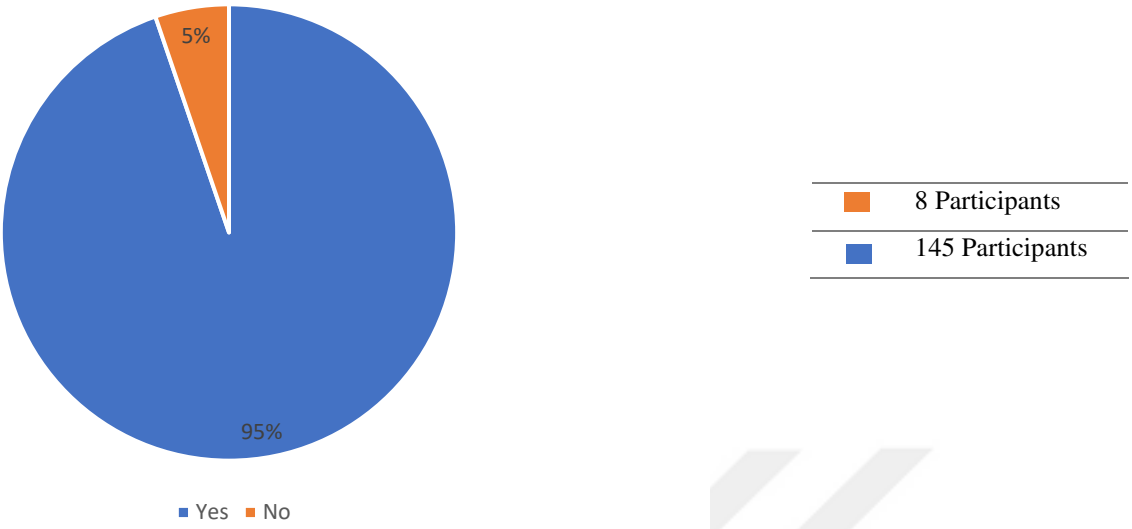
This statement pointed to learn if the case study of NMoQ was successful in presenting all the mentioned components of culture through its overall design. Which, according to the statistics was apparent as, 140 (92%) participants responded with yes while 13 (8%) responded with no.



Graph 5-15: Response graph of the survey's 8th statement.
Source: (Abualfateh, 2022)

9. Cultural identity and visuality in NMoQ's design helped link culture with social, economic & environment.

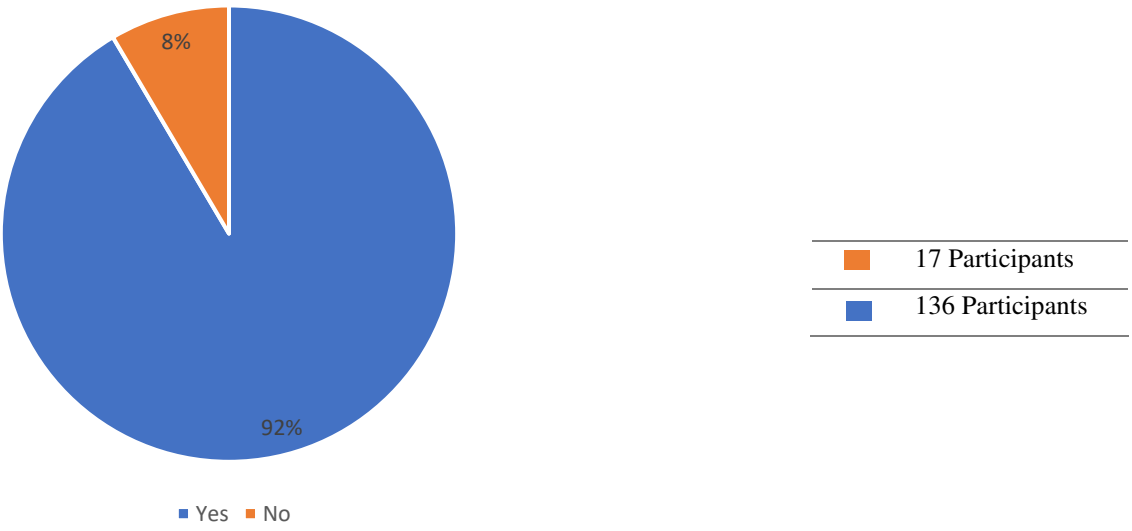
This statement aimed to make a clear connection between all four pillars of sustainability while questioning the role of cultural identity and visuality when it comes to the NMoQ. According to the collected data, 145 (95%) participants responded with yes and 8 (5%) responded no to this statement. Meaning visuality plays a key role in showcasing and recognizing both culture and cultural identity.



Graph 5-16: Response graph of the survey's 9th statement.
Source: (Abualfateh, 2022)

10. The visuality of culture is important for the sustainability of culture.

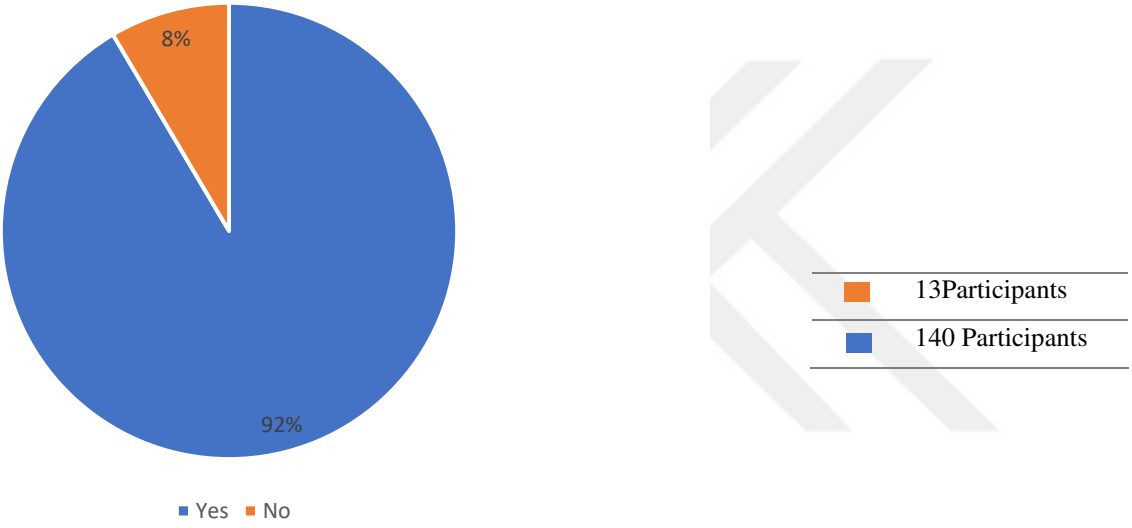
The statement intended to learn if there is a connection between the visuality of culture and its sustainability, and according to the statistics, 136 (92%) participants responded with yes, while 17 (8%) responded with no. Supporting that visuality is a key when comes to culture and serves a great deal when deigning with the purpose of cultural sustainability.



Graph 5-17: Response graph of the survey's 10th statement.
Source: (Abualfateh, 2022)

11. The presentation of cultural assets and the national identity through the museum's technology shown in the provided figures helps NMoQ's advertisement of cultural sustainability.

With the aid of visuals and figures, the statement aimed to go into the technology used in the different exhibitions of NMoQ to help the museum attract visitors and advertise its cultural assets while aiding its goal of cultural sustainability. The statistics show 140 (92%) participants agreed by responding with yes while 13 (8%) disagreed with the statement by responding with no.



Graph 5-18: Response graph of the survey's 11th statement.

Source: (Abualfateh, 2022)

12. NMoQ's presentation of culture contributes to the education and development of its visitors on Qatar's social cohesion, diversity, equality, and ethical practices.

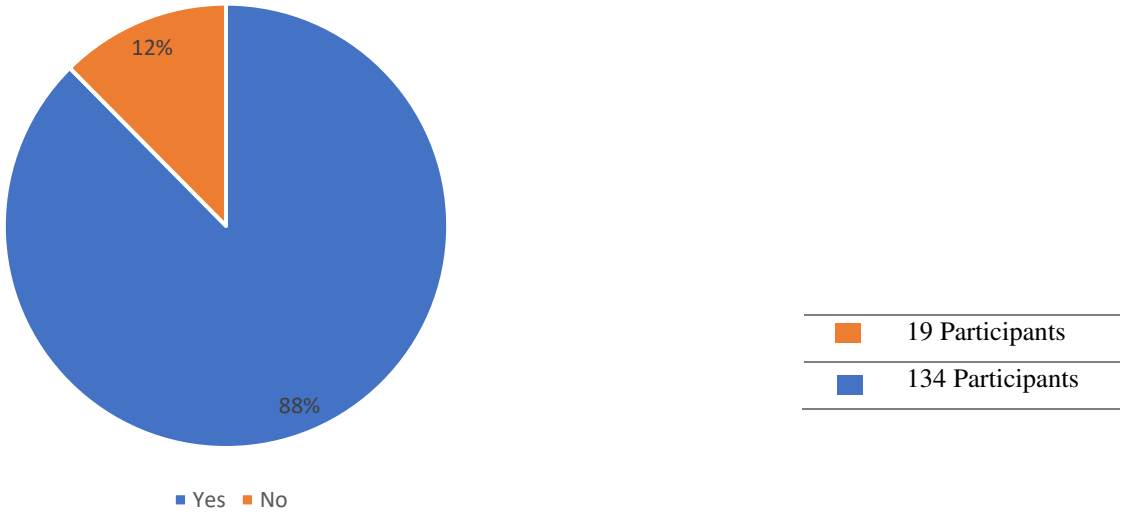
As mentioned previously in this chapter, one of the goals of NMoQ is to educate and expose visitors to Qatar's national culture and its history, and the cultural identity of its people, this statement was put forward to investigates if the museum was able to achieve that according to the participants' point of view. Further according to the participants' perception, 130 (85%) responded with yes while 23 (15%) responded with no.

Graph 5-19: Response graph of the survey's 12th statement.

Source: (Abualfateh, 2022)

13. NMoQ's cultural approach can help the economy through its development, productivity, marketing, cost management & growth.

This statement aimed to learn if the compensation of the museum's design concept, interior architecture, technology, and exhibitions aids in economic development, productivity, and marketing. According to the collected data, 134 (88%) participants responded with yes while 19 (12%) responded with no.

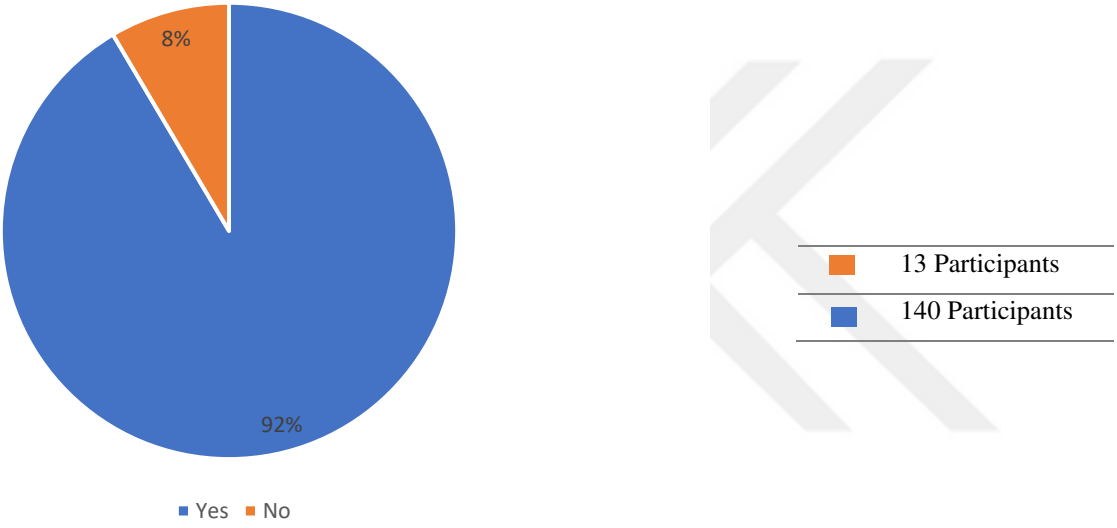


Graph 5-20: Response graph of the survey's 13th statement.

Source: (Abualfateh, 2022)

14. Following the provided video; NMoQ's interior architecture, and design are representational of Qatar's environment and culture.

With the aid of video visuals, participants were able to view Dahl Al Misfir (Cave of Light) Koichi Takada had in mind while thinking about the environmental and natural aspects of Qatar as the source of the design concept for NMoQ's museum shops interior design. According to the statistics 140 (92%) responded with yes and 13 (8%) responded with no.

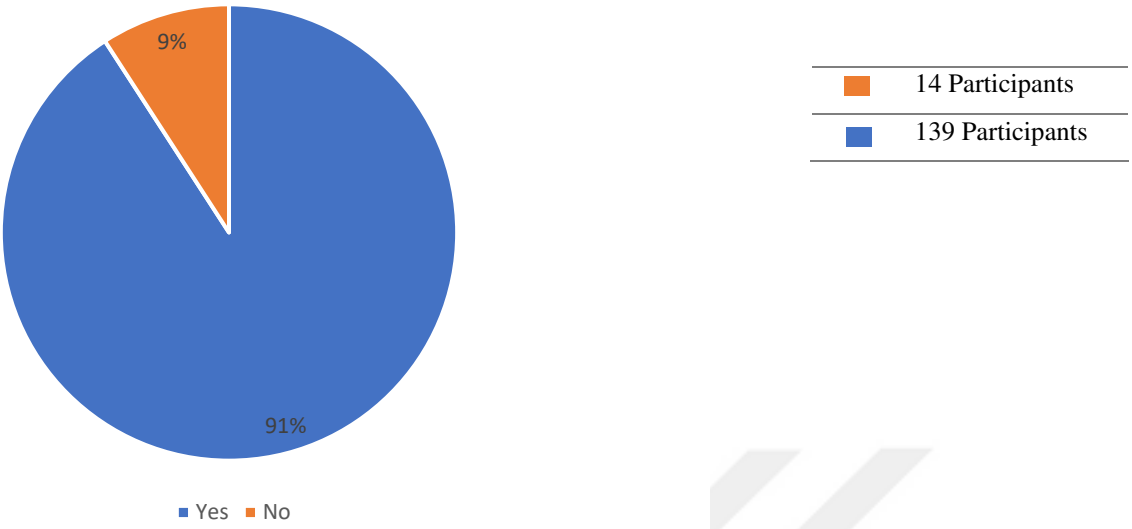


Graph 5-21: Response graph of the survey's 14th statement.

Source: (Abualfateh, 2022)

15. Culture can be a source of design inspiration.

This statement aims to express that heritage, ethnicity, ideology, ethics, identity, versatility & even aesthetics can be used as a source for design inspiration as seen throughout the case study. The statistics show that 139 (91%) responded with yes and 14 (9%) with no. Meaning according to the majority of the responses the museum is evident that culture can work as a source of interior architecture and design.

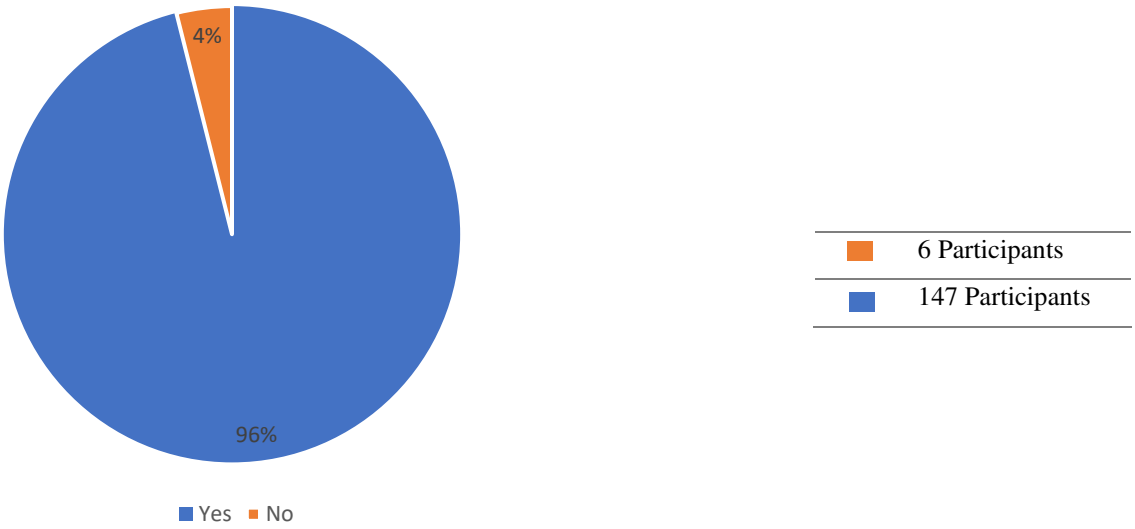


Graph 5-22: Response graph of the survey's 15th statement.

Source: (Abualfateh, 2022)

16. Culture can be integrated within interior architecture & design.

This statement aimed to make a clear connection of the ability of culture to be a unique source of design inspiration in general and interior architecture in specific. And according to collected data, 147 participants (96%) responded with yes and 6 (4%) responded with no.

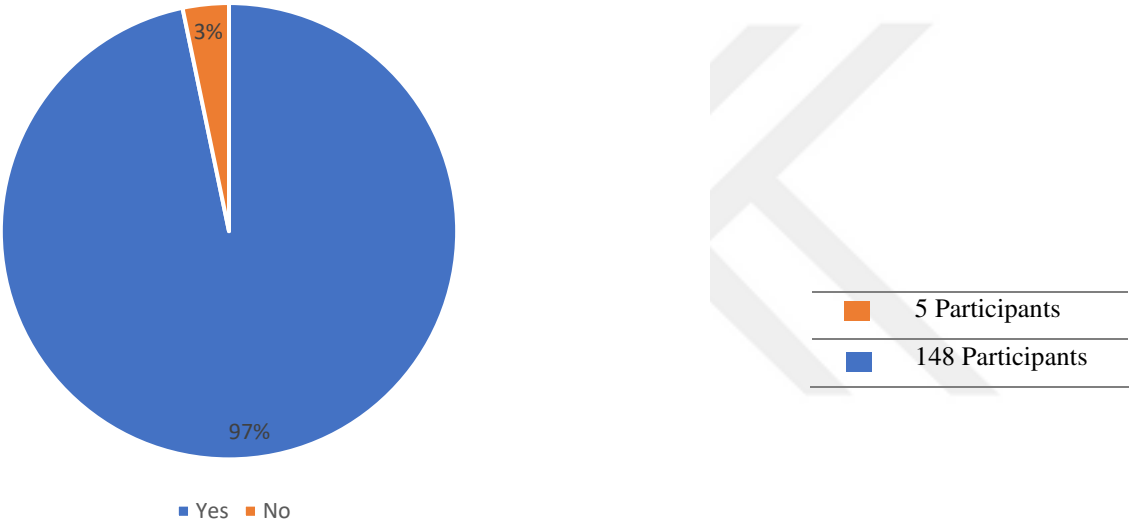


Graph 5-23: Response graph of the survey's 16th statement.

Source: (Abualfateh, 2022)

17. Cultural identity is vital to groups, individuals & society.

This statement was put forward through this statement to pursue the participants' understanding of cultural identity. And according to the statistics,148 participants (97%) responded with yes while 5 participants (3%) responded with no. This indicates that the general perception of the participants is in favor of cultural identity and agrees to its vitality within all the components of society.

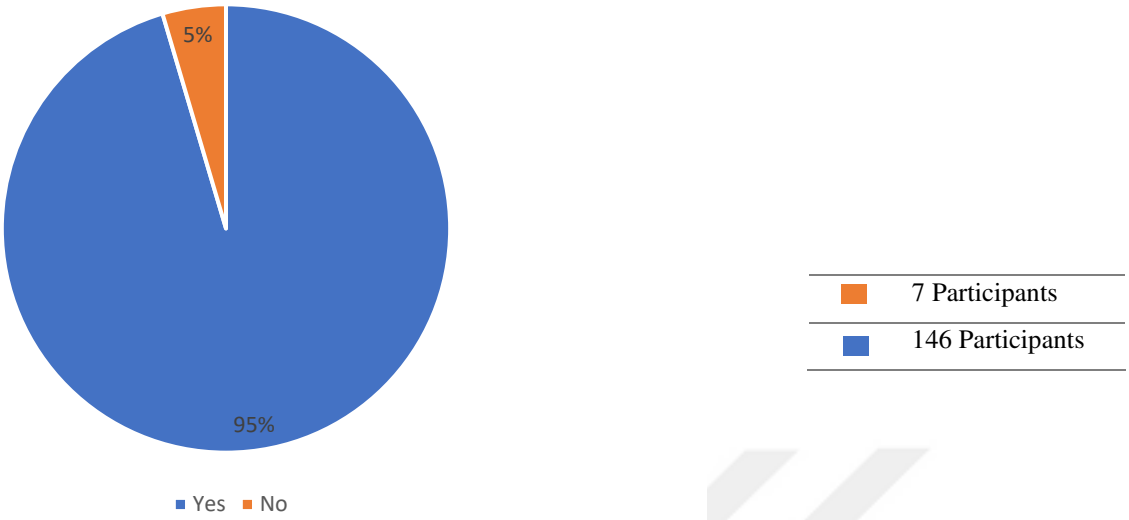


Graph 5-24: Response graph of the survey's 17th statement.

Source: (Abualfateh, 2022)

18. NMoQ can serve in favor of cultural sustainability.

This final statement of the survey is to learn the perception of the participants of the case study connection to cultural sustainability as the main objective of this thesis, and according to the statistics of this survey, 146 participants responded with (95%) yes while 7 participants (5%) responded with no.

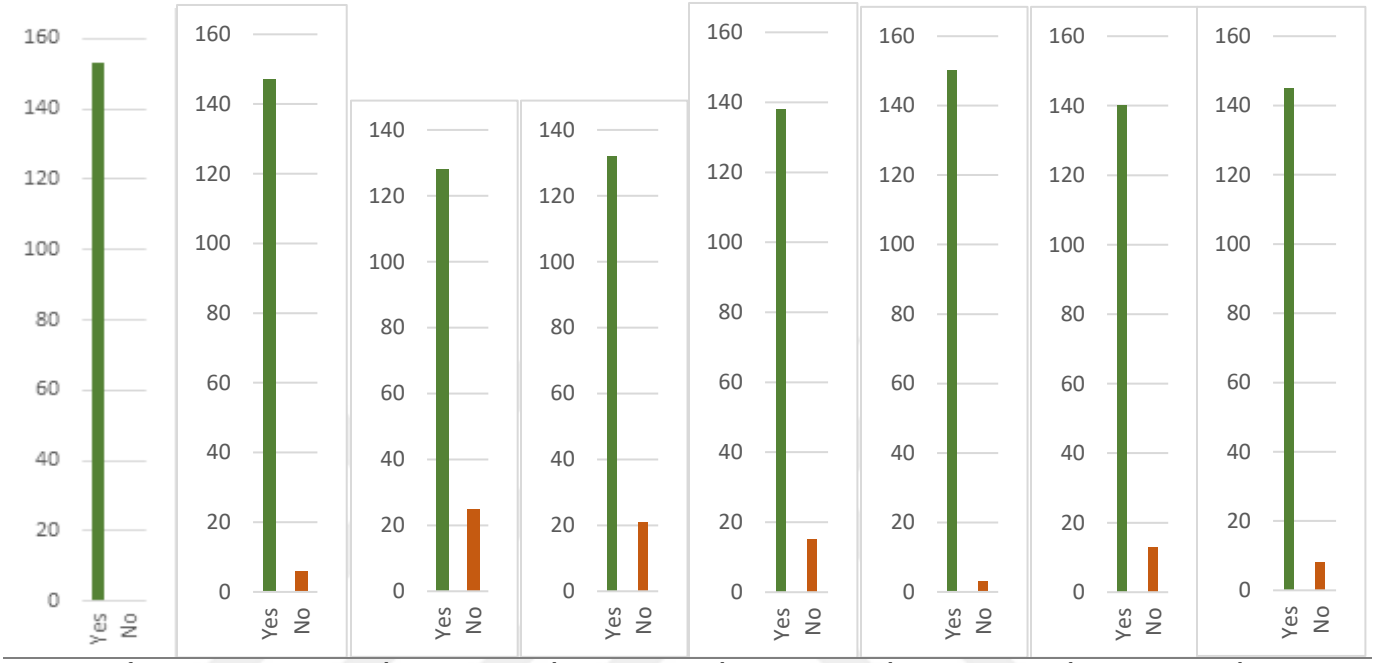


Graph 5-25: Response graph of the survey's 18th statement.
Source: (Abualfateh, 2022)

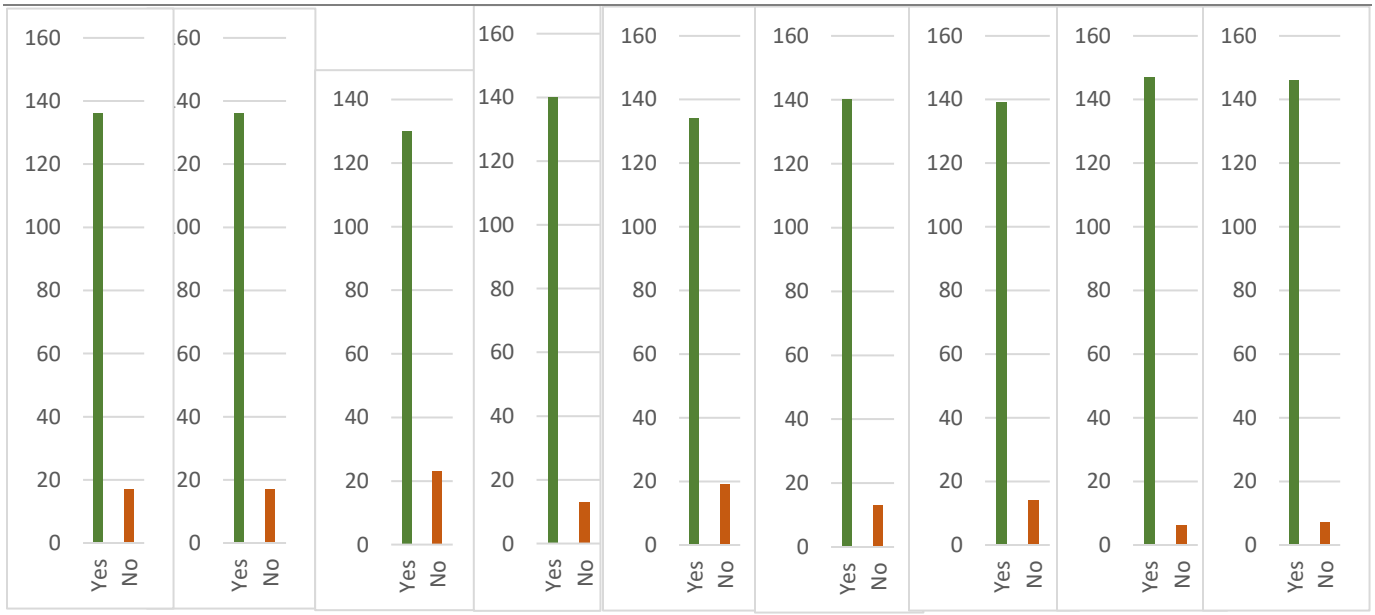
This statement demonstrates the participant's central understanding of cultural sustainability and, as a result, their ability to observe the case study of the NMoQ as a cultural institution in service of cultural sustainability, through its design concept, cultural assets, exhibitions, architecture, and interior architecture.

With the preceding statistics in mind, when reviewing the survey statements, participants appear to be aware of culture representors or components in their response to the first statement. It is also worth noting that the participants are positively aware of the importance of culture and the vitality of cultural identity to individuals and society, as evidenced by their responses to the 7th and 17th statements. With that in mind, and with the view of culture as an inspiring element for design innovation, when it comes to the presentation of culture through design – 16th statement – and the importance of visuality when it comes to cultural sustainability, we find that the participants' responses to the 10th, 11th, and 14th statements to all have a major positive agreement of that possibility based on the data collected. As a result, coming to the statements in which the survey debated the connection of culture to society, economy, and the environment in the 5th statement, the respondents demonstrated their perception to be in favor of the previously stated relationship between culture and the classic pillars of sustainability. This demonstration was again

demonstrated in the 9th statement. presentation of culture through the design concept of the case study.



1st & 2nd statment	3rd statment	4th statment	5th statment	6th statment	7th statment	8th statment	9th statment



10th statment	11th statment	12th statment	13th statment	14th statment	15th statment	16th statment	17th statment	18th statment

Table 5-6: Survey responses statistics.

Source: (Abualfateh, 2022)

The preceding table (5-6) illustrates the data acquired through the survey, displaying the primary answer to be in agreement with the relevance of culture to the participants while exhibiting the capacity of the integration of culture through design, architecture, and interior architecture. Nonetheless, it reveals, the participants' perceptions of culture sustainability via their understanding of the potential of culture as a tool for design innovation and the vitality of its visuality when it comes to its sustainability as noticed in the case study of the NMoQ.

With that in mind, this chapter went into detail about museums, demonstrating how they work in general, and as a cultural institution, under the umbrella of sustainability. The chapter investigated the role of museums in promoting cultural sustainability, as well as the parameters that museums must adhere to in order to achieve not just sustainability but also cultural sustainability. The chapter also looked at the NMoQ case study, focusing on its function in regard to cultural sustainability, its design approach, architecture, and interior architecture. To conclude this part of the study, analyze the results of the case study's survey, just to be able to conclude and discuss the conclusions of this thesis in the following and final chapter.

CHAPTER 6. CONCLUSION & RECOMMENDATIONS:

There is no “one size fits all” model that can be managed through one global (Scammon, 2012)

In a comprehensive analytical framework for this structured study on the application of culture and cultural sustainability, the conclusion is presented in these discussions which took place throughout this thesis inspecting the diverse fields of social, economic, environmental, and cultural education going down its policies, concepts, and framework. By this stage of the study through the examination of sustainability and the pillars within it, it became evident that with the addition of the fourth pillar of cultural sustainability the concept of sustainability is evolving. Leading undoubtedly one of the important findings of culture link to the economy, social, and environmental dimensions of sustainability.

In the same aspect, another noted thing is the need to place a high value on social connection to culture so as to obtain cultural identity since as noted throughout this learning object the action of strengthening the identity in our communities will build the foundation empowering to people identified with their culture and sense of place. Furthermore, the study was able to put out three indicators to of cultural sustainability:

- A Sustainable future is achievable if we continue to remove the barriers to culture and use technology to reach cultural sustainability.
- Researchers, designers, architects, and interior architects share a large share of the responsibility in interpreting cultural references aiding to cultural continuity while identifying cultural sustainability.
- The importance of interpretation of culture, cultural identity, and culture visuality is not granted only from the standpoint of cultural sustainability, through the quality of the built environment and does not only depend on using culture traits and physical design features, but also on the economic and social factors.

Not to forget the main objectives of the study which it’s safe to argue all three were proven to be eligible as they were supported through different literature and evident by the case study:

1. Culture is the reflation of identity and can be a means for users’ satisfaction.

2. Culture is a resource for design innovation and inspiration.

3. Culture is a balancing force against globalization. And implementing Culture in design is a basic means to avoid getting lost in the trend of the globalized sustainable movement.

Nonetheless, this study also regarded museums contribution to cultural sustainability and cultural policies in museum design as its analysis of the case study of the National Museum of Qatar's culture policy, cultural practices, design concept, used materials, and the quality of its built environment from all, as the spatial quality of the built environment from the standpoint of cultural sustainability. By collecting data from various sources and investigating culture interpretation, culture policy transformation, and culture visuality through the museum's design, all while considering the continuity of culture and the interpretation of culture identity features in the design, which includes the built environment required for its sustainability. Through a survey, the case study was also preserved within the context of this thesis.

In the thesis research, the survey applied to the case study's design concept, architecture, and interior architecture. The questions asked within the scope of this survey, under the framework of this thesis were put forward to analyze the case study of NMoQ. With the aid of videos and figures, 18 questions related to better understanding and analysis of the case study were presented to participants through a google form in accordance with the informations obtained through this study. The content of the survey was in regard to culture, cultural identity, and cultural sustainability. In addition, the data was collected around the context of culture and sustainability in the scope of their use as a source for design inspiration in interior architecture and architecture in the case study. Some of the thesis discussion points reached in line with the results of the survey. While the participants were from different educational backgrounds, age groups, and nationalities, culture was regarded as a general concept known by every society. According to the survey's statistics, participants always ruled in favor of culture and cultural identity, for instance, the first statement of culture had a positive response of all the participants (100%). The major responses viewed culture to have a strong connection to society, and agreed with the vitality of cultural identity, all while supporting the perception of the case study of using culture as its main source for design while using technology to its favor. Further, the participants were able to identify culture as a rich source for innovation when comes to design.

Participants also were able to reach the same result agreeing on the ability of culture to connect society's past to its future, service in the main aspect of sustainability supports the view of culture

as its fourth pillar beside its three pillars of economic, social, and environmental. Nonetheless, when it comes to the case study, while being a sustainable building the NMoQ appeared to has a good representation for cultural sustainability by the use of different cultural assets as its design concepts for its different spaces, even more, the use of materials and the unique shapes of its both architectural and interior architectural design works as an advocate for its unique culture and a clear presentation of Qatar's cultural identity.

In summary, coming out of this case study is that conceptual methods are typically used to meet the demand for a sustainable environment, and usually, these approaches ignored culture. Which condemned culture from being an idle subject when comes to sustainability and sustainable development. that brings to light the main goal of the case study of NMoQ, which displays exceptional efforts to conserve natural and constructed landmarks that foster a national sense of place, which are undeniably important to cultural sustainability leading to the conclusion that a once characterized sustainability efforts that serve only attention to its environmental, social, and economic dimensions, now recognize the inclusion of culture via various projects in the discourse as a significant value to its policy through the development of culture and its elements such as cultural identity, and sense of place, to introduce a platform for them to participate in the motion of sustainability.

In closing, going down the road of sustainability and culture, reviewing many pieces of literature, investigating the case study, and discussing the statistics of the study's survey. This thesis was able to demonstrate cultural sustainability by displaying its relation to the well-being of the environment, society, and economy all while administrating both culture and cultural identity in its notion of cultural sustainability. This is in my final interpretation, provided an example of how while operating under the notion of sustainability, by the means of cultural sustainability society can grow, the environment can thrive, and the economy can develop.

APPENDICES 1: SURVEY

Please select one language and answer accordingly

- English
- Türkçe
- اللغة العربية

Dear Participants,

This survey study was organized to identify research investigating the relationship between culture and sustainability and the perception of cultural sustainability through interior architecture and design. I invite you to participate in this research by completing this survey, which will take approximately 5-10 minutes.

Your answers to the questions posed in the collected survey study will remain completely confidential and will only be used for academic purposes, statistical analysis purposes, and within the framework of this study.

Thank you for taking the time to take part on this research.

Sincerely.

Tasabeeh Abualfateh

Başkent University

İç Mimarlık ve Çevre Tasarımı Anabilim Dalı

Department of Interior Architecture and Environmental Design

Master's student

SECTION A: Please answer the following questions by selecting or fill in the blanks.

1. Nationality: _____
2. Gender:
    - Female
    - Male
    - Other
3. Age:
    - 18-20
    - 21-25
    - 26-30
    - 31-35
    - 36 and above
4. Education:
    - University
    - Masters
    - PHD

SECTION B: After exploring the National Museum of Qatar (NMoQ) through the fellow link, please respond to each of the following statements by selecting one of the two provided options.

URL: https://www.youtube.com/watch?v=QQuIO5G8XkM

1. Believes, costumes, literature, fashion, art, design, architecture, and interior architecture are all components of culture.
    - YES
    - NO
2. Museums can serve as cultural institutions.
    - YES
    - NO

3. Culture connects societies' past to its future.
    - YES
    - NO

Figure 1: The desert rose.

Figure 2: National Museum of Qatar.

4. According to (figure1) above the museum design is a good interpreter of its concept.
    - YES
    - NO
5. This design concept connects the environment to culture, society, and economy.
    - YES
    - NO
6. Culture reflects identity in the case of the National Museum of Qatar (NMoQ).
    - YES
    - NO

7. Cultural identity is vital to groups, individuals & society.
    - YES
    - NO
8. Believes, ethics, design, fashion, architecture, art, are all considered as a component of culture while designing the NMoQ.
    - YES
    - NO
9. Cultural identity and visuality in NMoQ's design helped link culture with social, economic & environment.
    - YES
    - NO

Figure 3: Exhibitions of NMoQ

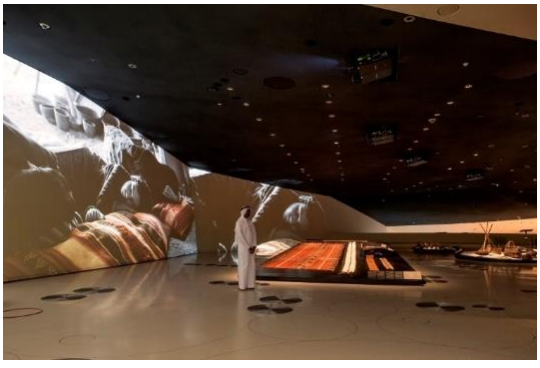


Figure 4: Exhibitions of NMoQ

10. The visuality of culture is important for the sustainability of culture.
    - YES
    - NO
11. The presentation of cultural assets and the national identity through the museum's technology shown (figure 2) helps MoQ's advertisement of cultural sustainability.
    - YES
    - NO
12. NMoQ's presentation of culture contributes to the education and development of its visitors on Qatar's social cohesion, diversity, equality, and ethical practices.
    - YES
    - NO
13. NMoQ's cultural approach can help the economy through its development, productivity, marketing, cost management & growth.
    - YES
    - NO

URL: https://www.youtube.com/watch?v=GlidKUr4QV8

14. Following the previous URL link; NMoQ's interior architecture, and design are representational of Qatar's environment and culture.
    - YES
    - NO

Figure 5: Qatari majilis (right)

Figure 6: National Museum of Qatar Café 875 (left)

15. Culture can be a source of design inspiration.
    - YES
    - NO
16. Culture can be integrated within interior architecture & design.
    - YES
    - NO
17. Cultural identity is vital to groups, individuals & society.
    - YES
    - NO
18. NMoQ can serve in favor of cultural sustainability.
    - YES
    - NO

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