

# **A Value Sensitive Approach to Communicate with Users and Designers in Cross-Cultural Contexts**

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# Abstract

Culture is embodied in many aspects of the identity of an individual. This makes it a critical component of understanding the design of technology for its intended users. Cross-Cultural Design has emerged as an approach to incorporate culture in the design of technology using off-the-shelf cultural studies. However, relatively little work has focused on how to approach culture and how to integrate cultural insights in the design of technologies. Additionally, the design space of this thesis, namely cultural values and how they impact the visibility of women in the digital media, is largely under-explored.

The research presented in this thesis investigates how to develop value sensitive methods for conducting and communicating culturally specific research. This thesis presents an investigation on the visibility of Saudi women in the digital media using culturally specific methods. Following the Value Sensitive Design methodology in this context, this thesis describes: how I propose a bottom up approach to define culture, enabling value sensitive methods for user research that informs the design of technology; how I approach the integration of these cultural values in evaluating existing systems and develop an implicit value eliciting method; and how I adopt a Double Ethnography approach to develop effective methods for communicating culturally specific research to a multifunctional team of designers.

In response to this context, I introduce two communication methods: *Scenario Co-Creation Cards* and *Research Snippets*, addressing these requirements. Scenario Co-Creating Cards are a novel value eliciting method which incorporate the cultural value of the users, while Research Snippets are a research communication method, which help designers to understand culturally specific research. In presenting the findings of a real-world deployment and evaluation of these two methods, this thesis contributes to current discourse in HCI on how to conceptualize cultural research to bridge the communication gap between user researchers and designers.

This thesis is inspired by Vision 2030 (National Transformation Plan) in which women are supported to fully participate in all aspects of Saudi society. The past few years have witnessed ground-breaking reforms in Saudi Arabia to improve the rights and mobility of women. A major part of the reform was transforming the public sphere to be more accommodating to women, including their appointment to leadership positions. This thesis aims at understanding how to promote and support the visibility of women within their frames of cultural and individual values. We built this understanding from the voices of transnational Saudi women who have experienced a higher level of visibility. However, by improving our understanding of how to design across cultures, this work should contribute toward Vision 2030, helping to empower and support the visibility of all women across the entire nation.

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## **Published work derived from this thesis**

Scenario Co-Creation Cards: A Culturally Sensitive Tool for Eliciting Values [21]

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# Table of contents

ABSTRACT .....	II
ACKNOWLEDGEMENT .....	III
PUBLISHED WORK DERIVED FROM THIS THESIS .....	IV
SCENARIO CO-CREATION CARDS: A CULTURALLY SENSITIVE TOOL FOR ELICITING VALUES ..IV	
TABLE OF CONTENTS.....	V
LIST OF FIGURES .....	VIII
LIST OF TABLES .....	VIII
DEDICATION .....	IX
1. INTRODUCTION.....	1
1.1. OVERVIEW .....	1
1.2. CULTURAL CONTEXT .....	4
1.3. THE RESEARCH QUESTIONS .....	5
1.4. METHODOLOGICAL FRAMEWORK .....	7
1.5. THEORETICAL FRAMEWORK .....	8
1.6. ETHICAL CONSIDERATIONS .....	8
1.7. RESEARCHER STANCE & REFLEXIVITY .....	9
1.8. POPULATION OF THE STUDY: TRANSNATIONAL SAUDIS .....	10
1.9. THESIS STRUCTURE .....	11
2. A REFLEXIVE APPROACH TOWARDS EXPLORING DESIGN PROBLEMS.....	13
2.1. OVERVIEW .....	13
2.2. BACKGROUND .....	13
2.2.1. Problem Definition in Design .....	13
2.2.2. What is a Design Problem? .....	14
2.2.3. Problem Definition in VSD .....	16
2.2.4. Cultural Context of the Study .....	17
2.3. METHODOLOGY .....	18
2.3.1. The Study Objectives: Scoping the Design Problem .....	18
2.3.2. Research Design: Exploratory Case Study.....	18
2.3.3. Research Method: Focus Groups.....	19
2.3.4. Participants and Population.....	20
2.3.5. Transcription and Analysis .....	21
2.4. FINDINGS.....	22
2.4.1. The Lack of ‘Positive’ Visibility of Women .....	22
2.4.2. The Lack of Appreciation for Women’s Achievements.....	24
2.4.3. The Paradox of Self-Disclosure .....	29
2.5. DISCUSSION: SCOPING THE RESEARCH PROBLEM .....	30
2.5.1. Wider Implications For VSD .....	31
2.6. CONCLUSION .....	32
3. UNDERSTANDING AND INTEGRATING CULTURE IN DESIGN WITH A TRANSNATIONAL POPULATION: A VALUE SENSITIVE APPROACH.....	33
3.1. OVERVIEW .....	33
3.2. BACKGROUND .....	33
3.2.1. The Concept of Culture .....	33
3.2.2. Culture and Design.....	35
3.2.3. Cultural Design in Saudi Arabia .....	37
3.2.4. Transnationalism .....	38
3.2.5. Transnational Saudis.....	39

3.3.	METHODOLOGY .....	39
3.3.1.	Study Objectives and Motivation.....	39
3.3.2.	Collaborator’s Study: Transnational Saudi Arabian Youth and social media: Enacting Privacy and Identity .....	40
3.3.3.	Unified Analysis .....	41
3.3.4.	Our Participants .....	42
3.3.5.	Validity and Rigor.....	42
3.4.	FINDINGS.....	45
3.4.1.	Concealing the Autonomous Self (Me) .....	46
3.4.2.	Embracing the Collective Self (Us) .....	47
3.4.3.	Withstanding the Others (Them).....	51
3.5.	DISCUSSION .....	52
3.5.1.	Values and Value Tensions .....	52
3.5.2.	Stakeholders .....	53
3.5.3.	From Understanding to Practice: Integrating Cultural Values in Design .....	54
3.5.4.	Wider Implications for Design .....	55
3.5.5.	Reflection: Defining Core Cultural Values.....	56
3.6.	CONCLUSION.....	56
4.	SCENARIO CO-CREATING CARDS: A CULTURALLY SENSITIVE APPROACH FOR ELICITING VALUES IN VSD	57
4.1.	INTRODUCTION .....	57
4.2.	BACKGROUND .....	57
4.2.1.	Eliciting Values in VSD.....	59
4.2.2.	What Is Missing?.....	62
4.2.3.	Values Theories.....	62
4.2.4.	What Are Values? .....	63
4.2.5.	How Do People Express and Manifest Values?.....	64
4.3.	DEVELOPING SCENARIO CO-CREATING CARDS.....	65
4.3.1.	The Conceptual Design: The Cultural Factor.....	66
4.3.2.	The Physical Design: The Cards.....	66
4.3.3.	The Practical Design: The Co-Creating mechanism.....	68
4.3.4.	Summary of The Scenario Co-Creating Cards .....	69
4.4.	CASE STUDY: SCENARIO CO-CREATING CARDS IN PRACTICE .....	70
4.4.1.	The Study Objectives .....	70
4.4.2.	Population Participants and Recruitment.....	70
4.4.3.	The Study Design .....	71
4.4.4.	Transcription and Analysis .....	72
4.5.	FINDINGS.....	72
4.5.1.	Overt Expressions of Values.....	72
4.5.2.	Provocation of Aspired and Real Scenarios .....	74
4.5.3.	Comparison Between Scenarios .....	76
4.6.	DISCUSSION .....	78
4.6.1.	Operation of each Aspect in Scenario Co-Creation Cards.....	78
4.6.2.	Implications for Value Sensitive Design .....	79
4.7.	CONCLUSION.....	80
5.	THE ENVISIONED VISIBILITY: HOW TO DESIGN SAFE SPACES FOR SAUDI WOMEN’S SELF-DISCLOSURE IN DIGITAL MEDIA .....	82
5.1.	INTRODUCTION .....	82
5.2.	BACKGROUND .....	83
5.2.1.	Self-Disclosure .....	83
5.2.2.	Study Context: Saudi Women’s Visibility in Public.....	84
5.3.	METHODOLOGY .....	86
5.3.1.	The Study Objectives .....	86
5.3.2.	Population, Participants and Interviews .....	86
5.3.3.	Transcription and Analysis .....	86

5.4.	FINDINGS.....	87
5.4.1.	Advocacy for Women’s Visibility and Cultural Changes: .....	87
5.4.2.	The Views-Practices Gap of Women’s Visibility (struggle for consistency) .....	90
5.4.3.	The Envisioned Visibility .....	92
5.5.	DISCUSSION .....	100
5.6.	CONCLUSION .....	101
6.	DESIGNER-CENTERED APPROACH FOR COMMUNICATING USER RESEARCH .....	102
6.1.	OVERVIEW .....	102
6.2.	BACKGROUND .....	103
6.2.1.	The Underlying Reasons for Communication Difficulties .....	103
6.2.2.	Existing Theoretical and Methodological Communication Solutions .....	105
6.2.3.	Communication Principles and Methods.....	106
6.2.4.	Incorporating the Three Categories.....	107
6.2.5.	What Is Missing? .....	108
6.3.	METHOD AND PROCEDURES .....	110
6.3.1.	Participants .....	110
6.3.2.	The Semi-Structured Interviews .....	112
6.3.3.	The data analysis.....	113
6.4.	FINDINGS.....	113
6.4.1.	Credibility: Evidence of the Research .....	113
6.4.2.	Dialogue: A Collaborative Space for Asking Questions and Exchanging Idea. ....	119
6.4.3.	Immersion: Resources Should Immerse the Designers into the User Research Data.....	125
6.5.	DISCUSSION: THE FIRST PHASE OF DOUBLE ETHNOGRAPHY .....	129
6.5.1.	Review of Each Element an A Designer-Oriented Communication .....	130
6.5.2.	Implications for design communication.....	133
6.6.	CONCLUSION .....	134
7.	DESIGNER-CENTERED RESEARCH SNIPPETS: A DESIGNER-CENTERED TOOL TO COMMUNICATE RESEARCH INSIGHTS.....	135
7.1.	OVERVIEW .....	135
7.2.	THE DEVELOPMENT OF THE DESIGNER-CENTERED RESEARCH SNIPPETS .....	135
7.2.1.	The Structure of the Workshops.....	137
	AT THE END OF THE WORKSHOP, ALL PARTICIPANTS WERE INVITED TO SHARE THEIR REFLECTIONS AND INSIGHTS ON THE RESEARCH SNIPPETS. THEY WERE ASKED ABOUT THEIR FIRST REACTION WHEN THEY RECEIVED THE SNIPPETS CARD AND WHAT THEY THOUGHT IT WAS. THEY WERE ALSO ASKED TO DESCRIBE HOW THEY USED THEM AND WHAT ROLE THE CARDS PLAYED IN THEIR OVERALL DISCUSSIONS AND ENGAGEMENTS WITH THE WORKSHOP ACTIVITIES. ....	140
7.3.	THE ANALYSIS OF THE WORKSHOPS .....	140
7.4.	FINDINGS.....	140
7.4.1.	Conversation Starter: Scaffolding Progressive Conversation.....	141
7.4.2.	Dots Connector: Establishing a Collective Understanding.....	143
7.4.3.	Reference Point: Enforcing User Centric Learning.....	145
7.5.	DISCUSSION .....	148
7.5.1.	Facilitating Communicating and Understanding of the User Research .....	148
7.5.2.	Overall Reflection: The Double Ethnography Approach .....	150
7.6.	CONCLUSION .....	151
8.	DISCUSSION AND CONCLUSION .....	152
8.1.	OVERVIEW .....	152
8.2.	UNDERSTANDING CROSS CULTURAL RESEARCH IN HCI .....	152
8.3.	DOING CULTURALLY SENSITIVE DESIGN.....	154
8.3.1.	Context: Data Grounded Understanding of Culture .....	155
8.3.2.	Users: Culturally Sensitive Method to Elicit User’s Values .....	159
8.3.3.	Designers: Designer-Centered Communication of Research Deliverables .....	160
8.4.	DESIGNING FOR THE VISIBILITY OF SAUDI WOMEN .....	162
8.4.1.	Perpetuating or Challenging Values? .....	163
8.5.	CHALLENGES & OPPORTUNITIES FOR CULTURALLY SENSITIVE DESIGN .....	165

8.5.1.	Challenges.....	165
8.5.2.	Opportunities.....	166
8.5.3.	Concluding Reflection .....	167
8.6.	CONCLUSION .....	167
9.	REFERENCES .....	170
10.	APPENDICES .....	189
10.1.	SCENARIO CO-CREATION CARDS .....	189
10.2.	RESEARCH SNIPPETS .....	190

## List of Figures

Figure 1.1	Scenario Co-Creating Cards .....	3
Figure 1.2	The Designer-Centered Research Snippets .....	3
Figure 1.3	Structure of the Thesis: a diagram mapping the three case studies onto the key research questions and the key findings .....	11
Figure 2.1	Visual cards representing exemplar women's achievements.....	19
Figure 2.2	The all-male workshop .....	21
Figure 2.3	The all-female workshop .....	21
Figure 2.4	The mixed-gender workshop.....	21
Figure 4.1	Scenario Co-Creating Cards .....	65
Figure 4.2	The Scenario Co-Creation Cards Deck .....	67
Figure 4.3	The scenario cards discussed by P16. (From left to right: a man in Islamic clothing, a newspaper, a woman running in sport clothing).....	73
Figure 4.4	The scenario cards discussed by P7. (from left to right: a police car, a clapperboard, a woman with suitcases) .....	75
Figure 4.5	The scenario cards discussed by P9. (from left to right on the top row: a bride and a groom, a newspaper, a woman in white coat. The bottom row: a radio) .....	77
Figure 5.1	The three common Islamic interpretations of what makes a veil .....	85
Figure 7.1	Research Snippets with some cards have the quote side faced-up and the others have the visualized side faced-up.....	136
Figure 7.2	Examples of design briefs used in the workshops .....	139

## List of Tables

Table 2.1	Women shown on the cards .....	20
Table 2.2	The focus groups conducted for this study.....	21
Table 5.1	The different levels of media visibility and participants' levels of preferences.....	99
Table 6.1	The functional gap between researchers and designers .....	104
Table 6.2	Methods of communicating research findings .....	108
Table 6.3	Participants Table (description of their role and responsibilities and years of experience).....	112
Table 8.1	The header of the table used to illustrate each participant's position in terms of values and practices towards visibility .....	163
Table 8.2	Designing for the optimum point between value sensitive and social change positions .....	165

# Dedication

## *To Dreams ... and Dreamers*

Hello world, say yes to dreams  
The dreams you live, they have no fear  
They're born of light ... they're guiding stars  
They're a shining universe ... with no frontier  
Now take a step and hold their hands  
Kiss their foreheads, sing with reverence:  
"I bless you dreams, with all my love  
I promise forever ... to persevere  
The days to come ... are my gift to you  
The weeks to come ... you'll have to steer  
The months to come ... are more divine  
They'll rejuvenate you ... every year"  
Keep on your dreams, with a sacred faith  
They're all you feel, see and hear  
Keep on your dreams, with a sacred faith  
It's not too late ... start now and here!

Tag

October 22, 2019

## Chapter One

# 1. Introduction

### 1.1. Overview

Humans are highly social creatures [29]. The accumulation of prolonged and interpersonal relations between humans brings about a collective shared identity, termed as *culture* [24,28,171]. Much as personality types shape the identity of an individual, culture shapes the identity of a group [95]. Culture exists to represent the collective (group of individuals) and provide solutions for regulating and sustaining humans connection to the society [171,184], and for responding to individuals' biological, psychological and social need [171]. Thus, culture has been a central concept in many disciplines, including anthropology, international business and the design of technology. In the field of HCI, it has been acknowledged that establishing a thorough understanding of culture early in the design process has a major impact on acceptability and usability [188,189,230,231,232,242,254]. Hence, many approaches have been developed to account for users' values and cultural context in the design process [23,60,90,123,137,190].

However, two main difficulties have been associated with the concept of culture: how to conceptualize culture, and how to operationalize it [69,158,189]. To address this, a series of cultural models have been developed to operationalize and measure the concept of culture (e.g. Hall; Hofstede; Trompenaars) [158,189,217]. Much of the cross-cultural work in HCI has heavily relied on these models; predominantly, Hofstede's model. The challenge remains that culture is an ever changing concept, not easily captured in simplified and static models of culture [230,232]. Thus, understanding the specificity of cultures, particularly when working with indigenous populations cannot be obtained by utilizing the existing cultural models. This argument has been increasingly acknowledged in HCI, particularly in the works of Sun [230] asserting the need for an approach with a richer and more dynamic view of culture [232]; Amant [24] suggesting a strategic approach to learn about the multifaced concept of culture beyond a simple literature review of cultural studies, and Heimgartner [112] proposing the development of a connection between cultural dimensions and HCI dimension to integrate culture into design [112].

In response to this, I present a culturally sensitive approach to conceptualize and integrate culture into the design process. This approach takes multiple different factors in the design process to ensure tackling a culturally relevant problem, working with a culturally fluent population, and communicating with users and designers through culturally sensitive methods.

In line with established cultural models (e.g. Hofstede's [95]), I explore culture in terms of values, both at the collective level, cultural values, and at the individual level, personal values. Since values are developed in social contexts, they can link the individual to the collective [46]. Thus, I demonstrate how the concept of values plays an essential role in understanding cultures. Values are a central concept with various definitions in many disciplines [208]. They have been used to refer to many other terms such as needs, desires, interests, beliefs, and norms, [46]. In

this thesis, I construct a working definition of values (detailed in chapter 4) based on existing literature as: Values are a fundamental and internal guiding mechanism which serves as an evaluative dimension of human choices and influences behavior across situations and circumstances. Therefore, the importance of understanding values in cross-cultural design lies in is that such a construct tackles the inner motivation behind users' behavior across situations. Values are inherently cultural; and often do not translate directly from one setting to another [84]. They are a key factor in investigating culture, social dynamics and society's collective consciousness [46]. Therefore, in the design of a genuinely inclusive technology of all cultures, it is an important concern to implicate values in the design of technology within cross-cultural approach. This is particularly a crucial consideration for designing for populations coming from a socially and politically conservative culture [129], or collectivist societies [117], where individualism and freedom of expression are not promoted. In the design of technology, it has been acknowledged, particular in the works of Value Sensitive Design (VSD) [80], that values have to be implicated both in the design process as central design criterion [89]. However, there remains a difficulty in VSD and other approaches which import, on occasions, a closed set of westernized values and then apply them across cultures [173]. In response, in this thesis I consider an alternative approach to define and investigate values from a culturally sensitive lens. I demonstrate a process of identifying cultural values from my participants without providing a pre-defined or a closed set of universal values. I also demonstrate the process of identifying individual values but following a culturally sensitive approach (and method) to allow investigating the differences between personal and cultural values.

I demonstrate the development and evaluation of this approach in a case study about the visibility of Saudi women in digital media. The visibility of women in the public sphere has been a core concept of the recent reform in Saudi Arabia. Originally, the exclusion of women in the public sphere has been a dominant cultural norm. Thus, self-disclosure in digital media remains a challenging practice for many Saudi women. Such a practice, in cases, can put them at social or political risks. Overall, there is limited historical knowledge about and current research on Saudi women, and compared to other Muslim women, Saudi women's gender issues remain the least studied [18]. This is perhaps due to general difficulties of conducting research in the region and specific gender related reasons in a highly gender segregated society [145].

The approach presented is an iterative, reflective, and case study-based approach for conceptualizing culture and integrating cultural values fo a specific group into the design process.

First, this approach enabled me to formulate the design problem from the perspective of users, and thus reflecting a real-world problem, rather than a symptom observed by research designers. Second, it enabled me to conceptualize culture from the bottom up where cultural values are constructed from the data rather than imposed through the use of cultural models mentioned earlier. As such, this enabled a deeper understanding of the specificity of the cultural context of my participants. Third, a culturally sensitive approach enabled me to integrate that specific understanding of culture into the consequent research/design decisions. Thus, the user

research method introduced in this thesis, Scenario Co-creating Cards (**Figure 1**), is an exemplar of integrate cultural understanding into culturally sensitive methods.



*Figure 1.1 Scenario Co-Creating Cards*

Fourth, this method, in turn, enabled me to elicit values from a culturally specific and relatively difficult group to discuss personal values [18,94,129]. Fifth, following this approach, and inspired by the notion of “designing within the patriarchy” [229], I was able to introduce a framework representing as spectrum of women’s visibility from commonly adopted, to socially accepted to personally valued levels of visibility. Within that framework, I suggest the notion of finding the “sweet spot” within the spectrum as an optimum solution to design for that context while taking a middle point between design for change and design for people’s values and cultures.

Fifth, taking that user cultural research forward, I was able to maintain the core cultural aspects and user needs within the communication process with the design team. Following a culturally sensitive approach underlined the need for a designer centered approach in communicating the field insights. Treating designers with the same level of care we treat users, I adopt a double ethnography approach, based on which I was able to introduce a novel communication method, the Designer-Centered Research Snippets (**Figure 2**). Finally, the design team thus was able to ask relevant questions and generate sufficient design concepts.



*Figure 1.2 The Designer-Centered Research Snippets*



## 1.2. Cultural Context

After September 11, 2001 - and the subsequent terrorist events in Saudi Arabia- the Saudi state was severely shaken, and since then human rights reports have started to grow louder and embarrass Saudi Arabia [18,262]. This has put pressure on the state to seek a more inclusive policy and to seek legitimacy abroad [18]. As such, the state has been introducing policies fighting “terrorism” and “extremism” and promoting “reformism”, “moderation” and “tolerance” [151]. A decade later, this has also been accentuated after the Arab upheavals of 2011. Despite being relatively stable, and the MENA country least affected by the Arab upheavals, Saudi Arabia has received increased demands for political and social reforms [94]. Most of these demands were not revolutionary, as many believed that the government, particularly King Abdullah at the time, was already making the necessary reforms [48]. Indeed, it is even believed that the King was in fact making more and faster reforms than what the Saudi society is prepared to accept [48].

It is not surprising thus, that the more the state respond the external pressure for reforms the more resistances appears from extremists and terrorists [164]. As eager as it is to appear modern, the State is aware of potential conflict with its religious establishment [18,48]. The reform has created internal ongoing debates between voices of conservatism and modernization [262]. The state, thus, has gradually started to restrict the control of the religious authorities which made the state being gradually perceived as losing its Islamic identity [18,151,164]. On this longstanding dilemma, it is rumored that King Fahad (1921- 2005) lamented on his deathbed: *“We are in a terrible position ... we must change, and we cannot change”* [48]. Indeed, Saudi Arabia has been struggling for long to create an alternative modernity to the globalized one [18].

Hence, democratization does not necessarily represent a solution, but evolutionary reforms might consider the social and religious obstacles might facilitate the reform movement [164]. The government has started promoting moderate Islam and taking a reformist stance [178]. The modernization reforms are happening slowly within Islam framework under guidance of the religious scholars as this might backfire, cause social chaos and antagonize conservative religious scholars whose defense is needed at times of political crises [18,48,248]. Although, some could argue that working within the system indeed perpetuates some social biases, such gender segregation, which has more negative effects on women than men [151]. However, thus far, working and changing the system from within, has often been an ideal (and only) approach to introduce reforms without having to impose them [18].

For instance, introducing higher education for females required participating in mixed gender environments. However, to work within the system for introducing this change, videoconference has been adopted (until today) in female universities for classes that require male professors (while the male professor can be seen on screen by the female students, he can only hear from them through a microphone) [151]. Indeed, technology has contributed to both the perpetuating of norms while introducing new norms from within. Whereas for more radical changes, public religious views might require some changes. For instance, modern religious interpretations have been adopted by the state to replace strict interpretations on women’s matters [18].

The reforms introduced to “remake the nation” has focused on particular groups that are affected by influencing particular issues (e.g. scholars and activists) [151,248]. The category of “Saudi women” was one of these group [151]. Indeed, the reform in women matters is particularly a critical factor for the overall modernization movement. In fact, when the liberals and conservatives are debating it is usually about women as the focal point of all arguments [176]. It is worth mentioning that these debates are open perhaps because usually the newly introduced reforms regarding women are left for people to decide, or not, to take them. This means it is a matter of a family choice whether they *allow* the female members to practice their new rights [151], example driving a car or travelling without a male guardian. Thus, contrary the widespread opinion, discussing women’s issues in Saudi Arabia is not (anymore) a taboo [151].

Women, especially elite women, play a significant role in their contribution to the cultural change which represents the state’s soft and modern face [18,176]. By female elites, I refer to the educated, academics, journalists, business women, cosmopolitan and intellectuals from different backgrounds [151]. The state started to show a soft side by increasing the visibility of women, promoting women’s empowerment, and starting a state sponsored feminism [18]. Hence, Saudi leadership has become hailed as a progressive force gradually introducing remarkable reforms and supporting women’s emancipation and gender equality [18,267]. It is worth noting though, that in addition to the religious oppositions and the family choice not to embark in the reforms, it is in many cases the women themselves – even elites- refusing the ideal of formal equality either for religious reasons or for devotion for their families and spouses [248].

### **1.3. The Research Questions**

This thesis is a qualitative work around the concept of Saudi women’s visibility in the digital media. The thesis started out of a curiosity in understanding the role of technology in making cultural change and a passion in advocating women’s rights and cultural development in Saudi Arabia. This interest stems from personal observations of the researcher as a cultural insider; and from understanding of the literature about Saudi women, particularly in the works of the Saudi anthropologist Madawi AlRasheed [18]. Due to complexity of this social context and the rapid changes within it, deductive quantitative methodologies (forming and testing hypothesis) do not offer an adequate means to discover a social context and develop theories [78]. By contrast, inductive methodologies organically starts with curiosity and passion in a certain topic articulated in a question or a research problem [6]. Thus, I adopt an inductive methodology which allows the design of the qualitative research evolve as the empirical data unfolds [54]. To start the process, I articulated the design problem in a roughly drafted question as follows:

*Q0: How might technology reshape the perceptions of women in Saudi Arabia?*

It is worth mentioning that the very fact that there is a stated design problem for the study, one can classify this work as deductive and claim that for an entirely inductive research design there has to be no prior research question [102]. In response, I argue that the research question is merely a provisional hypothesis produced initially not for the purpose of being tested for acceptance or rejection, but rather to define the scope of the project and exploration of related

concepts. Indeed, in many cases qualitative research does start with prior theoretical assumptions with the goal to provide some structure and boundaries for the research [102], which are rather flexible and can change while the analysis unfolds [78]. Thus, starting with a broad overarching provisional question can help find some initial focus, inviting more specific questions and setting the stage for selecting a theoretical and methodological frameworks [6].

However, a problem with this question is that it lacks a focus on a specific aspect. To address this, researchers have to focus on *sensitizing* concepts to widen the access to a range of relevant concepts [78]. Thus, I chose “achievement” as a sensitizing concept which is value-laden, context dependent and rather contentious to provoke a wide range of views. Also, women’s “achievement” has been a relevant concept in the recent reforms in Saudi Arabia (discussed throughout this thesis).

The other problem of this question is the lack of a focused population. Since my interests were particularly to study Saudis living abroad due to their awareness of different cultural perceptions of women, the provisional question was re-formulated to fit this population:

*Q1: How do transnational Saudis perceive and conceptualize Saudi women’s achievements?*

In the next chapter I discuss the development of this question resulted in surfacing the relevant problems in Saudi women’s visibility. The data analysis in the next chapter demonstrates how the design problem has evolved and how and why I had to shift the focus from ‘visibility’ to ‘self-disclosure’. This led to formulating the second research question as:

*Q2: How to design for Saudi women’s self-disclosure in the digital media with minimum violation to their cultural values?*

To answer this question, I describe in **Chapter 4** the need for a culturally sensitive method to elicit values for such a personal context. To this end, two supplementary (and methodological) questions were raised regarding:

*Q2-a: What makes a method classified as a value eliciting method?*

*Q2-b: How to develop a culturally sensitive method developed for culturally specific group?*

Answering these questions is discussed in **Chapter 4** and demonstrated in the development of Scenario Co-Creating Cards, a culturally sensitive method for value eliciting. The empirical data resulted from this study, combined with the previous study in **Chapter 3** yielded a substantial amount of qualitative data which raised a challenge regarding:

*Q3: How to communicate a culturally specific research to a multinational team of designers?*

Answering this question in **Chapters 6** and **7** required an extensive review of literature regarding the researcher-designer gap. A problem commonly acknowledged in design describing the gap between the amount of knowledge researchers gain from the field and the amount of that knowledge that get delivered effectively to designers. I adopt double ethnography to address this gap, particularly in a cross-cultural context, and this raised two questions:

*Q3-a: How to develop and evaluate a tool to facilitate an effective the communication between researchers and designers*

Answering this question yielded a set of three requirements, and the development of a method embodying these principles: *The Research Snippets*.

*Q3-b: How effective is the Research Snippets method, and the overall double ethnography approach?*

At the final study in **Chapter 7**, I discuss how the method was developed based on the insights gained from designers in **Chapter 6**, and how effective this method was in delivering the research insights. This marks the final point of the overarching goal of this thesis to bridge the communication gap between users, researchers and designers.

## 1.4. Methodological Framework

The adoption of an inductive approach is influenced by my epistemological orientation. Due to the difference in the type of questions I asked and the type of knowledge I sought in each study, different epistemological orientations have been adopted. Thus, I would describe my overall approach as *pluralistic* [253]. Methodological pluralism recognizes that the different epistemological approaches are not mutually exclusive, rather it is possible to combine them when different questions are asked of the same data [253].

In this thesis, different questions are asked of different studies (different data), thus my claim of adopting a pluralist methodology is reserved to the overall thesis and in this introduction only. Later in each study I discuss the specific approaches used to answer the questions asked for each study. Overall, I used three approaches: social constructionist (Study 1), phenomenological (study 2), and realist (study 3).

Following an inductive process has influenced my research design. A research design is the holistic framework guiding the process by which the research question is addressed [102]. For this, I adopt a qualitative approach as it is suitable for cases where there is little known about the phenomenon [51]. Qualitative research provides a naturalistic approach to develop a sophisticated understanding of a phenomenon by collecting a deep and holistic overview of people and their construction of reality [54,102]. In qualitative work, researchers immerse themselves in a range of data, while with a focus in mind, they are expected to stay alert to emerging insights throughout the research process [181]. There are different strategies to conduct qualitative research, the most popular of which are: case study, narrative, phenomenology, ethnography and grounded theory [54]. I discuss in the studies in the following chapters which strategy I adopted for each and why it was suitable for the purpose of the study.

The overarching design methodology employed here is *Value Sensitive Design* (VSD) [80]. VSD is a widely utilized approach to incorporate users and their values and value tensions in the design process [89]. VSD iterates through three types of investigation: conceptual, empirical and technical investigations; and places a particular emphasis on values with moral import such as privacy and trust [85,87,89].

A common critique of VSD is that most of the values studied in VSD tend to be universal, which is neither adequate nor practical for contextualization [34,60]. Le Dantec *et. al.* [59] also criticized the notion of starting from the value classification “values of ethical import” as a

departure point in the design process, stating that it “privileges a discursive definition of values over values that may be discovered”. In this spirit, I configure this study as qualitative investigation that aims to allow for discovered values to be co-constructed by the participants and the researcher. Thus, I adopt bottom up approaches throughout this thesis.

The data collection process includes selecting the setting, the actors, the events and the process [54]. In each of the following chapters I describe the processes and rationale for the different data collection methods I selected or developed to achieve the specific goals of the studies. For data analysis, I employed an inductive approach which means researchers develop themes from the bottom up from concrete data to more abstract units of information in an iterative manner until a comprehensive set of themes is established [54]. More details will be provided in the following chapters.

## **1.5. Theoretical Framework**

A theoretical framework is a reflection of the ontological and epistemological perspective of the researcher (personal beliefs) which informs the problem, purpose and significance of the research [110]. This framework is derived from an existing theory which lays the grounding on which all the knowledge in the research study is constructed [101]. There are different theoretical lenses employed in analyzing qualitative data such as the concept of culture and class differences [54]. However, sometimes a study is organized to identify social or political context of the problem. Indeed, in qualitative research, the aim is to build a theory derived from the data. Thus, qualitative research typically starts with no or less structured theoretical frameworks to avoid forcing preconceptions of the outcomes [101,152].

In this thesis, I do not base the work on a specific theory per se, rather I provide a conceptual framework (as part of VSD methodology) in which I establish a wider understanding of the cultural context. The difference between theoretical and conceptual frameworks is that theoretical is derived from an already existing theory which is widely considered acceptable; whereas conceptual frameworks are derived from the researcher’s own understanding of the research problem and context [101]. Moreover, adopting Value Sensitive Design and Cross-Cultural Design as overarching frameworks indicates implicit theoretical lenses, mainly culture and social participation [92]. I also make explicit my stance, beliefs and vision and I acknowledge the influence of researchers on the research context.

## **1.6. Ethical Considerations**

Prior to conducting the study, I examined the university’s standards and code of ethics. The code of ethics states that any work involving human participants or collection of sensitive data requires an application for approval from the Faculty Ethics Committees. These committees exist to providing protection against human rights violation, and to assess potential risks for participants, including physical, social, psychological and legal harm [54]. The University’s Policy and Procedure for Ethical Review require completing a Preliminary Ethical Assessment Forms for every project before applying for a Full Ethical Review [268]. Since qualitative research is set to be open and evolving, this makes it difficult for ethics committees to foresee associated risks with the full project [78]. Thus, I applied for a Preliminary Ethical Assessment,

before a multi-stage ethical approval. This means for each stage of the project where I would conduct data collection with participants I applied for a stage-specific approval rather than a full project approval. The Ethics Committee classified my project as a “low risk”, which means it does not involve major ethical issues.

During conducting the studies, I made explicit to my participants what the research project is, and what their role is. All participants were provided with an information sheet stating the details of the study and their role in it, and a consent form listing several items where they were informed about their right to accept or reject any item. The participants were made aware that they could withdraw from the sessions at any time without giving reasons. All sessions conducted with participants (apart from the third case study with designers), have been transcribed and translated by the principal researcher due to the sensitivity and personal nature of the conversation. However, the study with designers has been transcribed by hired transcribers. The digital forms of the data have been stored on a secured hard drive while the nondigital has been secured at Newcastle University. All data related to participants has been anonymized and replaced with pseudonyms to protect the privacy and anonymity of all participants. Only the principal researcher has direct access to the data, and supervisors have indirect access through the principal researcher.

I paid a special attention to the overall cultural aspects of the participants, especially regarding religious or political matters. For instance, any food was provided in the session, was Halal as per Islamic traditions. All topics were considered for their political sensitivity, due to strict regulations in Saudi Arabia regarding expressions of political views, particularly critical views (although sessions were abroad, but such consideration is still relevant).

## **1.7. Researcher Stance & Reflexivity**

I have declared in the introduction that this research started with a personal interest in understanding the role of technology in making cultural change regarding women’s rights and cultural development in Saudi Arabia. In this section, for reflexivity, I describe my personal background, views and cultural context that might have influenced my research approach.

I have a background in Management Information Systems (MIS) and this current PhD project is in Human Computer Interaction (HCI). The commonality between the two fields is the focus on the human aspect of the design of technology. Thus, my main research interests have evolved around understanding and designing with people as part of a wider vision of creating a meaningful change for societal development. I work from a design stance that seeks to both establish deep empathy and understanding of people’s values and culture, as well as bringing my own vision for societal development in harmony with that understanding. I believe it is impossible for researchers to come to the field without preconceived notions of what ought to be done [101]. Thus, the researchers’ own interpretation and contribution cannot be detached from their background [54].

Cultural wise, I exhibit different aspects of the different cultures I have been part of the past ten years. Mainly, I have lived in Saudi Arabia (as an Arab culture); and Australia, the UK and the US (as Western cultures). This has influenced my multicultural attitude from a surface level

(e.g. attire) to a much deeper level (e.g. personal beliefs). As such, this has provided me with a unique position to my Saudi participants. On one hand, being a cultural insider made it easier to establish a trusted rapport and empathy with them. On the other hand, exhibiting less of a cultural conformist attitude (e.g. not wearing Islamic attire) made it easier for my participant to express their views and critiques of their culture without the fear of being judged (i.e. social desirability).

On reflection, I have found this work a life changing project for me on a deeper personal level. Having been a non-cultural conformist made it difficult for me to relate to ‘culture’. However, delving deep in this concept, listening for hours to people both defending and criticizing different aspects of their cultures, trained me to acknowledge the value of culture and see it more from the eyes of my participants, free of my personal judgment. Thus, I am now still interested in creating a cultural change but rather within people’s frame of reference, not within mine.

## **1.8. Population of The Study: Transnational Saudis**

Perhaps the biggest factor influencing the movement of Saudis towards transnationalism is the Saudi national scholarship program. The Saudi government invests over \$2 billion annually for King Abdullah Scholarship program (KASP) which is set to be active from 2005 to 2020 [263]. KASP is one of the largest national scholarship programs in the world [8]. KASP was created to establish a ‘knowledge-based economy’ and bring about higher levels of academics and professionals to drive the ‘moderation’ movement [176][263]. It also aims at pursuing cultural exchange with other countries [263]; and opening the minds of young Saudis by exposing them to other cultures [176].

The number of Saudi students sent abroad has started from 6 students sent abroad for higher education in 1927 [8]. Then it has been increasing from 100 students in 1950s to 10,000 in 1980 [18]. Recently, launched in 2005, KASP initially aimed to send 50,000 students abroad but it has sponsored a greater number of students than its initial aim [8]. Indeed, the number of students abroad jumped to almost 200,000 students in the academic year of 2012-2013 [8][240]. Additionally, until recently (August 2019) Saudi women were required to have an relative male companion, which means more citizens were sent abroad as companions to female students [263]. Also, KASP sponsors families (spouses and children) of married students. English speaking countries are the most common destinations for Saudi students abroad, with the US and UK at the top of the list, respectively [8].

Although there is not much work done to rigorously capture socioeconomic backgrounds of Saudi students abroad, it can be estimated that they reflect different socioeconomical classes. That is because most of them, almost 83% are funded by the Saudi scholarship program (KASP) [8,176], and the rest are self-funded. [240]. This means they are sent abroad based on their academic qualifications, not socioeconomical status (not the elites) [263].

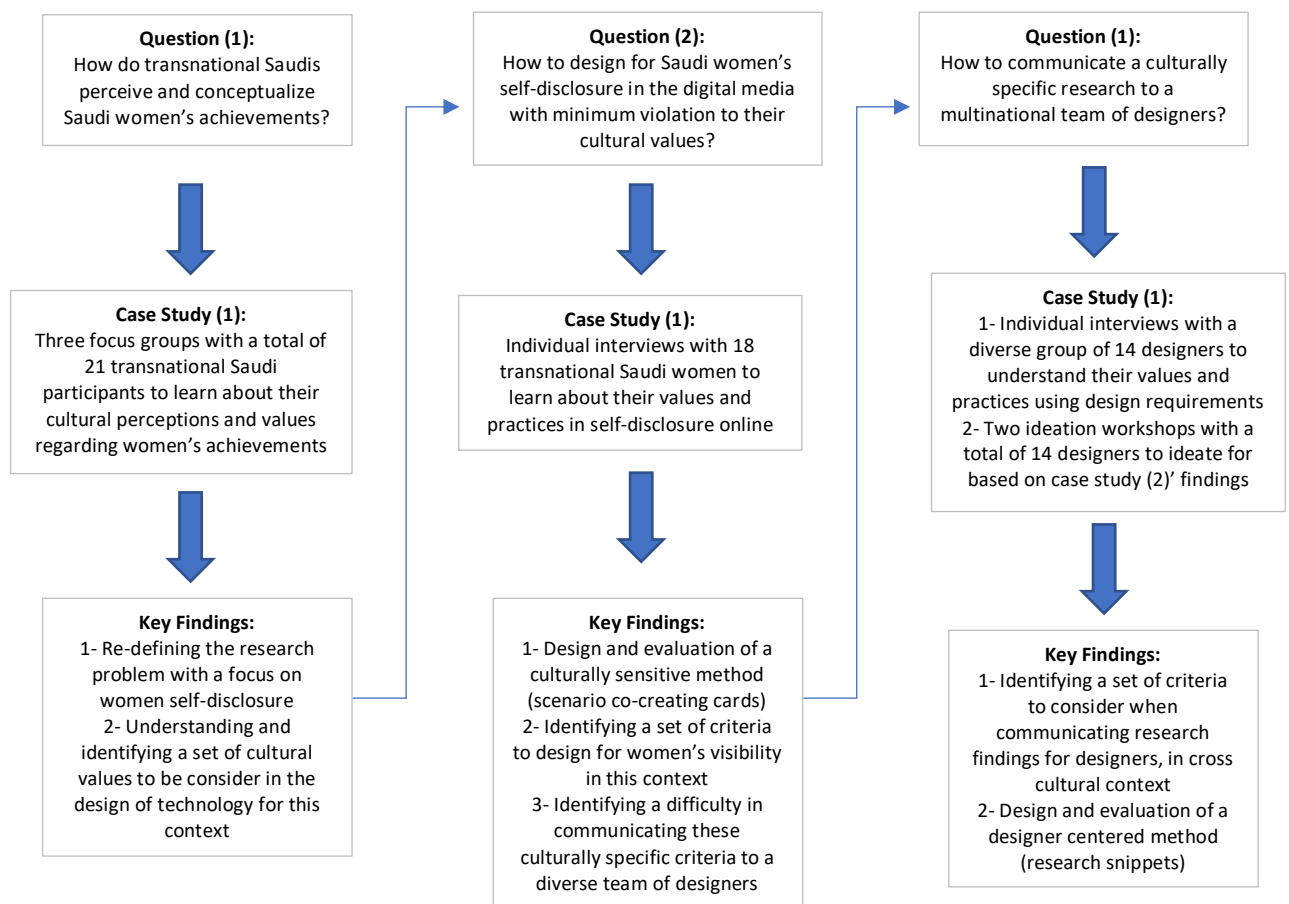
Overall, the social and cultural impact of this movement is evident among residents in Saudi Arabia [8]. Although there is some published work looking at the benefits of studying abroad in general [263], the gains and socio-economic impacts from this program are hard to track [240]. Some expect no to minor changes to be made and cited the strong conservative nature

of the Saudi society and the lack of seriousness of many students abroad as some of the main reasons [176]. On the other hand, there are concerns about the students abroad upon their return what political and social attitudes will they have and whether they will fold back to their conformist conservative society or they will sow seed of cultural, economic and political change [178]. Therefore, despite representing the wild cards, it is uncertain how Saudi students abroad will have impacts on their home culture upon their return [176].

Therefore, this target group, with their acculturation process and dual identity (discussed in **Chapter 3**), represents a remarkable opportunity for researchers to investigate a timely phenomenon and understand its cultural impact. They also a moving target which represents the cultural shifts and moves currently happening in Saudi society. For this, transnational Saudis have been chosen as the population of interest in this thesis.

## 1.9. Thesis Structure

**Figure 1.3** provides a visual representation of the chapters of this thesis and how they are connected.



*Figure 1.3 Structure of the Thesis: a diagram mapping the three case studies onto the key research questions and the key findings*



In **Chapter 2**, I describe my approach to the formulation of the design problem and how it evolved based on the data. This illustrates a bottom up approach to inform the focus of the design problem. I argue and demonstrate the significance of this approach in shifting the focus towards real-world problems, rather than observed symptoms.

**Chapter 3** contextualizes this thesis in the relevant literature on the concept of culture, cultural design, and Saudi culture. I introduce a bottom up approach in conceptualizing culture, and I propose construct it into a question-led framework to guide the design process. This outlines the different factors I employed which facilitated obtaining a deep understanding of the cultural context. I outline the significance of three factors: a bottom up approach, a transnational and a triangulated analysis.

**Chapter 4** describes my approach to developing a culturally sensitive method to elicit user values. I describe the procedure of the development and the evaluation of the method Scenario Co-Creating Cards. It outlines my contribution to value eliciting methods in Value Sensitive Design; providing insights into what makes for a value eliciting method and the demonstrating the significance of the cultural factor to be considered in these methods.

**Chapter 5** presents findings and design criteria to consider when designing for Saudi women's visibility. Taking these into account, I argue against the naïve designing for perpetuating cultural norms and I take a feminist stance into designing for empowerment *within*, not *against*, user values. By doing so, I introduce the notion of identifying what I termed "the sweet spot" which is a point in a spectrum spanning between designing for values and challenging values. This point represents the maximum acceptable level of changing current practice and thus represent the optimum point for creating change through design.

**Chapter 6** describes my approach to the acquisition of understanding designers' needs for an effective communication process of the research findings. It outlines the needs and pain points described by my participants regarding the different methods used in industrial setting to deliver design requirements. I thus propose three criteria for an effective communication: credibility, conversation and immersion.

**Chapter 7** illustrates taking these criteria forward into the development of my proposed method, the Research Snippets. Further, the chapter illustrate the evaluation of this method based on how much it did meet the criteria suggested and how relevant the ideas generated by the designers to the users and their cultural context.

**Chapter 8** discusses the overall culturally sensitive approach employed in this thesis and how it proved effective in answering the research questions presented in each case study. This includes limitations and suggestions for future work regarding the design of technology in cross-cultural contexts.

## 2.A Reflexive Approach Towards Exploring Design Problems

### 2.1. Overview

Despite emphasizing attending to user's values in the tripartite Value Sensitive Design (VSD) methodology [83], there is no clear articulation in VSD literature on how to incorporate users' values in the formulation of the design problems to be investigated in the first place. It is acknowledged in design literature that designers come to the design space *trapped* in their worldview based on past experiences, emotional state or particular perspectives [157]. Since VSD is intended to be integrated with other design approaches [82], I adopt a bottom up approach from Design thinking [67] to define and articulate the design problem from the perspective of the users. I suggest this as an essential part of the conceptual investigation within the VSD methodology to ensure that designers are tackling a real world and a relevant problem. By problem definition I refer to the phase in which researchers conduct an exploration and a thorough formulation of the problem to be tackled before proposing any solutions.

To demonstrate this in a case study, I identified an under-researched context, the perceptions of Saudi women's achievements among transnational Saudi migrants. Since this is an exploratory qualitative study [54], the initial problem defined is not rigidly structured, which is the case of typical design problems, rather it is meant to evolve in an open space and be formulated as the study unfolds with users from the ground up, informed by the understanding of their cultural values and perceptions.

The purpose of this study is to establish the foundations (explore the problem and the context) for the overall work in this thesis. Whereas the particular objectives here are twofold:

- 1 Understanding the perceptions of women's achievements among transnational Saudis.
- 2 Developing a ground up approach for scoping the design problem as an essential element in Value Sensitive Design.

### 2.2. Background

#### 2.2.1. Problem Definition in Design

Design, at its core, is a problem-solving activity. This because it is concerned about (i) responding to people's needs and (ii) converting actual (unsatisfactory) situations into desired realities [205]. In fact, any work that involves converting the actual to the desired situation, is considered to be a form of design; which means policies, institutions and behavior are all design objects [205]. Since it focuses on both 'actual' and 'desired' situations, design is as much a matter of finding problems as it is of finding solutions [148]. One of the designers' job is to find and understand problems that are difficult to articulate by people, before proposing any solutions [148,205]. For this reason, many design models classify 'problem definition' as the

first step of the design process, using different terms such as *scoping*, *setting*, *exploration* or *formulation* of the problem space [179].

For instance, Bransford and Stein [36] proposed a problem solving model represented by the acronym IDEAL<sup>1</sup> which consists of five components of the problem solving process; the first of which is ‘identify a problem’. Dorst [67] suggests that design leans on five main activities: formulating (a problem), representing, moving, evaluating and managing. Likewise, Lawson [148] suggests that design consists of formulating (problems), moving, representing, evaluating and reflecting. Notably, the most common design approach, Design Thinking, is a process of resolution of problems and creation of solutions [157].

However, despite acknowledging the importance of problem definition in the design process, in practice, there is more emphasis on problem solving [205]. The existing literature has focused on design strategies for producing quality solutions, while less attention has been given to how designers approach design as a move towards problem formulation [58]. Designers are typically solution focused rather than problem focused [148]. In many cases, they express a problem in terms of a solution concepts (E.g. X wants Z) [128]. The problem with paying so much attention to the solutions and final product is that it might hinder a sufficient reflection on the overall process [148]. Without paying attention to problem definition there is a risk of tackling the wrong problem [179]. Therefore, there must be an active rejection of solution concepts early in the problem definition process [128]. Although designers are expected to contribute problems, they still face the difficulty of integrate multiple kinds of knowledge and information before proposing solutions [36,148]. This is perhaps because a design problem is a multidimensional concept and the design process is not as clear and logical as the scientific method [148].

### **2.2.2. What is a Design Problem?**

A problem can be defined as “*a discrepancy between an initial state and a goal state, and there is no ready-made solution for the problem solver.*” [36]. Simply put, “A problem is an issue or concern that needs to be addressed” [54]. This means the problem definition process is an analytic sequence of determining the current undesired elements of the problem and the desired requirements of a successful design solution [39]. Lawson [148] suggests that the difference between identifying a problem and a solution is as the difference between analysis and synthesis, where “Analysis is the ordering and structuring of the problem [while] Synthesis is an attempt to move forward and create a response to the problem – the generation of solutions”.

Simon [216] discussed the difference between well-structured and ill-structured problems providing characteristics for each, one of which is whether there is a definite criterion to test proposed solutions. Ill structured appears when there is a large amount of information about the actual real world [216]. Bransford and Stein discussed the difference between routine and nonroutine problems, the later in novel and requires new thinking [36]. Design problems, in particular, are classified as ill-structured, taken from complex real world contexts, have

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<sup>1</sup> The acronym IDEAL stands for the 5 components of the design process: Identify problems, define alternative goals, explore possible strategies, anticipate and act, and look and learn

multiple undefined criteria, no agreed upon objective, and no right or wrong answers – only good or bad solutions [128][36].

However, there is no single universally correct definition exists of a complex problem [128]. Exhaustive formulation of complex problems is impossible as they require subjective interpretation and are organized hierarchically [128,148]. For this reason, scholars have identified some characteristics of what makes a good construction of a problem. Jacques and Talbot (1977) suggested that a well-formulated problem statement (WFPS) is: (i) clear, (ii) not based on assumptions, (iii) states for whom it is a problem, (iv) states who might support or oppose to the change, (v) states the purpose of the intervention and (vi) states where it might occur [128]. Whereas, Schön simply suggested that problem setting is the process of defining ends to be achieved and the means by which these ends are achieved [205]. However, before planning on formulating the right problem statement, one should ask first, where does the problem originate from in the first place? Does it represent real world problems?

Generally, problems originate from the rapid societal changes which require solution to an increasing number of problem and challenges [36]. Thus, the first origin of a design problem is the idea of a need [107]. For the purpose of this chapter, we adopt the definition of a need as “*innate psychological nutriments that are essential for ongoing physiological growth, integrity and well-being*” [61]. A need is one of the two forces that create problems as Jacques and Talbot identified, which are: the drive to satisfy a need, and the drive to achieve a vision [128]. Others identify alternative perspectives of the problem which is constructed during the exploration phase of a given context [179]. Furthermore, solutions to problems were also identified as a cause to emerging new problems [36]. This means both components of the design process – problem and solution – uncover new problems. Therefore, the overall design process is identified a major space during which problems and solutions are constructed together [107,148,205]. Indeed, problems in real world do not present themselves, they need to be constructed during the design process [205]. Schön suggested that the reflection-in-action makes the designer reconstruct the problem or the model of the phenomena [205]. Similarly, Lawson [148] suggested that escalation and regression are two ways to explore the hierarchy of the problem. However, these models do not consider the user as a main resource for identifying problem. In a truly user-centric design situation, designers need to identify user-centric problems as much as proposing user-centric solutions.

For this, the concept of *empathy* has been identified as an essential component of the Design Thinking model. Thomas Lockwood defines Design Thinking as: “*a human-centered innovation process that emphasizes observation, collaboration, fast learning, visualization of ideas, rapid concept prototyping, and concurrent business analysis*” [157]. Literature on Design Thinking place a great attention to the first phase of the design thinking process as an exploratory and user-centered learning phase. This phase is suggested to address many cognitive biases gaps in the design process including projection bias (projecting present into future), egocentric empathy gap (overestimating similarities between what designers value and what users value) and focusing illusion (overreacting to a specific factor in the design space) [157].

This thesis considers design as a problem-solving process in which the definition of a problem is as important as the proposing of solutions. It places a great emphasis on problem definition from the ground up with users before proposing any solutions. It aims at constructing well formulated problem statement (WFPS) inspired by the theories of Jacques and Talbot [128] and following the methodology of *Value Sensitive Design* [80]. To do so, this chapter explores a bottom up approach towards defining a design problem and integrating this with a value sensitive approach to design.

### **2.2.3. Problem Definition in VSD**

Value Sensitive Design (VSD) is a theoretical and methodological framework for design, iterating between conceptual, empirical and technical investigation [88]. In their survey of VSD methods, Friedman et al [82] listed steps of undertaking a VSD process where they suggested *getting started* with a core aspect: value, technology, policy or context of use. They demonstrated some examples where scholars started with different aspects. For instance Woelfer et al started with a population and a value (homeless young people - safety) as a starting point as in [258]. Whereas Denning et al [62], started with a technology (cardiac device). Typically, though not necessarily, VSD work starts with a conceptual (theoretical) investigation, which is a philosophically informed analysis to understand a proposed technology [213][88]. It is consisting of two activities: identifying stakeholders affected by “technology under study” and values implicated by use of technology [60]. For this, a list of values was suggested in VSD literature as starting points for this philosophical analysis [213].

However, this has been criticized for enforcing a top down approach. Le Dantec et. al. argued that the defined twelve values of ethical import in VSD privilege a discursive definition of values over discovery of values and results in designing system aligned with these twelve values instead of contextually expressed values [150]. Thus, scholars have started to support the notion of discovered values. For instance, Leong and Iversen [156] promoted working with participants to support the discovered of values, as they allowed participants put together vision of a classroom of future. Shilton conducted coding of field notes with focus on the relationship between specific concepts to allow discovered values [214]. It can be deduced from these examples that the design space is already decided upon and the researcher is only investigating relevant factors (and values) to the given problem.

Moreover, in the survey of VSD methods [82], the authors review a collection of 14 VSD methods developed for different purposes. Only one of these was developed for the purpose of expanding the design space: co-evolution of technology and structure. This method considers the technology in relation to other factors such as policy, laws and social norms, instead of in isolation. Thus, it is suited for projects where technology is the central point of the study. Recently, Friedman and Hendry [83] provided an updated version of the methods where they expanded the list to 17 VSD methods. However, none of which was concerned about the problem definition process.

Therefore, the question remains: how do we define the design space in the first place, before ‘allowing values to be discovered’ in VSD? Although VSD emphasizes a proactive orientation to influence the design early in the design process [83], and despite the emphasis of other design approaches on ‘problem definition’ as a primary step, this is still not explicitly articulated in

VSD literature. Although the conceptual investigation is supposed to do this role, but since it is ‘philosophically informed’ it does not start with users. Whereas an initial empirical investigation can allow this process to take place. Since empirical investigation is social scientific research to understand people and contexts [88], it can inform conceptual investigation [63,83].

In this thesis, I take a step back and conduct a bottom up approach to define the design problem from the ground up with users, by conducting an initial empirical work. By doing so, I demonstrate how this step is crucial for the development of the subsequent theoretical and empirical investigations within the VSD process.

#### **2.2.4. Cultural Context of the Study**

The persistent gender inequality and the deep-rooted exclusion of women at legal, social, economic and political levels is a unique situation in Saudi Arabia which remains unmatched and perhaps the most severe in the Muslim world [18]. Women are not regarded as equal to men in the eyes of law and society, daughters receive half the inheritance given to sons, the testimony of one man is equal to that of two women, and until recently, women were not allowed drive or travel abroad without a permission from a male relative [262]. The exclusion and dependency of Saudi women is attributed to the Wahhabi teachings which are considered to be the most restrictive within the Islamic tradition [18]. As such, although Saudi leadership has become hailed as a progressive force gradually introducing reforms and supporting women’s emancipation and gender equality, they might hesitate as this may antagonize conservative religious scholars whose defense is needed at times of political crises.

However, Saudi Arabia has been having remarkable changes the past few years in terms of women rights [267]. Visibility of women has been increasing both online and, on the ground and stories of high achieving women have altered the perception of the state and women although coexist with stories of victims [18]. The recent reforms regarding allowing women to drive, returning the physical education to girls’ schools and allowing them to work in the army are all indications for expanding places for women in the public sphere [267]

Despite the recent increased gender equality in the Saudi society, there is still a persistent conservatism and predominant social norms cast men as breadwinners and women as caregivers [240]. Although Saudi males have become more open to women’s rights they are still less convinced and less supportive of women’s liberation compared to the extent to which females are [176,177]. Wealthy, westernized and elite women are more vocal and enjoy far more freedom than young marginalized divorcees and mothers [18].

For this, visibility of women is still a concept connotated with bias for specific type of women. Thus, the recent changes and the increasing visibility of women are yet to reflect the average women practices. For instance, despite how the new technology has opened doors for interaction between men and women, it nonetheless has created a threat to women’s reputations as photos of them displayed in public can result in serious consequences [18]. Therefore a persistent problem remains is that women are still perceived as symbols of piety and modernity representing anything but themselves and a cornerstone to differentiate Saudi culture from others [18]. This chapter explores the publicly shared cultural perceptions of women and the

societal expectations and restrictions surrounding their visibility. Taking this understanding into consideration, the initial research question will be re-formulated accordingly.

## **2.3. Methodology**

### **2.3.1. The Study Objectives: Scoping the Design Problem**

This study exemplifies the foundational phase of the process aiming to engage with participants and develop empathy and understanding of their values and cultural contexts before formulating the design problem. The overall goal of the study was to explore the design space of the cultural perceptions of women's achievements in the context of the reforms in Saudi society. The concept of Saudi women's achievements was inspired by the recent reforms in the country which included the increase visibility of women's achievements. As such, 'achievement' was our initial point to provide some structure and boundaries. However, we remained attentive to evolving insights from the study [181] [181], our provisional question was drafted as:

*How do transnational Saudis perceive and conceptualize Saudi women's achievements?*

Since qualitative questions are best set to be explorational and discovery-oriented [6], this initial question was intentionally set to be iteratively scoped as the data unfolds. Particularly, taking the stance that a bottom up approach to scope the research question is not only a matter of composing a well drafted question, rather it is a matter of ethical representation concern. This means, when proposing to study people, especially marginalized populations, it is paramount that the research question represent their realities from their perspectives not the researcher's own view [6]. Ethical considerations should be taken as early as in the process of deciding on a topic and formulating a research question to assessing the associated risks [6,78].

### **2.3.2. Research Design: Exploratory Case Study**

The implication the bottom up process is that the methodology employed to achieve this would be adopted an inductive approach towards the design of this study. Inductive approaches, as opposed to deductive ones, aim at moving towards discovering principles and patterns, before forming any conclusions [102]. Therefore, the design of this study is inclined towards the inductive approach while flexible bounded to a provisional research question.

Since this study is the foundational work of this thesis, aiming at exploring patterns, values, perceptions and views of participants and their context, I adopted social constructivism as a methodological perspective. Following a constructivist/interpretivist paradigm implies that truth and meaning do not exist independently rather they are created through the interaction between individuals and their world, thus meaning is constructed and not discovered [102].

Therefore, the theoretical perspective adopted in the design and analysis in this thesis is that of constructivism and interpretivism [207]. In constructivism, knowledge is constructed through understanding and reflection on events rather than lived experiences [19]. Interpretivism implies seeking culturally driven interpretations of social realities [56].

Since little is known about this phenomenon, an exploratory study was selected to facilitate learning about the major factors contributing to this phenomenon [102]. Case studies are a strategy of inquiry which provides in depth and detailed information about a phenomenon [54].

An exploratory study aims at defining the research question(s) and procedure for a subsequent study [147]. I adopt an exploratory study strategy as it allows generating multiple accounts and perspectives to establish rich and detailed understanding of the context under study [102].

### 2.3.3. Research Method: Focus Groups

To understand how participants conceptualize women's achievements, and to investigate the values and attitudes underpinning their conceptualization, semi- structured focus groups [54] were conducted to allow individuals to express their thoughts the way they usually do among their peers in the same cultural context. Since the unit of analysis was communities and I was more interested in exploring publicly shared cultural perception and values than the individual ones, focus groups were appropriate methods in this study to explore how people conceptualize and present their viewpoints when interacting with others.

The workshops consisted of two activities; exploring the concept of achievements and discussing Saudi women's achievements. In the first activity, participants were given the opportunity to define the concept of 'achievement' and how they would evaluate others' works as achievements. In the second activity participants were asked to list examples of women's achievements and then they were provided with visual cards (**Figure 1**) of Saudi Women who might be perceived as achievers in different areas (scientists, models, politicians, *etc.*).



Figure 2.1 Visual cards representing exemplar women's achievements

Each card had a woman's picture and name. Participants were asked to state whether they know of these women and to express their opinion regarding these women's work and achievements. **Table 2.1** shows brief information about the selected women.

After the workshop, each participant was compensated for their time with a 20 GBP Amazon gift card. Then, a short follow up survey was sent to the participants to ask for their reflection and feedback. According to the survey, which was sent participants after the study, some participants had been hesitant to attend the workshop because it would be mixed gender. This drew my attention to three things; 1) the difficulties to find participants who are willing to participate in such workshops, 2) the difference between the two subcultures in Saudi Arabia, which are men's and women's cultures (due to the segregation). Therefore, gender segregation was adopted in the following two workshops. A male participant in the first workshop, who



was interested in the topic, was offered an opportunity to collaborate by conducting the second workshop with male participants.

Name	Work
Ghada Al Mutairi	A scholar, inventor, entrepreneur, a professor of Pharmaceutical Chemistry; and Director of the Center for Excellence in Nanomedicine and Engineering in the Institute of Engineering in Medicine at the University of California, San Diego (UCSD). <a href="https://en.wikipedia.org/wiki/Adah_Almutairi">https://en.wikipedia.org/wiki/Adah_Almutairi</a>
Haifaa Al Mansour	A female Saudi filmmaker, and one of the country's best known and most controversial directors. <a href="https://en.wikipedia.org/wiki/Haifaa_al-Mansour">https://en.wikipedia.org/wiki/Haifaa_al-Mansour</a>
Hanadi Al Hindi	the first female Saudi to become a commercial airline pilot. <a href="https://en.wikipedia.org/wiki/Hanadi_Zakaria_al-Hindi">https://en.wikipedia.org/wiki/Hanadi_Zakaria_al-Hindi</a>
Hayat Sindi	A medical scientist and one of the first female members of the Consultative Assembly of Saudi Arabia. One of the most influential Arab in the world and one of BBC's 100 Women. <a href="https://en.wikipedia.org/wiki/Hayat_Sindi">https://en.wikipedia.org/wiki/Hayat_Sindi</a>
Leena Al Qahtani	Participated and won in the Kingdom's Mowhiba 2014 program for scientific creativity and submitted a paper on chemical fingerprinting as an educational tool. She was nominated to participate in Intel's competition. <a href="http://saudigazette.com.sa/article/104002">http://saudigazette.com.sa/article/104002</a>
Manal Al Sharif	A women's rights activist who started a women's right to drive campaign in 2011. She is a computer scientist, Information Security Consultant and has a Cisco Career Certification. <a href="https://en.wikipedia.org/wiki/Manal_al-Sharif">https://en.wikipedia.org/wiki/Manal_al-Sharif</a>
Model Roz	A fashion model on Instagram, and one of the highly followed Arab models on the platform. <a href="http://www.arabnews.com/node/1530036/lifestyle">http://www.arabnews.com/node/1530036/lifestyle</a>
Muna Abu Sulaiman	A lecturer, businesswoman and co-host of ("Speech of the Soft") television show. <a href="https://en.wikipedia.org/wiki/Muna_AbuSulayman">https://en.wikipedia.org/wiki/Muna_AbuSulayman</a>
Samar Badawi	A Saudi Arabian human rights activist. She was awarded the 2012 International Women of Courage Award by the United States Department of State. <a href="https://en.wikipedia.org/wiki/Samar_Badawi">https://en.wikipedia.org/wiki/Samar_Badawi</a>
Sarah Attar	A track and field athlete. One of the first two female Olympians competed at the 2012 Summer Olympics and in the marathon at the 2016 Olympics. <a href="https://en.wikipedia.org/wiki/Sarah_Attar">https://en.wikipedia.org/wiki/Sarah_Attar</a>

*Table 2.1 Women shown on the cards*

#### **2.3.4. Participants and Population**

The study was conducted with three focus groups with 21 transnational Saudi participants who were in the UK mostly for education purposes. Although they might be less representative to the Saudi context as a whole, however this was part of the discovery phase, to learn whether there is a value in studying this particular transnational group. I discussed in the previous chapter this population and the value this group has in leading the current progressive cultural changes within the country [176].

The participants were recruited mainly through word of mouth and a Twitter advertisement through the 'Saudi Club' in Newcastle, which has over 7,000 followers. The Saudi club is a semi-informal organized group of Saudi students in Newcastle. They ranged in age from 21 to 40, and education levels from bachelor's degree students (or holders) to PhD students.

We initially aimed to conduct mixed gender workshops to reflect the shared understanding between men and women in addition to other different groups within the Saudi society. The following workshops were gender segregated, one with five females and the other with eight

males. Each session lasted for approximately two hours. Each participant received a £10 Voucher as a compensation for their time. The sessions were conducted between March and May 2016. **Table 2.2** shows brief information about the workshops.



Figure 2.4 The mixed-gender workshop



Figure 2.2 The all-male workshop



Figure 2.3 The all-female workshop

	Study	Participants	Recruitment	When	Duration	Place
1	Mixed Focus Group	8 (3 M, 5 F)	Mailing list and social media advertisement	7 March 2016	2 hours	Library – Newcastle University, UK
2	Male Focus Group	8 M	Researcher' selection and word of mouth	25 May 2016		
3	Female Focus Group	5 F	Mailing list and social media advertisement	26 May 2016		

Table 2.2 The focus groups conducted for this study

### 2.3.5. Transcription and Analysis

The workshops were conducted in Arabic, but it was also allowed for participants to use English as they were mostly bilingual. Thus, occasionally some participants would express in English but most of the discussions was in Arabic. The workshops were transcribed by the researcher in Arabic and analyzed in English. Then the chosen quotes for the findings were translated in English. This decision was made to ensure that meanings and expressions used do not get lost in translation.

Since the study follows an inductive approach where patterns were identified from the data to develop conceptual categories [102]. To facilitate this, I used a process of a *thematic analysis* [37]. Thematic analysis is a data reduction and descriptive strategy that facilitates segmenting, categorizing, summarizing and reconstructing data to allow capturing important concepts (themes) [96]. The analysis process aimed at giving meaning to the data by providing description to the data and then breaking it into smaller parts forming different categories [102]. The analysis started with the first workshop using NVivo, which is a software for facilitating

storing, coding and visualizing qualitative data [11]. The data from each focus group was used to extend, compare and validate the data from the other focus groups to reflect the shared understanding between men and women. Starting from the provisional research question as a hypothesis, the data was examined for relevant concepts to address or redefine the question. This took a process where the research question (or problem) was clarified and redefined.

## 2.4. Findings

The study was based on an overall assumption that there is a lack of awareness of the achievements of women, thus there might be a need to increase the visibility of women, as explained in the methodology section [3.1]. This assumption was proved in the sessions as participants revealed a poor awareness of women's achievements and the women presented on the cards despite being among those who had received recent media attention. For instance, as the cards were distributed (XF2)<sup>2</sup> asked: *"Is it ok if I don't know any of them"*. Also, another participant (XF4) gave a similar statement when commenting on the scientist Ghada Almutairi:

*"I know of her, the only person I know (laugh)... I rarely hear of Saudi people and I've heard of her, so she is something ..."*

However, this is not attributed to the lack of visibility *per se*, as originally hypothesized, rather to the problems associated with visibility as discussed below.

### 2.4.1. The Lack of 'Positive' Visibility of Women

The typical contexts in which Saudi women are visible are considered part of what participants perceive as a negative visibility of women. These include either negative aspects such as controversial acts to social norms, or in best case, minor achievements of women that are not worthwhile of visibility. For both cases, participants blamed the 'media' for portraying Saudi women in contexts that are not worthwhile.

The '*irresponsible*' media is blamed particularly for promoting and giving exposure to acts perceived as controversial more than those perceived as honorable. For instance, Manal Alsherif (see **Table 2.1**) is known for her activism (as a negative act), more than her achievements as a female computer scientist. On this, (XF2) commented, jokingly:

*"but we just know the first achievement (the activist side)"*

Likewise, (M2) commented on a female activist and how she was widely visible in the media although, in his belief, she is representing only a negative side of women's visibility:

*"when someone [like this] appears for example, and I'm sorry I consider her ridiculous, she appears and talks in social media, and they consider her one of the influential personalities and an achiever just because she drove her car for a bit, this is the negative part that I feel, it is loathsome, honestly"*

Whereas 'real' achievements seem to be ignored or at best hidden in a 'corner of a newspaper' as per (M1)'s comment:

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<sup>2</sup> For clarity, I identify participants using the nomenclature XYZ, where X indicates a mixed gender workshop and [null] indicates specific gender workshop; Y is the gender of the participant: male (M), female (F); Z indicates a given ID number for each participant in each workshop.

*“but the media unfortunately covers achievements that are not real achievements, and it raises them, whereas the real achievements do not get exposure, even if they did it would be in a corner in a newspaper and internal pages that no one would know about”*

For this, (M7) explicitly described ‘irresponsible’ media as dismissive to ‘real’ achievements and stories that are worthwhile of visibility:

*“The irresponsible media which people usually follow does not present people who deserve to be visible ... popular media does not look for these things [achievements] and does not have a commitment or responsibility towards them”*

The point raised by (M7) about real or worthwhile achievements was echoed by another participant (M8) who expressed his disappointment of local media which features ‘secondary’ types of achievements, not representative of the country:

*“unfortunately, I’d like to add a point about Saudi media, it is very weak compared to other media that are controlled by non-Saudis who represent Saudi Arabia as a country ... and they feature [Saudi] women’s achievements that I’d see as secondary ... not a type of achievements that I would feel proud of when I see ...”*

Similarly, (M5) expressed annoyance at ‘propaganda’ made out of ‘trivial’ things:

*“when I hear the word achievement, I get mixed feelings, is it really an achievement? Or is it just propaganda to raise the status of women? ... in the end we all wish for our daughters, sisters or wives to achieve something, but when the news is about something I’d describe as trivial sometimes and gets exaggerated in the media as an achievement, this frankly bothers us all”*

Consequently, this notion of negative visibility and propaganda has created what participants perceive as ‘delusional achievements’ of women. This point was particularly emphasized in the men’s session. For instance, (M4) stated:

*“when I hear ‘Saudi women’s achievements’, first thing comes to my mind honestly is that it is not a true achievement, which means this is maybe a kind of achievement that has already been accomplished by men, but because of the lack of opportunities for Saudi women, and also the challenges they face in Saudi Arabia, also the perception of Saudi women’s achievements as a new thing in the Saudi society ... thus some achievements started to appear that I do not see as achievements ...”*

Furthermore, such doubts were expressed even in cases where most participants considered something as an achievement. For instance, most participants praised the work of a popular scientist, Hayat Sindi. However, participant (XM1) still had doubts over the credibility of what the media portrayed about her:

*“that’s what we got from the media, but I don’t trust the media honestly not underrating her ... I don’t know but the media praise people and ignore others ... these are things we have to validate ...”*

Interestingly, despite distrusting the ‘media’ and blaming it for the negative visibility of women, participants acknowledged the role of society in influencing the media by presenting what is believed will get audience attention. In one case, there was a discussion about the media focusing on a woman’s appearance (Leena Al Qahtani), when she appeared fully covered, on stage to receive an award; instead of presenting her achievements, the following conversation took place in the first session:

XF5: *“I feel she is good, but the media is not good”*

XM1: *“she is not to blame”*

XF2: *“the problem is the media represents the public eventually ... it promotes what the public like”*

The same notion of returning the ball to the audience’s court was echoed in the second session:

M5: *“the [media] wants something that makes money, and this [type of achievement] doesn’t bring money”*

M3: *“but the media is influenced by the society, it depends on the views, if the media presents something and the society starts to watch it, then the media starts to be influenced and presents more of that thing ...”*

M4: *“it is a controversial issue, who is directing who, is it the media directing the society or is it the society directing the media”*

From this, it is clear that the ‘negative’ visibility of women is not the media’s responsibility alone. The media is perhaps only a symptom of a social problem reflecting the real world. Investigating this issue in the data, an essential problem was identified, which is the lack of appreciation for women’s achievements.

## **2.4.2. The Lack of Appreciation for Women’s Achievements**

The notion that negative visibility for women is the prevalent norm, was attributed at different points to the societal lack of appreciation for women’s achievements. This means regardless of the media attention allocated to women’s achievements, there is still an overall lack of appreciation for them. This due to four factors: (i) the limited definition of what makes an achievement (ii) the adherence to the cultural values (especially religion and clothing), (iii) gender-specific roles, and (iv) the social contribution.

### **2.4.2.1. The limited definition of achievement**

From the perspective of my participants, the definition of the concept ‘achievement’ seems to be limited to specific areas, such as science and academia, and to specific entities such as inventions or patent. This is summarized in (M8)’s comment who considers that there are no real achievements by women who are considered Saudi:

*“I can say that I do not see notable achievements for Saudi women, frankly, and this is because the lack of having a suitable environment for women to achieve something ... all those we talked about their achievements, the reason is they are not in Saudi”*

This is despite the fact some participants suggested that even “accomplishing a daily to-do list” (F4) should be considered achievements. Moreover, participant (M6) explicitly suggested widening the definition of achievements:

*“but there are many achievers, it does not always have to be something technological or such, maybe something seems simple in the eyes of the society, but she is raising like 8 children ... not all achievements have to be scientific”*

However, ‘in the eyes of the society’, it seems that non-scientific areas such as art, fashion, singing, acting or music were underrated or even condemned. For instance, work as a model was regarded as *“not achievement ... but a disgrace”* (M8), *“White slave trade”* (M1), *“she did something wrong”* (XF3) and *“why didn’t she become a model in Hijab?”* (XM2).

This is evident in (XM1)'s comments who considered the mere act of defining something as an 'achievement' is a social responsibility that should be taken seriously:

*"now, if I consider what she's doing is an achievement, it's like I am cultivating a bad culture for the country, and this is a responsibility, so what is she doing I don't see it as a pride, it's negative"*

Likewise, participants who said they would see work as a model as an achievement, stated their responsibility always to stick to their cultural values to make such a judgement, as in (XF2)'s comment:

*"[if] I separate myself from my culture and religion and then evaluate her, ... I'd say she has achieved something ... otherwise, she is so provocative, and I feel she is really inappropriate ... my criteria, my society's and religion's criteria"*

A sense of responsibility to create a shared cultural concept that is believed to bring collective good to the society -despite one's individual conception – reflects the significance of retaining cultural values in participants views and practices.

#### **2.4.2.2. The cultural values**

The restricted definition of achievement is evident even within scientific/academic achievements. This is due to another factor, which is abiding by cultural values. This was explicitly expressed in (F3)'s comment about how women would still be always judged even if they are high achiever:

*"look my dear, it is always the case that even when there is an inventor [achiever] who did something wow they would always go back and moralize about her not being fully covered, then when this woman [appeared fully covered] and indeed achieved something, they did not talk about [her achievement] but rather glorified her black cover, then why did they not acknowledge her achievement?"*

It is a remarkable point that the society would consider only a few types of achievement as worthwhile of visibility, but when these are visible, they would not receive the expected appreciation. Rather, achievers would be put under scrutiny of whether or not they are abiding by the social or religious norms. This is particularly the case when it comes to clothing. An example of this is (M3)'s comment when he expressed his opinion about a Saudi female scientist who appeared in the media not wearing Islamic clothing:

*"I saw her on TV ... I can't remember exactly what her achievements are ... but I would be prouder if she was wearing hijab"*

From his comment we can see (M3) was not aware of the scientist's specific achievements, despite her being visible in media and despite the fact he did see her. The other thing is that he still feels less proud of her for not abiding by religious clothing. This reflects a societal emphasis on the importance of religious clothing, which sometimes create an obstacle for women to choose what is considered appropriate clothing. Despite wearing hijab, (XF2) stated this difficulty:

*"I guess the society always, hijab, it is one of the things we face now as an obstacle"*

In her comment, (XF2) referred to the societal emphasis on wearing hijab as an obstacle perhaps more than hijab itself. Interestingly, participants stated that even adhering to religious clothing is itself is difficult and perhaps even more challenging than 'abandoning' it. This was

stated by a male participant, (XM2), who commented on (Leena Al Qahtani) the fully covered woman who won a scientific award:

*“[she is an achiever] it’s because there is a struggle and women started to appear without hijab while she is still in her hijab”*

The struggle (XM2) refers to here is the persistence in wearing the religious clothing with a full cover (including the face) despite the progressive tendency among women who appear in media to not be fully covered even when wearing hijab (head cover). To this (XM1) agreed by referring to this as ‘abandonment’ implying the disagreement with such acts:

*“there are women, like the one who abandoned her hijab, like the one in the UN”*

For those fully covered and who yet succeed at something, (F2) stated she would give them extra credit as the difficulty they face is even higher than that for the non or partially covered who face societal judgement. This is despite (F2) not being fully covered:

*“I know women who were fully covered ... I feel they were dedicated for their religion yet they achieved something ... despite the difficulties they reached their goal, so I give them more credit ... although those not covering the face are also achievers, but compared to those covered I’d say the covered struggled and reached their goals despite the challenges”*

Thus, from all these comments, we can infer that women struggle either way, with or without hijab there are challenges associated with each. The dominating factor here seems to be gender. This is evident in the following excerpt:

(F2): *“appearance is important in our society ... we have the problem that men are disgraced by nothing”*

(F1): *“women are held accountable more”*

Stating the importance of religious appearance while stating it is more emphasized on women revealed the gender factor, discussed next.

#### **2.4.2.3. The gender factor**

From these comments we can see that regardless of whether it is a positive or negative visibility of women’s achievements, there are always stronger measures than ‘achievement’ alone: one of which was religion. Interestingly, this was stated to be used differently between genders, as in (XF1)’s comment:

*“the [male] singers we have, we praise, follow and like them although what they are doing is wrong or rather Haram [forbidden in Islam] but this [female] model [is not praised] ... we evaluate things as we like, we say what this model is doing is Haram, because she is a woman ...”*

In her quote, (XF1) referred to double standards in using religion as a way to moralize about people’s work based on their gender. She also attributed this to “the macho” society:

*“our society is mostly masculine ... it is a macho society ... they do not trust women, men never give trust to women, always see her as suspicious ... maybe for some men, they wouldn’t marry a female doctor ... even if she wears hijab or niqab ...”*

Additionally, (XF1) raised a critical point about the fact that even when a woman is doing something not religiously forbidden and also considered an achievement by most societal

standards, such as being a doctor, the gender factor would still result in a negative attitude towards women. For a doctor, the gender factor lies in the nature of their work in a gender mixed environment. To this (XM1) confirmed that working as a doctor means a woman's "*chances to get married would be less*" which is another reason behind "*disparaging [women's] achievements and it restricts achievements*" (XF2).

Another participant, (F2), also referred to an example of an achievement, being a pilot, that is not religiously controversial, but it is still condemned as it is perceived as a gender specific job:

*"... a plane pilot, this is an achievement but some people in our society would be like 'oh my god what is this, she is doing a man's job', it is the gender here ..."*

This means, that appreciation for women's achievements is clearly conditional as opposed to that for men. This was stated as the normal difference between men and women in (XF4)'s comment:

*"she will get condemned by people ... this is something happening everywhere, a woman is different from a man and we should accept that"*

However, accepting the gender difference does not mean only accepting double standards in judging women, but interestingly, includes the double acknowledgement for women's achievements due to the difficulties they face compared to men. Indeed, participants considered Saudi women's achievements as "*double-achievements if it was something men can also accomplish, and if not then it is a multiplied achievement*" (M7). These challenges were described in (F2)'s comment:

*"the challenges, she has responsibilities ... family and upbringing ... she is required to do a lot ... it's multitasking ... I see in the West there is some sort of equality, so when women achieve something, it is kind of similar [to men] but in Saudi Arabia, the family roles are almost all the woman's burden ... so she struggles more to achieve something"*

For this, (F4) expressed why she feels happy about seeing women's achievement in the media:

*"when the news is about a woman I feel like wow, not because I am a woman but because I know it is [difficult]... especially when I see her with her children in the news ... if it is a man, I expect such a thing from him, it's their brain, physically and socially [different]"*

Despite articulating this double acknowledgement, the previous factors discussed demonstrate a stronger influence on the way the society judge women's achievement. Additionally, an overarching influential factor for judging whether something is an achievement is social contribution, the extent to which women's achievements represent societal ambition.

#### **2.4.2.4. The social contribution**

Achievers, particularly women are expected to accomplish things that are beneficial for the collective and not their individual self. This was evident across the sessions when participants considered some achievements as 'individualistic' by using phrases such "for herself", "personal level" and "from her perspective". For example, (M8) made a clear distinction between achievements that are representative to the society which are worth acknowledgment and those that are personal, and he would not acknowledge them as achievements:

*"for instance, featuring the role of women in media ok it is considered an achievement for them, but it does not represent the Saudi society"*



Another example, in the first session, (XM3) considered a female athlete who participated in the Olympics as accomplishing something for herself:

*“I think this is an achievement ... although she was in last place ... it’s not for the country, it’s for herself”*

Similarly, in the second session, (M5) commented on a female actress by stating it is ‘for herself’:

*“she is an actress, this is not an achievement, maybe it is an achievement on a personal level this is for her, but it is not beneficial for the society, it is not a novelty”*

Likewise, in the female session they also took the same view. For instance, they commented on the work of a Saudi model by stating it is “for herself” and “on a personal level”. Whereas (F3) explicitly stated:

*“I don’t see her as an achiever, she accomplished something for herself ... she is happy she achieved it from her perspective (laughter)”*

These comments are evident examples of the distinction between the individualistic and the collectivist achievement. The restriction surrounding acknowledging an achievement as a collective create a struggle for women to be acknowledge or appreciated not only by the society but also by themselves. For instance, when participant (XF5) praised the work of a Saudi film director and how it was a nudge for allowing women to ride their bikes in public, another female participant, (XF3), made a degrading joke about riding bikes as something only people from specific nationalities do in Saudi, referring to the working class. (The names of nationalities are concealed in this document using the word [such])

*(XF5): I know of her [Haifa Mansour], she is a director of ‘Wejda’, and I consider this as an achievement because after that women were allowed to ride a bicycle in Saudi Arabia*

*(XF3) [joking]: the bicycle is just for [such] and [such]*

In another session, participant (F4) explicitly expressed how women themselves lack self-appreciation by stating:

*“I feel that we [women] self-flagellate [metaphorically speaking] and are dissatisfied whatever we do ... I had this at some point I felt I have not done or achieved anything ... it is difficult for us to consider any thing as an achievement”*

In addition to the self- flagellation, relying on others to approve of their work is another issue as stated in (F2)’s comment:

*“and sometimes I see it in many women, she puts her confidence on others, meaning if she does not receive an approval from her husband or father or someone, her confidence decreases, there has to be someone supporting her ...”*

This implies the lack of societal appreciation might be stemming from the ‘self’ lack of appreciation. Thus, giving ‘others’ the power to approve women’s work and determine whether it is worthwhile might impede women’s courage to be more in control of determining what is appreciated and acknowledged. For instance, despite blaming the media as previously demonstrated, participants stated the role of women in allowing more visibility. This is implied in (M5)’s comment:

*“maybe there are people who are achievers, but the media doesn’t know about them”*

Indeed, digging deeper in the data, comments about self-disclosure reveals a core concept behind the visibility of women.

### 2.4.3. The Paradox of Self-Disclosure

The combination of the restrictions discussed above surrounding the acknowledgment of women's achievements create a sense of responsibility on women to manage the risk associated with being visible, even if they appear as achievers. This stems from an overall societal perception of women as representative of many entities other than themselves. Thus, the risks of being visible are even higher as they have wider effects as described in (XF4)'s comment:

*"I think the whole entire focus on, now you are going to appear, we have this amount of restriction so you would later represent [others], if you messed up ... or did something wrong, your whole family will be affected"*

In her comment, (XF4) summarized the overall problem with visibility, which is the fact it is not her own visibility but rather it is representing others. Thus, disclosing herself in public, a woman needs the consent of those she is representing, especially the men. This is exemplified in (XF2)'s comment:

*"Reputation! sometimes my husband says I'm ok with you doing this [being visible in media] but I can't let you do it because the rest of the society will shame us ... so stay at home ... the kitchen is good for you (a joke)"*

The joke about 'staying in the kitchen' in (XF2)'s comment is a metaphor for staying invisible to avoid the risks of 'messing up'. Such risks make it inevitable for women to retreat from self-disclosure even in low risk situations. This was also observed in the sessions, as women were more reluctant to consent to be photographed, despite being told they would be blurred or anonymized. Paradoxically, despite all the restrictions and the preference not to be visible, participants expressed the significance of the visibility of women as an essential factor to reflect a positive image of their families or the whole society. For instance, (F4) explicitly explained why she would like to be visible and acknowledged in the media:

*"for me the big achievement ... I hope someday to read my name among those who achieved distinctions, patents or something, this is a dream I've had since I was a third grader ... it's not about my name ... it is about receiving that acknowledgement ... when you have children, I feel it is for them in the future something to be proud of".*

Clearly her visibility is perceived as a gift to the children, to be proud of. This comment, again, emphasizes the high standard associated with visibility and the collectivist attitude towards women's visibility. Likewise, (F2) agreed with this by commenting:

*"I would be so proud if I see myself in something acknowledged, ... and also afterwards those who will come and be happy for you, but the most important thing is that I have achieved something and let the world and people know"*

Although this acknowledgement in the media was not the dream of all participants as some stated it is enough to be acknowledged by 'their own selves' (F1), however they did express the importance of 'positive' visibility of Saudi women, other than themselves, providing a positive image of the culture. This is especially important as a response to those who are deemed as opponents to the Saudi culture. For instance, (F1) expressed her disdain about the

Saudi film ‘Wajda’ as she believes it perpetuates the stereotypical image of women in Saudi society:

*“the film was very enraging ... the image it’s portraying ... it increases the stereotypes ... we are not living like that honestly ...”*

Moreover, (F1) believes it was a positive visibility of women to participate in Olympics which can reflect a good image about the country to “*those feminists who are against Saudi Arabia*”. She also advocates a female Saudi scientist because “*she gives a very good picture*” of Saudi women. While on the other hand, participants were against some activists who are believed to “*give a negative image about Saudi*”.

Furthermore, in the male session, participants also expressed a sense of pride associate with what they consider positive visibility of women reflecting a good image of their society. This is demonstrated in the following segment of a conversation where participants commented on (Leena Al Qahtani) for being fully covered on stage:

*(M1): “for me, I am very very proud of her being on the stage with her hijab on ... she is featuring her production and her personal identity”*

*(M8): “and she is featuring her Saudi identity, that’s what I wanted to say, featuring her Saudi identity”*

Similarly, (M5) commented on a female scientist wearing a hijab, though not fully covered but she shares her stories as a Muslim practicing her religion in the West:

*“look, someone like this, I see her a model and an example for women frankly she is honorable for Muslim women”*

This demonstrates the significant role visible women play in both reflecting a wider image of their society and influencing other women. However, the paradox of fearing visibility and desiring more of it creates the struggle perceived with visibility and thus underlies the lack of self-disclosure among women. Self-disclosure, thus, will be the core value investigated in this thesis.

## **2.5. Discussion: Scoping the Research Problem**

The study started with an open design problem based on the assumption that there is a lack of awareness of women’s achievements and thus there is a need for making these more visible. However, through the discussions in these workshops, we can see that the lack of awareness might just be a symptom of other deeper problems as demonstrated in the findings, and the lack of visibility is not the core one. Rather, it is a matter of self-disclosure. For this, the design problem is re-formulated as:

*How might we support Saudi women’s self-disclosure in the digital media with minimum violation of their cultural values?*

The first problem discovered was the lack of what participants considered positive visibility. This means there is a mismatch between current examples of visible women and the society’s aspirations for women and their appearance to be a sign of the distinctive authenticity and specificity of the nation [18]. Often, Saudi women conjure up contradictory images, as either excluded and heavily veiled victims or glamorous, cosmopolitan and successful survivors of

the patriarchy [18]. The two extremes create a biased visibility neither of which reflect average everyday women. These women still struggle for greater recognition and equality [18] within restrictive concepts of culture, stigma and taboo that remain persistent in women's lives [240]. Appearing in public, including media, is perceived as a potential risk bringing shame and disgrace to a woman's family especially the men [18].

The result is that many women see themselves as protected 'jewels' maintaining the honor of the family, tribe and nation [18]. While societally wise, there is a highly conditional and restrictive appreciation for women's achievements and for what participants considered something worthwhile of visibility. Such barriers impede women's willingness to disclose themselves, despite a paradoxical desire for more visibility of (other) women in public.

The significance of finding this paradox is it shifts the focus increasing visibility of women to encouraging self-disclosure. This is because focusing on increasing visibility alone, as assumed initially, would perpetuate the biased visibility of privileged (already visible) women, who do not necessarily reflect average everyday women. Overtime, such biases when embedded in the design of technology can magnify existing social inequalities [83]. This type of bias is referred to as *Focusing Illusion* [157], which is identified as a dysfunction in the design process in which on which designers over focus on a specific factor in the design space that might not present a real and relevant problem to the users.

For this, Friedman and Nissenbaum [91] suggest identifying pre-existing bias in the world such as that based on class, gender or ethnicity, early in the design stages to minimize its effect on the system. Whereas Liedtka [157] suggested mitigating such a bias by "*insisting on the collection of deep data of [users'] concerns and perspective as central in the need finding stage*".

Thus, in this study, the bias identified here was the media visibility of women mostly coming from a privileged background. Shifting the focus to self-disclosure allows us to understand the motives and barriers for everyday women to disclose themselves and gain the power of creating new connotations for visibility which might be more reflective of the societal values. Shifting the focus of this project would not have been possible if it was not for taking a step back to redefine the initially perceived problem by the researcher. By adopting a problem definition approach as a primary step in the conceptual investigation phase of the VSD methodology, I was able to redefine the design problem and establish a wider understanding of the context as a stepping stone to the subsequent theoretical and empirical investigations and the contributions that will be made in later chapters.

### **2.5.1. Wider Implications For VSD**

Although the work in this chapter was initially intended to get the design process began with a problem-definition process adopted from design thinking methodology and was not intended to address a specific problem in VSD; however, the result of this adoption proved valuable and thus it is vital to consider in addressing the critiques of top-down process and universal value in VSD. Taking a step back in value sensitive design to define the design problem from the ground up with users can advance the development of both user centeredness and ethical practices in the VSD process, as discussed below.

### **2.5.1.1. (more) User centeredness**

Friedman and Hendry (2019) stated that VSD has been largely applied in Western contexts while there exists a major opportunity to develop theories and methods applying VSD in other cultural contexts [83]. Since the context explored in this thesis is under researched, the problem definition process allowed us to actively avoid any assumptions about the context or attachment to the *tentatively* formulated problem. Rather, this helped us follow a learning process guided by the data to minimize the *egocentric empathy gap* [157], by which designers would overestimate the similarities between their own views and the users' views. Further, the problem definition allowed us to establish a cultural understanding of the context and the design space including the cultural values and value tensions, and the dominant stakeholders of the cultural identity (discussed in the next chapter).

Friedman and Hendry pointed out to another current challenge with VSD, which is selecting a method that fits a particular project in the empirical investigation with people [83].

In the next case study (**Chapters 5 and 6**), we demonstrate how the outcomes of this case study informed the development of a value eliciting method designed particularly for my participants, though versatile for other contexts. By doing so, we demonstrate how VSD methods can be informed by theoretical investigations as questioned by Friedman and Hendry [83].

### **2.5.1.2. Ethical concerns**

I argued in the method section that a bottom up approach is not only a technique for easier design process but rather an ethical concern needs to be considered when studying people, especially marginalized populations.

Demonstrating the development of the initial design problem into the final constructed problem showcases the significance of this approach in addressing the focusing illusion problem [157] in design which describes to the tendency of designers to overreact to a specific factor of the design space at the expense of others. Thus, for a truly value sensitive process, this chapter (and the next one) the significance of bottom up approach to defining a problem and a culture (unresearched) context.

## **2.6. Conclusion**

This chapter contributes to the VSD literature by articulating a step mostly overlooked in previous VSD work, the problem formulating phase. This allowed us to shape the final framing of the research problem in a bottom up approach. Answering the formulated question from a Value Sensitive Design perspective requires a deeper understanding of people's values. Thus, this required an investigation of values from two angles; 1) the dominant cultural values in the society; and 2) women's specific values associated with online visibility. The cultural values are derived from the data of this study and discussed in the next chapter. Women's values and practices are investigated in the next case study.

## **3. Understanding and Integrating Culture in Design with a Transnational Population: A Value Sensitive Approach**

### **3.1. Overview**

Building on the study conducted in the previous chapter to characterize and scope the research problem, this chapter provides an expanded analysis of the data to establish a concrete understanding of the user context. By taking a deeper look into the population of the study, transnational Saudis, we were able to unravel their core national values from their transnational identity and suggest a framework for constructing cultural values in the form of questions that can be used to guide the design of technologies in the Saudi context.

Thereby, we (my collaborator in this study and I) take a bottom up approach to identify a set of core cultural values. Despite the common reference to models of cultural values, most of these do not attend to the specificity of each culture. Typically, these models, such as Hofstede's, set predefined dimensions against which cultures are evaluated for comparison purposes. We build on these models, by establishing dimensions that are used to unpack cultural specificity. These values are nuanced and are intended to be unpacked and studied for each new context; thus, they guide designers to start establishing understanding around these dimensions without establishing a specific position. The utility of this framework is demonstrated through its application to exemplars to highlight related issues of designing digital services and the significance of adopting value sensitive approaches. While our case study is an initial step in the exploration of culturally specific values in an under-researched context (Saudi Arabia), the mechanism by which this framework was developed is applicable to other contexts.

The goal of this study is twofold:

- 1 Proposing a new approach in defining culture through a bottom up approach with a transnational population (i.e. a culturally fluent population in articulating cultural values)
- 2 Proposing a set of specific cultural values for Saudi context and demonstrating their applicability in designing and evaluating systems.

This work demonstrates how working with the same population can yield fruitful collaboration, where knowledge and research are shared across researchers. This it aims to drive research and facilitate more probing discussions around human-centered design in the Saudi context.

### **3.2. Background**

#### **3.2.1. The Concept of Culture**

Scholars have provided many different definitions of culture, ranging from descriptive, historical, normative and psychological [28]. By 1952 over 160 definitions were noted in the

collection of Kroeber and Kluckhohn [115,143]. Reviewing these definitions is beyond the scope of this thesis. The key discussion here will be that of acknowledging the concept of culture, notwithstanding the critiques it has received, and discussing how we approach culture to establish a coherent understanding of it while eliminating the potential fallouts of using this concept. To narrow down the scope of this discussion here, it is worth mentioning that culture can be applied to societies (nations), ethnic groups, organizations, professions, region, class or any group sharing specific goals or characteristics, for the purpose of this thesis I reserve the word culture for societies/nations.

For the purpose of this thesis I adopt Hofstede's definition [95] which is widely used in design and that I find explicitly captures two key elements of culture: collectiveness and distinctiveness. Hofstede's define culture as: "*the collective programming of the human mind that distinguishes the members of one human group from those of another*". Implied in this definition, and many others, that culture has two facets: (i) *collectiveness* which refers to the shared meanings, norms, values, and practices among (most) members of a cultural group [158,232]; and (ii) *distinctiveness* which is what separates one cultural group from others. These are two key aspects that attracted many debates and critiques over the concept of culture, where collectiveness is argued to imply homogeneity while distinctiveness is argued to imply superiority.

The concept of culture has been subject to resistance, rejection and sometime being deemed threatening [95]. In fact, "the very legitimacy of the concept has been questioned" [28], and thus, some have called for abandoning the concept completely [38]. The reasons for such skepticism over the concept of culture have their roots in deconstructionism and poststructuralism [38]. It has been criticized mainly for imposing an inordinate degree of homogeneity (disregarding individual agency), stability (a static image of culture) and superiority (where humans destructively turn against each other) [115][38][28]. This is perhaps understandable if one considers the negative applications associated with acknowledging the concept of culture, such as *stereotyping* [31], *cultural essentialism* [95], *cultural fundamentalism* [104], *ethnocentrism* [106], *elitism or nationalism* [38].

However, as Brumann argued, these concepts represents negative connotations which are fallouts of certain usages and misapplications of the concept of culture, rather than being inherent traits of the concept itself [38]. Indeed, in the many detentions of culture, including Kroeber and Kluckhohn's collection of definitions (1952) [143], culture is seen as a set of recognizable shared elements, and none of these definitions explicitly mentions any boundaries, universality or immunity to change [38]. Thus it is difficult, and indeed unfair, to attribute the negative connotation to the concept itself [38].

Furthermore, denying the concept of culture implies denying connection between individual and collective (group) behavior. That is, denying the social nature of humans. Culture and the is a by-product of the prolonged and interpersonal relations between individuals and it shapes future human worldviews and behavior [24,28]. It can be seen as accidental accumulation of individuals' traits and values brought together [171]. This means that *culture* and *individuals'* behavior are inseparable and thus all human behavior is cultural with respect to some context [28]. In that sense, acknowledging the concept of culture should imply acknowledging the

difference between the collective and the individual identities. Much as personality types shape the identity of an individual, culture shapes the identity of a group [95]; including its values, attitudes and communication styles and is embodied in many aspects of individual's identity and their psychology [189]. The collective nature of culture is above and beyond the individual person [28]. Culture is a supra personal and value laden phenomenon distinct from (and dominant over) individual and society; it is more than the sum of its parts [171].

Culture provides solutions to facilitating, regulating and sustaining human individuals' connection to (or deviance from) the society over time [171,184]. As such, culture does not fully fuse all members of a cultural group into one, nor it resides "fully in the head" of a member of that group [184]. Rather, culture exists to represent the collective and to respond to individuals' biological, psychological and social need (e.g. the need for safety can be responded to by providing protection from the group) [171].

This means we can acknowledge that no culture is a monolithic entity, rather there are subcultures and multiple levels of granularity [24]. However, this should not hinder the study and understanding of high levels of granularity of culture. The problem is culture remains a complex and vague concept [115]. The difficulty of studying culture comes both from its abstract, complex and multidimensional nature [158,189] and the problem that cultural information is not readily accessible [69]. To address this, a series of models have been developed to reduce the abstractness and complexity of culture [158,189]. In an attempt to conceptualize and measure the concept of culture, researchers (Hall 1976; Hofstede 1980; Trompenaars 1994) have developed models of national cultures [217]. Despite having been proved to be helpful for high-level analysis and cross-cultural comparison, these models have been criticized for over simplicity treatment of culture, and the static view of culture [230,232]. The challenge remains that culture is an ever changing concept, and thus, it is dynamic, open ended and not easily captured in static models of culture [230]. Moreover, these models are based on a unified set of dimensions to be quantitatively measured across cultures. Thus, they are not sufficient for understanding the specificity of cultures (or indigenous cultures).

### **3.2.2. Culture and Design**

In UX design and HCI, designers are expected to go beyond merely designing interface, rather they are expected to approach design by addressing sociocultural issues such as agency, identity, values, power and dominance [233]. Hence, it has been acknowledged in HCI that establishing a thorough understanding of culture early in the design process has a major impact on acceptability and usability [188,189,230,231,232,242,254].

With the explosive growth of internet and mobile phones, there has been a growing interest in cross-cultural research the past twenty years [189]. Particularly, the localization processes for products and services to adapt them to meet the cultural expectations of the different target groups [158]. This has been validated by many studies of real world cases of market failure resulting from overlooking local cultures [231]. Hence, the requirement to localize digital products and services, to adapt them to meet the cultural expectations of different target groups [158], has highlighted the need for processes by which designers can gain awareness of culture-specific values [24,189,230,242].



However, in some cases, designers either adopt the empiricist view of culture which favors efficacy over context sensitivity (focusing on layouts, colors, fonts, graphics etc. [24]). Whereas recently, it has become common to adopt the cultural models in Cross-Cultural Design as a central point of the design process. A series of models have been developed to reduce the abstractness and complexity of culture [158,189] including Hofstede's [232] widely adopted approach. While, these models have proved to be helpful for high-level analysis [232] to make possible comparisons across cultures, however, they are not sufficient for understanding the specificity of cultures (or indigenous cultures). For this, such models have been criticized for promoting a positivist view of culture as a static concept (e.g. predefined cultural dimensions of Hofstede's) [230,231,232]. Furthermore, localizing the design of technology for different cultures remains a significant challenge, in large part due to the lack of methods for integrating the abstract cultural theories as concrete design decisions [158]. Such a challenge can be observed in much of the work in cross cultural design which has adopted these cultural models, and thus focused on either visual level issues [24] (e.g. colors, languages, images and cultural markers) or predefined cultural dimensions in value-oriented cultural models [232,234].

To address this problem, as Sun [230] suggests, there is a need for developing a rhetorical approach based on thorough context analysis to guide the design process. An approach with a richer and more dynamic view of culture [232]. Likewise, Amant [24] attributes the complexity of culture to two concepts: information and approaches. Thus, he suggests designers have to focus on gaining more knowledge (information) about cultural context, and to adopt a strategic approach to learn about the multifaced concept of culture beyond a simple literature review of cultural studies. Few studies have attempted to systematize the integration process of culture within the design of technology. Notably, the work of Heimgartner [112] and Sun [231]. Heimgartner attempted to develop a connection between cultural dimensions and HCI dimension to operationalize culture into design [112]. Sun suggested an activity approach to cross cultural design where artefacts are understood based on the actions a user take and in social and historical context [231]. The limitation with the former is the reliance on cultural models which we have established earlier their insufficiency use for tackling the specificity of culture. The limitation with the latter is that it relies on the use of a given artefact, and thus it best fits in the usability testing phase of the design process and not the early stages of the user research and establishing a cultural understanding of the context to guide the overall design process.

Thus, a careful and truly culturally sensitive integrating of culture into the design process should start with establishing cultural understanding of the context with real users (a bottom up approach) early in the design process rather than being placed at the usability testing phase. Therefore, building on these models; I propose bottom up approach to allow cultural values to be constructed from user research to have a deeper understanding of the specificity of the cultural context. These values are proposed to guide designers to explore their nuances for each new context. To bridge the divide between our nuanced understanding of cultural values, and the design implications that might arise from this understanding, I construct these values in the form of a reflexive framework consisting of five questions to help designers ask relevant questions in any new study within this context.

### 3.2.3. Cultural Design in Saudi Arabia

In general, Arab countries have received little attention in cross-cultural design studies [183]. So far, few studies of the region have been configured as theoretically grounded [97] investigations [96] of specificity and nuances of Arab cultures. Studies to date have primarily undertaken content analysis of media, without significant involvement of target users to understand their values or needs [137]. Yet, since the recent Arab upheaval, many different platforms have been utilized as mediums to express opinion and to call for equal rights [5]. For instance, it has been found that Facebook enhanced the ability of activists and protesters to coordinate peaceful protests, while allowing larger segments of the public to share witness accounts, images and videos [136].

Yet little research has been undertaken into users' daily interactions and experiences with these technologies and services, or the opportunities and challenges they bring in terms of managing personal identity, privacy and safety. Al Omoush et al. [183] introduced a model for the relationship between cultural values, motivations, and usage patterns on Facebook in the Arab world. Their study revealed a major influence of Arab values (e.g. cultural traditions, religion) on Arab Facebook users and their motivations to be members of social media. In this line of enquiry, many researchers treat the "Arab world" as a single monolithic unit of analysis, which is a misrepresentative generalization. Critiquing Al Omoush et al.'s study, Ur and Wang [250] state that "[the authors] used snowball sampling to gather survey responses from 749 Arab users of Facebook, where the exact meaning of Arab is left ambiguous". Similarly, a study by Alsheikh et. al. [23] explored how Arab individuals conceptualize and employ technologies in their romantic relationships. The participants came from six Arab countries and had different religious backgrounds. While Alsheikh et. al.'s study provided high-level insights into the values and beliefs of the region; it demonstrated a very limited understanding of the actual diversity of the participants. Another study [137] found that Jordanian users preferred locally designed websites over other Arab websites, suggesting that Hofstede's model for Arab countries lacks sufficient specificity. Taking a broader view, other works have explored the notion of Eastern values versus Western values (e.g. [68] and [184]) and a number of studies have explored cultural values in specific countries in the Arab world, such as Kuwait [73], Morocco [242] and Qatar ([193], [1], and [244]).

With respect to Saudi Arabia, Hofstede's model has mostly been utilized to explore cultural values in the context of business, government and organizational e-services (e.g. [20], [109], [12], and [22]). Based on Hofstede's dimensions, Saudi Arabia, is characterized by *high power distance*, *uncertainty avoidance*, *masculinity*, *indulgence*, *short term orientation* and *collectivism* [116]. However, this model, as discussed earlier, is meant to be used for cross cultural comparison and not for unpacking the specificity and nuances within a given culture. This particularly the case in the Saudi context where there is a unique mix of cultural features such as religious nationalism, tribalism, Bedouin culture and the absence of anti-colonial struggle or secular movements [18]. Thus, further qualitative studies have placed an emphasis on specific cultural aspects. For instance, exploring the importance of religion in Saudi Arabia, and the influence of Islamic values and cultural traditions on perceptions of privacy [4]. Another example looked at the cultural factors influencing the perceptions and use of

matchmaking technologies in Saudi Arabia [11]. However, such studies have a specific focus (e.g. privacy or matchmaking) and are not designed for capturing the essence of core cultural dimensions, the purpose of our work here. This was made possible by our work with a transnational population (discussed in the next section), the members of which are uniquely placed to identify core cultural values related to both their origin and host cultures. As such they provide a retrospective lens on the cultural values.

#### **3.2.4. Transnationalism**

Population migration has increased significantly in the past decade [9] and it is widely recognized as an important phenomenon; both to study, and to understand its consequences [243]. A particularly important aspect is the acculturation process in the new environment, which migrants deal with by adopting a number of different strategies [25]. This is particularly evident where individuals come from contexts that differ significantly from the culture of the host country [9]. These distinctions between individuals' origins and their acquired identity in the host country have been characterized as a new form of identification widely referred to as transnationalism [44]. In Vertovec's definition [243], *"transnationalism is the dual (or multiple) identifications, ties and interactions connecting people across the borders of nations."* Schiller *et al.* also defines transnationalism as: *"the process by which immigrants forge and sustain multi-stranded social relations that link together their societies of origin and settlement"* [98]. Transnational migrants undergo the acculturation process at different levels and depths of transnational ties [9,243]. Some migrants are more transnational, maintaining several identities simultaneously; some strive to maintain their original culture; others prefer to abandon their native identity and values [9,243].

However, it is most typical for transnationals to develop a dual identity rather than a conflicting one [44]. Vertovec suggests that due to the increase in migration, the transnational affiliation is likely to become the predominant form of identification [243]. In the construction of this dualism, different facets of culture are often self-consciously selected and secreted from more than one cultural heritage [243]. This is a process by which individuals make conscious decisions about what values to change (or not). These decisions involve the loss of the familiar, including language, attitudes, values and social structures [30]. Bhugra and Becker [30] summarized this process as *"understanding of the similarities and differences between their home cultures and the new culture, so that they have clearer ideas about what they like and dislike in each ... mov[ing] in the direction of becoming 'bicultural'"*

However, *"people's core values are harder to change than their habits and artifacts"* [15]. Consequently, when transnationals make a deliberate choice of which values to maintain, this involves a conscious identification of their core cultural values. In acquiring this ability to make cultural change themselves, transnationals are also considered to be agents of cultural changes within their origin communities, since migrants who return home do not abandon their newly acquired identities [44]. In fact, this change usually continues as an ongoing sense of double belonging even post-migration [243]. As such, transnational migrants are believed to have a central role in effecting cultural change in their families, societies, populations, surrounding transnational networks and post-migration generations [44,243].

In summary, transnationals can be characterized in terms of (i) the dualism, which is the result of a self-conscious decision, and (ii) their ability to influence cultural change. The former refers to how they learn to distinguish between core values to retain and other values to reshape or abandon; the latter to how they are an influential factor in the cultural change process. As such, transnationals are a distinctive and potentially highly valuable source of insight for cross-cultural designers.

### **3.2.5. Transnational Saudis**

I have described this population in the introduction (**Chapter 1**) and stated three important facts about this population which motivated selecting it as the target group. First, statistics show that the number of transnational Saudis has been rapidly increasing since the establishment of the national scholarship program (KASP) in 2005 [8,18,176,240,263]. Second, most transnational Saudi students abroad (almost 83%) are funded by the government not self-funded (i.e. not the elite) as such it is estimated they represent a diverse range socioeconomic background [8,176,240,263]. Finally, despite the evident cultural impact of this transnational movement, little work has looked at the gains and socio-economic impacts from this group. Therefore, due to these facts and the nature of transnational populations described in the previous section, I argue that this population provides an invaluable opportunity for researchers to investigate a timely phenomenon and understand its cultural impact and for cross-cultural designers to learn about culture as a dynamic concept.

## **3.3. Methodology**

The data used in this chapter is from the case study (the three focus groups) described in **Chapter 2**. As discussed, the study aimed at characterizing and scoping the research problem and understanding the overall study context.

### **3.3.1. Study Objectives and Motivation**

On reflection, I (the thesis author) was able to see overarching themes reflecting core cultural traits shared among participants. Although these were directly connected to the goal of my study: framing of the research problem around the concept of women's achievements. However, the significance of these traits cannot be overlooked. Indeed, one of the main advantages of employing qualitative methods for data collection and analysis lies in its capacity to benefit from aspects of serendipity at different stages of the research [52].

This chapter illustrates a joint research was inception as a result of an informal discussion with another researcher (referred to as 'the second author' hereinafter). The second author's research is focused on qualitatively understanding and documenting the experiences of transnational Saudi youth with social media focusing on privacy and identity issues. Despite the fact she was investigating a different phenomenon, nonetheless, her reflections on her own work revealed commonalities between the two studies that were readily apparent, that is, overarching themes related to cultural values and transnational identity. Recognizing that "courting serendipity involves planned insight married to unplanned events" [52], the authors consequential discussion focused on the commonalities between the two studies, which yielded the discovery of a set of recurring cultural values underpinning much of our participants' perceptions.

This motivated our decision to conduct a secondary analysis of our separate studies to synthesize unified themes from our data, which proved to be a felicitous decision. The differences in the purposes of each study played a significant role in increasing the validity of our unified findings, especially in the cases where we were able to trace users' reactions from the different studies to the same underlying cultural value the triggering situation invoked. Furthermore, the different methods used in each study – focus groups and interviews – furnished us with a three-level investigation: a mixed-gender focus group (study 1<sup>3</sup>), two gender-specific focus groups (one with females and the other with males) (study 1), and (40) in-depth face-to-face interviews (study 2). This triangulation was a key element of the rigor and validation of our analysis.

Thus, we offer a new way in approaching culture to reveal its distinctive aspects. Particularly we consider conducting a secondary analysis on already existing rich qualitative data sources as an invaluable alternative to address the limitations with the aforementioned popular approaches to culture. Drawing on empirical evidence from two qualitative studies, this paper extends on debates around approaching culture in two ways: (i) suggesting a secondary analysis to define culture in a bottom-up approach, and (ii) offering empirical findings representing three cultural dimensions that are essential for capturing the cultural identity of the population under study.

### **3.3.2. Collaborator's Study: Transnational Saudi Arabian Youth and social media: Enacting Privacy and Identity**

The second author's study [2] examined the use of social media, specifically, Facebook, Instagram, and Snapchat, by 34 transnational Saudi Arabian young adults (ages 18-35). The study demonstrates how privacy is required, demanded, and experienced by a Muslim population going through the transnational journey of privacy across two cultural contexts vis-à-vis social media. Specifically, in her study, she employed a qualitative cross-sectional approach from three different points in the transnational experience: students before coming to the US, during their time in the US and after their return to Saudi Arabia upon graduation. Motivated mainly by the lack of research from the perspective of Muslim Arab technology users and the huge opportunity of learning from the use and appropriation of technology by transnational users, her ongoing research agenda investigates design issues and opportunities for culturally inclusive privacy systems.

For sampling and recruiting the transnational sample, she deliberately sought out Saudi participants from different backgrounds, education levels, genders, as well as ages. The cross-sectional aspect of her study required to recruit balanced gender samples in two field sites, Saudi Arabia and in the USA. Initially, she aimed at using random sampling from the larger group in both field sites (e.g., a date base of all students studying in the US or Canada under the Foreign Scholarship Program). However, it was quickly realized the difficulty of this approach due to the following obstacles: access to the whole group, time and cost, and/or willingness to participate. Consequently, she used snowballing and purposeful sampling techniques. She determined the research sample size following the protocol of saturation measure described in (Corbin & Strauss, 1990 [51]) that entails “adding new cases to the point

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<sup>3</sup> The study in the previous chapter (perceptions of women's' achievements) will be referred to as (study 1), while my collaborator's study will be referred to as (study 2)

of diminishing returns, when no new information emerges”. A similar approach (i.e. modified snowball sampling) was followed for recruiting the Saudi sample.

Recruiting for face-to-face interviews in Saudi was a unique experience with two primary challenges: First, researchers in Saudi are “not readily accepted in a traditional milieu that frowns upon those enquiring into other peoples’ lives” (AlMunajjed, 1997 [17]). The only noticeable difference between recruiting Saudis in Saudi and Saudis in the USA was regarding the types of information the second author needed to disclose about herself and the purpose of the research before participants agreed to partake in the study. The second challenge concerned finding male participants who were willing to meet face-to-face and finding a secure place to conduct the interviews with them in Saudi Arabia.

To gain an in-depth understanding of the participants’ use of social media, ethnographically informed semi-structured interviews were employed (Lazar, 2010; Neuman, 1994; Patton, 2002). The goal of the study was to provide an in-depth, “multifaceted account” of my populations’ values and needs; hence, the interviews, combined with other tools (i.e., questionnaire) proved powerful, as they offered flexibility in the flow of questions, and provided a space for the participants to freely share in-depth accounts of their experiences. The interviews lasted for 1.5 hours each and were conducted between August 2014 and February 2016. Interviews were conducted in Arabic and English. During the interviews, participants were asked about their general use of social media, any incidents that led to private information being exposed, moments of surprise, negative and positive experiences. They were also asked to share scenarios and accounts of discomfort or challenge they faced when posting certain content and when using the same platform in two extremely different contexts (i.e. Saudi Arabia and the US). Answers touched on topics such as privacy as an Islamic construct, fear of judgment, improving familial relationships, political engagement and freedom of expression. In the data preparation phase, the researcher transcribed the interviews in Arabic and used open and axial coding, following the protocol described in Seidman [210] to identify themes.

### **3.3.3. Unified Analysis**

Our contribution derives from a joint *secondary analysis* [127] of data sets coming from two independent qualitative studies conducted with “transnational Saudis”.

One of the main advantages of employing qualitative methods lays in its capacity to benefit from aspects of serendipity at different stages of the research process [52]. This means the data collected for the primary focus of the study may provide insights into other (secondary) aspects beyond what researcher is intentionally investigating. Such rich data gained from qualitative work offer opportunities to revisit, rework, verify and compare with other data [96]. Thus, a secondary analysis can clarify, expand and reveal new perspectives. In qualitative research, reanalysis across two or more studies can reveal mutual observations and review each study in relation to the other in order to draw a wider conclusion about certain phenomenon or community [253]. This is particularly valuable for studies with under-researched populations and sensitive topics, where access to more information may be difficult or unavailable [96]. In our secondary analysis with an under-researched population, the commonalities between the

two studies revealed a set of recurring cultural traits underpinning much of our participants' perceptions, which we synthesized and refer to as cultural dimensions.

We adopted a Value Sensitive approach to conduct a conceptual investigation drawing on the joint empirical findings of two studies which both were conducted with the same population and both fall under the purview of cross-cultural design. The goal of each study, respectively, was to explore perceptions of women, and online privacy. However, the unified goal in the secondary analysis was to define core cultural values shared among participants.

Initially, before the unified analysis, each session of both studies had been audio recorded and transcribed before being subjected to thematic analysis [37]. The first study was analyzed in terms of themes relating to perceptions of women, social expectations of them, and their visibility in the public sphere (whether online or offline). The second study was analyzed in terms of themes relating to online privacy practices and how they differ in an individual's home and host countries.

After deciding on conducting the unified analysis, each study was re-analyzed separately with a unified focus this time, which is identifying the dominant cultural values. After that, common overarching themes were identified to guide a collaborative iterative process; these themes were *the autonomous self*, *the collective self* and *the others*. These generated more specific themes and subthemes of dominant values and stakeholders. Following an iterative process, the final common themes were formulated as a set of values and stakeholders (in the finding section). These then provided insights on how they inform the design process (in the discussion section).

### **3.3.4. Our Participants**

Our participants were transnational Saudis; that is, Saudi nationals who had experienced life in Saudi and abroad (in our case, either the US or the UK). They were abroad primarily for educational purposes and were undertaking a range of undergraduate and graduate courses. Participants varied in both their ages (18 to 40 years), and in the time they had spent abroad (1 month to 11 years). The total number of participants in the two studies was 61 (32 females, 29 males). Most of them were sponsored by KASP, and our informal impression was of a group of people from diverse social backgrounds rather than an "elite".

### **3.3.5. Validity and Rigor**

Our claim is that the validity of this work is supported by three pillars: the method (triangulation), the type of population (transnationals) and the researchers' unique position (insiders/ nonconformists). We discuss each of these below:

#### **3.3.5.1. The Triangulation**

Triangulation is metaphorical term was imported into social research from the work of surveyors (in land surveying) which refers to observing an object from different angles to obtain a good fix on its true location [79,181]. In social research, this means observing a certain research issue from several (at least two) different perspectives as a strategy for validation to gain a total picture about the same phenomenon [79]. It is a rigor measure to allow diverse viewpoints (confirmatory instances) to cast light on the same social phenomenon [182]. This

is based on the idea that looking at something from multiple different perspectives improves the combined accuracy compared to relying on only one perspective [181]. Thus, typically triangulation is used to provide corroborating evidence from different sources to shed light on certain themes [53]

Although triangulation is most commonly used in measures of the same phenomenon [181], scholars have identified other different types of triangulation, include data sources, methods, theoretical perspectives and investigators [53,79,147,181]. When single case triangulation is not possible (such as with large spaces), triangulation can be implemented on the data sets to be assessed in terms of what they have in common and how they differ [79]. Triangulation of data sources allows data to be collected at different times, different places from different people [79,147]. Triangulation can also be implemented on a methodological level by mixing quantitative and qualitative methods in parallel or simultaneously, or techniques such as verbal data (interview and focus groups) and visual data (sketches and photos), or combining different levels of groups (individuals, groups and cultures) [53,79,147,181]. Another approach for triangulation is that of researchers (observers) [53,79,147,181]. This allows transcending the limitation of a single researcher that might lack skills or have bias or inattention to certain details [181]. Whereas multiple researchers bring a fuller picture of what they each observed [181]. In some cases, researchers can combine different types of triangulation such as that of methods, data and theoretical perspective [79].

Triangulation was first understood as a strategy for validation and confirmation of the research results [53,78]. However, there are three modes of triangulation: a validation strategy, a generalization strategy, and a rout to extending knowledge of the research [79]. Increasingly, the focus of triangulation now has shifted now from a strategy for validation and confirmation to a strategy for justifying and expanding the gained knowledge, to add more depth and breadth to the analysis and theory development [78,79,253]. Triangulation, thus, should serve to enrich and deepen the understanding of the research context through convergence, corroboration and correspondence of the research outcomes [147]. Indeed, the aggregation of qualitative data from multiple independent studies into a cohesive study enhances the generalizability and the theory development [77,147].

There are three types of results from triangulation: convergence, contradictory and complementary [78]. With convergence results, this might be an indication that one method would be enough, whereas complementary and contradictory provide more interesting and different levels of cous. In our case, there is a combined triangulation [43] of researchers, data resources and methods. This means, two different researchers independently conducted different studies, using different methods. This allowed us to cross validate the concordance between our findings and extend on our understating of the wider context from each other's perspectives. Thus, since the two studies were conducted independently for different purposes, we learned that, concordance of the findings cannot be a mere coincidence. Further, while the focus groups shed light on the general and shared cultural views and social structures, the individual interviews made it possible to see the nuances in the subjective meanings. Overall the results of the two studies were complementary and provided us with a fuller picture of the cultural context of the population under study.



#### **3.3.5.2. *The transnational populations***

We discussed earlier how transnational populations due to their dual identity can distinguish between their national and transnational values. Thus, by understanding their core cultural (national) values we have access to understand the wider culture they are representing.

As discussed, such a transnational population revealed an ability to articulate both their national and transnational values in their dual identities. As a result of living in two different cultures, this population is culturally fluent, and this enables them to articulate essential and core cultural values they have acquired from their home culture. This allows researchers to gain access to an understanding of core cultural (national) values that individuals often would adhere to (or account for) even after being exposed to other cultures [15]. Despite their experience abroad, and being subject to western influence, they are more likely to “forge and sustain multi-stranded social relations that link together their societies of origin and settlement” as explained by the theory of transnationalism [98]. However, this is not necessarily by holding or believing in these values, as we will demonstrate in the findings, but being affected by them and having social ties with milieus who still hold these values. This is the reason we use ‘adherence to’ or ‘accounting for’ to capture the nuances among participants attitude towards the core cultural values.

#### **3.3.5.3. *Researchers’ unique position***

The unique researchers’ stance as explained in section which incorporates being both cultural insiders, non-conformists, in addition to being VSD researchers which played a significant role in mitigating the effects of researcher bias and social desirability.

Both researchers identify as female (she/her), Saudi nationals currently embarking on their own transnational journeys and are HCI researchers. During the period that they conducted the research, they both exhibited less than typical conformity to some Saudi norms such as cultural attire and attitudes (e.g. neither researcher dressed in Saudi/Islamic female attire). As such, by being cultural insiders and not ‘westerners’ or ‘outsiders’ as well as not representing typical Saudi individuals, both researchers are able to represent a more neutral stance to the participants which we believe played a major role in facilitating participants open expressions and reducing social desirability [228].

As researchers, we worked from a design stance that sought both to understand the context as well as to create meaningful change. We produced rigorous research that, we hope, enabled our participants to voice and communicate their values, which we have translated into meaningful contributions for system design. In the traditions of action research [108] and participatory design [174] throughout our research timeframe, we created mutually beneficial feedback loops between our research, design, and involved parties (for example by working with Saudi students’ advisors at the King Abdullah Foreign Scholarship Program). We believe that our combined research and findings will touch not only the lives of people in Saudi, but also others, within and outside Saudi.

Since we are both advocates of value sensitive approaches in research and design, this is also reflected in our personal philosophies on social change and ‘constructive activism’ which is driven by understanding and compassion to people’s values and culture rather than fighting

existing realities. Thus, we believe there is a value in unpacking these cultural values, whether or not we conform to them, as they can provide invaluable insights in leading both social change and successful designs.

The collaboration between the two studies took place from the unified secondary analysis. This means we each conducted the data collection and the primary data analysis independently from one another. Then reflecting on our work together we distilled the themes unifying the two studies by first conducting an independent secondary analysis then selecting the shared ideas demonstrated in the raw data in the findings section. We make explicit in the findings section which quotes are coming from which study. The discussions are our shared ideas and the I am the first author of this work under guidance from my collaborator and my supervisor.

### 3.4. Findings

Overall, in both studies, participants' accounts of their perceptions and attitudes towards expressing their values revealed a sense of duty to other entities. When participants express their values and the actions, they need to partake in order to achieve these values, they often refer to culturally prescribed values they are expected to adhere to. Thus, we describe these values as duties, due to the nature of how participants expressed these values.

For instance, a female participant stated:

*"Families clarify this from childhood. We are raised with an understanding of what's right and what's wrong. It might not be explicitly about not posting pictures, but you know with growing up what is permitted and what is not." [PF2]<sup>4</sup>.*

The participant expresses her conception of 'privacy' as a value taught by her parents from childhood. She refers to some values (or practices) as '*permitted*' or '*not*,' which takes values from holding a personal-autonomous-judgment to values as duties and obligations. Similarly, in the other study, one participant expressed a sense of responsibility:

*"if I consider what she's doing as an achievement (referring to a Saudi model), it's like I'm cultivating a bad culture for the country, and this is a responsibility. So, in my opinion, what she's doing I don't see it as a pride for the country, it's the opposite." [AB-M1].*

Sami is aware that his evaluation of others' achievements is not solely representing his opinion, but rather a representation of the whole country: he mentioned that his expression of his opinion is "*cultivating a bad culture for the country*." Therefore, it is his 'responsibility' to evaluate things with a sense of the collective rather than his autonomous view.

As we reached this understanding of values-as-duties we were inspired to analyze and explicate our findings in the light of Abokhodair *et. al.*'s research [3] on self-presentation in the context of Arab Gulf. Where the authors theorize that self-presentation for users of photo sharing applications ranges between presenting an autonomous self and a collective self, where the collective self presentation on public photo sharing application overpowers the presentation of

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<sup>4</sup> For clarity we identify participants using the nomenclature AX-YZ, where A indicates a participant of the "achievement" study; X is the workshop, either all male (M), all female (F), or mixed gender (B); Y indicates male (M) or female (F) participant; and Z is the participant number (for the workshop). For the "privacy" interviews we use PLN, where L is the gender of the participant and N is the participant number.

the autonomous self. In contrast, we unpack and classify these values (duties) into three pillars: the self (me), the collective (us), the others (them).

### 3.4.1. Concealing the Autonomous Self (Me)

This refers to the *etivself* [3] where individuals think for themselves in an independent manner. We found that many fundamental values (e.g. safety, honor and self-image) are informed by cultural, religious and political factors (collective self), regardless of the presence of others. Thus, revealing a mere autonomous self can be challenging and, in some cases, puts an individual at social or political risk.

The data revealed that participants found it hard to access their deeper level of the self. For instance, when participants were asked to express their perceptions of ‘achievements’, a participant jokingly said:

*“give me something like math, I would understand, but this, philosophy, I don’t” [AB-M3].*

For this participant, accessing a deeper part of his identity is, in his opinion, a philosophical practice and deemed more difficult than doing math. This issue is illustrated in making judgments as in [AB-F2]’s case when asked to evaluate women’s achievements she explicitly expressed difficulties in achieving a full autonomous self:

*“now we reached a point where I separate myself from my culture and religion and then evaluate her [a Saudi model], if I evaluate her like that, being separate and neutral, I’d say she has achieved something, but I can’t.”*

The participant’s difficulty to be fully neutral and separate herself from her background indicates difficulty in accessing her deeper self. This was evident even in cases where participants were able to access their deeper self. In this case such an act can be associated with being selfish or mindless towards others. For example, [AB-M1] expressed a sense of social responsibility he has to exhibit when making judgements:

*“if I consider what she [a Saudi model] is doing as an achievement, it’s like I’m cultivating a bad culture for the country, and this is a responsibility. So, in my opinion, I don’t see what she’s doing as a pride for the country, it’s the opposite.”*

[AB-M1] considers that his evaluation of others’ achievements is not solely representing his opinion, but rather a representation of the whole country: “cultivating a bad culture for the country.” Therefore, it is his ‘responsibility’ to evaluate things with a sense of the collective rather than his autonomous view.

Our participants also expressed a sense of “duties” in addition to “responsibilities”, where the former is compulsory and the latter voluntary. For instance, one participant expressed her conception of “privacy” as taught by her parents and what they “permit”:

*“Families clarify this from childhood. We are raised with an understanding of what’s right and what’s wrong. It might not be explicitly about not posting pictures, but with growing up what is permitted and what is not.” [PF2].*

The participant refers to some values (or practices) as ‘permitted’ or ‘not,’ which takes values from holding a personal–autonomous–judgment to values as duties and obligations. These

examples show how participants' attitudes towards expressing their values revealed a sense of responsibility and/or duty to other entities, such as religious or social imperatives. They often refer to culturally prescribed values they are expected to adhere to.

We found that this sense of duty to other entities is a mechanism of self-protection from potential risks. Thus, when it comes to their autonomous selves, they value "seclusion" from others to protect themselves and their families from social judgments, legal repercussions and other factors shaping their collective self.

In fact, participants' sense of privacy positively correlates with proximity to their collective: namely, in the presence of others from the same culture. For instance, female participants stated: *"I don't feel comfortable around Saudi guys" [AF-F3]*. While another (in the second study) said

*"I have 2 [Saudi]colleagues from work who added me on SnapChat and that for me was like 'arugh' pushing my comfort zone because I know they are cool guys, but I only have girls on SnapChat" [PF1].*

For women, there are ongoing concern and responsibility for protecting their personal reputation, social status and that of their families [1][54]. These concerns do not only arise from being involved in controversial behavior, but as [AF-F1] explained, everything is prone to criticism and negative judgement in her society:

*"the society would always have some people who are actually against the whole idea of you going to study abroad, so you can't really satisfy everyone."*

Additionally, political risk was another obstacle for expressing their autonomous self. Participants tend to avoid indulging in political discussions, even while living abroad, as they are trained coming from Saudi Arabia, where the internet is censored by an extremely centralized internet infrastructure. For them, there is a belief that online and offline conversations are always monitored. [PM11] stated:

*"I am not keen on visiting home because of the nature of the content I post online. The last time I had to visit I left my name with a Human's Right Watch lawyer to help me in case I am captured."*

Another participant explained that fear of authority forces him to be more aware of privacy settings:

*"the reason why my Facebook Wall is kept to my friends only is because I don't have trust...I don't trust the government, especially over here (In Saudi). I have to always censor my opinion on stuff." [PF6].*

We can infer that accessing, expressing and exhibiting the autonomous self has limitations imposed by other entities, we unpack these under the concept of the collective self.

### **3.4.2. Embracing the Collective Self (Us)**

The collective self refers to "that facet of the self where the individual is but an appendage of a larger collective and must act with that collective's representational needs at the forefront of concern" [2]. Our findings confirm that this level of the self is heavily relied upon: it plays a fundamental role in shaping participants' perceptions and evaluations. As opposed to the

autonomous self which was associated with the value of ‘seclusion’, the collective self is associated more with ‘recognition’. Participants expressed that they feel highly motivated and validated when they receive acknowledgment and recognition from their society. This feeling is rewarding for them as it makes them feel as if they have passed the judgment line into the admiration level.

*“For me, the biggest achievement, is that I wish someday I will read my name, Fatima, amongst those who achieved something...this is a dream I’ve had ever since I was in third grade.” [AF-F4].*

This comment was echoed by another participant:

*“I would be so proud if I finally acknowledged...and see people around you happy for you. But the most important thing is that I have achieved something, and that people know” [AF-F2].*

Overall, we found the collective self overpowers the autonomous self and it shapes it by three powerful entities: Religion, State and Society. In the context of Saudi Arabia, these are not easily separated from one another and have many interconnections. We explicate each group below.

#### **3.4.2.1. Religion**

We found that the Islamic religion (faith) is an ultimate value in and of itself, by which all other contextual values are motivated and supported. For example, when discussing “achievements”, despite being an academic, a PhD student in a STEM area and a mother, [AF-F4] expressed how she feels like a low achiever compared to those who are “*Quran memorizers*”, saying that:

*“examples [of achievements] like Quran memorizing ... it’s the dream of my life ... especially now in our family [tribe] there are some figures who are Quran memorizers, I feel that no matter how much I do in science, I would never be like them ... they only completed college and some of them are still jobless, but I would still wish to be like them.”*

This participant, who is a successful academic, a PhD student in a STEM area and a mother, expressed how she feels less of an achiever compared to those who are “*Quran memorizers*” even if they had less education and career achievements than her.

More interestingly, it seems that in this context the Islamic religion is not only perceived as a value, but also as a scale in relation to which other values are measured. For example, our participants consistently expressed their appreciation of “achievements” by evaluating them first in relation to religious measures. This was shown when participants were asked about the criteria for evaluating women’s achievements. [AB-F2] answered: “*my criteria are my society and religion’s criteria.*” In response, [AB-F2] stated that her “*religion is the most important thing.*” [AM-F3]. Likewise, commenting on a Saudi scientist, [AM-M3] said:

*“To me, I would’ve been even more proud of her if she was wearing the Hijab.”*

In this excerpt, [AM-M3] is looking at the whole picture: for him the scientist’s achievement is incomplete if she does not adhere to the Islamic appearance. In response to that, another female participant, stated that “[her] religion is the most important thing.” [AB-F2].

[AM-M3], likewise, commented on a female Saudi scientist:

*"I have heard of her maybe more on T.V and heard about her achievements...To me, I would've been even more proud of her if she was wearing the Hijab."*

In this excerpt, [AM-M3] is looking at the whole picture: for him the scientist's achievement is incomplete because she did not adhere to the Islamic modest appearance.

#### **3.4.2.2. State**

Because the Saudi legal system is based on Sharia Law, state and religion are broadly inseparable. Hence, religion, together with other values (e.g. safety and state *image*), has contributed greatly to the participants' sense of duty towards the state (i.e. the government). [AB-F2] explicitly expressed this in a discussion about activist women who drove their cars in 2012 (before the lifting of the ban in 2018):

*"The place where you do your 'achievements', you should follow its rules. It would be a jungle otherwise. As Muslims, we'll always belong to the place where we are from, we express our identity with our morals no matter how much we don't like these rules ... There is a way to changing the laws within the rules ... like through the Shura Council."*<sup>5</sup>

Here, she touched upon another value in addition to religion: national safety. In using the metaphor of the "jungle", she referred to "anarchy" as a dangerous state. Likewise, in the interviews, [PF9] echoed this:

*"I'm against the Women2Drive campaign. I don't support the way the movement was established and tried to push change by force, but I am supportive of the goal."*

This sense of protecting the country's safety was also elaborated on when pointing at 'threats' by hidden enemies who aim to pressure Saudi to discredit Islam, the laws and the culture. To maintain national safety, participants expressed another correlated value: the promotion of the positive image of the state. For instance, [PM5] explained his sharing behavior on social media:

*"I share shocking news like gun shootings in [the US]. But I don't share any negative news about Saudi on Facebook. I only share good news."*

Participants also expressed how they appreciate those who reflect a positive image of the state even if they do not adhere to religious values. [AF-F3] commented on a female athlete (who does not wear Islamic attire):

*"For me, [she is an achiever] because she reflects an image for those [the West]." (Interviewer: what is it with those?) "[we are] the negative others, the weird others, the others, they always ... in everything and any topic they would refer back to women ... she doesn't drive! This is our cliché (stereotype), and that she can't go anywhere without a male guardian."*

In contrast to achievers, activists are discredited mainly not for their activist goals but for reflecting a bad image of the country. For instance, when discussing an activist (Manal Alsharif), a participant stated:

*"I feel that Manal...when giving that talk, she was against Saudi Arabia...you can feel that there was a hidden agenda in her speech." [AF-F3].*

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<sup>5</sup> The Shura Council is the Consultative Assembly of Saudi Arabia: the formal advisory body of Saudi Arabia.

This activist was praised by another participant; however, the common thread was the same when he compared her to another activist, he believes reflected a bad image of Saudi Arabia:

*“Loujain is nothing like Manal...Loujain in the West has tarnished the reputation of Saudi Arabia, but Manal didn't.” [AM-M8].*

Another factor giving value to the state is that of political risk. Participants believe that in Saudi Arabia the Internet is censored by an extremely centralized Internet infrastructure. [PM11] stated:

*“I am not keen on visiting home because of the nature of the content I post online. The last time I had to visit I left my name with a Human Right Watch lawyer to help me in case I am captured.”*

Another participant explained that fear of authority forces him to be more aware of privacy settings:

*“the reason why my Facebook Wall is kept to my friends only is because I don't have trust ... I don't trust the government ... I have to always censor my opinion on stuff.” [PF6].*

We learned from these examples that protecting the national safety is prioritized over social change. We also learned that when talking about national safety, participants pointed at ‘threats’ by hidden enemies (which we will discuss in ‘The Others’ section).

#### **3.4.2.3. Society**

Participants expressed a strong sense of social ties with other societal groups. We found that participants used the terms “society” and “social” to refer to several different concepts—whether consciously or not. They associated these terms with family, for example *“social responsibilities”* [AM-M3]. They also referred to their tribes as *“my society”* and *“his society”* [AM-M1]. Moreover, there seemed to be a sense of *“two societies in Saudi, male and female”* [AB-F5] with each gender group having a distinct subculture.

We found that in many cases, familial ties constitute the first and foremost social duty. For example, when participants were asked about how they act when they want something that might not be considered acceptable, [AF-F4] stated:

*“what matters to me is who are those who are not accepting what I want to do. If they were my family, I would not proceed ... otherwise if my family my mom and dad are proud of it, honestly I don't care about the rest of the society.”*

In response to that, [AF-F2] commented: *“most importantly your husband”*. Interestingly, the expected (future) family is equally important:

*“my sister has always dreamt of being a doctor then he [dad] told her: later, you'll get married and have kids, you'll either be [dedicated] for home and children or to your job” [AF-F3].*

In other cases, the extended family and tribe are equally important. It is remarkable that even if family was not the first priority for men, still, in the male session, some of them expressed that they do expect it to come first for women.

*“It always occurs to me...is this achievement based on sacrifices? Has this [female] achiever sacrifice other things, or did she manage to balance between her responsibilities?” [AM-M3].*

On the other hand, for men, they seem to prioritize tribes and male societies over any other group. For instance, Ussama pointed to tribal support:

*“the society usually, you as a husband, those who are around you have a role, some societies [tribes] support when they know your wife is studying and you are staying with the kids ... and then there is a completely opposite society, even if she works as a teacher, they would say oh she leaves the house and not cook for you ... he fights, and his wife fights too.” [AM-M1].*

The price for having these social ties, as we illustrated was to adhere the societal values or to be prone to negative judgements and exclusion. As a result, our participants expressed that they were mostly comfortable opening up and sharing contents that might be considered unacceptable with people who are not from the culture because they will not judge them. Therefore, we infer the cultural proximity is one aspect that contributes to seclusion. In addition, sharing certain contents with non-Saudi friends was for educational purposes. [PF5] explained that she

*“share[s] certain news on her Facebook to educate her American friends on the conflicts going on in the region.”*

Another participant explained,

*“I have friends from Saudi, friends from Canada, and friends from the States. It is nice to see how all of them react to a certain post I share on my Facebook.” [PF4]*

In summary, the reinforcement of this facet of the self is primarily enacted in two directions: secluding from others (to suppress the autonomous self) and seeking recognition from others (to promote the collective self).

### **3.4.3. Withstanding the Others (Them)**

Participants revealed a clear predilection for “cultural homogeneity” and “oneness” through the articulation of “others”. The use of “othering” was not only limited to hostile classification of those perceived as enemies (e.g. activists and the West who seek to discredit Islam and the laws and culture in Saudi Arabia); it also encompasses a more innocent classification of those who do not identify with the traditional values of Saudi culture. For example, when discussing the scientist Ghada Almutiri’s achievements, [AB-F4] questioned:

*“I don’t know to what extent? As a Saudi woman who left Saudi, if your achievements are done outside, how much should we consider you one of us?”*

Additionally, when discussing a Saudi actress—for many Saudis, acting is a highly stigmatized profession—[AF-F3] asked: *“is she a Saudi Saudi?”* (meaning, is she originally Saudi?). To this, [AF-F4] replied: *“surely she has some other origins.”*

Interestingly, it is expected that those who deviate from the norm should “other” themselves. When discussing the activist Manal Alsherif, who gave a TED talk on women’s rights, [AF-F4] said:



*“she talked on our behalf and used ‘we’ when she should’ve said ‘I’ and talked about herself. Those who do not like it here should just leave for another nationality, go abroad and live the free life that you wish. But do not represent Saudi Arabia and say I am a Saudi and I ask for these rights.”*

Interestingly, a participant raised the point that some people would intentionally ‘other’ themselves to avoid being condemned by society. When discussing a Saudi model, a participant said:

*“I see her account, I don’t follow her it’s shameful if someone sees me following her, she provokes me, there is a clear body show, and she pretends she is abroad, so she doesn’t know this is a vice, but she does know”*

In her use of ‘she pretends’, she refers to the strategy this model is using to avoid being ashamed for violating social norms. Such a strategy indeed confirms the proximity aspect discussed earlier, which correlate with criticism.

From this, it becomes evident that “oneness” and “cultural homogeneity” are crucial values to which individuals are expected to adhere, to avoid the social abandonment and exclusion that result from being classified as the “others”.

### **3.5. Discussion**

Building on Hofstede’s classification for Saudi culture as collectivist [117], and Abokhodair *et. al.*’s [3] work around expressing the two facets of the self: autonomous and collective ; we provide a deeper analysis of each facets to unpack constructs and values associated with them. Below we explain these values and illustrate their implications for design in the form of a framework consisting of five questions.

#### **3.5.1. Values and Value Tensions**

Islamic traditions are a fundamental component of Saudi cultural values as they are believed to be the only legitimate source of morality. Therefore, it is not only the ultimate sacred value in and of itself: it is also the yardstick for all other values. As demonstrated in the findings, in some cases an inconsistency arises between one’s deepest desire and their conception of religious moralities. The result is that individuals would prioritize religion or experience internal struggle such as ‘sin’ and being ‘afraid of god’.

Political safety includes an individual’s safety from political authorities and national safety from potential political turmoil. The state, by spreading its entities and monitoring online and offline spaces, makes it inevitable for an individual to self-monitor their actions and words and be concerned for their (and their family’s) safety. As such, political values differ from religious values in that the religious values shape how individuals perceive the world, whereas the political values guide how they articulate their perceptions—even if they do not necessarily believe in what they articulate.

A positive image of the state is maintained by individuals since the state applies Islamic law. Hence, any critique of the state is perceived as an attack on Saudi society and the Islamic religion. Since most of this critique originates in Western media, the West is perceived as the

“orientalist” [200] and “Islamophobic” [50] enemy. As a reaction to these attacks, individuals have a sense of duty to protect their state, religion and culture. This is exemplified in their attempts to maintain a positive image of the state. The tension that most commonly arises here is between the maintenance of a positive image of the state and the opening of public dialogues regarding internal (Saudi) issues. This is most commonly resolved by the avoidance of being involved in political discussions (i.e. political reform).

Cultural homogeneity and social ties are highly valued, in contrast to pluralism and *othering*. To preserve their cultural values, individuals are expected to conform to their groups’ values. There is a sense of hostility to pluralism, which results in “othering” those who do not adhere to their societies’ values. By “their societies”, we mean the groups identified in our analysis: family (and expected family), tribe, gender groups and the Saudi society. Social ties with these groups heavily rely on cultural homogeneity; these ties are prone to be broken in the state of pluralism. Due to some differences between these groups and how they are prioritized by different individuals, tension can arise between different groups, with individuals juggling different loyalties.

Concealing the autonomous self from others is practiced by individuals as a protection mechanism. In an authoritarian state and a judgmental society, to avoid risk, individuals prefer to hide from others and overprotect their privacy by maintaining a position of invisibility.

However, there is a tension here with other values such as acknowledgment and recognition. Recognition from others is sought to retain higher social status. Individuals value the presentation of their best (collective) selves and being visible to others. This visibility is valued when associated with other cultural values such as achievements and piety. The tension here arises from the fear of being negatively judged. Thus, individuals negotiate between protecting their privacy and presenting their achievements.

### **3.5.2. Stakeholders**

To unpack and define entities underpinning individuals’ perceptions, we identified six stakeholders shaping the disclosure of two selves (autonomous and collective).

The autonomous self reflects desires and values that are not necessarily “right” or “moral”. As such, it is not relied on, even when individuals can access and differentiate it from their collective self. This level of the self also reflects the perception of Allah (God). Allah can be seen as a critical stakeholder for our participants in every aspect of their lives. The sense of being monitored and living by the presence of Allah has become integrated within the self, represented in self-censure practices. However, because conventionally in VSD stakeholders are people, we situated this ‘stakeholder’ as an internal aspect of the *autonomous self*.

The collective self (the autonomous self + the religious establishment + the state + the society) represents right and wrong, and moral values [2]. This facet is what individuals rely on when making judgments and disclosing themselves. It is enforced by three entities: (i) the state, by being robustly tied to the religious establishment, is highly respected in Saudi Arabia, (this is in addition to the state’s intolerance of political and religious counter-discourse) [14]; (ii) the religious establishment, which predominates in the traditional religious and moral discourse [14] shaping Saudis’ perception of Islamic values; and (iii) society in general, and its

overarching values and norms to which individuals are expected to conform in exchange for social ties and inclusion, but with different groups having different interests, such as family, expected family, relatives, the whole tribe, friends, and female/male society.

The others are perceived as either hostile or non-hostile. This influences an individual's disclosure of their autonomous self or collective self. For instance, among non-Saudi friends, disclosing one's autonomous self becomes easier and explicit. This group is often treated differently by Saudis and perceived as judgment-free.

In contrast, the West and their allies (e.g. liberal Saudis, local activists) represent a hostile group whose agenda is to destroy religious, political and cultural values. Individuals cannot trust this group; thus, they defend their groups by conforming to the values and behaviors of their collective selves.

### **3.5.3. From Understanding to Practice: Integrating Cultural Values in Design**

Our remaining task is to bridge the divide between our (hopefully) nuanced understanding of cultural values, and the design implications that might arise from this understanding. Thus, we propose a reflexive approach to incorporating our findings into the design process. To this end we have constructed our findings in the form of five questions for designers of digital services and platforms that engage with Saudi cultural values. The questions are intended as tools for designers engaged in creating new systems and services, but we they can serve to structure a critique of existing localized systems.

**Q1: The Self.** To what extent will the user present their autonomous or collective self in your system design?

How a design imposes on users the requirement to disclose their autonomous self—for example, through the expression of a unique and resolvable identity or personal experience—is significant. Users are acutely aware of the potential consequences of such disclosures. Even where this is unavoidable in a design, users' experiences of traditional self-protection mechanisms are complex. It is not just that they have a deep mistrust of technical realizations of security and anonymity: their self-surveillance also has implications for designs that have the expression of individuality at their core (even with anonymity or pseudonyms).

Moreover, an implication for conducting user research with such a population is to explore the ways by which design researchers can facilitate expression of autonomous self. The challenge illustrated of articulating individual's values without reference to religious moralities or cultural (or collective values) could create a barrier for understanding the true values of users.

**Q2: Religion.** How is your design situated in the dominant religious discourse?

Since religious values are considered the foundation for all other values, it is imperative to explore the religious discourse and fatwas [133] related to the design space during the conceptual investigation stage. A design does not have to reflect religious values, but its intentions should be formulated within a wider understanding of these values. Whether the design topic is Islamic banking, social media or (as we explore) crowdsourced harassment mapping, religious values are a key concern, as is their interaction with political and societal values.

**Q3: The State.** What image of the state does your design project?

The desire to promote a positive image of the state not only stems from fears of being politically deviant, but also from a genuine aspiration to maintain and contribute to national unity. Such considerations manifest themselves in readily identifiable forms, such as the criminalization of aspects of freedom of expression as well as the requirements of state surveillance, but also in citizens' strong sense of national identity (whatever their political views) and desire to project a positive image of Saudi Arabia and the Saudi rulers.

**Q4: Society.** Could your design be perceived as reinforcing or undermining social homogeneity?

Social norms include gendered expectations as to the visibility of women and the prioritization of families over careers, but also expectations on both women and men to represent their families and tribes. If a design allows or encourages users to deviate from prevailing social norms, then there will be (or perceived to be) social consequences. Designs should consider how they manifest different social groups, and what the consequences of the designs are in terms of being excluded (or "othered") or gaining social recognition.

**Q5: Opponents:** Does your design validate institutions or groups that are perceived as opponents of Saudi Arabia?

The question is not about whether a design is associated with the "West" (indeed, many global products and services are very popular in Saudi Arabia). Rather, it is a question of whether a product or service is a vehicle for the promotion of a Western agenda that is intended to undermine Saudi values. While Chanel, Porsche and WhatsApp are seen as beneficial cosmopolitan products and services, there is a deep skepticism of "the media" and any service seen as constituting a coordinated attempt to criticize Saudi values and society.

Collectively, our questions aim to support the goal of designing safe spaces for self-expression within a culturally sensitive approach. We do not claim that answering the five questions offers a direct line to a "safe system", but rather that they are touchpoints that can assist designers who are seeking a culturally sensitive understanding of their users.

### **3.5.4. Wider Implications for Design**

By defining cultural dimensions that are specific to our context, we build upon (and not diminish) Hofstede's universal dimensions which are used for cross-cultural comparison. Whereas our dimensions are used specifically for Saudi specific context. For example, while Hofstede's dimensions characterize Saudi Arabia as a highly collectivist society, our findings demonstrate the practical aspects of that collectivism. Thus, our dimensions zoom in and provide a deeper understanding of collectivism in our participants' lives, the values associated with it and the stakeholders influence it in this specific context.

By doing so, we encourage designers to adopt such an approach for culturally specific investigations. We demonstrated how this was made possible by the virtue of (i) working with a transnational population that is more articulate of their national/transnational values, and (ii) conducting a joint secondary analysis where more than one study can provide validation and rigor to the identified cultural dimensions. Moreover, our approach differs in that it is less

deterministic than Hofstede's. While Hofstede define specific scores for each dimension to describe a specific country, our dimensions are defined as core influential values yet without given a specific intensity or direction. These are left for designers to study around specific topics or organizations. Meaning these acknowledge nuances and encourage investigation for each specific research topic.

Thus, they are intended to guide the scope and learning process about a given Saudi content and not taken as absolute values. While we do not consider this framework to have provided an exhaustive understanding of Saudi culture, it serves as a valuable guide for the process of investigation. Moreover, while this case study is an initial step in the exploration of culturally specific values in an under-researched context (Saudi Arabia), the mechanism by which this framework was developed is applicable to other contexts.

### **3.5.5. Reflection: Defining Core Cultural Values**

We argued in our introduction that for truly value sensitive approaches, cultural values have to be defined bottom up with people. This is consistent with Weaver's [251] notion of 'culturally competency', that working with indigenous people requires accurate information which can best be obtained from the people themselves. On reflection, we found that our defined core cultural values do not only meet a criterion of derived from the bottom up, but they also have two other qualities: a strong connection to the other core values, and a strong influence on individuals regardless of the value's intensity or direction (i.e. regardless whether the individual believes in that value). With regard to transnational populations, we discussed how their cultural fluency makes them suitable subjects for identifying core cultural values. On reflection, we found that another characteristic they possess is that they provide a wide range of intensities and directions of the cultural values (i.e. wider diversity) which makes identifying a core cultural value as such, more rigorous.

## **3.6. Conclusion**

The approach we propose to deepen our understanding of culture aims to guide designers and enhance their value sensitive design processes. Our approach can also inform the selection of methods, tools, and strategies when engaging in culturally sensitive user research. By understanding the relevant stakeholders, and the values identified, researchers can utilize these to guide the empirical research regardless of the topic under investigation. This helps us to "speak the user's language", ask relevant questions and examine the effect of relevant cultural values. Therefore, this also poses a challenge and an opportunity for design researchers, to explore empirical methods that are suitable for this context. While we do not consider this framework to have provided an exhaustive understanding of Saudi culture, it serves as a valuable guide for the process of investigation. The ultimate measure of our framework is its application to the design of new services and products (a topic of future work). However, the framework can be utilized for the evaluation and redesign of existing systems and services. This includes the interrogation of design decisions in the context of Saudi values by using them to explain the nature of localizations and/or the absence of otherwise globally popular services in Saudi Arabia, of which there are many. In the subsequent chapters, I demonstrate how this work influenced the rest of the project towards a more culturally sensitive approach.

## **4. Scenario Co-Creating Cards: A Culturally Sensitive Approach for Eliciting Values in VSD**

### **4.1. Introduction**

Designing for users requires beginning with a deep understanding of users and their needs [192]. For this, user research aims at understanding the users and their context, exploring their practices and meaning behind them, analysis and synthesis of the data, and using insights towards a design solution [192]. The adequacy of the chosen research method depends on the research question and the goal of the study [210]. This is particularly a vital decision to make when researchers claim they are adopting a value sensitive or culturally sensitive approach.

In this chapter, I discuss the limitations of value eliciting methods in VSD literature to fulfil the purpose of my cultural focus in work. Thus, in an effort to build upon existing methods in VSD which were developed for different purposes, I propose the development of a method with a culturally sensitive approach to address the cultural effects on people's expressions of values, a vital factor that has been reported from cross cultural researchers in VSD. Thus, I design and evaluate a method developed with culturally specific focus in mind. Taking my cue from literature on how people express their values in different fashions, I design a method intentionally to facilitate value expression, which makes it versatile for general use in other contexts. I demonstrate the utility of this method through a case study with a culturally specific group: transnational Saudi women. Apart from the fact that my case study urged using such a method, this also addresses the critiques VSD has received on how and why researchers use certain methods with their participants.

The goal of this study is twofold:

- 3 Proposing and evaluating a culturally sensitive approach to design a method for the empirical phase of the VSD process, demonstrated in a case study (this chapter)
- 4 Understanding Saudi transnational women's values and practices of self-disclosure in digital media. (next chapter)

### **4.2. Background**

Cultural context is a critical issue to consider in value-oriented approaches of design. A third wave of HCI emphasizes the importance of incorporating human elements including culture, in the design process [33]. Despite acknowledging the influence of cultures on the way people interact with technology, there is still a lack of practical guidance on how to explicitly integrate this concept in the design process [186]. This is particularly vital for value oriented approaches, due to the fact values and cultures are inseparable; it is not possible to understand people's values detached from their cultural context [186]. An example of a framework supporting the integration of both values and cultures in the design process is the value oriented and a

culturally informed approach (VCIA) [186]. However, apart from its complexity and being designer-generated, this framework does not provide concrete methods on how to elicit values or approach culture.

Other approaches, such as Value Sensitive Design (VSD) [80] and other value-centered methods [124,126] have been developed in order to help ensure that technology designs are congruent with the values of those who directly or indirectly interact with systems [80]. Eliciting values (and their practical implications) is a fundamentally important aspect of VSD: it is not possible to effectively perform VSD without having a sufficiently concrete understanding of what the underlying values of a target population actually are [34].

Determining what the relevant values are, and how they operate, is a challenging endeavor. In certain cases, this may be achieved simply by asking those concerned, however, this depends on the values, the person, and the cultural context. Yet in most cases, there is a multiplicity of difficulties, including the fact that people may not know what their values are [111], that they are self-reported (raising questions of efficacy) [114], or that they are expressed as protean words, making their direct discussion and documentation challenging [84].

This is an important concern to address if value oriented approaches are to be genuinely inclusive of all cultures, and with that, the technologies that end up being designed and deployed into wider society. The difficulty is that values are inherently culturally specific, and often do not translate directly from one setting to another [84]. This is particularly challenging with a population coming from a socially and politically conservative culture [129]. This is the case of my context of interest, Saudi Arabia, which is a deeply conservative culture defined by patriarchal structure [94] and a collectivist society [117], where individualism and freedom of expression are not promoted, and where there is limited historical knowledge about the population [18] to draw upon. These difficulties are perhaps why VSD and other approaches have imported, on occasions, a closed set of westernized values and then made design decisions using those values as a check-list, even where these values are not be appropriate [173].

Value Sensitive Design has been predominantly applied in Western context. As it becomes increasingly applied in many different domains such as health informatics, action research, and responsible innovation [83], the domain of Cross Cultural Design has been captured by a few studies within VSD. This is, however, is still a receiving a slowly growing interest in VSD, particularly in terms of the value eliciting methods employed. Typically, many of these studies report employing qualitative interviews as semi-structured [23], in-depth [11], or conversational interviews [4]. Researchers however reported different techniques they used in the empirical phase which helped them account for cultural norms of their participants, whether intonationally or not. For instance, Alsheikh *et. al.* [23] reported using audio-only calls in their semi-structured interviews (intentionally) to “*diminish cultural hesitation and embarrassment*”. Abokhudair and Vieweg [4] reported that they found allowing their Arab participants to use their second language (English) in the interviews facilitated their expression “*when discussing sensitive topics ... participants tended towards English*”. In another study, Abokhudair *et. al.* [3] reported that having both an *insider* researcher and an *outsider* researcher provided double advantages; while the insider had “*insights into the nuances and complexity of the cultural practices*”, the outsider was found easier to “*open up*” to by participants as they

freely discussed their “*secret boyfriends/girlfriends, alcohol consumption, getting tattoos, and additional haram or taboo activities*”. This was attributed to “*participants’ lack of fear of judgment*”.

These reported techniques whether intentional or not confirm how vital it is for cultural sensitivity to be considered in the method employed and they demonstrate findings that perhaps would not have been possible to obtain otherwise. Thus, I call for a careful and intentional adoption/adaptation of methods used to discuss sensitive topics or to work with culturally specific groups. To do this, I discuss the current value elicitation methods employed in VSD and why I find them limited to be applied in my culturally specific study. I then discuss literature on culture and how it is expressed in order to help us develop methods that are intentionally design for facilitating this process. Finally, I discuss how I incorporate my cultural findings from a previous study into the design of the method proposed.

#### **4.2.1. Eliciting Values in VSD**

VSD is a framework, not a method, so is not overtly prescriptive in respect of how values should be identified [150]. A starting point for VSD investigations has been the use of universal values of moral import [34]. However, the application of these values has been criticized substantially: most notably in the work of Borning and Muller [34], which (amongst other matters) decried the emphasis upon “universal” as opposed “culturally specific” values. Muller [173], explained that “the problem is the undifferentiated mixture of the researchers’ values and the described values of other people.” The overall point of this criticism is that there is a need to accurately identify the values of those who will be subject to a system, rather than taking ‘westernized’ values and applying them to other cultures. Le Dantec et al [150] expressed the concern that “what is needed is more prescription in methods that inform value-centered investigations, and less prescription in the kinds of values considered”.

To address this problem, a subdomain of VSD has emerged called ‘values elicitation methods’, whose goal is to develop methods that identify the values of given populations and cultures. [260]. There is no universally agreed approach towards doing this, however most approaches are qualitative in nature [220]. Typically, these methods include interviews, surveys, design exercises, ethnography, and the use of values advocacy [215]. Despite the strength of existing methods adopted from social science, VSD researcher sometimes find themselves facing a challenge of finding a suitable method for certain projects, which led to adapting or inventing new methods. [83]. Thus, other studies have used novel techniques such as those presented in Friedman and Hendry’s review of 17 VSD methods [83], where 6 of which were classified as value elicitation methods. These are discussed briefly below in terms how they were applied and why they are not suitable for culturally specific context.

##### **4.2.1.1. Value Scenario**

Value scenario is a technique comprising of fictional vignettes which aims at envisioning the systemic effect of proposed technologies [57,180]. It is an extension of SBD methods [180], and incorporates five key elements: stakeholders, pervasiveness, time, systemic effect and value implications [83,180]. It is reported that value scenario “although fictional, [is] grounded on actual products and events” [57]. The generation of value scenarios has been determined by



designers as an analytic tool to understand the systemic effects (as in [57]); and in other cases by stakeholders as an empirical tool to elicit stories (as in [258]) [266].

Example of a designer generated value scenarios is the work of Czeskis et al 2010 [57] where the value scenario was used early in the process. This did not involve users, although they were involved later in a traditional question-and-answers interviews. These interviews required participants to evaluate technologies for general use among parents rather than evaluating participants subjective usage. Tapping into their subjective experience might difficult anyway, particularly in a rather sensitive and prone to judgement topics such as parenting. Another example is that of Yoo *et. al.* [266] where the authors explained how they “*prior work had elicited 19 value scenarios from homeless young people about how they might use mobile phones to keep safe ... A sample of 11 scenarios was selected by the researchers and repurposed on cards as stakeholder prompts...*” However, it is not clear how the values were initially elicited before constructing scenarios from them. Thus, the missing key in this application of value scenarios is that they are not intended to be used with users elicit values (and facilitate value expression). Although they are classified as value elicitation tool, they are intended to be used (and created) by designers and policy makers to envision wider systemic effects. Despite their reported success in achieving this goal, they do not provide mechanism to facilitate value expressions, which is a key component particularly in culturally sensitive context as they are not intended to capture culturally specific elements.

In other cases, value scenarios were used as user-generated instead of designer-generated technique. A notable example is the work of Woelfer et al 2011, [258] where value scenarios were created by users albeit more as an ideation tool. In this case, participants were expected to respond to a problem statement: “*Homeless youth and young adults may face special challenges in keeping safe from harm*” and explore potential solutions of cell phones: “*Please write a story about how a cell phone could help to keep a homeless youth or young adult safe*”. While they were reported as effective tool, this application takes participants more into a ‘creative’ mode where their main task is to create potential solutions rather than to ‘express values’; which means more of an ideation than a value eliciting tool. Thus, such a tool may not provide a sufficient mechanism for my purpose in this work to facilitate users’ value expression, particularly independently from their social expectations.

#### **4.2.1.2. Value Sketches**

Participant sketching, wherein a rough sketch is used to illustrate or develop an idea by a participant has been increasingly used in HCI [42,237,249]. In VSD, value sketching has developed as a value elicitation technique which is based on using sketches made by participants to tap into their non-verbal views and values, particularly in relation to technology and how it is situated in place [83]. This technique has been used in both conception of digital aspects such as Friedman et al’s work secure online connection as in [86]; and in physical locations as in Woelfer et al’s work on homeless and safety [258]. The main advantages of this technique are provoking participants and allowing non-verbal expressions quickly and cost-effectively [55,82,238]. This is especially the case when participants (such as industrial designers) possess well developed graphic sensibilities [55]. However, there is a limitation in that not all participants are confident drawing or sketching, or to express their thoughts by

sketching [249], which may end up creating a narrow context for discussion. Moreover, where value sketches have been used, an emphasis has often been placed on understanding user conceptions of values as opposed a freestanding value elicitation [86]. Thus, value sketches might limit the outcomes of the ‘elicitation’ to only *sketchable* concepts and ideas.

#### **4.2.1.3. Value oriented semi structured interviews**

These interviews tap into participants views and values about technology, evaluative judgements and reason [83]. Semi-structured interviews [79] are the predominant method in VSD and are a standard method within HCI more generally. In respect of VSD, these interviews are designed specifically for value elicitation. The potential advantages of such an approach includes pursuing topics in depth and engaging new considerations provided by stakeholders into the discussion [82]. Given that interviews are a flexible platform [238] in which other techniques might be integrated [192], the precise formulation of an interview varies widely depending on the investigation. Thus, interviews can be seen as an abstract method and not a value elicitation technique per se unless explicitly formulated as such.

#### **4.2.1.4. Saleable assessments of information dimensions**

This technique comprises a set of questions to tease apart scalable dimensions such as pervasiveness, proximity and granularity of information [83]. Scalable information dimensions address the problem of granularity in respect of continuous variables: for example, in respect of privacy, someone might be happy with friends knowing what town they are in, but not which street. This approach is not prescriptive in respect of formats [82] and in practice, it can be combined easily with other methods [82]. However, the focus here seems to be on the gradation within the questions asked to elicit values, rather than going beyond that box or facilitating participants value expression.

#### **4.2.1.5. Value-oriented mock-ups/prototypes**

This approach involves developing a mock-up of an artefact or object, typically in a low-fidelity format, with a view towards “scaffolding” the investigation of values (and their implications) [82]. Examples include mock-ups of implantable cardiac devices [62], a hypothetical mobile phone application [57,82] and video prototypes [257]. These methods have the advantage of being concrete: in effect, they are more detailed and fleshed out value scenarios, amounting in effect to their more realistic alternative.

However, this technique is constrained to substantial artefacts, or spaces of artefacts and works best when there is an idea about a solution to be refined and it is not suitable to use for stages of the design process where showing participants potential solutions is deferred.

#### **4.2.1.6. Value sensitive Action-Reflection model**

This model involves a reflective and interactive process in which designers or stakeholders generate value sensitive prompts into co-design [83]. The Action-Reflection model is associated with co-design, and encourages stakeholders in such settings to be both reflective and to generate new ideas that would be otherwise challenging in respect of co-design activities [82,203]. For example, in [266], a combination of stakeholder and designer prompts were used in “a co-design process with homeless young people, service providers, and police officers”.

In practice, this approach provides participants a clear opportunity to reconsider their designs from a value perspective [83]. However, similar to sketches, this method is oriented toward ideation on designing new solutions and iteration of that design.

#### **4.2.2. What Is Missing?**

Overall, value eliciting methods in VSD literature have been reported to be effective in the circumstances that they were deployed. The method chosen is usually intended to help designers focus on critical elements of the design situation [83]. However, there is a gap in that (i) there has been no clear reflection on what makes a method classified as a value eliciting method; and (ii) there has been no culturally sensitive method developed for culturally specific group of users. This is even in cases where VSD was adopted in cross-cultural studies (as in [4] and [23]), where the cultural focus was on the outcome (understanding of culture) but not on methods employed particularly for culturally specific purposes.

Due to the limitations identified of these methods to facilitate achieving the goals of this work, I introduce Scenario Co-Creating Cards, a method that builds on VSD methods, inspired by literature on value expression, and incorporates cultural understanding from previous empirical work. To do so, I discuss in turn (i) the nature of values (and the difficulty in defining them), (ii) how values are expressed (iii) how my understanding of value expression combined with a specific culture can be integrated into the design of value elicitation methods.

#### **4.2.3. Values Theories**

Values are a central concept in many disciplines [208]. A meta-inventory of human values across diverse research contexts was developed by Cheng & Fleishman [46]. The authors provided a review of how the definition of values varies widely in different fields, and how different instruments developed separately measure the concept of values. Their study focused on inventories of basic human values, not the general value dimensions (categories). E.g. Hofstede. They reviewed 12 value inventories including Rokeach, 1973, Schwartz, 1994, and VSD 2006. The authors' summation of these definitions is that "values serve as guiding principles of what people consider important in life [46]." Additionally, the authors developed a list of values which consists of 16 value concepts which are derived from initial total of 48 value concepts. Such inventories were critiqued for being driven from the researcher's subjective selection of which values to be included in their list. Moreover, there seems to be an over-reliance on literature or researcher's intuitions which results in identification of values that are not necessarily meaningful for the population of interest.

Social psychology is replete with value theories; the most comprehensive of which is perhaps Schwartz's universal values model [255]. Schwartz et al [209] defined values as "trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or group." They provided a comprehensive set of 19 values on a circular motivational continuum: Self-direction, Stimulation, Hedonism, Achievement, Power, Security, Conformity, Tradition, Benevolence, Universalism. The order of values was based on the conflict or compatibility between them the people experience when making a decision or taking an action. Schwartz et al [209] argue that these values are universal and recognized in all societies because they are grounded in three universal requirements of human existence:

biological, social, and survival of a group. However, since their study did not include a cross cultural comparison of the importance of values, their argument of universality may require further cross-cultural research. Whereas, their method utilized statements that are in generic, such as “It is hard to get ahead in life without lots of money.” As such, the trans-situational element in their definition of values is not incorporated in the method. Thus, the study of values may require a multilayered approach to understand their complexity. One prominent example of such approaches is Maio et. al’s model of values as mental representations [166].

Maio’s work [166] reviews attempts to describe and measure values, such as the works of Allport (1960), Rokeach (1973) and Schwartz (1992). Based on these, a model of values has been created to address the gaps within the previous models. Maio’s model [166] of values as mental representations consists of three levels: systems of abstract values, specific abstract values, and concretely instantiated values. On the system level, values are connected to other values. Thus, a change in value X can lead to change to other values especially those values that are motivationally congruent with value X. On the abstract level, values are sustained by a strong affective support. Thus, values are strongly supported by emotions as source of information. On the instantiation level, “the typicality of prior value instantiation affects “perceptual readiness” to apply values to subsequent situations [166].” Maio argues that values have been consistently treated as conscious and explicit reportable constructs, whereas Maio argues that it would be useful to measure them as subconscious and implicit constructs. Thus, with this model, it is possible to measure both conscious and subconscious expression of values. Taking this model forward, researchers have suggested concrete approaches to study values, most notable example in the domain of technology design is the work of Winter et al [255] [256].

In their work on advancing the study of human values in software engineering, Winter et al [255] suggested considering two key principles in order to advance the study of values: distinguishing the concept of values from ethics, and grounding the study of values on established theoretical frameworks. Thus, The authors designed a theoretically informed method to study the values of software engineers in a systematic manner [256]. The main motivation behind this work was that the study of human factors in the design of technology has recognized that the individual values of designers can easily be implicated in the final products. Issues raised from this consideration include the fairness and algorithmic bias [255]. Thus, the goal of such work is to help those *making* the technology articulate and become aware of their own values. Taking this work forward, there is a need to explore how we help the end users too, articulate their values for which the design of technology has been oriented under the umbrella of value centered design approaches.

In response, this chapter aims at identifying principles and developing methods for eliciting values to be utilized in the user research (fieldwork) phase of the design process. Starting by constructing a working definition of values, extracting principles of how people express values, and using these in the development of a value eliciting method.

#### **4.2.4. What Are Values?**

Values are a central concept in many disciplines [208]. They are not simply objects of study or units of analysis, but a reflection of cultures, religions and individual experiences: indeed, they

are so important that values (when they take the form of a ‘belief’) are protected under International Human Rights Treaties (most notably the European Convention on Human Rights [7] and the UN Universal Declaration of Human Rights [26]). Despite their importance, the concept of a value is not entirely well-defined, with this issue having vexed philosophers, scholars and lawyers alike [138][76,113]. Nevertheless, values have core characteristics that help understand what they are and how they might be utilized as tools to assist in designing systems in an inclusive manner.

Values have been described in this literature as follows: (1) Values represent what is important and worthy [76,113,208]. and not what is ‘right or wrong’, (in contrast to other concepts like ethics and norms [47]). (2) Values are internal principles based in the ‘forum internum’ of a person: they are part of how people think and therefore do not have a freestanding existence outside of the people who hold them [47,114,138,208]. (3) Values are motivational in nature [76,169]: they act as psychological drivers for individual decision making. (4) Values are evaluative (normative) principles to direct the choice between alternatives [113,114,138,208].; they are not simply evaluated on an emotional level, but assist in rationalizing decisions that people make. (5) Values are relatively stable and slowly changing within an individual [76,113]. (6) Values are said to be trans-situational (i.e. consistent across situations [169]).

There is a cumulative picture, especially given that the features that underpin values naturally shade into one another. I can infer from these six characteristics that values are a fundamental and internal guiding mechanism (per 1,2,3 above), they serve as an evaluative dimension of human choices (per 3,4) and influence behavior across a diversity of situations and circumstances (per 5,6). The implication of this is that measurement of individuals’ judgments, attitudes (evaluation), beliefs (perceptions about what is true), traits (consistent patterns of thoughts and actions) and adherence to norms (social rules) are potentially means for indicating values that they hold [113,138].

#### **4.2.5. How Do People Express and Manifest Values?**

Moving on from the abstract properties described in the literature, it is necessary to consider how values are expressed and manifested in the real world. Naturally, this is not easy, for a multiplicity of reasons. The articulation of values can be challenging as they are abstract and unobservable [111,113,138]. Whilst values are often offered and thus typically measured in self-reported forms [114], the difficulty can be that the manifestation of the same value takes markedly different forms, and furthermore people may not actually know what their values are [111]. There is also the possibility (as will be illustrated later in this chapter) that how someone expresses themselves can be a value in of itself (e.g. collectivist vs individualist societies as per Hofstede’s dimensions [95]). Another difficulty, is that values are often expressed as protean words, making their direct discussion and documentation challenging [84]. This is more complex in other cases, e.g. for people with certain cognitive impairments, those subject to social exclusion, or people from very different cultural backgrounds to an investigator [23].

All of this presents an interesting challenge: what is a fair way to identify and measure values so that we can take an appropriate account of them in design decisions and properly balance ‘tension’ [168] between them in a design process? In practice, the solution has been to analyze

how individuals make choices, indeed, Hills [113] suggests that this is the only practical approach. This allows values to contextually constructed in relation to other values, thus enabling the values and the tensions between them to be identified. The next question is: what choices should be given to subjects so that their values can be identified? There is no universally applicable answer, but approaches (or elements thereof) generally follow one or more of four principles: (1) making a choice from a (real) selection (which includes the classical stated preference techniques and contingent valuation [159]); (2) justifying a choice from a real selection [72]; (3) justifying a choice from a hypothetical scenario (including a future scenario) so as to abstract away from prevailing social norms and constraints [72]); and (4) comparing across scenarios, or cross-situation scalability (which is said to be necessary to avoid a consideration of single situation only, as this might not be reliable [113]).

I infer the importance of incorporating all these principles within the design of a value elicitation method. Because of the stated difficulties with expressing values, a combined approach of these principles within one method makes it easier for a method to facilitate expressing values among different types of participants. In turn, this provides more rigorous and valid approach for researchers to identified values. Therefore, I present Scenario Co-Creating Cards as a method developed in lights of these principles and based on my cultural understanding from the previous case study. I showcase the design and deployment of the method in the next section. (see appendix **Scenario Co-Creation cards**)

### 4.3. Developing Scenario Co-Creating Cards

The development of Scenario Co-Creating Cards was motivated by the limitations of VSD methods to address a culturally specific group and inspired by literature on value expression (as discussed earlier). Thus, the goal of this work is to foreground culture-related aspects into a value elicitation method, guided by understanding of how people express values.



*Figure 4.1 Scenario Co-Creating Cards*

The design of the cards will be explained below in a sequence of three aspects although these were considered rather in parallel during the actual design. For simplicity, I explain the

conceptual, the physical and the practical design of the cards, respectively and separately. I demonstrate how my specific understanding of the cultural context guided the inner elements and mechanism of the method. However, I believe this can be applicable to other context, and can contain different contents and dimensions of the card, while the overall mechanics remain the same.

#### **4.3.1. The Conceptual Design: The Cultural Factor**

The main aspect of designing the cards is the cultural factor. This is defined by both the research question under investigating and a previous work to understand the cultural context prior to designing the cards.

##### **4.3.1.1. *The research questions***

The research question is a key element to help us define the main dimensions constituting the overall deck of the cards. These dimensions are abstract concepts derived primarily from the research question and the phenomenon to be investigated.

For instance, my research question was scoped with my users in the previous case study as: *how might we support Saudi women's self-disclosure in the digital media with minimum violation of their cultural values?* From this question I identify self-disclosure as the phenomenon. Whereas disassembling the question into the main concepts I identified three concepts: the user (Saudi women), the technology (digital media) and the obstacle (culture). The three concepts represent the *dimensions* of the card deck.

##### **4.3.1.2. *The cultural understanding:***

Grounding the design of the method on my cultural understanding required revisiting my findings of the previous study, particularly those in relation to the three dimensions. For each dimension there needs to be some content to be discussed with users. One can initially think each dimension can be represented by one card. However, since the three dimensions include a variety of possibilities this means each dimension comprises multiple cards.

For instance, the dimension of the user (Saudi women) could constitute of variety of roles the user can play while being involved in the phenomenon (self-disclosure). Similarly, there is a variety of media in which the user can be utilize for self-disclosure. Also, the culture as discussed in the previous chapter is constituting of a variety of values and stakeholders. In my case, since culture is represented by the collective self (one of my findings), I represent culture in the cards deck as a set of different stakeholders (or audience).

From this I conclude with three dimensions for my cards deck: user, media and audience.

#### **4.3.2. The Physical Design: The Cards**

The physical design of the cards involves visualizing the dimensions identified in a set of images under each dimension. Under each dimension I identified a set of possibilities. This was a mix of creative process and inspiration from my cultural understanding. Which means they are loosely grounded on my understanding of the context but not explicitly articulated.

For instance, I defined different roles of the user including those with high achievements (e.g. a scientist), cultural controversiality (e.g. a dancer) and mundane roles (e.g. a friend). Whereas

for media I selected a variety of different types including both digital and non-digital to establish a wider understanding of self-disclosure. For audience, this was mostly articulated in the cultural study which was referred to as stakeholders.

After identifying possibilities for each dimension, I selected images representing these possibilities. Initially there was a text labelling each image, however, I decided to keep it only images to allow for multiple interpretation of these images. Thus, since the possibilities are unlimited, I had to define limited number of images and leave the interpretation of them wide open. Also, recognizing that images can provoke emotions, while my goal is to minimize leading specific interpretations, I aimed at selecting images with minimum context (i.e. no story can be extracted from one image). Thus, the combination of the images from dimensions is what I intend to compose into stories (scenarios).

Initially, all images had the same backside color (white) but deciding on making the cards faced down (discussed in mechanism) yielded the decision of distinguishing the dimensions with different colors: blue, green and red. These have no specific meaning other than indicating the difference between the dimensions.

Picture cards have a long history as being a tool for assisting participants in expressing themselves. The visual and tangible nature of cards provides a sensory stimuli for communication [105], thereby facilitating dialogue by making abstract arguments tangible and visible [122].



*Figure 4.2 The Scenario Co-Creation Cards Deck*  
(Left to right: the audience, the media, and the role cards)

For instance, Sanders [201] argues that the use of images in collage can be effective tools to evoke expression of feelings about the past (emotional) and the use of images in mapping can facilitate understanding of the present (cognitive). Hornecker [122] explains that cards are physical tokens working as reminders and props for conversation, whilst offering a creative connection between the aspects the person considers to be relevant. Wong *et. al* [260] found that the use of physical workbooks helped participants engage in the discussion. They found that cards encourage non-linear progression and enabled participants to make tangible discussion by spreading out the cards to make comparison and connections between different concepts.



In value sensitive design, cards have already been used, most notably Friedman and Hendry's work on the envisioning cards [81]. However, "*paradoxically, the Envisioning Cards become a case in which values are instantiated in a design – i.e., the design of the cards themselves*"[173]. Accordingly, a picture-based approach enables *choices to be made by participants*, provides a space *wherein they could justify them* and also helps eliminate social constraints, but there is a need to ensure that these cards afford a full range of choices and opportunities to justify them (rather than those pre-conceived by the designer)

#### **4.3.3. The Practical Design: The Co-Creating mechanism**

##### ***4.3.3.1. The setting***

Essentially, the composition of three images coming from three dimension is what create a (visual) scenario, which is meant to be verbally described (and interpreted) by participants. A deliberate decision to make the cards faced down was made to allow random composition of different images without control of the researcher or the user. A control from the researcher might be leading or taken personally from participants. A control from the participant might result in selecting only what seems easy and comfortable.

##### ***4.3.3.2. Drawing and changing the cards***

The participant is then asked to draw a card of each pile (dimension) while providing a brief description of what each card could mean. Then composing these descriptions into a scenario and describing how and why the participant would act/react in a specific way. To reach a full understanding of scenarios, the researcher must probe the participants to elaborate justify certain points they raise.

Once there a clear interpretation and justification is given for a specific scenario, the researcher asks the participant to change the cards, either fully (the three cards) or one or two dimensions depending on the conversation and the participant's created scenario.

##### ***4.3.3.3. The projection***

In the previous chapter, I discussed in my findings how participants found difficulties accessing their autonomous self, and instead, expressing values in terms of cultural (collective) values. This was an influential factor in the design of my cards as an implicit method. One commonly used strategy to facilitate bypassing the collective structures is the use of projective techniques.

Scenarios have the advantages of providing an open hypothetical and contextual basis for discussions. Previous work has identified that the hypothetical nature of them evokes ideas for future practice and moves focus away from existing constraints to creating desirable futures [65], as well as being less personal to the participants and thus less threatening (in turn allowing more engagement in discussion) [93]. Moreover, hypothetical nature of scenarios allows for bypassing socio-cultural structures and thus encourages free expression both on existing practices, or exploring the future [65,122].

Similarly, projective techniques – which operate by 'projecting' a participants subjective experience onto an external stimulus [32,118,187], typically some kind of physical artefacts, such as a collage [144], metaphorical cards (as with my work) [135], or by engaging in painting and/or photography [191]. Projective techniques are a long-standing approach towards

addressing participant's inhibitions in discussing sensitive topics [118,135,144]. Projective techniques have a range of advantages that make them particularly suitable for difficult discussions, be it through building rapport [66,187,235], their lack of intrusion [187], their ability to access hidden content [144,187,191], or their ability to depersonalize participants' responses and thus enable them to 'save face' [144]. However, projective techniques and participant generated scenarios do not have a substantial history in VSD, and I propose that they could be a *powerful means for justifying a choice* from a real selection and *enabling a comparison across scenarios*.

#### **4.3.3.4. The Co-Creation**

Co-creation is where both a participant(s) and a researcher(s) construct or develop 'something': for my purposes, the 'something' is the development of values out of a dialogue. Accordingly, a co-creative value elicitation process is designed to facilitate a dialogue and discussion wherein a participant has genuine or reasonable control over where the discussion goes or travels. There are reasons why this would be effective: studies have shown that (i) enabling participants to create their own props increases their engagement in discussion [35] (ii) the use of artifacts helps free people to envision alternative ideas from their pre-conceived ones without decoupling them from their reality [156] and (iii) that using generative tools encouraged participants to express a wide range of unique personal emotions and experiences [201]. It can therefore be expected that a co-creation process will enable a participant to justify a choice in both real or hypothetical circumstances.

#### **4.3.4. Summary of The Scenario Co-Creating Cards**

The scenario co-creation cards are focused on the task of assisting a participant in positioning themselves in a scenario. Thereby allowing participant generated scenarios which they can scaffold or adapt in order to justify or explain a given rationale for how they would act in a given set of circumstances. Thus, enabling a co-creative process.

The use of three dimensions means a large number of permutations (which for my deck was 16 in each category, amounting to  $16^3=4096$  different card combinations). In turn, this affords a great degree of flexibility, especially when it is observed that each card (and thus card combination) can be subject to a variety of different interpretations. Flexibility is necessary to ensure that this is a genuine co-creation process, rather than simply being an exercise where the researchers' values are rearticulated by the participants, a well-known risk in VSD [10,173].

Apart from one stakeholder card, which has the text 'Allah' due to cultural sensitivity in depicting 'God' (or any other deity), all the other cards are purely pictorial in nature, which helps to create a degree of abstraction (and thus further flexibility). This is in addition to addressing the fact that the use of words, especially the protean words that might be used to describe values, run the risk of talking cross-purposes. Each deck of cards had a colored reverse side (i.e. red, green, or blue), which enabled a scenario to be drawn at random by the researcher. At first sight the pictures might seem obvious, but the interpretations can yield rather different contexts. For example, a woman wearing a white coat could be interpreted as a medical student, a nurse, a doctor or a scientist.

#### **4.3.4.1. Using the Scenario Co-creation Cards**

Scenario co-creation cards are a flexible tool to be used within a wider qualitative interview study for the purpose of generating scenarios and co-creating values. In practice, the researcher would place the cards color-side up and allow the participant to select three initial cards to begin with at random. When the discussion needs to be furthered, the researcher could ask the participant to change one or more of the cards (choosing from different decks), depending to the extent that the scenario would need to be changed in order to further the interview. On occasions, where it was appropriate to do so, the researcher could also select a card themselves: typically to assist with a point or direction that a participant was travelling along on their own volition. For instance, if a participant started talking about a scenario by providing a comparison to another possible scenario using different media, for example Snapchat, the researcher would deliberately pull out the snapchat card from the media pile.

The interviews themselves were designed to be a flexible exploration of values: accordingly, a semi-structured approach was utilized. The researcher would have core questions in mind but would react to the participants concerns and allow them to develop the conversation to focus on their values and concerns, rather than any pre-conceived values of the researcher. The researcher also participated in providing different, and sometimes, challenging interpretations of the cards. In effect, this is an exercise of ‘co-creation’, where the discussions between the researcher and the participant leads to a co-created scenario which serves as the canvas for the participant (in one way or another) to justify their actions with respect to that scenario (and in turn, reveal their values). Naturally, the use of the scenario cards would also have to be within interviews conducted in such a manner as to support free and frank discussions of sensitive issues, and to build effective rapport with the participants: the projective technique (through the medium of the cards) was one component of that, but so was the freedom and flexibility offered by the interviewer.

#### **4.4. Case Study: Scenario Co-Creating Cards in Practice**

##### **4.4.1. The Study Objectives**

This study is guided by the research question defined in the previous case study: “how might we support Saudi women’s self-disclosure in the digital media with minimum violation of their cultural values?”.

I present a case study involving Saudi transnational women, which is aimed at (i) demonstrating how values can be elicited using a combination of carefully designed scenario cards and culturally sensitive questioning; and (ii) understand women’s specific values associated with online visibility (presented in the next chapter). The cultural values identified in the previous chapter has set the ground for understand the participants overall cultural context. Whereas here the focus here (and indeed the challenge) is to identify the individuals’ values in spite of their cultural ones.

##### **4.4.2. Population Participants and Recruitment**

The visibility of Saudi women in the public sphere has been increasing both virtually and on the ground over the past decade [18]. The recent reforms in the country, including allowing women to drive, are indications for expanding places for women in the public sphere [267].

However, women's appearance in media is still generally perceived as a source of shame and disgrace to their family members, especially men [18]. My population is the transnational Saudi women who experienced life in Saudi Arabia and abroad. This population represents the new cosmopolitan women in Saudi Arabia which are expected to create social changes due to their education, participation in the workforce and cultural fluency [176]. By way of a specific anchor, I focus this study on how they are represented in the digital media, using the appearance of women in media in order to act as a bridge (using the projective, scenario co-creation cards) to discussing and debating values.

This study was conducted between March and August 2017 in the United States and the United Kingdom, where the researcher was based during that period. The participants were 18 females living abroad (UK=10, US=8) for educational purposes (P1-P10 were based in the United Kingdom, whilst P11-P18 were based in the United States). They ranged in age between 19 and 35, and in education level from Undergraduate to PhD level students. Given the sensitivity, the study was conducted in private one-on-one semi-structured interviews. All participants were offered \$25 (or £20) gift cards. The participants were given the choice of using Arabic or English or a mix of the two. In the event, all but one, primarily used Arabic, but on occasions, found a specific phrase easier to articulate in English.

#### **4.4.3. The Study Design**

##### ***4.4.3.1. The interviews***

Since the goal of the study was to explore personal values of my participants, I adopted qualitative interviews as a main method to achieve this goal. Qualitative interviews have been widely used in the empirical phase of VSD. The purpose of interviews is rooted in understanding the lived experience of the interviewees and how they make sense of them [210]. Hence, when the goal and the question are about the lived experience, the subjective understanding and the meaning making, then interviews provide a good avenue of inquiry [172,210]. They provide a high level of openness, indirectivity and detailed information which allow invoking points of views that are unanticipated [79]. Typically interviews take the form of a series of questions-and-answers until one point they take the form of questions-and-stories [192]. Stories are a key aspect which provides rich insights into the users views [192]. However, when telling stories, people consciously selected certain details to recount narratives of their overall experience [210]. Thus, there has been increased development of tools and techniques to facilitates the expression of deeper values and views that interviewees might not express explicitly. Indeed, Interviews are platforms than can integrate different tools and techniques [192]. This means researchers have been able to integrate a variety of tools and techniques depending on their goal and research questions. Many of these are classified under overarching terms such as participatory methods [134], projective techniques [32], card based tools [259] and photo elicitation interviews (PEI) [71].

In the case of Value Sensitive Design, the methodology adopted in this work, the main interest of VSD researchers is eliciting values, and thus I incorporated a value elicitation tools within my interviews: Scenario Co-Creating Cards.

##### ***4.4.3.2. Using the Cards in the Interviews***

I began with two ice breaking activities in order to develop rapport with my participants. Due to the nature of the open reflection expected from the cards, participants were taken gradually from close-ended activity to a more open activity, serving as a lead up to the main investigation. I had two specific activities. The first activity was a set of 6 paired images representing different concepts related to women's visibility in the media. The participants were asked to pick one of the two cards in each pair, as to which image they like more, or which image represents their values more, as a less challenging interlude towards discussing values more concretely. The second activity consisted of twenty different news headlines related to Saudi women. Each headline had only three lines of the full article. The purpose was not to read and evaluate the articles, but to provide a relatively more open activity where participants start to open up and reflect on various concepts. They were initially prompted to choose the best headline(s) and the worst headline(s) and comment on them. Both activities lasted for around 10 minutes. The ice-break activities were followed by the substantive study using the scenario cards and lasted 40 minutes on average. Each session began with an explanation of how the cards worked and the types of discussions that they were intended to facilitate. My participants were encouraged to interpret the cards in any way they wish, when multiple interpretations arose, they were instructed to create a scenario for each case. With some participants, saturation comes early while with others it required a consideration of more scenarios to understand their overall attitude towards being visible in the media.

#### **4.4.4. Transcription and Analysis**

Each interview was audio recorded and then originally transcribed in Arabic, with researcher noting cases where values were identified, before translating the discussion around them into English (the point was to capture the entire process). I then performed thematic analysis on this resulting data, which is a standard and widely utilized process for analyzing qualitative data, and is well known for its flexibility [37]. As this chapter is concerned with exploring the effectiveness of the proposed method, the thematic analysis was focused on classifying the data based on the process of how values were arrived at, rather than providing an account focused upon the values themselves (the focus of the next chapter).

### **4.5. Findings**

In what follows, I present the three themes which are constructed from my analysis: (i) the overt expression of values, (ii) the provocation of 'aspired' and 'real' scenarios, and (iii) the use of comparison between scenarios. All of these themes reflect different routes used by my participants to arrive at values and value tensions. Where appropriate, I illustrate certain discussions with the cards that were raised with my participants, thereby aiding the reader in understanding the value elicitation process.

#### **4.5.1. Overt Expressions of Values**

Certain values were often elicited directly from my participants upon presentation of the relevant scenario co-creation cards. The concrete manner in which the scenarios were presented and scaffolded by the cards assisted the participants in articulating a value. They could often root a value in a relevant scenario with little prompting from the researcher. The most striking example of this was in respect to a value of 'socially-accepted achievement', where participants

would expect that they should only be represented in the media when they have personally achieved some kind of success (as measured by the norms of Saudi-Arabian society). An exemplar is P1 who explicitly associated visibility in media with high achievements:

*... I would only use my picture if I had made a great discovery or something like that, as would then I deserve to be there [in media]*

On other occasions, the participants were less direct at arriving at a value, but they nevertheless provided a clear narrative that enabled the researcher to identify the value, that was actually arrived at. For example, consider this exchange with P16:



*Figure 4.3 The scenario cards discussed by P16.  
(From left to right: a man in Islamic clothing, a newspaper, a woman running in sport clothing)*

*Researcher: ... Ok imagine that you are a woman playing sport, what would the newspaper say here? Bearing in mind this is a local newspaper read by many religious men.<sup>6</sup>*

*P16: Maybe a Saudi woman climbing Everest ... the photo might not be a personal photo; it would be for the woman while climbing the mountain.*

*Researcher: Which is you?*

*P16: Yes, but not the face.*

By ‘not the face’, P16 meant that she personally should not be in the media (i.e. her appearance should be anonymized, which in and of itself perhaps implies a value to that effect). Yet she would still want to be associated with achievements e.g. ‘climbing Everest’. There were some scenarios that were somewhat more challenging for certain participants, although this also led to overt values. For example, P13, could not imagine being on television as a cashier: the scenario simply confounded them:

*Researcher: Imagine a scenario where you appear on TV as a cashier?*

*P13: In the news?... Honestly, I don't know... (silence)*

*P13: There is nothing special because many girls now work as cashiers ... (silence)*

However, even when P13 could not provide us with a scenario, the justification of her struggle revealed the same value of ‘socially-accepted achievements’ which was expressed in her words as being ‘special’. In another approach to respond to challenging scenarios, some participants attempted to move the scenario onto something else to avoid the challenge, where they would

<sup>6</sup> The scenarios are constructed based on participants’ interpretations of the cards. The researcher here is merely restating and combining what the participant has said about each individual card.

prefer to change the role card to another one, for example (with P11) from a cyclist onto a scientist:

*P11: Maybe like a doctor, a scientist that discovered something or had a patent in something, or entered a project and it succeeded ... but as a cyclist, I can't imagine anything where I am in a movie for having done achievements"*

This also suggests that the struggle to create a scenario with the provided cards reveals the value of 'socially accepted achievement' as a narrow construct which is heavily favored by specific societal norms and prejudices (in this case, the idea that a scientist could achieve something, but a cyclist could not).

#### **4.5.2. Provocation of Aspired and Real Scenarios**

The cards also actively encouraged participants to imagine and compare new scenarios that were distinct from their current reality. In turn, these revealed some embedded values, through the introduction of hypothetical scenarios of the participants own creation. In other words, they used idealistic settings as a platform for expressing the values which they were concerned with. An illustrative example is P5, who would prefer a society where it would be possible for women to be more visible in public:

*Researcher: If you appeared in the newspaper would you put a photo of you?*

*P5: Currently in my conditions now? No not my photo ... but my daughters I wouldn't want them to be like that, like 'ooh no photos!' On the contrary, I want them to appear even if with no hijab.*

Whilst this example is somewhat subtle, she is projecting an aspiration of how she would like a future society to operate, and therefore her expectation that society should be more open (or to put it another way, a value of 'freedom of expression'). This aspiration was also echoed more directly by P6, when reflecting on her daughter:

*Researcher: If your picture appeared in the news with your daughter, what would that look like?*

*P6: Do you mean me my own desire? I will appear with my daughter, even regardless of her wish to wear hijab or not, I don't mind ... people might say she does not represent Saudi women ...*

*Researcher: Would that affect your attitude towards appearing in the media?*

*P6: No, I don't think so, at that time [in the future] I won't care about what they would say.*

As can be seen, sometimes this process of value elicitation through aspired scenarios would begin with a clarifying question, which in effect amounted to permission for participants to move into an aspired scenario (as in 'my desire?'). In other cases, participants could be abrupt and very direct, as demonstrated by P7:

*Researcher: In a political production, you are aware that the government can watch, you were asked as a traveler to compare countries you lived in, in terms of laws and policies?*

*P7: I won't be able to enter Saudi (laughter) trust me I would be like Saad Alfaqeeh (a political opponent banned from entering the country) and won't be able to enter ... I might accept talking about things but if they guarantee nothing would happen to me and I would be able to enter the country as a visitor for example ... I would have the dare if there is, if they tell me you'll be an UAE or Qatari citizen ... I might speak up as I have lots of things to say that I might explode but only if I'm granted a place to live in ... maybe because my parents have passed away, so Saudi Arabia doesn't mean much to me.*



Figure 4.4 The scenario cards discussed by P7. (from left to right: a police car, a clapperboard, a woman with suitcases)

These types of discussions are also important in another sense, in that they demonstrate a willingness to discuss issues that are controversial or taboo in the context of the study, whilst also providing a vivid account of the social pressures that govern their day to day lives.

As a different route towards eliciting values through comparison, the method represented an opportunity for my participants to easily recall and discuss a real experience, so they could root the expression of a value in respect of an event that happened to them. For instance, P16 talked about a real scenario where she attended an event where photographers took her photos without notifying her that the photos would be published in a well-known local newspaper:

*P16: I was surprised with the news I didn't expect [my picture] to be in the newspaper, they took our pictures but didn't tell us they will be in the newspaper.*

*Researcher: Did you object to that?*

*P16: Not at all.*

*Researcher: What about your family and relatives ...?*

*P16: It is very normal that they would criticize me and reach to my parents ... my mom had reached a stage that when she sees me insisting on something I am doing which is a bit rebellious to prove myself and achieve what I want, so I just ignore others, she realized that this is what actually made me do something, unlike if I conform to their criticism, an example is me traveling abroad they were all not accepting it but I insisted.*

P16 referred to another real scenario, namely her mother's reactions, which were not only relevant to the scenario mentioned above but as a general response her mother would usually take.

Another case was where the participant used the opportunity to vent a grievance from real experiences, with P10 having a strong objection to cameras in certain settings. In one sense, this could be superficially said to be a concern for the value of 'privacy', but in practice, they were more concerned about the (value of) 'keeping up appearances':

*P10: Not from far and nor from close, I actually reject having cameras in any gathering where people are dancing and having fun, there is no need for filming. It is even worse if*



*they do so without your consent, this is totally unacceptable, maybe if you ask my permission, I would give it to you, but if you don't, I might be outraged ... It happened to me once that a person took a selfie and I was in her background, she posted it publicly in snap chat and she has many followers ... I talked to her on private and asked her to delete the photo and she accepted it ... she should've at least covered me by putting a smiley or something*

**Researcher:** *What is the most annoying thing for you of having your picture displayed in public?*

**P10:** *Maybe she has male followers ... maybe she has some sarcastic people who might take the photo and design things like, 'that-moment-when-you-are-doing-something' ... the photo could be used as a meme you know"*

Both of the foregoing examples demonstrate the ability of the scenario co-creation cards to act as a means for furthering discussion, through recollection of prior experiences.

#### **4.5.3. Comparison Between Scenarios**

It is clear that allowing participants to have flexibility in exploring different scenarios on their own terms was an effective means for identifying values. This became more obvious as participants moved to compare one scenario to another, unpacking different aspects of the scenarios, which led to a broader exploration of a particular value, and a concreting of their position. Below, I demonstrate comparison of three aspects among other aspects in the data.

Across my participants as a whole, the level of expected visibility crossed a full spectrum with a value of 'highly visible' at one end, and 'completely invisible' at the other. For instance, when the researcher raised the issue of talking in a newspaper (and being visually depicted) with P9, she responded by comparing different levels of visibility: writings, photos and voice:

*Researcher: So, is it easier for you to talk in the newspaper about sensitive and personal topics than disclosing your photo and talking about mundane non-sensitive topics?*

*P9: Yes*

*Researcher: Why?*

*P9: I don't know maybe like I said I don't like to appear physically in the media, then if I appear, I would appear with distinct writings, educational not trivial. The [social] image for me is important (laughter)*

Moving on to a different medium, namely radio, the response referred back to another level of visibility, 'writings', to express her views through comparison

*Researcher: What about Radio?*

*P9: possible, although I don't like my voice ... the voice is still more difficult than writings*



Figure 4.5 The scenario cards discussed by P9. (from left to right on the top row: a bride and a groom, a newspaper, a woman in white coat. The bottom row: a radio)

Some participants also raised the level of permanency as a means for distinguishing between whether or not they would publish material on social media:

*P2: ... I may post photos but not in Instagram or anything that might be saved or published, it would only be on Snapchat ...*

Again, this demonstrates the need for flexibility: if the discussion of values was not being conducted in an open and expansive manner, then the actual expression of values would have been muted or curtailed by being overly fixated on a given context. Whilst my participants occasionally showed reluctance in discussing this topic, it nevertheless made it clear that their position on the topic in question (visibility) was somewhat situated in the level of formality of the media. For instance, P14 referred to a state media as an ‘institution’:

*“I feel that TV, no matter what you are in TV it means something, ... it is an institution, but in Snapchat ... you don’t know how people might use your photos. A man can say to another, oooh, I have your sister in my Snapchat ... but in TV, it is ok, he might say my sister is famous and brag about it (laughter).*

With P14, this issue was concretized in respect of their familial relationships. Accordingly, the discussion of values is strongly tied to a given scenario and the wider consequences connected to that scenario. With respect to media in which someone might appear, the level of permanency, the social cachet and the nature of the relationship that said appearance might convey are all matters which can influence whether (or how) a value is articulated, and the extent to which it might be emphasized by an individual.

Furthermore, through comparing scenarios, it is possible to identify values (or their relative importance) based upon seemingly contradictory accounts expressed by participants. For instance, in respect of P13’s account on when it is likely for her to consider other people’s judgements on her (or her daughter) appearing in media:

*Researcher: About your daughter, you said when people objected to her appearance without a hijab, it affected you, but their objection on you appearing as a cyclist didn’t affect you?*

*P13: First I won't appear without hijab, where is that case because in our community and family she must wear hijab by now.*

*Researcher: So, you believe she must wear it now.*

*P13: Yes, she is supposed to.*

This contradiction in what was said previously highlighted the tentative - and somewhat incoherent - views that P13 held in respect of whether or not someone considers societal judgment in their decisions to appear in media. Another advantage of these contradictions is the opportunity they offer to unpack some value tensions through comparisons. My participants often compared values where tensions might arise. For instance, P12 is comparing 'visibility' to 'collective identity' where her primary concern was not upsetting her father. The effect on him is held to be more important than appearing in public.

*Researcher: As per your experience with dancing, you said it is like an exercise and it helps change your mood, let's say they asked you on a seminar to go on the stage and talk about your experience with dancing and say what you just said about it, there are religious men in the seminar ...*

*P12: Hmm, I feel there's no difference, but also, I don't know!*

*Researcher: Hesitant?*

*P12: I might be hesitant but not because of the religious men, because of papa, because I respect papa*

*Researcher: How would that affect him?*

*P12: I don't know, I feel that, he doesn't think that this topic is very important, and you know older generations are different from younger ones, I feel that he would think this is a silly topic or something like that ... so if I would refuse it would be because I respect my papa.*

Whilst there was an element of contradiction in P12's arguments, they also (overall) make logical sense and reflect the very real and pragmatic value tensions that they have to contend with in their day-to-day lives.

## **4.6. Discussion**

I first consider the operation of each feature of the Scenario Co-Creation Cards, then turn to discuss the wider implications for value elicitation methods going forwards.

### **4.6.1. Operation of each Aspect in Scenario Co-Creation Cards**

It appears that the hypothetical nature of the scenarios played a significant role in providing participants with a wide space for making deliberate choices (or the avoidance/struggle thereof) and the justifications underpinning their choices. In this regard, the questions that were asked by participants are important, such as: '*in my current conditions?*', '*my own desire?*' or '*shall I talk about myself currently or the team leader in the scenario?*'. This shows that participants were inclined towards using the cards as a means for creating a hypothetical scenario which is a better frame for discussing their own values. The participants were then able to use this hypothetical scenario to make cross situational comparisons (a consideration for a VSD methods from my four principles): examples include a comparison between scenarios based on the role 'e.g., a scientist vs. a cyclist' P11, the media 'e.g., permanent vs. ephemeral' P2 or

even implicit components such as place and time, or across generations as in P6's reference to her daughter. Accordingly, the hypothetical element provided a tool to eliminate social constraints by taking the pressure off the participants and projecting their aspirations on their future self, children or idealist society. It also allowed for different types of situations and contexts, and thus an exploration of values in a cross situational manner. The overall evidence is that a flexible hypothetical element is worthy of consideration in any VSD method going forwards.

The method's **co-creation element**, wherein participants could in effect generate their own props for discussion, provided a flexible participatory approach, giving the subject sufficient control in choosing how to structure the scenarios in ways which were of interest to them: an exemplar of this is P13's engagement. The co-creation element also provided participants an opportunity to move between creating and projecting on hypothetical situations and recalling and reflecting upon real experiences of their own lives as in P10 and P16's cases. Further, the co-creation aspect allowed the researcher to a space to co-direct the conversation into creating challenging or unfamiliar scenarios to the participants in order to explore values beyond the participants' comfort zone of familiar or easy topics. This was either implicit in the method through including cards like a role of a 'dancer' or a stakeholder of a 'political figure', or explicit through asking the participants to reflect on scenarios even when they say they could not apply to them: e.g. when P9 expressed how she completely refused appearing in the media, the researcher asked her to assume a different state of mind. This helped the participant discuss another value 'i.e. the collective identity' despite the fact she said earlier in the discussion it was not about her society, it was her own choice. Overall, the co-creation allowed participants to contextualize the scenarios in different ways reflecting their experiences and aspirations.

**The tangible aspect** – namely the cards – functioned as a visual and physical aid which minimized the cognitive effort in recollecting scenarios (as there was no need for 'free recall' [212] on their part). This element made the process of making a choice tangible (changing cards means changing elements in the scenarios). The researcher regularly observed participants pulling the cards apart or together or referring to cards as 'this case' or 'here' by physically pointing to them during the discussion. This allowed more concentration and facilitated reflection upon the values. Another significant factor is that the pre-designed cards emphasized the hypothetical nature of the conversation where participants were projecting on hypothetical photos, not their own ones. This helped depersonalize the conversations as it was clear to participants that some challenging questions were not raised specifically for them but instead arose randomly from the cards. The tangibility of the cards and the nature of the setting utilized play to allow participants see, feel, project on and play with the cards freely during the discussion.

#### **4.6.2. Implications for Value Sensitive Design**

The exercise I conducted was able to identify values: that is to say my participants were able to exhibit behaviors and offer arguments that could be grouped into a common result or pattern. These patterns are given monikers or labels which summarize the behavioral characteristic or provision, however, what ultimately matters are whether the coherency of the manifestations in question: in other words, do they make a sensible group? This is not really a question of

positionality, albeit there is inevitable human bias in the grouping task, but a focused analysis of the evidence that was produced. The fact is that the values I identify above are (i) repeated (albeit I give specific exemplars of the mechanics of arriving at them), (ii) coherent, in that they fit a clear characteristic concern or behavior (even if there might be debate about the moniker that I ultimately chose), (iii) often counter-intuitive and/or not immediately obvious (meaning that it is unlikely that these were subconsciously contrived by the authors, as these are genuinely unique) and (iv) offered values, by routes of reasoning which only came about through the method. This suggests that my approach is likely to have worked in producing accurate values (and manifestations thereof) which can be applied in order to obtain a workable set of values that can be used to enhance the design process.

Looking forwards, there are wider implications for VSD and in particular the development of ‘value elicitation’ methods. Notably, by offering a multiplicity of different mechanics within one method, I provide more flexibility (and thus opportunity) for participants to express their values. Moreover, this is inclusive: because certain values are less likely to be expressed without there being the right opportunity to do so (especially with certain populations), I afford a wider opportunity for people to express values and in turn, have them taken into account in the design process. Accordingly, when creating new methods for value elicitation, it is important to take account of both the ‘elements’ identified in the background section (with a view towards including all of them), as well as considering each of the mechanics which I have shown to work above. Perhaps the key lesson is a cumulative one: namely ensuring that there is a wide canvas available to participants, thereby maximizing the chance that their values will be identified and ultimately addressed and/or responded to.

There is a wider point of practical importance. I notice that the pragmatics (and resource implications) of identifying values have been a reason for VSD to attempt to utilize general moral values that are often inappropriate for the setting at hand (see [34] for why such an approach would be troubling). The effect will be the semi-exclusion of the group whose values are being omitted, and likely, a system that is generally less effective, for the reasons already extensively canvassed in recent works about VSD’s limitations in respect of values [150,173]. The relative efficiency of the method that I have offered is also of import: not only have I shown that it is possible to obtain values from a challenging group whom might otherwise be excluded, but I have demonstrated how this can be done efficiently. I hope going forward that this work will make it less necessary to rely upon lists of values and instead rely upon the evidence generated by this method (and developments thereof), thus ensuring that future designs are more likely to reflect the needs of such populations.

## **4.7. Conclusion**

The identification of the values of people who are likely to interact with an information system is a fundamental concern in VSD. In this work, I have successfully utilized an implicit approach in order to elicit a broad range of values (across all value dimensions) from a population of Saudi-Arabian transnational women, a group for whom the articulation of values might be expected to be difficult. I have demonstrated the mechanisms by which scenario co-creation cards were particularly helpful as prompts for discussions that led to values, thereby illustrating

how values might be elicited in other challenging scenarios. More importantly, I also noticed that the mechanics of how the values arise depend on the nature of the value itself and how that values expression might be constrained by governing social norms and expectations. It is my intention that this work will assist VSD to become increasingly inclusive of a range of cultures and backgrounds going forwards, by more effectively responding to their underlying values.

## 5. The Envisioned Visibility: How to Design Safe Spaces for Saudi Women's Self-Disclosure in Digital Media

### 5.1. Introduction

Various barriers restrict women's freedom in Arab countries including the reliance on patriarchal interpretations of Sharia Law and cultural norms that cast men as breadwinners and women as caregivers [240]. The cultural confinement of women, and the obsession over them, as religious and ethical subject not a social agency led to their exclusion, minimizing appearance in public sphere and restricting their citizenship rights and participation [18]. Many Saudi women have no problem with the controls imposed on them by this system [176]. In fact, the subordination of women led some women to oppress other women and adopt a masculine persona; for example, mothers sometimes are the biggest defenders of men's supremacy [18].

However, the expansion of communication technology has undermined the gender segregation in Saudi Arabia; allowing cross gender virtual contacts where women have a wider space to express themselves in the public sphere [176]. Moreover, the recent reforms in Saudi Arabia, including allowing women to drive, returning the physical education to girls' schools and allowing them to work in the army are all indications for elevating position and expanding places for women in the public sphere [267]. Indeed, the state has been showing its soft and modern face by promoting women's empowerment and increasing their visibility and contribution to the cultural change [18].

In the previous case study (**Chapters 2 and 3**), I suggested that there remains a bias in this (new) visibility of Saudi women which are mostly expected to represent the state in public, these are typically rather wealthy, glamorous, cosmopolitan and elite women. Whereas everyday women still face cultural barriers restricting their willingness to disclose themselves in public (and online) despite their advocacy for women's visibility as a critical factor for cultural change (as I discuss in the findings). This led to the formulation of my research question as: *how might we support Saudi women's self-disclosure (choosing visibility) in the digital media with minimum violation of their cultural values?*

Thus, in this chapter I conduct in-depth interview with 18 transnational Saudi women to understand their perceptions and practices of everyday women regarding their online visibility (self-disclosure). The goal is to incorporate that understanding in the design of culturally sensitive technology, particularly in the pursuit of supporting cultural change and women's visibility in the public sphere through the use of digital media

The goal of this study is twofold:

- 1 Proposing and evaluating a culturally sensitive approach to design a method for the empirical phase of the VSD process (previous chapter)

- 2 Understanding Saudi transnational women's values and practices of self-disclosure in digital media (this chapter)

## **5.2. Background**

Online communication technology has increasingly required people to disclose personal information for different reasons [132]. The social nature of this technology facilitates and encourage self-disclosure, albeit allowing users to maintain certain levels of anonymity. Users of social networks are increasingly representing themselves, particularly visually with identifying personal photos[75]. The meaning, extent and types of online self-disclosure vary depending on several factors including the mode of communication, context, gender and cultures of the users [165]. Taking these factors in consideration, below I discuss the concept of self-disclosure and how it is conceptualized and investigated in this study.

### **5.2.1. Self-Disclosure**

Self-disclosure is a cross disciplinary phenomenon which have been provided many different definitions [16]. Commonly, it has been defined in comparison to a similar concept, self-presentation. Self-disclosure is revealing factual information about oneself; whereas self-presentation is providing a picture and projecting how one desires to be regarded by others [130][206][204]. Moreover, self-disclosure is both a personal and interpersonal constructs [16]. However, it applies mainly in relationship context whereas self-presentations is more widely applicable and not necessarily exclusive to the context of relationships [206]. Thus, many of the studies around the concept of self-disclosure are concerned about its role in interpersonal relationships, maintaining and initiating relationships. For the purpose of this thesis I define self-disclosure as the act of revealing factual information about one's identity to others [131]; regardless of the purpose.

Although typically the concept revolves around the notion of sharing information about oneself with others, however, there is a diversity in terms of what kind of information are included in this concept. This information can be categorized to: personally, identifiable information (e.g. names, personal photos, contact details), feelings (e.g. positive and negative), thoughts, beliefs and opinions (e.g. political, religious and social issues) and everyday activities and events [16]. For the purpose of this thesis I narrow my scope to the first category, focusing in particular on physical visibility (i.e. personal photos). Visibility does not necessarily means being identifiable [75]. Being identifiable comprises 3 aspects: disclosing personal details, visual visibility and eye contact [146]. The work presented here deals only with visual visibility which refers to users being visually represented by any form that distinguish them from other users [75].

The common factors influencing how people disclose themselves are: culture, gender, context, motivation, risk/benefit ratios [103], in addition to and mode of communication [165]. Self-disclosure has been investigated and compared in across different cultures [16]. In terms of gender, there is a popular perception that women disclose more than men [103], and thus different studies with different results has investigated the gender effects on self-disclosure [165,211]. The concept has also been investigated in different contexts such as alcohol intake, gender differences, personality characteristics [131] and online dating [13]. Other factors as



well have been investigated are factors motivating self-disclosure such as anonymity in online interaction which was found to encourage self-disclosure more than face to face interaction [131][204][206] and the use of asynchronous media, which allows time for reflection and editing [204]. Additionally, the concept has been investigated in terms of its effects whether positive or negative, for instance, it was found the lack of self-disclosure creates deindividuated behaviour [45]. It was also found that some of the negative effects include embarrassment, rejection and diminishing power [103].

In this study, we have the culture and gender factors defined and I aim to investigate what motivates or hinders self-disclosure in an online mode of communication, focusing particularly on physical disclosure such as the use of photos or videos. To the best of my knowledge this is the first study conducted specifically with this cultural group with the aim to create safe spaces, and perhaps challenging spaces for future work oriented towards design for cultural change. I next give an overview of the specificity of my user group and their culture.

### **5.2.2. Study Context: Saudi Women's Visibility in Public**

The seclusion of Muslim women is a relatively recent phenomenon as historical Muslim women participated in aspects of life [195]. Thus, typically gender inequality in Saudi Arabia is often mistakenly attributed to Islam [195]. However, it is the cultural and social construction by men not the sacred text alone [18]. The predominant Islamic tradition in Saudi Arabia is Wahhabism which its teachings have prevented women from driving cars, kept them segregated in education and workforce, put them under the guardianship of their male relatives who control their mobility, marriage work and education [18]. All these teachings and interpretations of religious text are deeply rooted in social traditions and the patriarchal nature of Arab society, which gained legal institutionalization [195].

For instance, women are not regarded as equal to men in the eyes of law and society, daughters receive half the inheritance given to sons, the testimony of one man is equal to that of two women, and (until recently) women were not allowed to drive or to leave the country without a permission from a male relative [262]. Such interpretations and legislations were also reflected on everyday life where Saudi women are socialized to be subordinate to men, obedient and chaste [236]. A strict emphasis of women's chastity has created a strictly gender segregated society [176]. Predominately, women work in gender segregated environment due to the cultural belief they should not be seen by men, other than immediate relatives (unmarriageable males) [195]. Thus, despite the recent reforms, being physically visible in the public sphere is still as a contentious issue [236]. This invisibility is mostly symbolized and manifested in the dress code enforced on women, commonly known as the *veil*.

Although veiling is a common tradition among women in most Muslim societies, its enforcement in Saudi society for both local and expat women is extraordinary [194]. Veiling is attributed to Quranic injunctions, although there are different Islamic schools interpreting what makes a veil differently, the most strict of which is the Wahhabi traditions [194]. Wahhabi tradition enforces full cover on women, as it aspires to create 'godly women' [18]. The three common Islamic interpretations of what makes a veil are demonstrated in **Figure 5.1**.

Typically the dress code for women in Saudi Arabia includes *abaya* (black cloak), *hijab* (head cover) and *niqab* (face cover -except for eyes) [194]. Whereas wearing a full cover (from head to toe) is still common.

The choice of these depends on many different factors including religious views, family tradition and geographical region. Saudi women are typically portrayed as a homogenous group although in reality they represent a greater culturally diverse communities [236]. However, still many Saudi women are inclined towards conservative attitude and adherence to the cultural norms [236]. In fact, the majority of women see niqab as a social custom rather than religious imposition, and if given a chance, many of them would discard niqab [194]. Thus, substantial number of women are now increasingly discarding niqab [194].

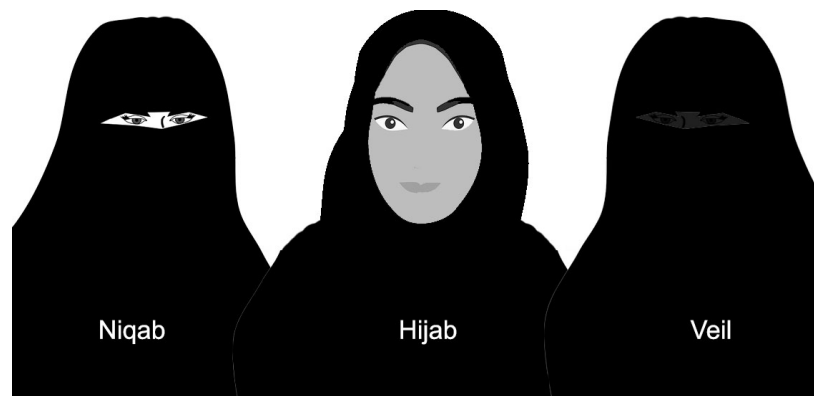


Figure 5.1 The three common Islamic interpretations of what makes a veil

Saudi Arabia has been having remarkable changes the past few years in terms of women rights and elevating position for female role models in the Arab world [267]. These changes have been mainly enacted through increasing women's visibility in public and participation in economy and other sectors [194]. Examples include their nomination in the consultative body '*majlis alshura*', their participation the municipal elections [194] and the appointment of the first female deputy minister of education [236]. These changes are underlying the state's commitment to engage women in the national decision making process [236]. Moreover, the recent reforms regarding allowing women to drive, returning the physical education to girls' schools and allowing them to work in the army are all indications for expanding places for women in the public sphere [267]. It is expected that the "*increased visibility of women leaders and their participation on the national stage encourages other women to believe that they too can achieve great things in the future*" [236]. This is particularly the case of the visibility of cosmopolitan women who are more amenable to the notion that veil should be seen as a personal choice and not a legal imposition [194]. However, for everyday women, concepts of culture, stigma and taboo are present in young women lives [240]. Overall, men are less convinced than women about gender equality (e.g. less supportive to the decision to allow women to drive), there is a significant aspiration gap [176,267]. Thus, women face various barriers restrict their freedom including the reliance on patriarchal interpretations of Sharia Law as a legal barrier and social and economic norms that cast men as breadwinners and women as caregivers [240].

In fact, there is still a common trend, which Thompson [236] noted it is crucial to be acknowledged, believing that female representation of the state is purely symbolic and merely one of a decorative nature to appease Western criticism [236]. This perhaps due to the contradictory image Saudi women often conjure up, in which they are either excluded and heavily veiled victims of society or glamorous, cosmopolitan and successful leaders [18]. Thus, there is still a persistent negative image about Saudi (everyday) women on a global level [236]. These women however, have utilized the pervasiveness of digital media as a tool to participate in public debates which increased their visibility and voices [18,194]. Indeed, the expansion of communication technology has opened doors for interaction between men and women, yet created a threat to women's reputations as photos of them displayed in public can result in serious consequences [18]. As such, communication technology provides both opportunities and challenges for everyday women to utilize as part of their stepping into the public sphere.

### **5.3. Methodology**

This the same case study described in the previous chapter. While the previous chapter focused on development and evaluation of the method (scenario Co-Creating Cards) used in the cases study, this chapter focuses on the empirical outcomes of the study regarding women's view and practices of self-disclosure.

#### **5.3.1. The Study Objectives**

This study is guided by the research question: "how might we support Saudi women's self-disclosure in the digital media with minimum violation of their cultural values?". I present a case study involving Saudi transnational women, which is aimed at (i) demonstrating how values can be elicited using a combination of carefully designed scenario cards and culturally sensitive questioning (presented in the previous chapter); and (ii) understand women's specific values associated with online visibility to identify challenges and opportunities facing women in this transitional era (this chapter). The cultural values identified in the previous case study has set the ground for understand the participants overall cultural context. Whereas here the focus (and indeed the challenge) is to identify the individuals' values in spite of their cultural ones.

#### **5.3.2. Population, Participants and Interviews**

Presented in the previous chapter.

#### **5.3.3. Transcription and Analysis**

Each interview was audio recorded and thematically analyzed [37] (as explained in the previous chapter). As this chapter is concerned with exploring the views and practices of women's self-disclosure, the thematic analysis was focused on understanding these two aspects and learning about what makes a safe space for their visibility.

## 5.4. Findings

In what follows, I present my findings in the form of four overarching and interconnected themes.

- 1- Advocacy for women's visibility and its influence on cultural change (value)
- 2- The struggle for consistency (pain point - practice)
- 3- Envisioned visibility (vision)

### 5.4.1. Advocacy for Women's Visibility and Cultural Changes:

Over the past few years *"there has been a change in the societal thinking"* (P1), particularly regarding women's visibility in public, both offline and online. An example of offline visibility is that it was common *"10 years ago ... that no one accept female [medical] doctors"* (P2) and it was *"used to be forbidden because of the mixed gender environment, ... so [girls] used to scared away from it"* (P8). However, a common narrative among participants was that: *"currently there have been changes in people's attitude towards women, for the better, in the past everything was forbidden for women"* (P13).

These perceptual changes have been reflected by concrete changes which are being witnessed in different aspects of life. For instance, P6 stated that *"now ... people's attitude towards doctors has changed"*, as they are not only accepting it *"but [also] now they encourage it"* (P2). Another example is that women are now able to run *"their own businesses and manage them"* (P13). Moreover, in social conventions, changes also took place as described by P3's experience:

*"a little while back, the brother of my husband came here in the UK and visited us, I met him unveiled and we sat with him, but in Saudi Arabia we would never do this, ... we used to avoid sitting together ..."*

These ongoing cultural changes regarding women's visibility in public (i.e. offline) seem to be also reflected in the digital world, albeit at a slower pace. For instance, P9 recognized the offline cultural changes; although she still finds it difficult taking this to the online realm, at least for the next 2 years:

*"it is becoming more acceptable for women to be in hijab [only head cover /no face cover], especially in my area ... [however] ... I can't appear in media currently because of my society, but maybe after 2 years it would be ok"*

In P9's immediate society, while it is becoming more socially acceptable for women to be unveiled in public, there are still some restrictions regarding media appearances. This was echoed by P8, although she estimated a longer timeframe of 5 years:

*"now I wouldn't do this [self-disclose in social media] because I'm a bit afraid of the societal response, but later maybe within 5 years society will definitely change, so I could appear unveiled and no one would comment ..."*

Thus, it seems that this is a complex transitional era in which women are living the struggle between the desire to catch up with the new changes and the fear of being the first breaking the barriers. Nonetheless, the recent cultural changes regarding women's visibility in the country have induced internal changes within women's beliefs. For instance, P1 described her internal struggle in determining the legitimacy of the veil:

*“I think I’m going through the period ... of why are we covering our faces? What is the basis? And stuff like that ... like recently I’ve been thinking about it a lot, I’ve been thinking do I believe in it? Do I not believe in it?... I’ve been thinking about it from a religious perspective and such”*

This internal struggle, according to P6, creates an identity crisis and duality between online and offline lives:

*“I strongly want the change... We are tired of the life of hypocrisy where one lives 100 different lives but can’t live their own [desired] life ... everything in our society, every category of your life, family, school, tribe, city, state, all of them are expecting specific things from you. All of them are creating moulds for you and they want you to stick to, and you might not fit so you can’t squeeze yourself in more than that, just to satisfy all of them... so social media [can be] the only vent where one spends 3 quarters of their time on, and find their true self, and express their own views that might piss others off ... so if you want to live in peace with people you will have to be a hypocrite, I don’t mean in your behaviour but in your identity that you disclose to people ....”*

The struggle P6 faces is a battle between her advocacy for change and desire to be herself on the one hand, and the societal actors and the price to pay for avoiding conflicts on the other hand. However, due to recent changes, women seem to be motivated to start going through personal change, as their contribution to the collective. For instance, even by disclosing herself in the session, P5 finds this participation as a step forward for her to start being comfortable with a certain level of visibility:

*“I used to not be interested to mix with people but now I’ve been trying to get back to this and you are a reason I came [to participate] and see how this goes”*

Likewise, P4 described how she has become fearless of the societal judgment of her being unveiled:

*“in Saudi, face is important, it’s like whoever sees your face they are seeing everything, it is a cultural thing ... for my family face is taboo... for me now I reached a point where I am not afraid as I’m not doing anything wrong ...”*

Whereas those who still struggle to cope with the current changes, seem to have high levels of optimism for the near future. For instance, P7 despite not catching up with the current changes is still considering that the changes will be the new norms in the near future:

*“I don’t feel I have reached a point where I would appear online publicly. I would when I become a businessperson or speaking about HR ... and I’d love to do this but in future”*

This was echoed by P6 who seems to have a determined plan of how her future (and her future daughter) should be like

*“for me, between me and myself, I’m determined that if I’m getting married, I wouldn’t marry a person who wouldn’t let me be what I want to be ... so the moment I get married it would be a moment of transition for my life because it’s leaving my family’s house and the moulds they want me to fit in, to the path I want which I also want to pass on to my daughter ...”*

Interestingly, in addition to all these statements about how the current societal change influence women to change, participants also expressed that women’s visibility can create cultural changes. For instance, P5 stated that this can enforce cultural change whether people like it or not:

*“I personally know so many women appear unveiled in social media and it is ok, they appear mostly for professional purposes ... and people over time will have to accept it whether they like it or not ...”*

Furthermore, P2 believes this deviance from cultural norms might be the only way to create cultural change, based on past analogies:

*“society won’t change unless someone breaks the mould then they get used to that, and this has happened in so many cases like education, it used to be shameful for girls to go out for schools, my dad says: ‘when I used to take my sisters to schools, everyone used to criticise me’ ... somebody has got to break out then the society will start to accept this till it becomes a norm”*

The deviance from the norms regarding women’s visibility can change fundamental perceptions about women, gender roles and what they are capable of doing. This was described explicitly by P14:

*“recently, people started to see that women can do a lot of things because they work in so many areas and stand out in so many things, not like in the past where she had to stay at home and raise children ... seeing women in this way can change a lot of perceptions that people have about Saudi women as suppressed, not good, stupid or retarded ...”*

The same notion was echoed by P9, who seems to refer to the overall global perception of Saudi women and not only the Saudi context:

*“I feel very happy when Saudi women appear in leadership and high positions in international society ... it does not matter how her clothing is as long as it is not disgraceful... this gives the impression that Saudi women are achievers, smart and educated and not ignorant, illiterate or submissive ...”*

Moreover, participants not only expressed their approbation of women’s visibility but they expressed disapproval of imposing invisibility on women and considered this to be dehumanizing. This was explicit in P11’s comment about a newspaper which presented a list of men’s face photos alongside a list of women’s photos represented by flowers.

*“we, women, are also human beings, our photos are supposed to be presented as a normal thing just like men’s, why do we have to hide our photos just because we are females! ...”*

However, P5 emphasised that if it was women’s choice *“not to appear, then it’s ok but if it was the newspaper’s decision this is completely wrong”*. Similarly, P1 questioned *“who gave them the right to cover your face for you?”*

On this, P10 expressed her disapproval of this behaviour and found it dehumanizing when it was not the women’s free choice to appear this way:

*“honestly, I prefer presenting women’s photos [over symbols] because this is her identity, if she is accepting to be presented with other symbols that’s her choice ... but if [the newspaper] imposes using flowers [symbols] on these women while they don’t mind their photos to be presented I feel it is not the newspaper’s right to do this, if it were me, I would not have approved of my name to be listed here if they are not presenting my photo, given that I accept showing my photo”*

Whereas P2 expressed her condemnation of this and believes it reflects a double standard in the treatment of women:

*“I feel the flower is kind of funny, it is not realistic, it does not represent me, why do they put flowers? I don’t get it! If they put a female character at least ... I really hate these*

*things, first because they are things (not human) second because it depends on their mood, when they decide so, you are a protected jewel. when they don't, you are not! ... If I would appear in this news, I would show my face, I don't prefer the flowers, I would prefer something like a cartoon symbolizing woman, but not the flower, no I'm not a flower, I'm a human"*

This same level of emotional reaction was expressed by P6:

*"This is very provocative; it may be the choice of these women, but this is not an identity of a human, flowers do not represent humans ... I feel that [the newspaper] is ideologized and ... it satisfies certain people, and those who try to do so, they are not credible, I am sure they have certain audience they are trying to satisfy ... I get a huge frustration when I see images of women are dealt with in this way, as if there was something wrong with them and they are supposed to be hidden ... it is provocation ... unless it is actually these women's desire to do so"*

However, despite the fact most participants, if not all, strongly advocated women's visibility in public and media, and disproved of imposition of invisibility, there seems to be a gap between their views and their daily practices in disclosing themselves.

#### **5.4.2. The Views-Practices Gap of Women's Visibility (struggle for consistency)**

Despite their views advocating women's visibility, participants described their visibility practices (or self-disclosure) as being very limited due to different types and levels of social risks. For instance, in opposition to previous statements, P5 said she would like to use the flower photo:

*"as in my current personality and circumstances now, ... I would go for the flower photo ... I don't like to appear in the media"*

Then in another scenario P5 expressed the same notion of distinguishing between how she would act as herself or as the female presenter on TV:

*"yes [I'd appear] if I were this presenter, [but] if it was me with my current views, with my current situation, I would appear but covered"*

The two comments demonstrate a vivid gap between P5's views and practices in terms of what she would accept for herself and for other women. The same notion was expressed by P3 when she was commenting on a woman who appeared on TV wearing hijab, not covering the face:

*"I know that the case [of covering the face] has multiple doctrines, so I think it is ok when this woman appeared on TV with her husband ... I wouldn't do this, I don't like appearing in media or in front of people, I like to work covertly, behind the scenes (laughter), I would only allow publicising my name, not a photo ..."*

The main reason behind this gap is the fear of societal criticism, as stated in P4's comment:

*"I am pro women's rights, women are not a disgrace, they have their rights just like men, she did not do something wrong for us to say why did she appear on TV with her husband, the problem is society would be like why is she not covering her face?"*

Likewise, P9 described this as a terrifying repercussion, particularly in cases of controversial topics such as covering the face:

*"you see, I like to keep my peace of mind, maybe I'm a little sensitive so I can't stand the criticism, ok I would be contented with my behaviour [if appearing in media] and I wouldn't care about others ... but still, I don't like the gossip and defamation and they would drift to other topics ... so I would probably anonymously talk about that it is ok to*

*not cover the face without disclosing myself, because later they might protest against you when they see you in the street, this is what mostly terrifies me, otherwise I have no problem ...”*

Whereas, P4 referred to a combination of societal and religious barriers that make her opt for using a flower photo instead of her own photo:

*“I would go for the flower, because I don’t agree with the idea of women uncovering their face, I feel there is no need for this because society doesn’t accept it, and also religious wise there is a debate about this, so I prefer to be on the safe side always”*

Interestingly, P8 revealed another dilemma of the gap between views and practice:

*“I don’t have a problem [using my full name in a newspaper] no photo, because of society, [if] veiled yes but what’s the point of it, they can’t see anything, I’d rather use the flower photo (laughter), I don’t mind this but it’s just I feel it doesn’t represent your personality, it would show your eyes only”*

In this case, it seems that the flower as most participants agreed, is not representative of their human identity, yet they would choose it to avoid societal judgment. It seems that the flower is more acceptable (or representative) to them than the veiled picture. This might be attributed to the fact that almost all participants (except for one) do not fully subscribe to the religious doctrine that says veil is compulsory, and they only feel obligated to wear it as a traditional practice.

This brings us to a vital factor participant consider for accepting visibility, which is consistency. There is a struggle revealed by participants around the concept of consistency of the way they appear online and offline, on one hand, and the way they appear within their cultural context (inside the country) and abroad. Despite acknowledging the inconsistency of their appearance between these different realms and adapting to it as part of their dual lifestyle, they prefer not to embrace it. The main inconsistency here revolves around the covering of the face which most of my participants do in their homeland but not abroad. For instance, P7 described how this plays out in her experience online/offline and being home/abroad:

*“if it is exclusively in the UK, I don’t mind [appearing on TV] because people have seen me and they know me, but [back home] people would be like she is inconsistent, being on TV not veiled but at work [in Saudi] she is veiled, they don’t respect personal choices, [so] I might just appear veiled to avoid criticism, although I don’t think veil is the solution, I don’t advocate veil (face cover) in the first place, I love hijab (head cover) only ... but if I post my photos [unveiled], it would be inconsistent to see me suddenly not veiled”*

Whereas, for P4 who, on the contrary, seems to support the veil, nonetheless expressed the same struggle of maintaining consistency to the international audience:

*“I don’t like to be unveiled and appear this way in media ... if I would appear on TV I would be veiled [here in UK], but then it is not reasonable because they see me here not veiled then if they see me on TV wearing the veil would be inconsistent”*

This was echoed by P1 who experienced appearing in media herself but is still trying to maintain consistency by managing what photos are associated with her online presence:

*“...I’m veiled in Saudi Arabia ...if I would appear [in media] here in the UK, it is ok, you’ll find me all over Facebook, and like all these films and everything, to the point I started to say please don’t tag me because if someone googles my name they’ll find all these pictures on Facebook. I was just asked a couple of days ago to be filmed for a video for [school]*



*but I will think about it because it is quite global ... if I would appear on a TV cast, I wouldn't veil but I do in the street in Saudi Arabia"*

The intense desire for consistency stems from societal pressure, which according to P18 accepts women being uncovered more than being inconsistent:

*"I've seen this girl on snapchat ... she records herself while wearing a scarf but not fully covering the hair ... then eventually she abandoned the hair cover ... because many people said to her make a decision, you either wear a hijab or not ... men do not criticise girls who are not covered both online and offline [consistently], but like this girl, they feel she is not serious ... she is inconsistent, not only religious wise but maybe other areas too, so, no trust!"*

This pressure creates the fear of being a target for criticism as described in P9's comment:

*"I would refuse [to appear in media], I don't want to be in public, even if it is in a foreign society, [because] Saudis are everywhere (laughter). Because we are more afraid of the [local, Saudi] society than the international audience. They would be like how come she appeared [this way], Saudis will judge you based on a photo, and they decide whether you're good or bad based on your appearance. So, for peace of my mind, although I'm convinced everyone has the right to do whatever, I would just avoid these things ..."*

Interestingly, despite the fear of societal judgement, P2 and P4 emphasised that they do not want to appear as if they are afraid of this judgement. For example, using audio only in a visual media makes it clear there is a fear of being physically visible, according to P2:

*"I don't like if it is only voice, if I would appear [on visual media] I would appear in the look I am convinced with, which is hijab (not face cover) ... maybe as a phone call ok, but not that I am physically there and refusing to appear as if there was something wrong with me"*

Similarly, P4 expressed the same notion of refusing to declare the fear of being visible:

*"I'd rather be taken photos of fully, not partially like hand or leg as if I was frightened ... I don't like inconsistency honestly"*

Thus, the fear of societal judgement and the disinclination of showing that fear makes this dilemma a key reason why they would opt for invisibility. However, as complex as it is, this dilemma can be overcome by meeting some criteria they stated as conditions for accepting visibility, which are discussed in the next theme.

### **5.4.3. The Envisioned Visibility**

In addition to advocating other women's visibility, participants envisioned an alternative reality and a future where women are more visible, through the articulation of how they want their children, particularly daughters to conceptualize visibility. For instance, P6, who explained previously how she wears hijab just to satisfy her family, stated that this is not expected to be the case with her (future) daughter:

*"if it is on my own desire, I would appear [in media] with my daughter, and also my daughter, can wear hijab or not, as per her wish, I don't have a problem".*

The same notion was expressed by P5 who explained why it is difficult for her personally to embody the change and thus would rather delegate it to her daughters:

*"for my daughters, I wouldn't wish them the same thing, like, oh no photos! On the contrary, I would want them to be more visible, even if without hijab. [the difference is]*

*the way we think, the way I think, it is too late for me and difficult to change even if I tried to, it would be psychologically difficult. It would be as if I'm deceiving myself which makes it even more difficult ... but for my daughters when they grow up, they are free to choose whether they want or not [to be visible]"*

Whereas P7 explicitly stated her desire for the cultural change to be embodied by the new generation of children:

*"my son, I am the one who develops his character whether or not he accepts [me being on media] ... it is good if he is understanding and not following the old traditions, the old retardation ... we have to change ... we wish Saudi children now have a cultural change ... if it is a daughter I wouldn't make her veil, if she doesn't want to ... it's up to her I wouldn't intervene in her life"*

However, moving on through the conversation, P7 stated how she would still expect her daughter to live up to her standards. Concepts related to religious obligation and societal image (reputations) are still present in this case:

*"it is time she builds her own personality, rationally ... not as if she is looking for cheap goals, something good for her and her reputation ... my conviction is that hijab (head cover) is mandatory not heresy ... so I would say to her, as long as you are staying with me you obey my instructions, until you get married ... many girls abandon hijab behind the back of their families, I hope my daughter will have the same convictions like mine"*

Similarly, in P5's, her desire for her daughter's visibility is conditional, and expected to meet the mother's standards:

*"it's fine, when she grows up, as long as it is not a foolish context, something more formal ... I don't like her to post her photos everywhere and give them to everyone ..."*

This shows that although not all participants agreed on imposing the head cover, overall, they seem to have a rather conditional acceptance for their visibility. Concepts like 'my convictions', 'foolish context' and 'formal' all imply certain conditions which I will discuss below. These are related mainly to three aspects: (i) purpose (context), (ii) type of media and (iii) level of visibility.

#### **5.4.3.1. Context and Purpose of Visibility: High Achievements**

Participants questioned the core purpose of visibility and considered revealing their photos as typically "*not necessary*" (P7). For instance, when asked about allowing her photo to be posted on a university website posting students photos including hers, P9 stated:

*"is it necessary? I don't think it is, I doubt I would allow posting my photo"*

Whereas P4 questioned the reason, or the legitimacy of it behind her visibility:

*"why would I post my photos? I don't know everyone online so why let them see my photos? I'm not a celebrity so they can watch my photos"*

This questioning, according to P10, is also expected from the society:

*"I've never posted my picture even if wearing hijab ... people would be like what's the point, this would be the question revolving around it, what are the benefits? It is unnecessary ..."*

For this, P3 questioned this and justified her answer as follows:

*“I feel I would rather only use my name I would not publish a photo of me, because it is not necessary to see my face, why would people want to see my face? You know what I mean? It does not matter to me that people know my face, it matters that they know what I did, what work, I mean I represent myself in my work and achievements, not as a face, they do not need to know who I am”*

However, in very specific kinds of contexts, the necessity of being physically visible may not be an issue. These include context such as education and science provide a relatively safe context for visibility. For instance, P5 stated:

*“I would use my name in media, but in sport topics, I feel they are something silly, that does not have a purpose, whereas talking about motherhood is better than talking about sport, same for medicine, religion and science ...”*

Whereas P9 makes a clear distinction between social context and academic context where social context involves higher risks for societal judgement:

*“yes, I would [appear] if it was something educational, my family would be ok as long as it is scientific domain ... something more academic, whereas if it was more social, they would look comment and gossip, I’d just avoid that”*

This was echoed by P10 who stated even in an academic context, if there is a social context in it, as in people know her and her family personally, this would make it a higher risk context:

*“I wouldn’t accept to go on stage unless the audience is mostly women and a few men, also depends on those men, if one of them is a religious figure I would reject to go on stage, or if one of them knows my family, it is not nice because they’ll get the gossip and they would not like this. But if it happens that I am kind of forced to speak publicly as we do presentations here [at college] I will have to do it, but it is not what I’d prefer to do”*

Thus, overall, a context associated with achievements provide the best possible option for visibility. Participants explicitly stated the context of visibility must be “some kind of achievement” (P3), “something huge, a great discovery” (P1), “receiving an award” (P11) or something that is “worth being in media” (P2). For instance, when commenting on a hypothetical scenario where she would be asked to give a statement for a TV program about her experience with customers as a cashier, P13 stated:

*“No, I doubt I would participate, there is nothing special (laughter) ... I honestly don’t know, because there is nothing special about working as a cashier ... so it depends what context, if it is something good and honourable, I would defiantly appear, otherwise if it just something normal I wouldn’t”.*

The same sentiment was echoed by P15 in another hypothetical scenario of her appearing in media as an athlete where she had ‘winning’ as the only condition she would accept for being visible:

*“maybe during winning, if not winning there is no need to appear in media, unless if I participate in a contest that is not easy for everyone to participate in, then maybe ...”*

Whereas P9 explicitly emphasised that *achievement* should refer to something big and worthwhile of visibility:

*“I still wouldn’t show my face, the news would be for example so and so accomplished her research and won this certain prize in this certain domain... societal wise everyone would be happy for me that I did some achievement that is worthy, not just any achievement, an*

*actual one. Sometimes in the newspapers or twitter they would talk about someone who did something trivial and they are like this is the best ... ”*

Thus, it seems that ‘real’ achievements are key to facilitate accepting not only visibility but also what P2 refers to as ‘confrontation’:

*“unless if it was in a good context, as in you achieved something good ... I wouldn’t [appear in media], because my family doesn’t like this. Maybe I just don’t really like confrontation. Because those [who break the norms] in the beginning they would face a lot of difficulties and they would be massively attacked by many people, by religion and society, so I don’t think I would be part of that especially when I think I am not really doing some great achievement that is wow which makes it worth being in media, maybe when I reach that stage where I have a great achievement I would appear to share this, I would convince my family [to accept]”.*

From this quote, it is evident that visibility is associated with high levels of achievements, not only by the definition of the individuals but mostly by the societal definition of achievement. This means societal recognition of something as achievement is a key aspect for individuals accepting to be visible. This was confirmed in the comparison between different types of media, discussed next.

#### **5.4.3.2. Type of Media: Formal and Ephemeral**

Formal types of media, such as official TV channels and websites, were ranked as better space for visibility than less formal types such as social media. This was stated clearly by P15:

*“I feel appearing in media of official bodies is better than snapchat and public stuff”*

This was echoed by P11 and she attributed this preference to different reasons including purpose and agency. In this excerpt, P11 explains how the purpose could be perceived differently of her visibility on a formal media (TV) and on her own account on social media:

*“My mom would object to me posting my photos, but I suspect my appearing on TV she should wouldn’t mind it because she knows if I would appear on TV it would be for a purpose, whereas Instagram is just oh look it me! ... maybe she thinks nowadays girls post their photos on Instagram too much and men think less of them in Saudi Arabia, even if you ask a Saudi man about his opinion of a girl who appeared as a chef on TV it would be ok but if it was on Instagram they would be like she is seeking attention ...”*

Regardless of the actual purpose, it seems that different types of media indicate different purposes whether or not they align with the actual intention of the user.

Another factor associated with formal media is agency, where participants made a clear distinction between posting their photos themselves or having someone else posting their photos for them. For instance, P18 explained the difference of the perceived purposes in her comment:

*“I wouldn’t mind appearing on TV, because at the end what would they present anyway? Whereas Instagram this is a personal account and would be my own decision, people would see it like she is doing this to seek attention and advertise herself. It is like on TV it is about the context, like sport, whereas on Instagram it’s about me and showing myself”*

By “my own decision”, P18 refers to her responsibility to take the blame if she posts her photos on her accounts as opposed to on TV, where she would be less held accountable. This same notion was expressed by P16 in another comparison this time, between government websites and social media:

*“government website would be easier in terms of criticism, if my photos get published, it is not me who posted it (laughter) whereas the blog is something personal. Maybe not now, maybe after a while of being published on the government website first and people know my identity more”*

Another point raised by P16 was the notion of accepting visibility on social media once it was granted on formal media. Which means starting with formal media would open the door for other types of media to be acceptable. Likewise, P17 confirmed this view:

*“family would look at me like it is not ok to get fame from social media, whereas TV is different, so if I appear on TV first then on snapchat it is not a problem, whereas starting from social media is a problem”*

And also echoed by P14:

*“for my family it would be more acceptable to appear on TV rather than snapchat, because TV is something institutional, official whereas snapchat everyone can go there and if they have your account you don’t know how they would take advantages of it”*

Whereas P15 gave a different example of formality where the focus was on who she was with rather than where she appeared:

*“I would prefer to appear with some leader, it is better ... not on my own, it is better next to someone known and has their status since you achieved something ... this give more support to you”*

By ‘leader’ and ‘status’ it is evident that P15 refers to formal types of setting where she would be held less accountable due to the ‘support’ of the ‘leader’ appearing with her. Overall, I conclude that a formal media or even only a formal setting provide a more acceptable space for visibility. However, formality alone is not the only measure for preferred media. Alongside this, the data revealed that ephemeral types of media are more preferred for a safe visibility.

Among all types of social media, Snapchat seems the most preferable platform for posting photos among my participants, which (P1, P2, P3, P4, P5, P7, P13, and P16) stated it as their first choice for posting their photos. The main reason is that Snapchat does not allow saving photos and consequently sharing them. This was stated by P3:

*“snapchat is fine, I take selfies there, but blogs no because anyone can access them, even if private, photos there can be saved, I don’t like my photos to be disseminated at all (laughter)”*

This was also echoed by P5:

*“easiest would be snapchat and last would be WhatsApp ... because there once the photo is sent you can’t delete it, whereas Instagram at least I can delete ... I don’t like my photos to be disseminated just to anyone ...”*

The other key feature of snapchat is that it is “private and temporary” P13 and “ephemeral” P7. The advantage of this feature was explained by P6:

*“Facebook even if private I can’t guarantee that someone else would enter my friends account and sees my videos, whereas snapchat is temporary so once my friend opens the post it is gone after that so she can’t save it or see it again, I wouldn’t post in my story, if I would be, I would restrict who can see it”*

Whereas P2 who justifies why ephemeral platforms are preferred:

*“If snapchat, I don’t mind taking photos of me and sending privately to my family and friends, whereas public story can be seen more than once so it might attract some discussions and criticism, and maybe disseminate with others and seeing more than once ... not on Instagram of anything that allows saving or sharing ”*

Similarly, P13 expressed her concerns about potential risks of using other platforms that are not ephemeral:

*“my girlfriends post photos on snapchat, it is ok because it is temporary so hopefully none would save anything, but when they send on WhatsApp I get concerns for them that they should be cautious that these videos might be disseminated and that’s not a good thing, regardless who is seeing it ... even if there’s trust, what if they lose their phones”*

Overall, the notion of having something recorded or documented and being available for dissemination is rejected by most participants. For instance, P1 explains her experience in being part of some documentaries and how the nature of these films, not being ephemeral, is raising future concerns for her:

*“I’m supposed to be filming something in a couple of days, and I already put it in my mind I would wear something [modest], because these are things that stay, so medias, videos, films, these things stay, when I know that something would stay for really long time I would try to, I tear in all the things I believe in, because they would stay for a couple of years ... that what I say and what I do while being filmed I would not regret it in a couple of years and at the same time I would make sure that I won’t do anything embarrassing to my children that could embarrass them for the next 10 or 5 years”*

The same notion was expressed by other participants who preferred live visibility (synchronous) over recorded (asynchronous) visibility, which explains my previous finding around the notion that online visibility is taking a slower pace. For instance, participants considered being on a stage as a low risk visibility because *“it is like one time and you are done”* (P9) as long as it *“not recorded, so it won’t be saved, it won’t be disseminated to all people”* (P5).

The other factor is that recorded or documented media might make the message behind visibility *“distorted”* P14 or *“misunderstood”* (P17). For instance, P2 stated:

*“writing in a newspaper might be indirect, whereas talking in person is something we do once and hear it, not like reading it more than once and then misunderstanding ...”*

This raise the question about whether ephemeral media and formal media are mutually exclusive. Whether there is a conflict of preferences, where on the one hand participants prefer formal media (e.g. newspaper) while they also prefer ephemeral non documented (e.g. snapchat). I suggest that there is no inherent conflict between the two and it is possible to have a combination of them, however, so far there is no such a thing, at least as stated by my users, that fulfil the two preferences. Another critical factor remains here is how much of a visibility participant preferred, both in real current scenarios and hypothetical/future ones. These will be discussed in the next section.

#### **5.4.3.3. Level of Visibility: Auditory Visibility**

For this theme, I visualize participants responses in **Table 5.1** where light grey represents what participants say they typically do, white represent what they accept and consider safe spaces for visibility, dark grey represent what they accept but consider challenging spaces for

visibility, and black represent rejected levels of public visibility. It is evident that audio media represent the safest option for most participants, although appearing physically wearing a hijab is the most acceptable/ preferred. Thus, the data represented here will focus on audio media as a representative example of a socially acceptable level of visibility. All participants, even those who completely rejected physical visibility (e.g. P4), had consensus on audio media as an acceptable level of visibility. For instance, P4 explicitly stated she would only accept total invisibility or audio visibility:

*“I would only appear either in niqab, or never appear, or I do online [voice only] ... I really like audio, we always use this at college, so I would appear in media via voice”*

Similarly, P10 echoed this and attributed this conservative attitude to the family she comes from:

*“I never share my photos with anyone, I would send audio messages, ... as long as it is only voice I don’t mind ... in Instagram I would use audio only because I see no point of people seeing my face, it is about the content ... so I prefer using voice only and hiding my face ... I come from a conservative family ... audio in all forms I believe is totally fine ...”*

Whereas P9 prefers complete invisibility, not even audio is an acceptable media. However, she classified it as a ‘maybe’ as opposed to other types of more visibility which she completely rejected

*“maybe [radio], although I don’t really like my voice, I wouldn’t prefer radio because it is a very powerful means of media in Saudi Arabia, I feel my appearance in it is not worth it ... still voice is more difficult than writings, but maybe!”*

On the other hand, other participants stated that they, their families and religious figures “don’t mind” P16, P1, P14, P5, P11, P8. Whereas in P7’s case she stated she actually “would like to be” P7 in audio media. They attributed this to the fact “radio is less [risky] than social media” P17 and that they would be less afraid of [their] voice[s] being under criticism” P18. This notion was captured in P13’s comment:

*“I would appear in radio, I have no problem, I feel it is more comfortable, see, when I asked you whether you would video record this session and you said no ... it feels more comfortable, especially that we [Saudi females] are not used to it, but now the new generation I think it will become normal for them”*

They also referred to the cultural change of the notion of “women’s voices as disgrace” P1. For instance, P3 stated:

*“I feel partial visibility, niqab and audio are quite fine, see, the voice of women is considered disgrace when she talks in an alluring way, whereas when she talks naturally it is not a problem ... and nowadays I see religious men very different from the past, the normalized talking to women and discussing things with them”*

Therefore, we can conclude that audio media provides the safest level of media visibility which is accepted by individuals, families and society as a whole.



















Level of visibility	Invisibility	Symbols (non-human, flowers ...)	Symbols (human emoji, avatars)	Name (name + accomplishments)	Writings (tweets, articles)	Voice (audio)	Physical / anonymized (no face)	physical / with niqab (no face)	physical / with hijab	Physical / no hijab
	(blank, zero visibility)									
P1										
P2										
P3										
P4										
P5										
P6										
P7										
P8										
P9										
P10										
P11										
P12										
P13										
P14										
P15										
P16										
P17										
P18										
	(blank, zero visibility)									

Table 5.1 The different levels of media visibility and participants' levels of preferences

However, all the previous discussions regarding aspects such as context, consistency and achievements are still applicable in regard to audio media. For instance, P2 insisted on staying consistent in her views and practices, where she believes would prefer to uncover the face although she cannot do so for societal reasons. Thus, she would not like to exhibit this in her practices:

*“I wouldn’t mind radio ... but if it was audio and visual [e.g. TV], and I am just using the audio part I wouldn’t like this ...”*

This means P2 does want to hide herself when it is a visual media, but at the same time cannot appear on it, thus she would rather use audio media like radio to remain consistent. Whereas, P15, insisted the context has be something related to achievements (discussed before) when she stated: “only if winning [I would appear in radio]”. Another aspect was the family pressure which P6 stated she would avoid when she appears in radio:

*“I wouldn’t mind [radio], maybe not saying my full name [if controversial topic]”*



## 5.5. Discussion

I have discussed that everyday Saudi women face cultural barriers restricting their visibility in public online and offline. Thus, I raised the question of: how might we support Saudi women's self-disclosure (choosing visibility) in the digital media with minimum violation of their cultural values? To answer the question, I conducted this study to explore women's views and practices regarding their visibility in the digital media. The results of my analyses indicate a vivid gap between my participants' views and attitudes towards women's visibility and their actual daily practices of self-disclosure. The results also demonstrate a set of criteria of what makes an envisioned visibility for my participants to bridge that gap.

The gap identified exists between a strong advocacy for women's visibility and a strong inclination towards invisibility. My participants expressed that current cultural changes regarding women's visibility, which has been supported and promoted by the state, is becoming reflected in the digital realm but with a slower pace. Consequently, this has created internal changes, particularly for women, however, exhibiting external changes is feared due to societal disapproval. The tension between changes in different dimensions creates situations of identity crises as expressed by my participants whereby women behave inconsistently across the online and offline spheres [240]. For my participants, the gap, or inconsistency, between their views and practices is evidently manifested in (i) inconsistency between their appearance online vs. offline; (ii) inconsistency between their appearance home and abroad; and (iii) inconsistency between the visibility they accept of themselves vs. that of other women. Despite advocating being unveiled and appearing in media as such, they prefer not to embrace this in their online presence. This is in line with research that suggested public inconsistency in one's appearance creates a negative impression of them, thus, people would avoid self-disclosure when it is difficult to maintain consistency for different audiences (as is the nature of online communication) [204].

The problem is that women, overall, are more supportive for gender equality than men [178,240,267]. Yet, they are still aware that their visibility can cause shame and disgrace to women's family especially men [18]. However, they believe in the mutual influence between their visibility and the cultural views of them, as the more they push the boundaries and deviate from the cultural norms, the more societal changes will take place. Despite advocating visibility and disapproving imposed invisibility, this attitude was expressed as an internal change by my participant while they struggle to exhibit it externally in their daily practices. Dealing with such situation entails either abiding by or deviating from the cultural norms. However, neither of these options has a pleasant effect to my participants. This is because deviating from the cultural norms make them prone to criticism, while abiding by the norms creates the inconsistency dilemma, which again is prone to social judgement.

The limitation of this study is that it is not covering male's points of view, or local women's view. A separate study with each of these group could confirm whether this is a *pluralistic ignorance* [154,175] or not. Pluralistic ignorance phenomenon refers to case when majority of people falsely perceive a social norm as desired by most of their peers, which in actuality is not [154]. Pluralistic ignorance thus is a common mechanism by which social norms are perpetuated [175]. In this case, my participants in the private session all expressed advocacy

for women's visibility. Yet all believed others will negatively judge them if they physically disclose themselves in public. However, this is perhaps the reality of the overall society beyond the type of women I worked with: transnational women. Indeed, studies show that men are less supportive to women's right and gender equality [240]. However, more visibility focused studies are needed to examine such a phenomenon.

## **5.6. Conclusion**

The exclusion of Saudi women from the public sphere has been declining in Saudi Arabia due to the recent reform in the country. However, it is argued that this decline is biased and exclusive to the elite, educated and cosmopolitan women. Understanding the views and practices of everyday women in terms of how they disclose themselves in the public sphere, including digital media, would help designers create safer digital spaces for women's visibility. Women's visibility, as my data revealed is a crucial element in the ongoing cultural change and is widely advocated by women despite their concerns to be part of it. This study provided a deep understanding of the nuances of views and practices among 18 transnational Saudi women, concluding with the suggestion that audio media currently represent the safest option for my participants, despite the preference of most of them to be comfortable and safe having a more physical visibility. This is perhaps the takeaway message for designers to understand that designing for audio visibility is the safest option however this should be coupled with a vision of going towards creating safer spaces for physical visibility.

## 6. Designer-Centered Approach for Communicating User Research

(The first phase of the double ethnography)

### 6.1. Overview

After conducting user research and gaining rich insights about the users and their cultural context in the previous chapters, the remaining challenge here was how to communicate this research to a design team and how to utilize it in creating design resources to guide and inspire the overall design process. This challenge, as I will discuss in this chapter, becomes even more daunting when communicating culturally specific research to a diverse team of designers. This is, nonetheless, an invaluable opportunity to understand and develop communication methods designed to facilitate the understanding of user research. The need to understand users in order to design relevant and useful technologies has been addressed in the research of user-centered design [198], including Participatory Design [247], and Value Sensitive Design [80]. This implies that the purpose of doing user research is not the research itself, rather, the design implications of its findings: in other words, to make better designs that more accurately reflect user needs. The findings of user research are critical inputs for designers to integrate in the design process [264]. Therefore, it would be ideal practice if all team members, including designers and developers, have a direct involvement in the user research; however, for many reasons discussed in this chapter, this often is not the case [245,264].

Typically, designers have indirect contact with user research which is mediated by researchers [219,245]. As such, designers and the overall success of the design process rely heavily on how the researchers communicate their research outcomes [198]. The problem with this indirect communication is that it usually either lacks clarity, or has constraints, which are too fixed, limiting the creativity of designers [264]. Additionally, designers in many cases do not have the time to study the whole outcomes of user research themselves, or sometimes they do not receive the information in an understandable form or in a timely manner [219]. In this chapter, I discuss the communication difficulties between researchers and designers, often referred to as the *researcher-designer gap*, its underlying causes, and how scholars attempted to address it. I showcase my case study to illustrate how this gap is even wider in a context where designers are addressing a problem in an unfamiliar cultural context; I will refer to this as the *cultural gap*. Given the nature of modern organizations where the diverse expertise and culture of design teams are ever increasing, it is imperative to address this gap from a cross cultural perspective. This chapter describes an effort to address the communication gap between researchers and designers in multifunctional and multicultural design teams aiming to facilitate their understanding of the context they are designing solutions for. The goal of this study is twofold:

- To learn about how researchers communicate research to designers (this chapter)
- To develop a tool to facilitate the communication of user research (next chapter)

## 6.2. Background

The importance of communicating research results to all stakeholders is well recognized as a critical element to the success of the collaborative design process [161,218]. To deliver actionable outcomes of the innovation process, the research findings should be conveyed appropriately to all team members [41]. To enable effective design communication, knowledge gained from the research should be clarified, understood and transformed to inform collaboration and create shared understanding [140,153]. However, despite its recognized importance, developing a shared understanding in design teams to inform design practices has long been acknowledged as a challenging endeavor [49,141,227]. Indeed, a quick historical overview of the literature proves this has been a persistent challenge.

As early as 1971, Tweeton [239] pointed to the difficulties for researchers in communicating the knowledge they gained from their research to the designers who are creating the product. A couple of decades later (1992), Ramey et al [196] has echoed this and remarked that this difficulty creates a situation of a “very well-informed investigator” whilst there is “no real impact on the design”. Almost another decade later, Hughes et al (2000) [125], described this as a “a perennial problem”, and Diggins & Tolmie (2003) [64] pointed to the difficulties in making good use of ethnographic data in multidisciplinary teams. Despite the continuous acknowledgment of this gap, a decade later, Yargin and Erbug [265] noted that there was more literature on conducting user research than on communicating findings to stakeholders and design teams. Likewise, Roschuni et al (2013) [198] noted that there is very little work on HCD oriented approaches to communication. Furthermore, recent work have described the communication difficulties as a “wicked dilemma” [225], “fragile or dissonant” [139], a “struggle” [252], “challenging” [120] and “mismatch” [100], between HCI researchers and practitioners.

The communication difficulty is perhaps a result of the nature of the knowledge gained from the field work which is usually fragmented and not easy to share [163]. Thus, scholars particularly suggest that the division of labor is the underlying reason for this problem.

Design is becoming increasingly interdisciplinary [161]. The division of roles within design projects means that different tasks are divided into multiple phases, carried out by multidisciplinary teams where members come from different functional backgrounds [198,219,221]. Scholars have established that the division of roles in the design process in today’s practice is the underlying reason for a long acknowledged gap between researcher and designers [198,252,264].

### 6.2.1. The Underlying Reasons for Communication Difficulties

Design is becoming increasingly interdisciplinary [161]. The division of roles within design projects means that different tasks are divided into multiple phases, carried out by multidisciplinary teams where members come from different functional backgrounds [198,219,221]. Scholars have established that the division of roles in the design process in today’s practice is the underlying reason for a long acknowledged gap between researcher and designers [198,252,264].

#### 6.2.1.1. *The Division of Labor (the functional gap)*

Typically, not all of the design team members participate in conducting the user research, and some of them might have never been involved in carrying out user research before [252]. The researchers are social scientists (or take the roles of such) who conduct the research then present it to the designers in the form of deliverables [264]. As such, designers have indirect information of the user research which is mediated by researchers [219,245]. In that sense, the designers' direct involvement in the research would be a multitasking which does not correspond to this division of labor [100,264]. Thereby, researchers and designers think very differently [121,155]; researchers are typically user oriented while designers are object oriented [265]. Indeed, many designers are not versed in research skills, although they need it the most [161]. Yargin [264] summarized these differences as shown in **Table 6.1**.

	<b>Researcher</b>	<b>Designer</b>
<b>Problem solving approach</b>	Simplification	Abstraction
<b>Research aim</b>	Informational	Inspirational
<b>Education</b>	Social science (usually)	Design
<b>Terminology</b>	Academic-scientific	Design-solution oriented

*Table 6.1 The functional gap between researchers and designers*

The problem of the division of labor is that there might be a lack of communication or a lack of knowledge transfer [100] among team members as analytic frameworks developed by researchers are not always accessible by practitioners [100]. On the other hand, another common issue is information overload, as it was found that managing information takes up to 18% of designers' time [99]. These communication issues result in team members not sharing common language, vision and understating of the user [170]. Moreover, due to their different responsibilities, members of a design team may have a conflicting views in design decisions [140]. Thus, the more people come into collaborative design the more potential problems might arise, including social, political, technological or organizational problems [170]. These problems makes it difficult to manage diversity and facilitate collaborative decision making [227]. Consequently, it becomes difficult to account for the user needs in the design process and potentially lead to overall unsuccessful collaborative work [170]. This is particularly the case in distributed or multinational teams where the cultural gap between members is an added obstacle.

#### **6.2.1.2. The Cultural Diversity (the cultural gap)**

In addition to this functional gap, which has been the focus of most work in the area, there is a cultural gap that could arise in today's multinational organizations. This is due to the cultural diversity of the team members, particularly between researchers and designers. It could also arise from the culturally specific research conducted in an unfamiliar cultural context to the designers [155]. However, little work has discussed, let alone addressed, this gap. Some work has indirectly pointed out to it. Roschuni et al [198] suggested that the cultural gap is another obstacle of communication. However, by culture they mainly referred to the 'organizational culture' and 'societal culture'. This to some extent is more relevant to the functional gap rather

than the cultural one. Furthermore, Holtzblatt and Holtzblatt [121] pointed out that the communication gap is even wider within distributed teams. However, they did not directly point to the cultural gap that could arise from distributed teams of designers working with culturally specific research.

The most notable work in this area is perhaps the concept of operationalizing culture discussed in Sun's work [233]. Sun suggested that one of the most fundamental epistemological issues in the practice of culturally sensitive design is the challenge of operationalizing culture. That is how to transform a sophisticated understanding of local culture into design insights to inform and guide the design process for crafting culturally sensitive technologies that is both usable and meaningful to local users [233]. Indeed, in many design cases, the complexities of local cultures are transferred into simplistic design recommendations without any deeper reflection.

This results in designing technology that could be usable, but not meaningful, to local users [24,233]. Hence, scholars are increasingly calling for community-centered, inclusive design practices to address local needs; in order to legitimize cultural voices long marginalized by universal, i.e. culturally neutral, and top-down approaches dictated by dominant stakeholders [70,232].

#### **6.2.2. Existing Theoretical and Methodological Communication Solutions**

There has been increasing efforts in the literature to address the researcher-designer gap, even without necessary referring directly to the gap. That is, theories and methods have been developed to inform the design of communication techniques and strategies to better share the knowledge of the user among the design team. In the next section I discuss these efforts, their limitations and how this work attempts to build upon the existing methods.

Efforts in the literature to address this gap can be classified into two approaches: (i) involving designers directly in conducting the research; and/or (ii) applying different techniques to communicate the findings [264].

##### **6.2.2.1. *Direct Involvement in the Research***

Scholars have suggested allowing designers to participate in the early stages of the design and to experience fieldwork first hand [74,162,245]. The problem with suggestion is that ethnography is something designers rarely do [162] due to the current division of labor between researchers and designers as discussed in the literature above. However, it is suggested that direct contact between designers and users does not necessary guarantee the success of the design process [153].

##### **6.2.2.2. *Communication techniques***

Alternatively, it was suggested to make research mediated and communicated by social scientist [153]. Effective presentation of the user research is crucial for the designers to understand, internalize and employ user data to drive the generation of design solutions [121,185,252]. Researchers developed different methods and techniques to address this problem [125]. However, having the user research mediated by social scientist has been criticized [153]. This is perhaps due to the little consensus about how to formulate ethnographic work into effective design resources for design teams [64]. Moreover, The practical

requirements pulled out of the research outcomes has made the art and craft of fieldwork rather invisible [52]. Therefore, scholars have developed principles and methods to consider for an effective communication process.

### **6.2.3. Communication Principles and Methods**

It is acknowledged that the success of conveying the outcomes of the research depends on how well the chosen method fits the context and how it engages stakeholders with the materials [41]. Thus, scholars have suggested factors (enablers and barriers) influencing the creation of shared understanding within design teams [140]. Other scholars suggested developing techniques and strategies for user designer collaboration [153,170]. Whereas others have suggested adapting some existing methods and activities in HCI to modify the dynamic of collaboration and create better conditions for user-centered design [170]. I classify the suggested principles into three categories: (i) user-centered, (ii) designer-centered and (ii) solution-centered principles.

#### **6.2.3.1. User-centered principles**

User-centered principles emphasize putting the user at the center of the communication process. This means, in structuring a user-designer model, individuals' knowledge, cultures and local situated accounts (praxeological accounts) are essential inputs to convey [52,153]. For instance, *empathy* is perhaps the most common way to articulate these principles. 'Empathy' has been widely recognized an essential factor for designers to establish towards the users they are designing for [142].

#### **6.2.3.2. Designer-centered principles**

Designer-centered principles emphasize communicating the research to designer in an *engaging* and interesting manner. For instance, it is suggested to foster engagement by providing relevant data, reasons for design (*goal*), shared vision and ownership among designers based on user needs [252]. Other researchers suggested engaging designers by employing a balance between *play* and *seriousness* in the communication methods; such as the use of theatre [41].

#### **6.2.3.3. Solution-centered principles**

Solution-centered principles emphasize facilitating the leap from the research communicated to the generation of design solutions. Notable exemplar principle is providing *inspiration* to facilitate idea generation which has been emphasized in many techniques, such as the PLEX cards [160] the inspiration cards [105], the Envisioning cards [81] and other card-based methods [259]. *Creativity* is another principle discussed in the literature which fits in this category. For instance, Goncalves et. al. [99] explored how to support designers when selecting inspirational stimuli to enhance design creativity. They found that the *ambiguity* of text resources stimulate creativity. Similarly, ambiguous briefs and prose were found to offer more *flexibility* and stimulate more interpretations as opposed to visuals which force people to be precise [222,227].

#### 6.2.4. Incorporating the Three Categories

A few works have incorporated the three types of principles stated above, most notably Visser *et. al.*'s work where they suggested that the results of the user research should be accessible, sharable, useful and understandable to all members of the design team [246]. To facilitate this understanding, Visser *et. al.* suggested that tools used for communication should have three qualities: enhancing empathy, providing inspiration, and supporting engagement. As such, in their evaluation they measured the success of their tool based on the number of ideas generated (inspiration), referring to users (empathy), and intensity of use (engagement) [219,247]. Based on the classification I provided I find that inspiration is a solution-oriented principle, empathy is a user-oriented principle and engagement is a designer-oriented principle.

Another example work is that of Holtzblatt and Buyer's where they suggested a set of more concrete principles for design communication. These are: (i) presenting the data in a meaningful structure, (ii) using story language, (iii) providing a way-in for designers to immerse in the data, and (iv) supporting interaction with the data [119]. I find these correspond to Visser *et. al.*'s *abstract* principles in a more concrete manner; where meaningful structure is a concrete technique corresponding to inspiration, story language corresponds to engagement and a way-in correspond to empathy.

A more concrete example is that of Steen *et. al.*'s where they suggested the use of scenarios and demonstrations in establishing a common language between members of the design team. The authors found that scenarios and demonstrators promoted shared understanding between stakeholders. They also put the user at the heart of the design process (empathy). They are especially useful in designerly approaches of exploring and learning (inspiration and engagement) [227].

In another concrete example, Buur and Torguet's use of theatre represents a concrete method for two of the three principles: empathy and engagement. The authors suggest using theatre as a tool to engage recipients (stakeholders) of the research insights on a more fundamental level rather than using these insights as mere innovation drivers; They use theatre with professional actors to convey their research results to industry and academia. They found that performance support engagement and empathy as it focuses on people rather than technology [41].

An indirect example of a concrete method would be the layered scenario mapping technique. This method aims at providing a frame of reference, sharing insights, and presenting the data with relevant details (empathy). The authors concluded that the map guided the collaborative sessions, served as a stage for conversation, comments, questions and mutual knowledge development (engagement). Thus it provided a holistic understanding and became a substitute for the field research [163].

Applying these principles, many methods have been developed in different forms and different structures. Borrowed from Visser 2009 [219], we can classify the methods based on their format as shown below. This classification is not meant to be exhaustive but to guide my study with the designers by providing them with different existing approaches to examine their understanding, familiarity and uses of these methods. The classification is illustrated in the **Table 6.2** below



Type	Example	References
Verbal (written or spoken)	Text narrative, scenarios scripts, diaries, transcripts, raw data, original quotes, themes, reports, websites, databases, emails, spreadsheets, online hypermedia requirements document, analysis reports, executive summaries, articles, newsletters, PowerPoint slides, presentations, design briefs	[99] [163] [196] [198] [202] [222] [227] [246] [247] [252] [265]
Visual	Collages, storyboards, photos, personas, posters, videos, websites, graphic summaries/ infographics (graphs, maps, diagrams, illustrations, charts, exploded views), images of real people	[41] [120] [125] [163] [196] [202] [227] [246] [247] [252] [265]
Tangible	life-size dolls (personas), card sets, prototypes	[198] [247] [265]
Acted	role-playing, games, improvisation, performances, bodystorming, brainstorming, consumer safaris, (interactive on-screen) installations.	[41] [252] [265]

*Table 6.2 Methods of communicating research findings*

### 6.2.5. What Is Missing?

Despite the abundance of methods and principles suggested in the literature, there are still some limitations related to (i) the selection (or design) of the communication method, (ii) accounting for designers' specific needs (and backgrounds) within the communication, and (iii) establishing a collaborative communication process.

There is a lack of a structured guidance in the literature on how to apply the suggested principles to select or develop concrete communication methods (i.e. deliverables) [264]. In a typical case, the selection of the communication method is left completely to the researchers without a clear process of how they decide on a communication method.

The arbitrary selection of a communication method could raise another limitation which the use of unfamiliar or irrelevant methods to the designers and their current practices is. Designers are typically not aware of scholarly theories and methods [100]. Whereas it is critical that the methods used are compatible with existing workflows and industry practices [49].

The aforementioned two limitations could result in a third one related to restricting designers to work as collaborators in both the selection of the method and the communication process itself. The communication process should be seen as not only dissemination of information but a creative activity to establish a shared understanding among team members [74]. Whereas, some commonly used methods and some representations with too much details or realism can be restrictive to designers' creativity and create what is known as 'design fixation' [41,227,241].

#### 6.2.5.1. Designer-Centered Communication

Various ways and methods have been developed to involve users in the design process; under common methodology such as user-centered design, participatory design and design for experiencing [153]. Despite their emphasis on attending for user needs, a persistent question remains is how to make use of the findings of user research [155] (discussed in a previous section). Since the communication of these findings is targeting designers, the core element here is the designers themselves and not the method selected.

However, most of the principles and methods reviewed earlier are user centric approaches aiming to maximize representation of the users, while little work is concerned about understanding designers and their expertise and understanding of the research context [100]. Therefore, some scholars have noted that it is imperative to pay a close attention to how practitioners actually work [100,161]. It was also suggested that the choice of communication methods should be resonant with designers and tailored to their functional and cultural background [100,252,264]. This means, overall, researchers need to communicate both to those being studied in the research and to designers/developer in a way that is designed specifically for each group [52]. One methodology that can accommodate both users and designers is the *double ethnography approach*.

#### **6.2.5.2. The Double Ethnography Approach**

One strategy for a choice between communication methods that has been discussed in the literature, is referred to as the *double ethnography* approach which suggests establishing a *designer model* is as essential as a user model [198,252]. It is important to note that the use of the term ‘ethnography’ here does not necessarily mean conventional ethnography work, but it is encompassing other types of fieldwork. In their study of communication strategies, Roschuni et. al. concluded by proposing that the communication of user research should be treated as a design problem of its own, to help researchers decide on how to communicate their research findings [198]. This approach was suggested also in early work, although not using the double ethnography term, when Button et al [40] recommend treating engineers the same as the fieldwork (users) to establish understanding of the engineers’ work with the aim to facilitate communicating the requirements. Simply put, double ethnography aims at incorporating designers’ needs in the decision of choosing a communication method between the researchers and designers [198]. In this regard, I find that the double ethnography approach addresses the three limitations listed previously.

- selection of the method is not random but rather selected or developed based on studying designers
- accounting for designers’ needs both in the method and the communication process
- involving designers allow for a better collaborative process.

However, there remain two questions regarding the application of this approach:

Q1: How to account for designer needs not only in the selection/development of the method but also in the communication process as a whole?

Q2: How effective is this approach?

There is little work in design literature on developing and evaluating methods as part of double ethnography approach. In this work I discuss these questions and demonstrate how I employed this method for my research and reflect on its effectiveness. I also discuss the role of designers’ involvement in the collaborative communication process and its implication on the overall research.

### 6.3. Method and Procedures

To conduct this study with a team of designers coming from different functional and cultural background, I chose to adopt the double-ethnography method in order to establish a solid understanding of the designers, their experiences and their understanding of the cultural context at hand, before communicating the culturally specific research to them. It is important to understand users when not just when developing a product but also during the design of studies conducted with them [223]. Thus, as per the double ethnography method where designers need to be studied before communicating research insights to them, I conducted a semi-structured interview individually with each of the designers (semi-structured interviews are discussed in **Chapter 3**). This method was chosen due to the different backgrounds of designers, thus, I wanted to allow each on them to have an individual space in an individual interview to discuss their personal experiences and views. The interviews were transcribed and analyzed, looking specifically for cues to guide the choice of the communication method and structuring the ideation session based on these findings (the workshop is discussed in the next chapter).

#### 6.3.1. Participants

The recruitment process started once ethical approval was attained. For such a low risk study, outline ethics was granted, and full ethical approval was not required (gaining ethical approvals was discussed in **Chapter 1**). Since my focus is the cultural gap, and I take the functional gap as a necessity in modern design teams, I aimed at recruiting designers or members of design teams coming from various functional and cultural backgrounds. This is an attempt to replicate the nature of today's global organizations and multidisciplinary teams with diverse expertise and cultural backgrounds [197]. I also aimed at recruiting participants with different levels of experience. However, I required familiarity with design teams and ideation processes to reflect my target population and task and learn about typical issues they might face [223]. This is due to the fact I am chiefly concerned with the cultural factor, and secondly the functional factor, but not the level of expertise.

I started the recruitment by reaching out through personal connections, word of mouth, email lists and LinkedIn contacts. All these techniques provide direct and personal connection with participants which was important for the researcher to have in order to build a rapport before conducting the semi informal interview. I provided a copy of the info sheet of details about the study. I received 18 requests and screened them against levels of expertise, cultural background and role. Then I selected 14 designers with the details in **Table 6.3**.

For privacy purposes I combine the different backgrounds here as a collective diversity instead of showing them in the table above for each individual. My participants associate themselves culturally with over different countries including those where they lived in, worked at, visited or have had friends or partners from. Overall, they are coming originally from 11 countries (including mixed-raced) and have lived in 14 places, in addition to having visited and worked in other numerous locations. These include Australia, Korea, China, India, Jordan, Saudi-Arabia, UAE, Egypt, Ghana, Austria, Germany, Sweden, Spain, the Netherlands, the UK, Canada, the USA and Mexico.

ID	Role and specialty	Years of experience
1 (pilot)	Background is in industrial design. The role is product designer for a designer agency. It involves doing some research for writing up proposals for a government project. Then once the funding is gained, the main role is designing 3D prototypes and different types of products.	1-3
2	Product Designer in architectural lighting industry. The role involves What participating in the different stages of the design. Starting with creating the design briefs, doing the research and defining the profile of the product, and developing ideas and doing some sketches by hand or the CAD modelling software.	5+
3	Head of UX. A design researcher. The role involves doing user research, providing insight to the designers, making sure that they apply them in the design of apps or websites, checking up that the users of the design are represented in the designs.	1 - 3
4	Senior Full Stack Web Designer. The role involves speaking with clients to understand their problem, requirements or goals, translating these into technical or design specs, developing code for web services, mobile apps and other systems, and designing the customer-facing part of these apps and websites.	5+
5	UX Manager. The role involves leading a small UX team of seven or eight people, 'loosely' following the agile Scrum methodology, and having 'a lot of' meetings with stakeholders to discuss projects.	5+
6	Senior UX Designer as part of in-house design team responsible for the design of the software. The role involves following a roadmap of improvements and features to be made to the product, taking requirements from the business, doing research with users and converting that into design concepts and sketches. Sometimes doing test with users.	5+
7	UX Designer. The role involves doing user research, running ideation session, working across the websites of the university, looking at a new site and working with content editors and other people to make that new site, working on the layout and visuals of the pages.	5+
8	Background is industrial design degree. The role is senior Product designer for a lighting manufacturer. The role involves designing commercial and retail architectural lighting, including concept generation, market research, taking the product from sketch to production, rapid prototyping, technical drawings, testing, thermal analysis and product introductions on to the factory floor.	5+
9	Background is graphic design and design interactions. The role is interactive designer and developer. Founded a company which is a design ideation tool, managed the design and development of that, working within a team, collecting user feedback, collating it into a spreadsheet and translating into design specs.	5+
10	Background is Interior Designer. The role is interaction designer. The role involves working with qualitative research with different participants, whether end users or designers, collaborating with architects, interior designers, and other design and art on ideation, and the crafting and making of prototypes.	5+
11	Developer in healthcare. The role is a lead designer for development team. The role involves sketching, coding, and implementing applications for healthcare, database and interfaces.	5+
12	Background is design and innovation.	1 - 3

	The role is senior experience designer. The role involves formative and upfront research, foundational research, having outputs and artefacts that come from that, creating personas and journey maps and combining the legislative requirements, the business needs, and customers needs.	
13	Background is electronic engineering, industrial design and design. The role is web development manager. The role involves managing 14 web designers and web coders and coordinating web design. Another role is teaching Interaction Design Methods at the university, working with external partners on research projects, looking at public consultation project on the redesign of, or the design specification of, the projects.	5+
14	Software designer/architect in large and small businesses. The role involves design work, requirements gathering and user research, defining functional requirements and non-functional requirements, defining where the system will be physically be located, in terms of hosting.	5+
15	Designated IT employee and test case design consultant. The role involves dealing with, assist and developing the database for the applications, backtracking, quality assurance, testing and making pixel concrete mock-ups of the interfaces. Also going to different clients and helping them to come up with a test case portfolio to cover most of their business processes to be tested on SAP.	1 - 3

*Table 6.3 Participants Table (description of their role and responsibilities and years of experience)*

### **6.3.2. The Semi-Structured Interviews**

The semi-structured interviews were chosen as a method to understand each designer individually before treating them as a member of a design team, discussed in ‘the double ethnography’ section. Semi-structured interviews allow for a deeper investigation with the values, reasoning and experiences of the participants [82]. The overall goal of the interviews is to utilize their findings into designing the ideation workshop to follow. The specific goals and questions of the interview were as follows:

- Learning about the designers:

An essential part of the interview was set up to understand designers as individuals with motivation, needs and desires to be fulfilled. Thus, they were asked about their daily work, the type of tasks and projects they work on in order to elicit their preferences, values and beliefs. They were also asked about struggles and obstacles hindering success of their designs, and how they deal with that.

- Identifying effective design deliverables for the designers:

This was the core of the interviews. This part aims at learning the different ways designers usually receive the requirements or learn about the user research, if provided. They were asked about the communication methods used in their organizations and how effective they are. Then they were provided with a variety of methods presented in a card deck and they were asked to group them and evaluate their effectiveness.

- Understanding designers’ overall perceptions about my context:

A final section of the interview aimed at gaining a sense of how familiar designers are with cross cultural contexts in general, and the Saudi context in particular. They were asked about experiences they had in this realm, and what pros and cons they associate with designing for a culturally different population. Then they were asked about their perceptions and assumptions

of Saudi culture and the Arab world in general, particularly regarding women and their visibility in public (the case study in **Chapter 5**).

### **6.3.3. The data analysis**

Each interview was transcribed by a hired transcriber. They were analyzed using thematic analysis methodology (discussed in **Chapter 2**). Thematic analysis allows us to find the different categories of the methods and practices used or preferred by designers and understand the justification thereof. The analysis started with the first interview analyzed using open coding [79]. Then the next was analyzed the same way but followed by constant comparative analysis [253] and so for the rest.

## **6.4. Findings**

Based on the data I infer that the design requirements have to involve the designers into three levels of access to the user research: access to raw data (for credibility), access to the interpretation process (through conversation), and an access to the user experience (for immersion). Accordingly, I classify my findings into these three themes: Credibility, Conversation and Immersion.

### **6.4.1. Credibility: Evidence of the Research**

In this theme I demonstrate trust issues my designers face whether regarding trusting the fact a research has taken place, or the representations of the users are accurate. However, despite their emphasized need to see the raw data, the revealed their struggle to interpret it. These two conflicting needs create what I refer to as the ‘credibility dilemma’. I demonstrate how I distil solutions from the data to deal with this dilemma by emphasizing the advantages of adopting an approach that combines both raw and interpreted data in the communication of the user research.

#### **6.4.1.1. Just Build Something! (No research = frustration)**

*“[designers] do believe in the concept [user research] and they get frustrated if the client says, “Just build something without research and insights. Just put something together.”” (p3)*

Participants stated that it is common that sometimes there is a lack of research in the design projects. For instance, P6 described this as a ‘difficulty’ in her work:

*“I would say one of the difficulties is that sometimes it just doesn’t happen. We don’t actually get the research. Then there’s not enough information to be able to understand something fully and we don’t have time to do research.”*

In other cases, it is common that designers receive the design requirements expressed in the form of solutions with no regards to user research. This is particularly the case when dealing directly with clients. P4 described this as a *perceived notion of solution*:

*“I think in most cases, even when the client is just presenting a problem on its own, there’s usually, again, some preconceived notion of what the solution should be like ... They’re basically unable to, kind of, back it with research ...”*

It is evident that dealing with this type of *perceived solutions* can be frustrating for both researchers and designers. This is the reason behind P3’s aversion to design briefs:

*“Design brief, I always have a bit of a difficult relationship with because clients will come to you telling you what they need, ... They should tell you what their goals are ... they shouldn’t say, “We want a website. We want the pages to be this and this and this.” ... we should tell them, “That’s fine. You want this but we’re going to do research first...”*

This lack of research could create a potential space for conflicting agendas to inform the design solutions, as per P7’s experience within internal team members:

*“there might be some people in the Marketing Team that have a particular interest in portraying a certain message ... We can test stuff quite quickly... So therefore, we can either prove or disprove other people’s hypotheses or our assumptions.”*

In best case scenarios, it could give the design team a space to creating ‘anything’. For instance, P9 encountered this with developers, but questioned the source of design decisions:

*“I think sometimes the developers get like, ... “Oh yes. I can see what wants to be happening.” They’re always jumping the gun of the designer and there was a couple of times features came into the product. It was like, “Where did that come from?” and it’s like, “Oh yes, I thought that was a really good idea, so I just stuck it in.” It’s like, “Yes. I’m not sure that looks great though...””*

Similarly, questioning the source of the design requirements was echoed by the skepticism of P4:

*“I think if you get them to, kind of, vocalize or think out loud, “Where do these ideas come from?” they can’t back them up with proper research.”*

In response, P3 explains how she answers such a question to designers in her team by using a specific user-centered language to avoid any skepticism:

*“I always make sure that I say, “The user needs this,” and not, “I don’t like that.” It needs to be clear to them that it’s about the user. I always refer to a specific thing in the personas so they can’t think, ... It’s because the user who’s going to be using it doesn’t like it.”*

However, even referring to the user as P3’s approach in using her design resources (the personas) does not seem enough as the question of ‘where did that come from’ could actually extend to questioning the design resources themselves.

#### **6.4.1.2. Where Did That Come From? (Design resources = skepticism)**

*“It’s like, “I don’t know. Who did you speak to?” Not that I want to see evidence but, “Are you actually presenting the full picture here?” ... maybe it’s just me being a bit cynical ... Sometimes people just want the stats to look good for them rather than actually representing the needs of the user.” (P6)*

The question of “Where did that come from” persists even in cases where a user research has taken place. As per P6’s quote above, there need to be an evidence to trust where design resources are coming from. This was echoed by another participant, P15, who described this as a *political question*:

*“But then there’s always the question, like where do personas come from? Is it the personas or the prioritized persona by manager A, or is it who is this persona and who decides the persona? This [is] also a political question, I guess ...”*

Another type of design resources, reports, were also put under scrutiny when P4 questions the production of reports, in comparison to research papers:

*“I look at it as a slightly less convincing way of perceiving information. I think if I was given ‘reports’, I would like more information about how this was produced, what sort of information does it contain, etc.? ... I would say I’m a bit skeptical ... I think a word which I find very positive is research paper... it implies a certain level of trust ...”*

The skepticism of design resources sometimes stems from the fact there might be conflicting agendas within different members or team, as per P6’s statement:

*“In terms of receiving information and interpreting it, something that I do see sometimes is – depending where it’s come from – it has an element of bias. If someone has their own agenda about wanting something to happen, they might present the research in a way that just confirms what they want...”*

Other times, the problem can stem unintentional representation of the user which occur through the multiple stages of interpreting the user data, as per P2’ statement:

*“Sometimes as designers we rely on the feedback of the people who are selling the product... I think that’s where the struggle comes because you need to interpret. You have two breaking points. You have their interpretation of what the customer said and then you have to interpret theirs, so you already have two barriers. I think the request of the customer is already changed by their interpretation...”*

To deal with this skepticism, participants suggested either involving designers in the production of the design resources, as per P5’s quote:

*“I think [researcher] are the authors of these user stories, and the user stories dictate what development teams are assigned to. But again, we need to make a decision together.”*

Or another approach is to involve designers to participate directly in the user research itself:<sup>7</sup>

*“Yes, I would like to have more feedback from the end user, maybe from the actual [user], ... Maybe to listen to people when they’re working, what’s their feeling of the light and what could improve the environment. Maybe more user research” (P2)*

However, direct involvement, as P3 explains, might be ideal but not possible in today’s industry:

*“I try and involve the designers but there’s not always time do involve the designers. Ideally, they would sit in on every interview and ask questions as well ... so that they would really get first-hand knowledge. The problem with that, I personally think, is that research is not something that ... everyone can do.”*

Clearly, the underlying need of these two approaches is the seeing the raw data firsthand. This was expressed explicitly by my participants as a way to reinforce trust and credibility

#### **6.4.1.3. Show Me the Data (Research = trust - understanding)**

*“If I need to persuade someone, I’ll show them video. They won’t read my executive summaries... if I really want to deliver in an impactful way, in a persuasive way, what the user says and thinks, I’d use video... I think the executive summary is dead. That’s no longer how to persuade executives... Photos, like video, photos, videos, evidence is really important.” (P5)*

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<sup>7</sup> It is noteworthy to state that ‘direct involvement’ in the research was rarely mentioned in the data as a way to reinforce trust. It was mentioned, however, as a way to enhance empathy, and thus we included this in the ‘immersion’ theme discussed later in this chapter. The focus in this theme, thus, will remain on the credibility and trust of the research data and insights.



The quote above shows the power of sharing raw data, which is in P5's view is persuasion. Whereas other participants stated the need for raw data could only be for satisfying curiosity, as per P6's statement:

*"if another member of the team is doing some research, usually they'll put it into a shared document where they've typed up all their notes from the research ... where you have, "This is who we spoke to ... key findings ... some more specific feedback," because a lot of the time it is just to satisfy our internal curiosity. It doesn't need to go any further."*

Clearly, from mere curiosity satisfaction to deliberate persuasive conversation, a common factor in meeting these needs is establishing 'trust'. This is imperative to deal with skepticism I discussed earlier. For instance, P12 explained how he deals with skepticism about design resources by showing the significance of research process to the design team:

*"you can say, "... these were the questions we had... I had this script; I did a whole bunch of interviews. Basically, it all boiled down to all this." You're swooshing around the thing and they're just like blinded, like, "I thought you people just sat and colored in buttons and. You've actually been doing work these last few weeks...." Just them seeing there is a process, and everything that's gone behind it ... I know it's always really helpful to go through, clarifying, why you're doing what you're doing, so that they can't argue and say that you've got the wrong end of the stick."*

Likewise, P7, a UX designer, also adopts a similar defense strategy to articulate the research:

*"I think to articulate research; I think it's quite good for people to see that research happening in real life... So, then stakeholders and people can see, actually, other people struggling on stuff. That would be the best way of articulating research and user feedback"*

In addition to enabling 'trust' in design resources, showing the raw data has another significant benefit, which is enabling 'traceability' of the data throughout the design process. For instance, P8 stated using these as reminders:

*"We need information from the field ... Transcripts, yes definitely because three months down the line you'll forget. "What did somebody say?""*

Likewise, P14, emphasized the traceability element by referring to it as 'point of reference' against which design decisions can be checked:

*"the other important thing is having, if you like, approved documents, so things like the requirements documents and the technical- ... it allows you a point of reference against which you can say"*

Whereas P4 expressed the same point using the term 'objective metrics':

*"transcript is essential ... maybe you can scan this record to get some objective metrics, as opposed to you, for example, trying to come up with your subjective interpretation of what the user is."*

However, despite these advantages, two issues might arise from showing the raw data to the design team. The first issue, as pointed at by P4, is that raw data might negatively affect the designer's objective judgement:

*"When you read a quote, basically, all your reasoning starts to converge on this particular case ... Sometimes, that's useful, but ... this basically narrows down your focus ... As a designer, you need to understand the average case. If a quote is particularly positive or negative, this basically just zooms in on the user experience, on one individual."*

The second issue was raised by P3 regarding research ethics, which might hinder sharing raw data with stakeholders (clients or designers):

*"We don't share with the clients for anonymity reasons for GDPR type... We're not supposed to share that with anyone, really... They are usually quite long and boring things. I would rather take out the main things and show that to designers, so they know what to focus on."*

Therefore, despite the need for raw data the mere sharing of it is not an ideal solution to facilitate the design team understanding the research. Thus, as per P3's quote, the researcher needs to facilitate delivering the key aspects of the research.

#### **6.4.1.4. Interpret the Data! (Raw data = need interpretation)**

*"This is the dry, raw, data. You need to do something with it to make it engaging ... I wouldn't just give those directly to people because there is work involved in interpreting them. It's not that those people aren't capable of that work, it's just it's not a good use of their time."* (P13)

From the quote above when can see a summary of why raw data, despite the need for it, is efficient way to communicate the research. One main reason is time, which was also stated by other participants P7:

*"it comes down to time, and I think people's time is quite limited. I've had it in the past where I've sent people videos, and they haven't really seen the videos of user testing or whatever..."*

This exact point was also emphasized by P12, who explains how time-consuming raw data can be, not only for designers but even for researchers themselves:

*"Videos, in my experience nobody has got time to watch them ... especially if it's raw data, raw video... I record all my interviews and I video usability tests. I don't even watch half of them back myself or listen to half of them. I haven't got time."*

The other reason mentioned in P13's quote, is the work needed to analyze raw data. Thus, supporting it with an *analyzed* version of the data can facilitate the communication process as P14 described:

*"[transcripts are] very poor. Because in its own right, it doesn't tell you anything - it needs to be analyzed... Because really, that kind of analysis doesn't happen in the software industry"*

The need for analysis was also articulated by P11 who expressed her lack of skills, as a developer, in dealing with raw data:

*"I'm not the best one at capturing the comments of end users. I always take, with me, an analyst or even an administrator like an assistant."*

This stems from a concern of making false judgement or bias, as P4 explicitly described it:

*"I think I would be very cautious if I was handed diaries by a particular user. If I absolutely had to read it, I would be very cautious about extracting any general statements ... this is a bit dangerous."*

P5 also referred to the generalizing issue by stating how the data of an individual may not represent predominant themes, which need to be extracted through analysis:

*"if I present the needs of one user to a product manager, they'll respect that as the needs of one user. What they're looking for is, "Can I demonstrate that this is a theme? Is this what lots of people want?""*

This perhaps leads us to conclude with what I will call the credibility dilemma. This dilemma occurs from not trusting the design resources (analyzed data), but also not having the time or the skills to deal with raw data. From the data, I found that two approaches can address this dilemma: quantifying the data and combining the raw data with analyzed versions.

#### **6.4.1.5. ‘Numbers’ Is Our Language! (Quantified data = trends)**

*“it’s okay but going through a load of people’s transcripts and diaries you can lose the will to live. Unless you feed it into the quantitative data and have some sort of analysis on it... there’s a lot of guesswork goes into quantitative data” (P9)*

The quote above summarize both advantages and disadvantages of quantifying the data. The big advantage of quantifying the data is to facilitate understanding by providing analysis of what the big picture is. This was echoed by P5 who believes quantifying the data is provide a quick access to trends in the data:

*“I see these feedback comments popping up, and I’ll get a feeling that, “Actually, I think I see a problem.” But then I’ll go and look at the numbers, and actually, the trend isn’t as clear as I thought it was ... because I want to get a sense of not just what one person thinks but what general trends are.”*

Whereas P4 emphasized this by describing raw data as ‘the evil counterpart of statistics’:

*“We don’t have access to this [raw] material, and I think, even if we had access to it, it would be very laborious to go through. It wouldn’t be efficient. Then again, it will just tell you about the experience of a particular user. This sounds like almost the evil counterpart of statistics, right?”*

This is what makes ‘numbers’ as an organizational culture where *“more business... trying to understand what the customer wants in terms of quantity”* (P2). This is especially the case in *“the software engineering industry, [where] people usually are very happy to back things up with statistics ... [which] are considered the golden standard in terms of reasoning.”* (P4).

Thus, it is imperative to realize significance of quantified data in the industry, which is mainly speaking the industry’s language as P12 described it:

*“There might be more qualitative data, but I will twist it so that I can present it numerically ... Everyone in the business thinks in numbers ... The development people, they’re all techy so they’re all used to numbers and visualizing data. Then you’ve got the business people, who are used to business data and numbers. So, it’s kind of speaking their language, really ...”*

Despite these advantages, the main disadvantages lie in the fact numbers create “guess work” as per P9’s comment. This was also echoed by P2 as she stated her struggle to understand quantified versions of user research and to ‘connect’ with users:

*“they would try get the brief from the designer, but they’re thinking more about numbers, costs and everything. I really struggled interpreting their brief because it was difficult for me to connect with the user because I rely on the information of this person.”*

Therefore, it is crucial to use quantified data to adapt to the industry’s language but at the same time there has to be some unquantified interpretation to allow the design team to deeply ‘connect with the user’, as described in P12’s approach:

*“there will have to be some numbers somewhere. If you can create a persona and say, “Right, here is a persona... here is the problem they’re having.” Then you can say, “Actually, but this persona is created based on all this mound of data.” ... This result is this one persona.” You*

*can then take them through that, and be totally qualitative about it, once you've got that buy-in"*

#### **6.4.1.6. Back It Up! Bring It to Life! (Combined approach: evidence + interpretation)**

Digging deeper in the data, and building on P12's comment above, I found that a combined approach might be an ideal way to communicate and present the data. This means providing access to the raw data while making clear connections between this and the analyzed versions provided. P13 provided an example of how this was done in one of his projects by combining different part of raw and interpreted data:

*"So what we handed back ... at the end of that process was... There was a more formal written report, but there was also the website, which had become this repository of all these stories and all these ideas and all of people's comments and votes and... With first pages which said, 'These are the nine main issues that people have talked about, these are the nine top ideas that people have come up with' ... It was, rather, saying, "Here is what you should think about with your train suppliers when you do design the new train. Here are the nine positives, negatives, key important issues for people. Here are some ideas that people think have got some value and you should explore.""*

Similarly, P12 explains the power of combining the use of quotes (raw data) to back up his summaries and points (analyzed version), and thus providing evidence to establish trust:

*"... it's one thing to tell somebody the output as an executive summary after you're all done. It's quite dry and... It's another thing altogether to have a photo and a quote that back up that. Put a face to the quote, then a quote that brings to life ... key quotes that back up the point... I've got to have solid justification..."*

Whereas P6, combined presentations with quotes as an explicit way to address the trust issues:

*"Sometimes when you just see text on a screen, anyone could've written that. But then when you've got, "Here's a screen capture of the user trying to use something and thinking out loud, 'This is a little bit confusing,'" that brings it to life a little bit."*

Moreover, P3 is addressing the trust and 'misunderstanding' issue by utilizing the combined approach and providing audio quotes of users to provide what she describes as 'first-hand' knowledge:

*"Ideally, I want to start, in the future, incorporating little sound bites or sound clips of users. I could just copy and paste that into my presentation ... So that they hear the conversation firsthand ... I think it's important for them to hear first-hand from a user what might not work. If they hear it from me, they might see it as criticism, or they might not understand it. Whereas if they see someone can't use something they'll be, like, "Oh. I'm going to have to fix this because it doesn't work."*

From this, I establish that the combined approach provides the best possible approach to address both 'trust' and 'understanding' issues. However, there remains a debate over the setting this takes a place in. From the data, I demonstrate in the next theme the answer to this question.

#### **6.4.2. Dialogue: A Collaborative Space for Asking Questions and Exchanging Idea.**

In this theme I establish that this approach should be undertaken in a two-way conv. This means a dialogue where there is a space for asking questions, exchanging ideas and collaboratively refining the design requirements.

#### 6.4.2.1. *I have some questions!*

Participants expressed their frustration and confusion when there is a lack of an open space to discuss the design requirements, as P15 stated:

*“Often I would be in a quite tricky situation, like, “When do I ask, actually, for more clarification, because I feel like a total fool here right now?” Or you need to learn how to distinguish what important information is and what not, but often, I guess, when you have something like this and then you translate it ...”*

However, even in cases where there is a space given for asking questions, a lack of prompt responses can also be frustrating. For instance, P2 expressed her frustration about the waiting time to get the information needed:

*“... when you send out enquiries to get information about costings and everything and it’s the wait. You have to wait, so you don’t get that information ... Maybe that’s a process that takes more time ..., managing the time ... that can be frustrating. It’s managing that frustration and compensating with the multitasking, while you’re waiting for some information ...”*

One corporate way of answering questions from designers about requirements, is by utilizing a unified template where there are questions for all the required information. This approach is meant to save time as P13 explained it:

*“... we came up with a template, or a series of ... which said questions like, “Who is this for?” ... all the questions that you’re likely to need to answer in building something. That was for two reasons. One, to prevent a lot of lost time going backwards and forwards to business managers ... The other thing was because we, as a production team, had to schedule the work, ... You had to be able to estimate ...”*

Sometimes, such a template may be ‘forced’ to manage the process, as per P15’s experience:

*“There is quite a long table where we actually had to force the provenance researchers – the external ones – to actually commit to the same format and that they actually give us ... We provided them with Excel sheet templates ...”*

However, this ‘pushed’ template, as P2 explains, tends to receive more resistance than compliance:

*“... This is funny because in all the companies I’ve worked for the design department will have a format they push people to fill in, but it never works because they just end up sending the email with the words...”*

The same problem was echoed by P15, who attributes it to ‘political conflicts’:

*“There were a lot of conflicts. I mean also politically, like some people didn’t like the project manager, and that’s why they were not keen on updating the database ... The table is actually like a vehicle that catalyzes different conflicts that are already out there.”*

Despite the forced template, the waiting time to receive a response can be lengthy and frustrating as P13 explains:

*“frustration in that, “I can’t get you to do something until I’ve filled in all these fields””*

Another major issue with these templates is that they are text-based communication tools. Whereas designers, as my participants expressed, do not prefer to deal with these tools. P7 stated this explicitly:

*“Text documents, again, if there are a lot of words, I’m not really a man of a lot of words.”*

Another participant, P9, describes himself as *dyslexic* in this regard:

*"I'm rather dyslexic so having a lot of text is quite often- and I think quite a lot of design people are probably of the same mind. It can be a little bit overwhelming."*

Researchers, on the other end of the communication, confirm this issue with text-based tools. For instance, P3 explained the reaction of her design team when provided with text documents:

*"They say, 'Thanks, that's great,' but they don't look at anything that's written on paper, as I've experienced, unfortunately"*

Another researcher, P6, echoed this when commenting on transcripts:

*"Writing a full design brief doesn't really provide anything to anyone. Maybe if we had a conflict of interest when it would come in useful for us."*

An alternative tool to text documents, would be *conversation*-based communication, as P6 explained:

*"... we often have an understanding as a group, just by talking to each other and doing a bit of lightweight documentation, what we're trying to achieve ... I think it's because we're quite a close team. It's all conversations and documenting things as and when we need one."*

Indeed, compared to text-based tools, conversation can be more efficient as per P5's view:

*"we're probably very light on documentation and reports, and probably much heavier on conversations, interactions, and sharing the evidence itself ... Sometimes, in very short reports, like one page or, maybe, two pages. Again, even that tends to be quite conversational."*

#### **6.4.2.2. *Let's have a conversation!***

Therefore, P7 considers these types of design documents, such as design briefs, should merely be conversation starters and not design resources on their own:

*"I don't just pick up a design brief and do the design brief and deliver it, and that's that done. Because a lot of the time, things in the design brief will help me ask questions... So, they're a good conversation starter... it can be quite detailed, but it can be quite light. Either way, there are going to be a lot more questions to ask, and a lot more research to be done ..."*

This is echoed by P3, a UX researcher who emphasized the importance of allowing space for interaction:

*"I know that from experience, it doesn't help to give them a full, boring research report with all the details. They're not going to read it. That's why I try and show it and do more of a presentation and they can ask me any things, type of way... I try and make it interactive and less boring ..."*

The main advantage of an interactive setting is to allow that exchange of ideas or what P4 refers to as information 'push' and 'pull':

*"This is an example of information which the client might possess about this demographic which you as a designer might not have beforehand ... I had to basically pull for this information. It wasn't, kind of, pushed onto me... It's a bit strange because it ended up as being a very important point which shaped the development of the product, ... I think, if it wasn't for this particular kind of conversation, I as a designer wouldn't have got this information from the client..."*

This could be incorporated with presentations by making them to avoid making them "a bit more interactive and highly visual" P13 and "not just purely data to present." P12.

In addition to presentations, online communication tools, when adopted, should incorporate the same notion of interactivity and exchange, as pointed to by P5:

*“For creative stuff, yes, Slack and instant messaging. Enormous volumes are exchanged. Persuading, influencing, it tends to be done, I think the executive summary is dead. That’s no longer how to persuade executives. It’s instant messaging in the moment.”*

The overall principle here is to have an open space for conversation, a collaborative process in making design decision, as explained by P7:

*“I prefer open conversations, so everybody who’s on a project can see the conversations or see the comments that are being made. ... Everybody ... from delivery people right up to senior managers – can see that decisions have been made, and they’ve been made for a reason, and changes have been made. They can see the full process.”*

P15 goes a step further in widening the open space, and involves designers in the creation process of the design resources:

*“I like to actually involve the people I’m designing with or designing for, to actually define also the personas, rather than me generating something based on my understanding.”*

P2 echoed this by stating her wish for closer relationships and shared tools between different departments:

*“I think that maybe could improve, maybe getting closer. Design and sales getting a bit closer ... If sales departments were more informed of different tools of getting information from the user, I think that would be helpful for me as a designer ...”*

#### **6.4.2.3. Miscommunication is a possibility!**

However, having an open space for conversation does not necessarily guarantee an effective communication and understanding between stakeholders or team members coming from different backgrounds, as P12 stated:

*“The relationship with development, product delivery, it’s getting better but a lot of it is just they don’t understand what we do. They don’t understand where we come from ... or how you’ve arrived at that point, what the journey you’ve taken is or how much stuff you might have gone through to try to make their lives easier...”*

Similarly, P10 has experienced a non-successful design process due to this lack of shared language:

*“... one session that wasn’t quite successful ... it was with interaction designers. They all had different backgrounds ... So, when you bring them all on the table it might end up with a lot of dispersed, kind of, ideas. I think, to some extent, you need things to be going through the same tunnel, but, that one, I think some people were talking different languages than others, metaphorically speaking ... that might make some inconsistencies in thinking and therefore in the output.”*

Consequently, the lack of shared language could lead to conflicting interests as P13 stated:

*“That design process was complicated because we had so many different people involved ... So that was quite a tricky design process because it was recognizing that you can’t keep all these people happy. This design process is not a process of reaching consensus, there are too many loud voices in the room, and they will never always agree... It was just that there were all these different partners involved and they had very different ideas, very strong opinions, about how things should go”*

Interestingly, alongside the conflicting interests, arise dominance and inequality, as described in P7's comment:

*"Equality. Because you often get strong directors and people who shout and who speak louder than others, and people who often don't say a lot. So, for me, I would like to be able to have all the ideas sessions so that everybody is free to say whatever they want in those ideas sessions ... people who spoke loudest had their ideas heard more. Whereas I don't think that's very healthy in ideas sessions."*

Moreover, even when such interaction takes place online, issues of conflict might still arise, as per P14's experience:

*"... email. It's the most ineffective form of resolving anything. I've experienced many problems in my career through emails creating misunderstandings, opening up issues instead of closing them down. I mean, I think email is a terrible medium, and yet it's the most commonly used medium for communication in the software industry... It invites a sort of tennis match type of exchange, batting it forward. It invites people copying in more people than need to be copied in and covering their back and all that kind of stuff. It invites adversariality, if that's a word, because if you make an email short, you end up leaving ambiguity, but if you make it long, it becomes hard to digest and can be taken more seriously than it's meant to be..."*

These conflicts seem to be common in corporate meetings despite the medium used as long as the setting is very formal. Participants indicated this through their emphasis on the effectiveness of informal settings to create manageable and cooperative communication.

#### **6.4.2.4. It has to be informal!**

Participants expressed the importance of having informal settings which are likely to restrain hierarchy and inequality. Therefore, allowing a space for questions and conversation should be adopted as a way to establish equality and collaboration instead of hierarchy and 'imposition', as summarized in P6 quote:

*"It's really important for me to be approachable, be able to take questions and work with them on a collaborative basis ... It's having that conversation and it being a little bit more us not just imposing information on them but trying to build their empathy with the user as well ... It's just less of an imposition. It's more of a collaboration, so everyone understands the aim of the research and what is being discovered."*

It is evident from P6's quotes that such a setting provides a very comfortable environment for everyone to be involved in the communication process of the research. Other participants as well have referred to this type of relaxed setting as 'informal' and described why it is beneficial. P6 refers to this as a 'good relationship':

*"usually it's quite a close working relationship. So, if you're not sure about a point or you see something that doesn't line up with something that you understood, you can usually just approach them and just say, "I saw this in your deck. Can you tell me a little bit more about that?" .... very informal. I try really hard to build good relationships with developers ..."*

Similarly, P6 described how informality facilitated closer relationships and more honest communication:

*"We have very close working relationships. We're very honest and upfront about people to each other. If we were reading something like, "I think you've interpreted that wrong. I don't know if you've actually asked the right question there." We can just say that to each other face to face...."*



Therefore, P5 would advise against using text documents if the same content can be communicated through informal conversations:

*"... the days of writing big, glossy reports are pretty much gone. In fact, if I see someone doing that, I'll generally suggest, "Are you sure you need to do this?" Because there's probably a faster way, which is more effective. Sometimes even informal things."*

Additionally, P4 suggest that conversations are more effective compared to online communication tools:

*"... this can be done online or chat or on a phone call, but it doesn't tend to be very effective. This is why the very first interactions, we usually do it in face-to-face meetings. We usually use some tools, either whiteboards some computers and maybe layouts and sketches and use these to discuss... It needs to be a conversation. I've done this by email and chat and Slack communication before but usually these methods tend to be less effective ..."*

This was echoed by P14, with emphasized getting 'in a room':

*"I think face-to-face communication is always the most effective way of dealing with issues in design ... whenever there was some kind of challenge with the software and we had to thrash out how it would be solved, the solution was always, 'Let's get in a room and figure it out together'."*

Whereas P8 referred to the same notion as 'knock on the door':

*"If we're sitting down and there's something you don't understand it's literally you knock on the door about this and it's a discussion."*

And P5 describes it as 'cup of coffee kind of talks'

*"Some of the most interesting things come from random chances. So, you say, "Okay, let's go and get a coffee." We'll talk about this thing, and then something will come up and it's really interesting and useful. Some of the most valuable things are cup of coffee kinds of talks"*

Regardless of the label given, the bottom line in such setting is the informal nature which allows cooperative communication or what P14 referred to as 'bouncing ideas':

*"... all of this stuff is very informal, ... which is in the small start-up companies and that kind of thing. And it's like as informal as you can imagine – ... it's a lot about just bouncing ideas around with likeminded people."*

#### **6.4.2.5. Traceability is key!**

From the quotes above we can see why participants preferred informal settings to facilitate design communication. However, a potential problem arising from this setting is the lack of traceability. Despite their preference for an informal setting, participants expressed the need for a traceable approach in communication, which certainly difficult to achieve through informal communication. Here, P5 express his worries of this lack of traceability:

*"We use Slack for instant messaging.... It's really informal; it's messaging, but it's kind of... On the one hand, I think, 'Yes, that's kind of cool. That's really fast. I can persuade, and I can get this agreement now, if I want.' On the other hand, it scares me a little bit, because I know there's no traceability in that. I'm just trying my best, and it's a bit chaotic, and there's no archive of reports. We're just managing it on the hoof, a bit."*

The need for traceability becomes even more crucial in cases of conflict of interests as described in P7's comment:

*“there might be some people in the Marketing Team that have a particular interest in portraying a certain message. ... phone calls ... I think because they probably need to be referred back to, so they need to be documented.”*

Whereas, P8 explains one way of how he deals with undocumented phone calls by using emails as a backup:

*“So, the phone straightaway just to get the information across. That’s quite useful when you’re sitting there sketching and somebody says, “We know you’re going to start that project. I’ve got some information.” It’s usually a phone call and then back-up on an email.”*

However, this method might, again, creates misunderstanding or documenting inaccurate information, particularly when there is a conflict. Therefore, I will look next at more effective ways facilitate traceability through design resources as a part of the immersion process in the user research.

#### **6.4.3. Immersion: Resources Should Immerse the Designers into the User Research Data**

Despite the emphasized need for receiving credible design requirements (theme 1), and having these communicated through collaborative conversation, that alone does not necessarily provide a user-centric mindset for designers to be put into the user’s shoes. For this, participants articulated different ways by which they can be immersed in the data and get a feel of what real people actually need.

##### **6.4.3.1. Direct contact with the users is not always possible**

Clearly, providing designers (or other stakeholders) with a direct contact with the users was stated as the best possible approach. For instance, P14 explicitly states that full understanding of the users cannot be gained unless there is direct contact with users in their environment:

*“But really, you’re never going to fully get that unless you actually go and visit the user in their home environment”*

Moreover, P5, a UX designer confirms this need for involving designers as closely as they can within the user research:

*“So, I personally, feel you’re a better designer if you understand your user more. So, I encourage designers to all take a hand. It doesn’t have to be a major part of their time,”*

Another UX designer, P6 says that the effectiveness of involving designers in the research lies in bringing the human aspect and realizing it is ‘real people’ they are designing for:

*“Probably bring some developers into the room as well because I think it’s really important that they understand the things that they build impact real people... Sometimes if you create that distance, they don’t realize they’re actually solving a real person’s problem over here.”*

This was echoed in P15’s shadowing approach where she emphasized the need for immersing herself in the lived experiences of the users:

*“Shadowing, like looking at the processes or how they are doing the work yet. I’m talking here in a very more professional or work environment setting. If I would go out and if I would be asked to design a new app for people that I can’t even access or that is more like free-time activity stuff, then I would probably do it differently. But in this kind of similar settings I would always need to first try to get hold either of artefacts or of the information, like the lived experiences.”*

Moreover, it is evident that direct contact with users is not only effective for designers, but it extends to other stakeholders, particularly managers, as P5 stated:

*“So, we'll take them with us..., and we'll introduce them to the user. Then they make the same conclusions we do, and we don't have to persuade them so much... So, what we needed was something really fast and really quick and quite impactful. The best way we found to do that was to involve the product managers in some of the sessions ...”*

However, as I established in the literature section and the first theme, this is typically not a common approach due to division of labor between researchers and designers, their different sets of skills and the limitations of time for designers to be involved directly in the research when it is not a part of their job. P3, a UX researcher, explains the time and skills factor:

*“I try and involve the designers but there's not always time to involve the designers ... Ideally, they would sit in on every interview and ask questions as well ... that's not always possible ... The problem with that, I personally think, is that research is not something that everyone is good at. It's not something that everyone can do.”*

Likewise, P6 echoed the same issue:

*“We just had a lot of staff turnover in the last year or so and we haven't managed to backfill our user researchers. it's become the designer's job to do the research too, which brings in its time pressures trying to do both ... I think some other people on the team have kind of been a bit- Struggling and just the motivation to do it themselves ...”*

Whereas P14 states that due to the lack of access to users there might be some alternatives to establish empathy through indirect approaches such as personas:

*“I mean, if I'm completely honest, I don't think there's often enough access to the user expertise by the actual developers doing the design. But some of the ideas that are trying to tackle that and get more direct empathy for the developers, are things like user personas”.*

#### **6.4.3.2. Design resources can misrepresent the real users**

However, personas and other design resources seemed to receive some debate about their effectiveness. This because they do not represent the full picture, as P3 stated:

*“personas is you can't get all the information in there. Sometimes someone says something that's really valuable for the business to know but it might not necessarily be valuable for your website design project.”*

Participants also expressed some discomfort of dealing with design resources that are lacking the essence of real people. For instance, P10 refuses some gamified approaches which she finds do not represent a real user:

*“It's uncomfortable if you get a persona that you don't feel.... I'm very connected to my emotions, and so when I act as a certain persona, or use dolls or stuff like that to mimic their sounds, I'm very emotional with that.”*

This was echoed by P6 who refused to use something fake, such as stock images:

*“Face photo, [I] really like those ... when we do playback sessions and we talk about the people that we've spoken to; we'll tend to get little crops of their faces from the videoconference. Obviously with their permission. Put those alongside their quote ... I really categorically hate the stock images that you get on Persona sometimes. You know those fake photos of people.”*

Likewise, P5 refuses what seems ‘functional’ and lacking the human feel, such as databases”:

*“database structures. It usually sounds pretty functional. It's very dry. It lacks the humanity and the holistic feel of what the users can experience about that.”*

Interestingly, participants had the same attitude towards methods that are supposed to represent real users but they seem to provide an incomplete picture of the complicated user experience. This is evident in P3's conflicting quotes about storyboards:

*“Storyboards.... they are good in the sense that they will help the designers get empathy for the user and start thinking about them as real people ...”*

*“storyboard ... I don't want to say, “Basic.” Maybe, it's a bit too simplified. Users obviously do lots of complicated things that you need to take into account.”*

The same notion was expressed in P9's quote about scenarios:

*“I think with the scenarios; they quite often miss quite a lot. Yes, it gets you to imagine someone's what they're, kind of- Where the storyboard, depending on what you do, helps you imagine the process.”*

Moreover, P5 goes further and describe such methods as ‘insulting’:

*“when we'd talk about the persona, Betty Bookkeeper, and actually that's a little bit insulting. Bookkeepers aren't all called Betty, and they aren't all female, and they aren't all older. Actually, Betty Bookkeeper is not our user.”*

Therefore, participants emphasized the need for more human-oriented methods to represent the users in a way that enables designer to empathize with. P7 referred to this as ‘humanistic view’

*“because with an elaborated scenario, you get more of a humanistic view. You get to be more empathetic towards the thing that you're thinking about.”*

P13 echoed this same concept ‘human’:

*“scenarios, they make it human, they make it engaging.”*

Whereas P6, believes ‘stories’ are key elements to add that ‘humanistic view’:

*“I think the best way to get research across to people is framing it as a story. Like, “This is the problem that we have. This is who we spoke to. This is what we understood.” Then talk about how we can resolve them. Rather than just, “Here are some facts. Do you what you want” ... Executive summaries I think are a little bit too factual. They don't really bring the story of the user into it ... It always has to be put in the frame of something that they can identify with, is relevant to their role and can help them make a decision.”*

This was echoed by P13:

*“Visual is engaging, stories are engaging. Diaries and empathy maps are ways at getting at stories and drawing them out. These are ways in which you can go beyond visualizations and stories”*

In other cases, there was a recurrence of the term ‘real’ as opposed to ‘fake’ human representation, as exemplified in P3's comment:

*“Yes, it's just kind of to show them the value of real insight rather than guessing about something. That's how we would use an empathy map,”*

Similarly, P5 and P6 distinguished between referring to *personas* and *real people*. P5 associates this with the difference between a *fresh* or a *mature* designer:

*“Effective things, personas can help. I think particularly for if you're fresh to a scenario, or fresh to a design team. Once you really get to know individuals, I tend to refer more to groups*

*of individuals I've actually met, rather than a persona. So, I think over time, once you get more mature, perhaps you rely on that less."*

This incompetence of personas was attributed to their short validity as explained by P6:

*"Personas. This is not something that we tend to create that much ... I just find that they're tricky to maintain. They get outdated quite quickly... I prefer to rather than just say, "This is our persona," talk about real people you've spoken to."*

#### **6.4.3.3. Semi-direct approaches as a second-best alternative**

Therefore, just as I learned in the first theme about the importance of combining raw data with analyzed version of it, I learned in this theme that immersion requires semi-direct approaches to be in contact with users. These approaches include attending user sessions without interacting with users, as described in P3's comment:

*"I just think [audio quotes] would bring the persona to life. It would make it about a real person and not about a person I wrote down on paper. That's why, ideally, I would want them to be in all the sessions or even be the one asking the questions, but I think it's not always possible."*

Similarly, P7 suggests the use of one-way mirrors for this purpose:

*"I would like a lab where it's a two-room thing, with a mirror in the middle – a one-way wall. So, then stakeholders and people can see, actually, other people struggling on stuff. That would be the best way of articulating research and user feedback"*

Another semi-direct approach is what P6's refers to as 'replay session':

*"we'll try and do a little ... replay session where we'll take them through what we did and what we found out. That's when it's really nice to have quotes and little screen captures to bring it to life."*

Likewise, P3 adopts a similar approach by recording the sessions in case if attending them wasn't possible for designers, as she stated:

*"Even if they weren't able to attend the user testing session, I would always make sure it's recorded so they can watch the recording ... If it's on a phone you record their hands as well so you can see everything, they are doing so it's like you were there .... Obviously, it's better if they see it first-hand but if they can see it in a video that would be a good start."*

#### **6.4.3.4. Constant exposure provides deeper immersion**

However, semi-direct approaches might provide a fully immersive experience in the long run. As such, constant reminders and exposure to the representation of users was stated as a common technique. P12 explains how they print out personas and keep them around as reminders:

*"printed out, they're on walls and they're on people's desks as a reminder of what we're doing and where we're going. So, they have a lot of value after the fact, after the presentation has been forgotten"*

This applies to other design resources, such as posters, as in P12 comments:

*"[posters]. People, they'll probably read it. Then you keep them around afterwards. We've had a few things like that where we've created artefacts."*

Likewise, P3 adopts the same approach to use these resources as reference points:

*"Yes. We hang them on the wall so they can refer back to those when they are designing."*

This was echoed by P14:

*“we printed one out and put it on the wall in the development space as well ... in context with personas ... we also develop scenarios.”*

And by P6:

*“I think it was just to have around the office, so everyone had information about who they were or something like that. I think it was personas.”*

The core value of these practices, as P7 stated, is to maintain a user-focused mind-set across the departments:

*“let's say you're working on a project and you've got some personas on a wall, then all the people that are working on that project are seeing those personas and seeing that these are the people that we're working towards. It helps the organization, or helps people in the organization, be a little bit more user-focused, as opposed to organization-focused.”*

Apart from hanging design resources around the offices, P12 mentioned another approach he adopts, which is constantly updating the design team about the research and analysis going on to keep everyone informed:

*“Sometimes it might just be, “Update the team to let them know what we’re doing.” They just need to be kept informed. So, it might be, “Here’s a slide, there, with some bullet points and a summary and an overview.” You might have a folder or two of... If I’ve been on site, or something, I might have a picture of practice. I might have screenshots from someone’s software. It’s really just a summary of what I know, just to keep people informed.”*

We can infer from this that regardless of the approach taken, hanging resources or updating the team, the main idea is to provide a constant exposure to the design resources to support more user-centered design.

## **6.5. Discussion: The First Phase of Double Ethnography**

In the literature section, I identified some limitations with communication methods used to convey research findings to designers. These were:

- the arbitrary selection of a communication method
- the lack of accounting for designers
- the lack of space for a collaborative process.

I then suggested to adopt and adapt the double ethnography approach to address these limitations. However, I raised two questions regarding double ethnography that I aimed to answer in this study. I asked:

- How to account for designer needs in the communication process as a whole?
- How effective is this approach? (evaluated against the limitations above)

To answer the first question, I conducted interviews with designers as the first phase of the double ethnography approach which is about learning from my participants, what they need and why they need it in receiving design requirements. The goal is to design a communication method tailored to their needs in order to maximize the effectiveness of communicating user research to them, and thus facilitate their design decisions throughout the design process. In

this regard, I consider designers as no longer passively receiving the knowledge of the user but rather co-creators of the ideas and design decisions.

The main lesson learned from this study is the significance of adopting a user-designer-researcher centric approach in the communication process of user research. In this triangulation I identified three main needs representing:

- researcher-user centric need (Credibility)
- researcher-designer centric need (Conversation)
- user-designer centric need (Immersion)

I first review each need for a designer-oriented communication, then turn to discuss the wider implications for design communication methods going forwards.

### **6.5.1. Review of Each Element an A Designer-Oriented Communication**

#### *Credibility*

By credibility, I refer to the designers' need to ground the design requirements in credible user research. As demonstrated in the findings, my participants expressed their frustration when they were asked to 'just build something', with no reference to the real users. Whereas providing them with mere representations of the user (i.e. design resources) raised their skepticism of the credibility of these representations and their curiosity to see the data on which they were based. However, they expressed some difficulties they face when dealing with raw data due to limitations of time and research skills. Despite these difficulties, the need to see the data is still persistent to serve as a credible evidence or just to 'satisfy curiosity' to see where the requirements are coming from.

Interestingly, the struggle of understanding or utilizing raw data on one hand, and the skepticism of the validity of design resources on the other hand created what I refer to as the 'credibility dilemma'. From the data, I found two ways of dealing with this dilemma: quantifying the data and combining raw with interpreted data. Quantifying the data was pointed to as the 'industry language' and the main approach to 'persuade' and demonstrate credibility of the design requirements. Based on the data, I find that credibility is not established by showing the numbers per se, but the fact it shows clear raw data with an interpreted version of what needs to be done with these numbers. Indeed, this is the underlying value of the second approach as well. Combining raw data with an interpreted version, whether quantified or not, is deemed as the most credible way of conveying the design requirements. By combination, I do not refer to merely disseminating the raw data and the design resources, but rather using an approach where I communicate both simultaneously.

The value underpinning the need for the credibility factor is trust which is applicable to collaborative work in general. By showing credibility of data, as well as validating the data also allows other team members to see what the researchers are actually doing. This is crucial in collaborative work as it was suggested that a lack of awareness of what other members of the team are doing or why they are doing it, triggers assumptions about how productive and trustworthy, or not, others are. [141]. Indeed, the success of collaborative work is a matter of human relationships which are grounded in trust or mistrust [141,170].

The other value here is the user-centeredness. Clearly, it is difficult to adopt a user-centered mindset without having credible accounts of user needs. Therefore, some approaches in the literature suggest making data accessible and shareable with designers to empathize with users [247]. However, this mere sharing might not prove fruitful. This is due to the difficulty of sharing fragmented data [163] and the difficulty designer face to understand it, which makes it more user-centric (aiming to increase empathy) but less of designer-centric (not speaking the designer language). Furthermore, such a suggestion, paradoxically, does not account for the privacy of users as all their data are made available, and perhaps their identities identifiable, to all members of the design projects beyond the researchers who conducted the user studies. Thus, aside from potentially discouraging participants to take part, this approach would usually be constrained by ethics and legislations of data protection.

Therefore, I conclude that a combined approach of carefully revealing only some data to account for user privacy while providing some interpretation to allow building shared understanding with designers to maximize both trust and user-centered design. Thus, it is what I propose as a legitimate approach for the success of collaborative design.

### *Conversation*

By conversation, I refer to the designers' need to receive design requirements in the form of a conversation. As demonstrated in the findings, my participants expressed their need for a space where they can ask questions and have a conversation about the design requirements in a dialogue between researchers and designers rather than receiving them as a monologue. This means, regardless of the format of the design requirements, they need to serve only as conversation starters and not a finished product. They revealed how a dialogue provides a strategy to bypass hierarchy, dominance and inequality in typical formal meetings, as implied in the need for 'informality'. This was attributed to the fact that informality implies closer relationships and thus more comfortable environments for communication.

Conversely, participants expressed the need for a traceable communication to be able to check back when needed, particularly for cases of conflict. However, the contradiction between the need for informality and the need for traceability created what I refer to as the 'traceability dilemma'. This means conversations alone are not enough. They need to be supported by traceable communication methods. As such, utilizing the combined approach I proposed in the previous theme can play the role of this supporting method. Meaning, integrating design resources validated by evidence of the raw data while conversed in an informal setting provides a synthesis between the 'what' and 'how' of the communication process. The 'what' represent the format of the design requirements (raw and interpreted data) while the how represent the manner in which they were delivered (two-way dialogue).

The value underpinning the need for a two-way dialogue is human-centered communication. By communicating the design requirements through a two-way dialogue, this not only facilitates communication of the data [49] but also allows establishing better relationships among team members. This means providing a human-centered design process in which all team members are considered to be contributors to the success of the collaborative work [170]. Whereas treating team members like robots executing tasks, undervaluing their intelligence and humanity decreases their engagement and satisfaction with the project [141]. Fortunately,



literature in design has started to consider the social construction of design (design as a social practice and not merely creative and synthesizing work), which views designers as social members of collaborative work [149,226]. Thus, collaborative design should not merely target solving problems and distributing information but also support communication and interaction among stakeholders to building new knowledge [74].

The other value is creativity and authorship. Design, by nature, is a creative process. Thus, designers should have a sense of ownership [252] through the design process. This means, not only when it comes to creating solutions, but also early in the design process when the design requirements are communicated to them. This can be achieved by different means such as allowing for more interactions in a question and answer approach [161] and engaging designers in making representations of the users [219]. Consequently, allowing all team members to participate in the creation of a shared understanding facilitates the ideation process in a later phase of the design. This is because ideation, as opposed to idea generation, involves interpreting problems or synthesizing ideas [99]. Thus, the more designers are involved in building knowledge of the data the more they become creative.

I conclude that for a truly human-centered approach, designers need to be involved in a two-way dialogue to communicate the design requirements. This not only treats them as humans instead of robots, but also enhances their creativity in the design process as a whole.

### *Immersion*

By immersion, I refer to the designers' need to internalize user data and representations in order to empathize with users. As demonstrated in the findings and the literature section, having a direct contact with the user can facilitate the immersion process, making this the ideal, but not always possible, strategy. Conversely, participants expressed their aversion to what they perceive as 'fake' representations of users such as personas, which makes it difficult to get immersed in the user experience.

Thus, from the data I attempted to pull out a strategy that works best for my participants as an ideal but realistic approach. I found that semi-direct contact with the user was stated as the best approach. By semi-direct I refer to approaches that allow designers to see the research being conducted or to see the raw data while not necessarily participating in the conduct of the research or data collection process. Examples of these include "two-way mirrors" and "replay sessions". With these approaches the designer can witness the research fully or partially during or after it being conducted. However, due to privacy concerns discussed earlier (see theme 1: credibility), such approaches might not be possible. Thus, I found that a less direct-contact approach such as sharing parts of the data <sup>8</sup>to be collaboratively discussed and interpreted through the guidance of representations might be the best possible approach for allowing immersion if they meet two conditions. The first condition is having a 'humanistic view' where the focus of the representation is more on the real user rather than the synthesis of the data. The

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<sup>8</sup> The question of 'how much' data and resources to be shared and discussed left for both researcher and designers through a two-way dialogue. Meaning, depending on how much designers need to learn, they are given a space to ask questions and co-interpret data with an end goal of establishing a shared deeper understating of the data among all members of the design team.

second is the ‘constant exposure’ to these representations to allow memorizing and thus inspiration [99].

The value underpinning the need for an immersive approach of communicating the data is user-centered inspiration. For better inspiration, scholars have suggested different ways by which the design requirements can be easily available to the design team throughout the design process whether through online or physical tools [40,153]. However, having these external stimuli might not be enough for inspiration. Design requires a continuous switch between internal information stored in memory and external stimuli [99]. Thus, it is crucial to adopt approaches of communication to facilitate the process by which designers internalize the information about the user experience (internal stimuli) and have a constant exposure to the user representations (external stimuli). Indeed, inspiration requires memorizing because information becomes inspiration only after being perceived and understood then retrieved from one’s memory [99].

Although ‘immersion’ was suggested as a principle in the literature under different terms such as ‘internalizing’, ‘supporting engagement’, ‘intensity of use’ and ‘a way-in’, it was suggested as a theoretical principle rather than a method or a process that is tailored for designers. Meaning, immersion was discussed as an element of other methods (e.g. stories) for a user-centric purpose rather than a designer-centric process of itself. Whereas I conceptualize immersion here as a process connected to the previously discussed values starting with providing credible user data, having these conversed collaboratively to establish a shared understanding and ending with allowing for a user-centered inspiration to be driven through internal and external stimuli, all should provide an immersive process to the user experience.

I conclude that despite the emphasized need for receiving credible design requirements (theme 1) and having these communicated through a collaborative conversation (theme 2), that alone does not necessarily provide a user centric mindset for designers to be put in the user’s shoes. The first two themes demonstrate ‘what’ is mainly needed in the design requirements and ‘how’ it should be communicated. Thus, the final theme, demonstrates the ‘why’ aspect of these needs, which is to be able to get immersed in the user experience. Without being immersed in the data, there is more likely to be a lack of inspiration, or at least a lack of user-centered inspiration.

### **6.5.2. Implications for design communication**

Qualitative studies in HCI have focused on conducting user-centered research, but often neglected designer-centered communication of the outcomes. This means it is an arbitrary selection of the communication method which is left to the researcher to make without attending to the designers needs or current practices. This implies that the lack of account for designers hinders their ability to trust, understand and internalize the knowledge communicated.

The double ethnography approach I adopted, provided us with important values; that is to say helped us explore a designer-centered way of communication encompassing mainly three values: trust (credibility), human-centered communication (2-way dialogue) and user-centered inspiration (immersion). I found that underpinning all these patterns is to maintain a human

oriented design process. Designers refuse to be asked to just ‘build something’ without having a feel of the real humans using that something. They also refuse design requirements that reduce their role to a robotic producer rather than a human collaborator. They finally refuse ‘fake’ representations of the users and favor immersive techniques into real humans’ lives to fully comprehend their problem and thus create better solutions.

Looking forwards, there are wider implications for design communication and in particular communicating user research findings to the design team. Notably, by considering the human oriented factor in communication throughout the design process, namely, a balance of user-centered and designer-centered approaches. As opposed to what I identified in the literature as user, designer or method-centric principles, I call for exploration of more interrelated values as I identified in the data. These are:

- researcher-user centric values (Credibility – of what the researcher presenting of the user)
- researcher-designer centric values (Conversation – between researcher and designer about the user)
- user-designer centric values (Immersion – of the designer into the lives of the users)

This interrelated triangulation ensures a more human centered approach of communication, particularly for a long neglected group in HCI, my designers.

Taking these patterns forward in the second phase of double ethnography in my work, I discuss in the next chapter how I incorporate these values in the design of a communication method and ideation session with multidisciplinary teams of designers. The goal is to answer the second question of this study which is: how effective is the double ethnography approach, and the patterns I identified in communicating the research findings?

## **6.6. Conclusion**

In this chapter, I demonstrated how to integrate the initial understanding I established of designers into principles to consider for designing a research communication method. By understanding designers’ needs and practices I was able to eliminate any assumptions about what makes for a good research communication method. Rather I was able to take a designer-centered approach to bridge the communication gap between users and designers. Despite the plethora of principles and methods suggested in the literature regarding how to communicate the research insights to the design team, I identified a gap in that there is not structured and process and justifiable selection of these methods. This means the selection of the method has often been left for researcher to decide on without much involvement of the design team and their needs. I then concluded that the double ethnography approach provides the best possible approach to attend for designers’ needs in the way and method by which the research is communicated. Therefore, I conducted the first phase of the double ethnography phase in this chapter and distilled key principles to consider for designing a research communication method. These principles will be taken further into the development of a method in the next chapter and evaluating the effectiveness thereof.

## **7. Designer-Centered Research Snippets: A Designer-Centered Tool to Communicate Research Insights**

(The second phase of the double ethnography)

### **7.1. Overview**

This chapter discusses the second phase of the double ethnography approach. The first phase was discussed in the previous chapter. The main overarching need was the adoption of a user-designer-researcher centric approach in the communication process of the user research. Thus, our three fundamental qualities they need for an effective communication method cover this as follows:

- researcher-user centric need (Credibility)
- researcher-designer centric need (Conversation)
- user-designer centric need (Immersion)

In this chapter, taking these insights forward in the second phase of the double ethnography, I attempt to answer the second question and discuss the design and evaluation of ideation sessions I conducted. The ideation workshops were designed to deliver the user research findings to a multidisciplinary team of designers and have them ideate design solutions based on their understanding of the user. The aim of these workshops was not the ideated concepts per se, but rather to evaluate the method developed specifically to communicate user research. Thus, generated concepts, and the discussion thereof, were evaluated to test the extent to which they demonstrated an understanding of the research insights communicated through the method developed for these workshops. As such, this chapter discusses two points:

- The implementation of the insights discussed in the previous chapter and how they fed into the design of workshops
- The evaluation of the method used in the workshops based on the generated concepts and discussions.

### **7.2. The Development of The Designer-Centered Research Snippets**

My understanding of the designers and their needs took a central point in designing a communication method by which I communicated user research I conducted in earlier chapters. Namely, I discuss how the three qualities of effective communication --- credibility, conversation and immersion --- fed into the design of my method (Research Snippets) and the overall workshops. The main goal of the workshops was: evaluate how the design team, using the method provided, utilized their understanding of the research in the design process (i.e. ideation phase). I demonstrate below what, how and why I took each design decision of the Research Snippets and the different activities of the workshops. (see appendix **Research Snippets**)



Figure 7.1 Research Snippets with some cards have the quote side faced-up and the others have the visualized side faced-up

Research snippets are cards with two sides where one side has a visualized aspect of the user research (interpreted data), and the other has a quote of one or two users (raw data), as shown in (Figure 7.1) above. These snippets are representing key aspects of the research; the research problem (visibility /self-disclosing), the key stakeholders, key values (achievement), key finding (cultural change), exemplar designs (websites, newspapers & billboards) and types of preferred media (for digital visibility). The design of these snippets was made deliberately to address the three major themes identified in the previous chapter as follows:

#### Credibility:

Each prompt was designed to contain two parts on its two faces: raw data (quote) and researcher's insights (visualized). The quote provided evidence of the research while the visualized insight provided a, possibly ambiguous, interpretation of the data. Thereby, the snippets are designed to address the credibility dilemma identified in the previous chapter (the struggle to understand or utilize raw data, and their skepticism of the validity of design resources).

#### Conversation:

The snippets do not take the role of design requirements but rather the role of conversation starters. This aligns with the previous chapter that designers needed to receive the design requirements in a two-way dialogue and in a space for asking questions. Thus, the ambiguity of the interpreted data is intended to allow that conversation and questions to take place, while the raw data is intended to facilitate the collective understanding of the interpreted side of the snippets. Additionally, the snippets were designed to be handed out during dinner and networking before the workshops; this decision was taken to facilitate creating informal setting around chatting about the data. The snippets also were planned to remain with participants throughout the session as points of references to use for traceability during the different activities.

#### Immersion:

The quotes in the snippets were used to facilitate semi-direct contact with users and portray ‘real’ people instead of ‘fake’ representations of the users as an approach to establish empathy, as proposed in the previous chapter. The ambiguity of the visualized side is a means to encourage curiosity and leave a space for collaborative interpretation of the data to maximize immersion of the participants in the research. Additionally, the snippets were made available and accessible throughout the session so participant could exchange them and chat about their content. This was aimed at providing constant exposure to user data.

### **7.2.1. The Structure of the Workshops**

In this second phase of the double ethnography approach, I was able to retain all of my participants which I interviewed in the first phase of the study (details in the previous chapter).

Each workshop was divided into four activities: sensitizing, warm-up, learning about the research, and ideation. After the sensitization, the three activities provided three different levels of contact with the user: direct (using role play); semi direct (using research snippets); and, indirect (using a design brief). The core activity is learning about the research. Thus, I developed a specific communication method (*research snippets*) based on the findings of the first phase of the double ethnography. I explain this method in detail below then I describe each activity.

#### **7.2.1.1. Activity 1: Sensitizing (40 minutes before the workshop)**

This was designed to be a rather light-weight activity during dinner time. Participants were invited to dinner just prior to the workshops. Dinner time was an opportunity for participants to meet one another and sensitize what the research to be discussed in the later workshops is about. Upon their arrival, each participant was given a card (research prompt) to use as a sensitizing object to the research and also to use as a conversation starter and an ice breaker with other participants during dinner. This setting aimed at orienting the initial interactions in an informal manner, which based on my findings facilitate effective collaboration. The snippets were provided to orient the participants towards a user-centered approach and give a sense of what the research is about.

Participants arrived one by one almost within ten minutes. They were seated on two round tables, 3 or 4 people at each table. Since most of them did not know each other, they spent most of dinner time networking and learning about one another. Thus, there was very minimal interaction with the snippets. This part of the workshop was not recorded as it was not considered part of the data collection.

#### **7.2.1.2. Activity 2: Ideation Sprint (the role play)**

Drawing on the concept of design sprint, in this activity aims participants conduct the first phases of design (user research, problem definition, ideation) within 15 minutes. This was aimed to be a warm-up activity for designers to them through the phases which they usually do not get involved in as part of their jobs. Particularly this was designed to allow participants to have direct contact with the user and identify a problem and a solution using a user-centered approach. Finally, this activity was also aimed at preparing them for a later cultural-specific

ideation activity. To facilitate the warmup, the context used in this activity was a familiar one (driving in the UK), rather than a culturally specific context.

In this activity participants were divided into two groups with 3-4 members each. They were asked to choose one person in the team to play the role of a car driver new to the UK. They were advised to choose someone who actually has recently been through this experience. The rest of the team played the role of researchers/designers whose task is to identify a problem by asking the 'user' and aim to solve it. Then, teams were asked to incorporate a specific value (i.e. achievement) in the design solutions they proposed.

Participants followed a self-selection process where one member of each team volunteered to take the role of a user due to their recent experience of driving in the UK. The rest of the members were asking questions and discussing with the assumed user potential problems they faced. Then each team identified a problem based on their assumed user experience. Afterward, they generated possible solutions, in some teams with the user validating solutions. This seemed to give more dominance to the member played the role of the user. However, in other teams the user took a mere user role and did not play the role of a member of the team.

#### **7.2.1.3. Activity 3: Learning About the Research (the Research Snippets)**

The snippets were used in different parts of the workshop, but mainly in the 3<sup>rd</sup> activity, learning about the research. They were also shared (either physically or verbally) among participants.

In this activity, designers were encouraged to learn about the research using the snippets provided and participating in the discussion. The learning resources here were designed to be: (i) the participants impression of what they think the snippets mean, (ii) the slides presented on the screen, (iii) the researcher explanation, and (iv) the comments and questions raised throughout the discussion.

This activity starts by presenting one of the prompt cards on the screen so that all participants can see it and asking the participant with the corresponding card to explain their impression of what it means. Then, the researcher explains what it means and how it fits in the overall research, making a comparison with what the participant said. Other participants then are allowed to comment or ask for clarification about this prompt. Then, another prompt card is presented, and the same process goes on till the final card. The cards were presented in a coherent order starting from the research problem and ending with the design considerations. Since this activity was the core of the research communication process, it incorporated all the three major themes in its design.

For *credibility*, the combined approach of raw and interpreted data was provided in three forms: (i) the snippets given to the participants, (ii) the presentation slides with some pictures and text, and (iii) the researcher elaborating on the details of the research process.

For *conversation*, this activity was designed to be conversation based where the learning about the research is considered an outcome of the conversation, comments and questions asked in the activity. In this regard, the snippets were used as stimuli and conversation starters but not as a communication means in their own right.

For *immersion*, I attempted to show the real people instead of personas, which was suggested as a more memorable approach in the findings of the previous chapter, and also discussed in literature [167]. Thus, photos of participants (anonymized) during the workshops were presented on the slides, quotes were given on the snippets, and exemplar real designs concerning the research problem, also on the slides. These were presented to provide first-hand knowledge of the users and their real world through a semi-direct contact approach as suggested in the previous chapter.

#### 7.2.1.4. Activity 4: The Ideation (the design brief)

This activity was designed to provide indirect contact with the users and evaluate whether this works given that participants learned enough about the same context in the previous activity. It was designed to pull together all the aspects practiced and learned in the previous activities. The overall goal of this activity is to evaluate the use of the knowledge gained from the snippets and the conversation into the ideation process.

Participants were given a design brief (examples in **Figure 7.2**) about Saudi women being allowed recently to drive cars in Saudi Arabia. The design brief offered an open space for a problem to be explored (supporting women to drive) and asked participants to ideate design considerations and solutions. The ideas generated are expected to reflect the participants understanding of the research. They were also encouraged to go back and critique their own ideas generated in the warm up activity (driving in the UK) and try to adapt these into the Saudi cultural context.

Participants worked individually in the beginning as each of them was handed a copy. Then they worked collectively to share their understanding of the brief and answer the provided questions. In some teams, individuals happened to share the same understanding of it whereas in other, each member had a different take on it.

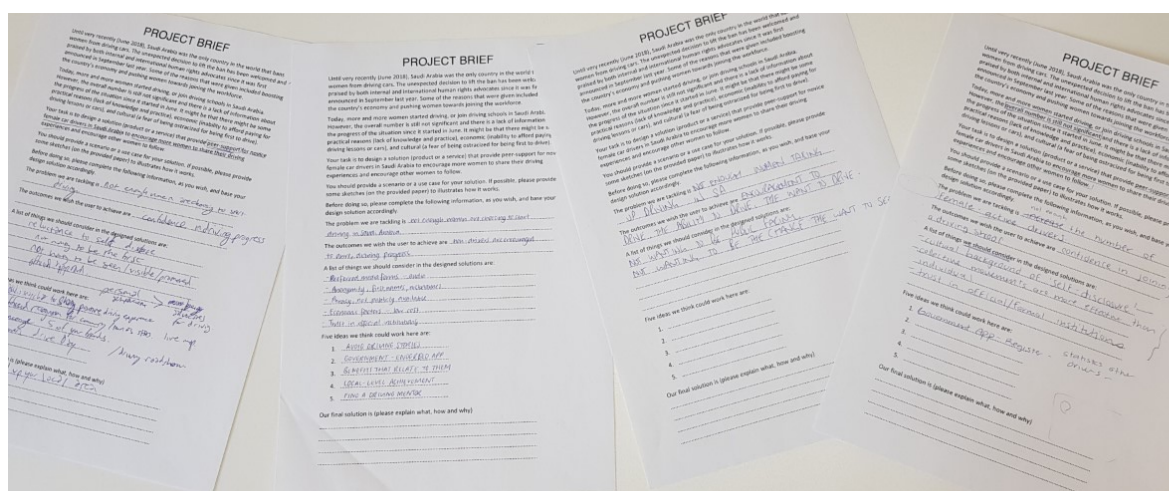


Figure 7.2 Examples of design briefs used in the workshops



#### **7.2.1.5. Activity 5: Reflection (sharing experience and insights on the snippets)**

At the end of the workshop, all participants were invited to share their reflections and insights on the research snippets. They were asked about their first reaction when they received the snippets card and what they thought it was. They were also asked to describe how they used them and what role the cards played in their overall discussions and engagements with the workshop activities.

### **7.3. The Analysis of The Workshops**

Since the goal of the workshops was to evaluate how the method (research snippets) worked, and how effective it was in communicating the user research, the analysis of the data focused on these two angles; the roles the method took (how it worked) and the extent to which it facilitated understanding (how participants utilized their knowledge). Meaning, the goal is not to examine the three qualities (credibility, conversation, immersion) as separate features, but rather to examine their overall effect on creating effective communication. Therefore, the analysis took a ground up approach looking mainly the roles my method took. However, in the discussion I discuss the correlation between these findings and the three qualities identified in the first phase of Double Ethnography.

To do this, I audio recorded the sessions, had them transcribed by professional transcribers. Alongside the transcripts, I have some supporting materials that they used/created during the sessions such as the design brief, Post-its and sheets. These were not analyzed on their own but rather facilitated understanding of the interactions and discussion textually presented in the transcripts. This was because these materials were not used in the activities as an end-goal but to help participants articulate and discuss their ideas, which can be found in the transcripts.

The findings of this study have been identified through:

- The participants' interactions and discussions
- The ideas generated
- The participants' reflection and critique on the activities and the workshop

Thus, using these three routes, I examine in the findings section below how my method worked, touching upon three qualities identified for effective communication: credibility, conversation and immersion.

### **7.4. Findings**

From the three routes defined above I identified, I demonstrate in this section how the snippets played different roles (conversation scaffold, dots connector, and reference point) by employing the three qualities for effective communication: credibility, conversation and immersion.

#### 7.4.1. Conversation Starter: Scaffolding Progressive Conversation

The powerful role of the snippets was not only being a conversation starter but also scaffolding the conversation throughout the session. My overall observation of the participants initial interaction with the snippets is that they had difficulties understanding the snippets and explaining their impression thereof. However, this turned out to have a great value in stimulating engagement and curiosity. It was not until there was some progress going through the cards when they gradually started to engage, comment and ask question and eventually, they engaged in discussion without the researcher intervention.

Initially, participants were hesitant to comment or ask any questions at the initial stages of using the snippets in the third activity. They also started hesitantly to express their impressions of what the cards could mean. This was mostly obvious in some participants' use of tentative language such as "[this] looked to me like ...", "it sounded like ...", "I think. It looks to me to be- I don't know what you'd call it ...". Whereas other participants used merely a descriptive language of what it is on their cards rather than how they interpreted them.

For instance, (G,M, 2)<sup>9</sup>'s initial part of his quote below exemplifies both using a tentative language (e.g. 'appears to be' and 'my guess') and distancing himself from what he is stating (e.g. 'as everyone can see' and 'it shows'):

*"So, like, I mean, as everyone can see it basically shows a panel of eight images, showing what appears to be a progression from zero visibility and then a series of steps, ... my guess is that this is from a study which looked at cultural attitudes and perceptions of women's clothing..."*

This difficulty was then confirmed later on the reflection activity where participants expressed how they perceived the snippets initially. For instance, (S,F,2) explained this difficulty by drawing an analogy between the gradual unfolding of the data and solving a jigsaw puzzle:

*"It was a bit out of context, and it was like you see a part of the puzzle, a piece of the jigsaw, and you kind of get a sense of what it should be but not really. Like, that's a nose, it looks like the nose of a horse but I'm not sure until I see the whole picture. So, I guess it didn't really make sense on its own until we, kind of, discussed it together."*

In her quote, (S,F,2) is stating how the snippets played out as individual pieces, difficult to see their meaning; and as parts of a bigger picture giving meaning to each of them.

This turned out to have a great value in stimulating the participants' engagement and curiosity. For instance, (G, M, 2) stated that the advantage of this method was not understood until it was played out in the conversations:

*"I think the cards have been very useful, in retrospect. I thought they were a very effective tool after we had the discussions, etc. At the very beginning, I think they didn't make as much impact ..."*

Moreover, in (J,M,1)' reflection, he pointed out to 'the value' of such an approach as he explained how seeing a 'superficial' and 'out of context' pieces of the research played a critical role in creating rich conversations:

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<sup>9</sup> These identifiers represent (The participant's initial, the gender, the number of the workshop)

*“Well, it’s more superficial, isn’t it? Just the surface face value of what you see, but then, I think there is a value to having seen it without the context, because you’re almost bringing in an independent opinion when you do get it explained the context. Whereas if you’re just given this ... after you’ve explained the context, then I don’t think there would be quite as rich a conversation”*

This ‘superficial’ or ambiguous design of the snippets was referred to as ‘not making sense’ in some participants’ comments. It was nonetheless stated to be an advantage of the cards, as stated by (L,M,2):

*“ ... I thought, giving it to me beforehand it didn’t really make much sense to me, but as soon as it was talking about it then I thought ... then it got quite interesting, especially to get me into the mind thinking of what we’re about to do.”*

In her quote, (L,M,2) pointed at an important factor associated with the difficulty of ‘not making sense’. It was increasing her ‘interest’ and stimulating her ‘thinking’ that facilitated her later engagement.

The gradual revealing of the data although proved difficult at the beginning, but a significant value of this difficulty was to keep the participants engaged and to provide a step by step learning process about the research. This was evidently stated by one of my participants, (J,F,2):

*“I think my experience of it was really that I liked that I had to try and attempt to actually, you know, understand the context. So, of course, I felt like it’s probably not the right interpretation, but I think it was important that I at least tried, and then it was easier for me to follow up the rest of the conversation because it was all about closing the gaps and making it more engaging for me because I already had a little bit of incentive or information to begin with.”*

Similarly, (L, F,1) explained how this gradual unfolding of the data motivated her learning:

*“I quite enjoyed listening to people’s interpretations of what they thought the prompt was and this is what it was representing. ... it was really interesting to, kind of, unpeel another layer and understand it... it’s actually more, like, you wanted to listen more to what people were saying, so you can inform your opinion.”*

This gradual sense making was echoed in (A, M, 1):

*“I originally found it quite, sort of- not sure how to engage with it when I was downstairs. I didn’t really understand it fully. But, then, once we had it up here, there was a load of value to be understood, once you’d explained the context. And then you can look again and you can [combine 0:49:10] the prior thought with the context with it and then suddenly you have all these thoughts”*

A critical advantage of this approach is creating engaging and memorable conversations as stated by (E, F,1):

*“... sometimes I do use research and then I have to present it to a client, who is clearly not **interested in it and very bored**. But this is a really good way to get people to **think** and get people to, kind of, **engage** in what you’re telling them. Because you could have just listed everything on a sheet and just told us, but now we’ll **remember** everything ...”*

Conversely, Px W2 expressed how the lack of ambiguity in the design brief made it less engaging:

*“Yes, I think my approach is a bit ad hoc. I mean, to me my impression is I think I can see a clear problem in terms of what needs to be done, so I wasn’t very incentivized to try to reach out to [higher other] problems, it was just very tangible for me. You know, we just need more data. We want to push people to do this, so let’s do it.”*

In conclusion, I established here the advantages of gradual revealing of the snippets for participants’ engagement and learning. I demonstrate in the next theme how this enabled participants to establish a collective understanding.

#### **7.4.2. Dots Connector: Establishing a Collective Understanding**

The second powerful role of the snippets was enabling participants to establish a collective understanding. By this, I refer to the individual’s participation in the discussion by both building on other participants (and the researcher) comments and sharing their insights to inform the overall story. This was established through the progressive nature of the snippets ‘unpeeling layers of the research’ and through the shared comments, questions and answers during the discussion by which participants informed one another understanding as I will demonstrated in the examples below. This was explicitly stated in (S, M,2)’s comment:

*“I think maybe not the cards just by themselves, but what we did with the cards, the conversation that we had around the cards was helpful to understand them.”*

My overall observation of the participants understanding of the research is that it was established through the collective conversation, where every one’s input (comments and questions) allowed the others’ knowledge of the research to grow. This was noticeable through the participants progressive ability to interpret the cards and sometimes through their verbal expressions. For instance they would articulate how their ideas are connected to the overall discussion such as saying *“I think that follows on from what you were just saying”* (T,M,1), and *“I think this connects with the idea [discussed earlier] about self-disclosure ..”* (A, M,1). In other cases, they would articulate that they are building on what other participants’ comments such as saying: *“... for the reason that [(S, M,2)] just mentioned earlier ...”* (L, M,2).

The fact that each card represented only one aspect of the research without displaying the complete context played a significant role in enriching the conversation the participants had and their desire to understand the meaning of the cards and hearing “the collective of it, it just made it a bit more powerful” (J, M,1). Participants expressed how they were trying to say and find something “similar” (M, F,1) to fit in the overall story. Thus, this worked more as “cross pollination” (A, M,1) between participants by which their “knowledge grew” (J, M, 1).

(E, F,1) elaborated on the advantages of this approach in provoking thinking and competitiveness on the one hand, and creating engaging and memorable conversations on the other hand:

*“... because once you go through these cards and I really felt, I don’t know if the rest of us are the same, but someone else was before me and I was like, “Oh, God, I need to, kind of understand what my card says, because actually I need to say something clever.” And then you start just thinking about it and then other people start talking and they have different perspectives. So, you feel really engaged. And I was thinking, that would be really helpful, if I could even do something like that myself in my work life”*

Furthermore, participants engaged with one another's interpretations by commenting and asking elaborative questions. For instance, when (M,F,1) explained her impression of what was on her card regarding the different levels of women's visibility, (R,F,1) added an important insight saying *"as well as passing that to [their] children, it is not only the individual herself..."*. This was common through the session that sometimes in the transcripts there were regular incidents of 'cross talks. Also, participants raised questions sometimes for clarification on what is on the cards and other times asking for extra pieces of information that were not presented on the cards or the slides on screen.

Answering the questions was sometimes provided by the researcher, particularly when it is about the research or the cards. Examples include (B, M,1)'s question about a quote in the card *"... I can't quite work out, is she ok with that or is she challenging that?"*, and (J, F,2)'s question about the concept of achievement *"... do you mean more women's daily life achievements, like, can it be small things, or does it need to be big things?"*. Clearly, this type of questions needed more of the researcher's intervention to facilitate understanding the content. Thus, in many cases, without such a conversation some data would not have been revealed and shared with participants.

However, in other types of questions, participants answered each other's questions to establish their collective understanding. This sometimes even took place among participants without the researcher intervention unless there needed to be some confirmation from their role as researcher or cultural insiders. For instance, the example piece of the conversation below demonstrate how when (S, M,2) shared his insights regarding about the research context in comparison to other contexts, other participants chipped in to discuss this topic:

*(S, M,2): Not a question, but an observation, and it's an extreme case, but in some ways it's a refreshing antidote to what we see at the moment in this country and America, where social media is dominated by people sharing pictures of themselves ... It isn't about any form of meritocracy whatsoever, it's just about being focused and just being seen." ...*

*(D, M,2): People just want to be celebrities.*

*(S, F,2): I would argue that's not how people use social media all over the world, maybe it's context dependent or culturally based.*

*(J, F,2): Definitely.*

*(S, M,2): That's what I'm saying, I think here in the UK and certainly in America, it's this popularity contest.*

*(J, F,2): Definitely, this Instagram shift of, basically, all the social media stars need to be super well-trained and knowing all the right products, right, so it's a lot about the variability of your life, right? (members started to discuss away from the facilitator)*

This example demonstrates how the knowledge was shared and established collectively among participants. In other cases, participants comment and questions provided collective understanding among everyone including the researcher also to see the research from different angles, as I will demonstrate in the following section.

It was not only participants asking questions to gain insights about the research, but in fact, they added some invaluable insights for the researcher to look at the data in a new light. For

instance, building on what the researcher explained about participants having different values when it comes to their children, which mean they would not engage in some acts but they would allow or encourage their children to do so, (M, F,1) provided a deeper interpretation of this phenomena:

*“... here they feel identified through their children, expressing yourself through your children, which, in a way, it's the same. The family or the generations, they have always been presented by someone else ...”*

The notion of expressing identity through children, while representing parents (or older generation)' identity was indeed a new invaluable way for the researcher to articulate this finding of the research.

Another example is (S, M,2)'s interpretation of the stakeholders associated with the research findings. While the researcher had referred to this as 'stakeholders', (S, M,2)'s labelling for it as 'masks' has given a new and deeper insight to this piece of the research:

*“it's about the many different identities and masks this person puts on in order to negotiate this, kind of, contested space, this sea of tensions, of having to put on the right face for the right group. That, actually, they need to be themselves somewhere, and social media being a way of presenting them an environment where they can just be themselves.”*

Thus, we can conclude that the cards provided a powerful tool to establish a collective understanding of the research by providing a scaffold on which participants collectively build their understanding and by encouraging participants to create new insights and cross pollinate with each other's understanding. The most critical advantage of this, as explained in (E, F,1)'s comment is making the content memorable for everyone which they will carry out for other stages of the design process to inform their design decision.

### **7.4.3. Reference Point: Enforcing User Centric Learning**

An overarching role the snippets played is enforcing a user centric learning process about the research. In this section I present observations of how the snippets enforced a user centric learning process throughout the sessions.

The nature of the cards enforces participants to refer constantly to the users and describe what the users potentially think and feel. Even when they merely described a card without providing interpretation, this by default involved ascribing a problem, a need or a feeling to the user. For instance, participants described: “how women feel in certain societies” (L, F,1), “how the society and the culture is treating the female” (R, F,1), how “the oppressions that stop the person who's giving the quote from being what they want” (T, M,1), how “women aren't very visible in media in this culture” (A, M,1) and how “they don't feel like it's necessary” (E, F,1) to be visible. This involvement in discussing another person (the user) and another culture not only maintained a user centric learning but also stimulated curiosity to learn more about the user. This was evident in participants' comparison to their own or other popular cultures such as “this country [UK]” (S,M,2), “Christian” (J, F,2) and “America” (E, F,1) to make sense and establish ground of the user culture.

The snippets worked as reference points throughout the ideation activity. Participants articulated how the snippets allowed them to connect to the real users and how they feel. For instance, (J, M,1) stated:

*"It was really good to get insight, to get a feel of what the issues are and how people really feel about stuff. You know, I think quotes are always good to know- I think, because people have actually said this stuff, it's not just, "We think this, so therefore..." It's like, "This is actually how we feel." So, I think it's a big..."*

In this quote, (J, M,1) emphasized especially the role of the quote in providing a credible piece of data to show the real user. Whereas, (S, M,2) emphasized the roles of both the quote and the visualized side to reflect one another:

*"The picture and the quote was nice as well, having the pictures on one side and the quotes on the other was good because you kind of got the big picture or the whole idea, and then you got some specific quotes on the back. It was nice to reflect on one with the other."*

One notable factor in credibility was that the snippets gave less space to "speculate", "assume" or "imagine" the user; and rather allowed participants to "question", "feel" and "check back" what the user needs are.

On the other hand, participants demonstrated the same tendencies when describing their aversion to the design brief. For instance, one major flaw with the brief was the fact it does not provide a mechanism for asking questions as (S, M,2) put it:

*"But I think my point is a bit more high-level, is that if you're going off a piece of paper, you don't have a mechanism to ask questions. There was a few times, when I thought, "Can we just ask you about driving in Saudi Arabia?" Or wherever. So, what I'm saying is, I think, this is a really good framework for writing down and thinking about it."*

(S, M,2) also described how the problem presented in the design brief as 'assumption' due to the fact it was presented, although open and briefly but it was not described in detail how it came about (this was an element of the snippets):

*"But, the problem is you are making assumptions about what the problem is ... what we did was we said, "Maybe that's not the problem," and we actually said, "It's not about experiences, it's about motivations, it's about perceptions of driving," and that's what we worked on. So, it's good from getting people to be experienced centered, to focus on the human experience of a problematic situation, but it does constrain the problem."*

The problem with such an assumption-based tool, is described in (J, F,2)'s comment who expressed the lack of trust of the information presented in the design brief in comparison to the snippets:

*"I guess it's a very different feeling of confidence, like, "Do we have the information available? Could we check back?" Whereas here we need to really rely on the brief, or maybe even not because then it would be part of the... To, like, get more information and validate the information. So, I think we were far less secure on actually making some design decisions, whereas, you know, in the first task I was basically okay, "What do you want?" and we could just tell from the experience. We could actually rely on understanding this experience where, in the other context, it was just far more... I don't know, a little bit insecure?"*

Another issue was associated with briefs was the fact they are text based. The lack of conversation was thus described as a teamwork issue, as Px W1 stated:

*“Yes. Even having it written down, for us, for our team, anyway, we all just sat and read it and then started making notes and then time was up. And we didn’t really work as a team.”*

This written nature of briefs, according to Px W1, causes getting hung up on specific syntax:

*“I think when something is written down you tend to just get a little bit too literal. Like, we were picking up on specifics, whereas [Crosstalk 0:56:38] peer support. So, like, rather than having a conversation being able to interpret something, we were getting hung up on specific syntax more than anything ...”*

Whereas, Px W2 stated that the ambiguity of the snippets and possibility to make a mistake in interpreting the cards played a role in facilitating following up and engaging with the actual context:

*“I guess I was lucky, a little bit, because I had the first card and it was more the context. I think my experience of it was really that I liked that I had to try and attempt to actually, you know, understand the context. So, of course, I felt like it’s probably not the right interpretation, but I think it was important that I at least tried, and then it was easier for me to follow up the rest of the conversation because it was all about closing the gaps and making it more engaging for me because I already had a little bit of incentive or information to begin with.”*

Consequently, this method allowed for grasping much data in timely manner, as Px W1 stated:

*“It was great to have that much context, whenever you do any ideation, you never have that much context, like you knew a lot about the different factors that were affecting what we were designing.”*

The result is, many of the generated ideas considered different aspects of the research. Despite the fact the ideation activity was provided within the design brief, participants relied on the snippets as a main source of inspiration for their ideation, and as reference point against which they checked validity of their ideas. For instance, some ideas focused on the role of the different stakeholders, such as “an app that is provided by the government”, “endorsed and accepted in [their] cultural groups”, “approval by an official institution”, “the respect of these authority systems”, “certified official endorsement”, “drive your kids to school day”, “device or sign for male drivers to show support”. Others considered the levels of visibility and anonymity, such as “anonymously ask questions, ... share stories”, “animations ... instead of real pictures”, “avatars for personas”, “live map ... you can see people just moving around ... not specifically or any identity of the driver”, “an emoticon ... without showing yourself”, “female branding of vehicles”. And others focused on the type of medias suited for this context: e.g. “something like snapchat that is audio based”, “radio traffic news”, “billboards ads for fathers”.

From these examples we can see how the research snippets transcended their initial role as conversation starters and played a significant role in establishing a user centric ideation process among participants. In a more explicit example, (L, M,2) stated where his group’s idea about targeting youngster in billboards ads came from:

*“Then, there were also billboard ads for fathers to support their 18-year-old daughter, sort of thing, saying, “Hey, look here, you’re giving your daughter a helping hand with the future of her life.” That stems from the research whereby you*



*said that a lot of the 40-year-olds were actually happy for their youngsters to do it, but they felt that they'd missed the boat, sort of thing, for this sea of societal change"*

The idea around youngster generation stemmed from an earlier part of the workshop where the researcher discussed how her research participants aged 18 to 40 seemed to represent their society's values, mainly older generation's values, whereas they hope their own values would be taken and represented by their children. This piece of information was not included in the design brief, nor it was in the snippets. However, participants' use of it demonstrated their engagement with and understanding of the research.

Similarly, (B,M,1) used the prompt displaying the stakeholders as an inspirational source for their ideation activity, although this was not part of the design brief:

*"You're encouraged to do it. And you're not going against all of these stakeholders, you're doing it for them. You're getting... Yes. I would say, if an app is approved by the Ministry of Transport or the authorities, it has a little badge."*

This quote indeed demonstrates a significant part of the research which is the collective nature of the context where the authorities represent a crucial stakeholder in the social change process. Taking such pieces in consideration while ideating has evidently demonstrated the participants' understanding of the cultural context of the research.

## **7.5. Discussion**

By doing the first phase of the double ethnography approach, learning about my designers' needs, I developed the research snippets method and employed it for the second phase to communicate user research to my designers. The second phase thus was guided by the question: how effective is the method (the research snippets) and the overall approach (the double ethnography)?

To answer this, in the following sub-sections, I use the results to evaluate and discuss (i) how my proposed method, the research snippets, facilitated the communication of the user research and met the needs of my designers identified in the previous chapter, and (ii) how the double ethnography approach helped us address the limitations of methods identified in the literature section.

### **7.5.1. Facilitating Communicating and Understanding of the User Research**

The research snippets method facilitated communication of the research between researcher and designer through the different roles it played:

#### ***7.5.1.1. The role of a conversation starter: (from ambiguity to trust)***

The incomplete and ambiguous nature of the snippets made them perceived as not a communication means on their own right but rather a conversation starter. This triggered curiosity and encouraged participants to take part in the conversation and have ownership in constructing their meaning. Thereby, setting the stage for a collaborative creative process [252,264].

Furthermore, giving each participant a piece of data empowered all team members to take part in the conversation to bypass hierarchy and dominance issues discussed in the literature. [141]

This was the case even when there was a possibility to make a ‘wrong’ interpretation or misunderstand the snippets. Knowing they only have an incomplete piece of the research; participants were “incentivized” (J, F, 2) to use that as a conversation starter to bring “an independent opinion”(J, M,1) without (and/or despite) the fear of making assumptions or mistakes or not saying “something clever” (E, F,1) or giving “ the right interpretation” (J, F,1).

Indeed, since making mistakes is a natural part of the learning process, the snippets encouraged participants to adopt a learner mindset while dealing with the data and increased curiosity about the users lives and experiences. This means the snippets were perceived as inspirational and not informational tool which aligns with how designers differs from researchers as suggested in the literature [264]. Additionally, there is more evidence that abstraction in inspirational methods allows more creativity [241]. In that sense, the research snippets were neither descriptive analyses nor prescriptive recommendations [199]. This, in turn, created a space for collaborative learning and encourage joint reflection [170].

The research snippets as a conversation starter and collaborative learning tool prepared to the ground for trust to be developed alongside the learning. Since it is expected usually that “individuals will bring baggage to any new trust context” [141], the research snippets provides a space for that trust to be key part of the collaborative process.

#### **7.5.1.2.    *The role of a conversation scaffold***

The gradual unfolding of the data where the snippets were discussed one by one, provided an understandable form in a timely manner [219]. While each prompt was discussed individually, the discussion was progressive and building on the previously discussed snippets. This means the earlier snippets had less conversation as they had less to build on. As such, this allowed avoiding information overload and instead established a gradual unfolding of the data and a progressive conversation. The gradual process of unfolding the data allowed participant to build on and inform each other’s shared point.

Thereby, guiding the conversation into a meaningful structure and a coherent story [119]. Since each participant had only one piece of the research, this made each prompt incomplete and ambiguous until discussed and put in context with the other pieces, as in the jigsaw analogy of participant (S, F,2). In turn, this provided a mechanism for “cross pollination” (A, M,1) between participants and thus any misunderstanding can be remedied through discussion [199]. As such, this increased participant’s engagement and sometimes competitiveness say something clever or at least something “similar” (M, F,1) to fit with the overall story.

Moreover, allowing designers to have that conversation expanded the collective understanding of the research to the researcher as well. During the discussion, comments and question, designers provided some invaluable insights on different aspects of the research. This allowed establishing a collective understanding which provided new insights for the ‘individual’ understanding of the researcher.

As it is suggested that the researcher leads, guides and scaffold the design process [202], the research snippets provides a coherent mechanism to facilitate this role.

#### **7.5.1.3.    *The role of a reference point***

The research snippets took the role of a credible reference point as both external and internal stimuli due to their credibility, tangibility and the mechanism by which they played out.

Since the research snippets applied the combined approach - identified as the best credible approach in the previous chapter- they provided a credible design resource (reference point) for user centered inspiration. The raw data provided a lens to what 'specific' (S, M,2) users say, and thus allowed establishing trust of what is presented of the users. Whereas the visualized parts allowed participants to see 'the big picture' (S, M,2).

Not only their content, but also their tangibility and being put in the hands of participants allowed a constant exposure to different pieces of the data. This, as established in my findings, and the literature [40] [153], facilitates user-centered inspiration, and a deeper immersion and traceability of the data. As such, the research snippets were utilized as an inspiration stimuli and reference points to trace back to the data and check validity of ideas generated.

Alongside providing an external stimulus (tangible cards), the research snippets provided an internal stimulus. Since design requires a continuous switch between internal information stored in memory and external stimuli [99], the mechanism by which the snippets were used – the collective conversation- facilitated memorability of their meaning as suggested by (E,F, 1).

### **7.5.2. Overall Reflection: The Double Ethnography Approach**

I have demonstrated in the literature section of the previous chapter that there has been a lack of structured guidance in the literature in respect of how to select a communication method to deliver the user research outcomes. In this chapter I showcase how deliberate design decisions were made to use a method that is designed specifically for this context. This allowed to incorporate the designers needs into the designed method which makes the selection of the method more of a collaborative process between researchers and designers. The second phase of the double ethnography, although not explicitly stated in the literature as a way to guide the evaluation of the method selected, but in practice it provides an opportunity to evaluate the method and the overall approach. Meaning, the outcomes of the second phase can be examined against 3 criteria:

- The research - The extent to which participants understand the research
- The first phase of the double ethnography – the role the outcomes of the first phase played to create the outcomes in the second phase
- Against limitations in the literature

Moreover, As stated in the literature, in many cases the research findings are communicated through means that seem irrelevant to the designers and their practices. In contrast, my method was designed and tailored for my designers. In the evaluation, I demonstrated how it facilitated participants understanding in timely manner. This approach allowed us to bring a method, although new and not familiar to designer, but nonetheless addressed their needs and provided an effective tool for communication. This was evidence in how the built a collective understanding of the research and produced relevant concepts and ideas.

Furthermore, I demonstrated in the literature section how typically designers are seen as passive actors, and perhaps reduced to robotic actors, within the design process where they are expected to 'just create something'. In contrast, the Double Ethnography approach allowed us to consider designers as collaborators beyond influencing the selection of the communication method. This is not only in creating the solution but also in establishing the collective understanding of the research. Even though the reflection is not an integral part of the double ethnography but allowing that was a natural follow up similar to that of the user research which allowed us to consider designers as collaborators as well in the evaluation part of the method.

Finally, from this and the previous chapter, we can see that the three qualities I identified (credibility, conversation, and immersion) focus on the process of delivering the research rather than the final abstract goals to be achieved such as empathy and inspiration, or the concrete methods such as personas or journey maps. Thus, the Research snippets contribute to the double ethnography by providing a case study for a context rarely explored in this domain, proposing a framework for designing methods and developing a versatile method (the research snippets) to employ that framework.

## **7.6. Conclusion**

In this chapter, I conducted the second phase of the double ethnography approach. By taking the principles suggested in the previous chapter (the first phase of the double ethnography approach), I was able to develop the Designer-Centered Research Snippets. This method proved successful in concisely providing key aspects of the research to the design team while establishing credibility, engagement and empathy. I thus addressed the previously stated argument (in the previous chapter) that communicating the user research to the design team has to attend to designers' needs and practices. On reflection, I demonstrated how the double ethnography approach can be an effective vehicle to apply the view that design is a social process which involves interaction, discussion and negotiation within team members. While the researcher role is to lead, guide and scaffold the design conversation, this role cannot be effective without attending to all relevant actors' needs. Thus, empowering all members, the same way we emphasize empowering users, to disrupt power relationships is a critical step in design communication for designers make well informed design decisions.

## **8. Discussion and Conclusion**

### **8.1. Overview**

In this final chapter, I review the research questions posed in each of the three case studies in the previous chapters by discussing the findings of each study and how they build on one another to create an overall culturally sensitive approach to identify, elicit and discover values. By doing so, I demonstrate the overall contributions of this thesis, which are:

Proposing a value sensitive approach to conceptualize culture in the design process. By doing so, I suggest four affordances to this process: a bottom up approach, using a transnational population, a triangulated analysis and demonstrating cultural values in a question-led framework.

2- Proposing a culturally sensitive approach to design a value eliciting method to address the difficulty of eliciting values within culturally specific groups. By doing so, I suggest a set of principle constituting of how people express values and how to embed that cultural understanding into the design and mechanism of a novel method, Scenario Co-Creating Cards.

3- Providing an empirical understanding of how to design for Saudi women's visibility in the digital media to address the social exclusion of women in the public sphere, including digital media. By doing so, I create a spectrum of the visibility levels stated by participants from commonly adopted, to socially accepted to personally valued levels of visibility. This spectrum is a framework suggested to provide guidance for designers to consider, particularly when "designing within the patriarchy".

4- Examining the effectiveness of the double ethnography approach to address the lack of literature examining this approach as an effective approach to address the researcher-designer gap. By doing so, I provide empirical understanding of how designers need the user research to be communicated to them, based on which I develop a novel presentation/communication method, the Research Snippets. Further, I examine the impact of this method on the designers' understanding of the research communicated to them and utilizing it into design concepts.

5- Putting the previous points together, this thesis provides a narrative approach to conceptualize and embed our understanding of culture throughout the design process (demonstrated from the problem definition up to the ideation or concepts generation phase).

In the next sections, I discuss the implications of this work for cross cultural design in general; and for the context of Saudi women's visibility in the digital media, in particular. Finally, I review some challenges identified for conducting cross cultural design in this context and the limitations of this thesis and recommendations for future work.

### **8.2. Understanding Cross Cultural Research in HCI**

It has been acknowledged in HCI that attending for cultural context in the design of technology has a major impact on acceptability and usability [189,230,232,242]. This is not to take an

essentialist stance, rather to acknowledge that culture is only one of significant factor influencing human behavior [189]. However, culture is a complex and multidimensional concept which has received many different definitions as well as critiques. Consequently, the application of cultural work in design still remains with a narrow scope and on a surface level (e.g. focusing on layouts and colors) [232]. This poses a challenge for cross-cultural designers, as identified in the first case study, to establish a wider and empathetic understanding of their user's social context. Particularly, in respect of *how to approach and apply the concept of culture in design*. Existing cultural models utilized in design work provide a range of values, mainly, they provide a tool for cross cultural comparison following a predefined set of values or dimensions (e.g. Hofstede's cultural model [95]). However, such models have been criticized for oversimplicity, rigidity and overlooking the specificity of each culture and what makes its core values (dimensions) [230,231,232]. It was, thus, imperative in this thesis to carefully conceptualize culture. To do so, I establish an approach to understanding culture and propose a framework to integrate it in the design process. Responding to this challenge, I presented the literature relating to the concept of culture and the significance of acknowledging the concept without taking an essentialist stance, rather a dynamic and nuanced view of culture. I establish in this thesis that a careful conceptualization of culture can be obtained from (i) a bottom up approach, and (ii) working with a transnational population. I then argue and showcase that the integrating culture in design is not a straightforward or linear process by which cultural values are transformed into design features. Integrating culture in design should be regarded as a way to utilize the established cultural understanding as a reference point to guide design decisions in different phases throughout the design process (e.g. the development of user research method, the communication within the design team, the ideation and usability testing). Cultural understanding thus should be integrated as a guidance to the overall innovation or localization of design processes. The proposed bottom up approach in establishing an understanding of cultural values responds to a longstanding critique of how to conceptualize and operationalize culture in HCI work (e.g. Sun [233]). Additionally, the cultural context I am exploring in this work, Saudi Arabia, has a unique structure and a distinctive mix of cultural features such as religious nationalism, tribalism, Bedouin culture and the absence of anti-colonial struggle or secular movements. movements [18]. All of which makes it imperative for designers to establish a more relevant understanding which cannot be obtained without bottom up approaches.

In spite of this, few design works consider such approaches in tackling the specificity of cultures. To this end, I identified a set of core cultural values for Saudi contexts in a bottom up approach with a population that is more articulate about their national and transnational values, namely: transnational Saudis. These values were derived in **Chapter 2** as: Islam, positive image of the state, political safety, social harmony, and concealing the autonomous self & embracing the collective self. This is a distinctive approach from both the cultural models and the universal values. Namely, the values in this approach are bottom up rather than being pre identified to be tested in this context. Moreover, these are culturally specific values, however, the approach by which they were identified (explained in section 3.1) is applicable to other contexts.

The notion of having a closed list of core values is inspired by the cultural dimension approach of constraining the definition of cultures within a set of concepts to facilitate understanding and integrating cultural values in design. The difference in my work is that these dimensions (values) are constructed from the data and not predefined. On reflection, however, I stated that core cultural values are not only contextually constructed but also have two other traits: a strong connection to the other core values, and a strong influence on individuals regardless of the value's intensity or direction (i.e. regardless whether the individual believes in that value). The proposed a set of cultural values for designing for Saudi contexts are not exhaustive but rather proposed to guide designers towards asking more relevant questions. Additionally, I conducted a collaborative secondary analysis with another researcher who is working with the same population to validate and refine the set of values I both proposed based on commonalities between the two studies. For this, I argued that (i) a transnational population, and (ii) a unified secondary analysis of different studies are two factors that provided us with a rigorous approach to understanding cultures.

Nevertheless, the limitation of having a set of core cultural values remains in the fact that culture is ever changing; and particularly in Saudi Arabia where the current reforms are rapidly increasing. Thus, the provided set is by no means exhaustive. Instead these are considered as a working conceptualization of Saudi culture which is open for researchers to build on, refine or change over time. The goal is to have a more relevant understating of cultures for designers to ground their work on instead of solely grounding on predefined cultural models that overlook the specificity of cultures. It has been acknowledged in HCI that a thorough understanding of culture early in the design process has a major impact on acceptability and usability [188,189,230,231,232,242,254]. However, little consideration has been given in HCI on how to approach the specificity of cultures beyond the static cultural models, thus, more work is needed to investigate my proposed approach in other cultural contexts. Since the role of cross-cultural designers is expected to go beyond merely designing interface, and instead to approach design by adding values and addressing sociocultural issues such as agency, identity, values, power and dominance [233], it is vital to understand the specificity of cultures they are intending to contribute to its growth.

### 8.3. Doing Culturally Sensitive Design

In this section, I showcase an iterative, reflective, and narrative approach for discovering and eliciting values relevant to a culturally specific population, and how to embed them into the design process. The case study is on the visibility of Saudi women in the digital media, which provided a unique exemplar case of establishing a culturally sensitive design. In the following sections, I discuss the fundamental steps required to conduct a culturally sensitive design process, based on three main concepts:

1. **Context:** the exploration of the cultural context in a bottom up approach
2. **Users:** the development of Scenario Co-Creating Cards to elicit user values
3. **Designers:** double ethnography with designers to communicate user research

### 8.3.1. Context: Data Grounded Understanding of Culture

Because of the complexity of the concept of culture and the limitation of cultural models (discussed in **Chapter 2**), I establish that the conceptualizing of culture (providing an understanding of what it is like) and integrating culture (using that understanding in the design process) are challenging for culturally sensitive design. However, a more expansive approach can guide capturing the essence (i.e. core values) of a given culture.

At the beginning of this thesis, in the first case study, my goal was to conceptualize and integrate culture early in the research process alongside the definition of the research problem. However, on reflection, I stated that the integration process must be an ongoing endeavor throughout the project and not an end outcome in itself. In the following, I discuss how the combination of different elements contributed to an expansive approach to conceptualize culture. These elements are:

- A bottom up scoping of the research problem
- Working with a transnational population
- Conducting a unified secondary analysis and triangulation
- Establishing a closed list of core values
- Questions-led framework for integrating culture

#### 8.3.1.1. *Bottom up Scoping of The Research Problem*

Grounding the scope of the research problem on user data marked a starting point in my approach to establish the foundation for a culturally sensitive design. The main argument I made was that a bottom up approach to scoping the research/design problem is not only a technique for easier design process or rigorous validation, rather it is an ethical imperative as it is a claim to represent the target population and their real problem. This is especially the case when working with marginalized populations (such ‘the elderly’, ‘the disabled’, ‘women’, or ‘LGBT’ [261]). Thus, taking the stance that a bottom up scoping of the design problem is an impactful ethical practice, ensures that designers start considering ethical issues at a very early phase of the design process, namely deciding on the design space to assess the associated risks [6,78].

In my work, I formulated the overarching research problem by borrowing a bottom up approach from Design Thinking [67,157] and suggested it is a valuable step to consider in conducting Value Sensitive Design. This is due to the lack of clear articulation of how design problems are identified in Value Sensitive Design (VSD) [83], the approach adopted in this thesis. I based this decision on the fact that design, at its core, is a problem-solving activity, and thus design is as much a matter of identifying problems as it is of finding solutions [148]. I argued for the significance of the researchers’ and designers’ role in understanding and formulating design problems before any exploration or proposal of solutions. This is because problems in the real world often do not present themselves, rather, they are discovered, constructed and evolved during the design process [205]. This is particularly crucial when adopting a culturally sensitive approach by which not only proposed solutions are relevant but also the design problems themselves are reflecting real culturally specific problems.



The research grounded and iterative refinement of the research problem were set to ensure that I would be tackling a real problem, emerging from data rather than an observed symptom. Indeed, I demonstrated how actively avoiding a fixed formulated problem helped minimize the *egocentric empathy gap* [157], a common problem in design where designers over-estimate the similarities between their views and the views of the users. This was evident in the different framings between the problem as initially drafted and the refined problem. The focus of the initial problem was on ‘visibility’ of women however the refined problem focus was on ‘self-disclosure’. The difference between the two concepts revealed a power structure and bias in that there is a media bias in presenting only the elite, educated and cosmopolitan women whereas everyday women are rarely visible in media. Focusing the research on visibility would have led to perpetuating that bias. However, making that focus only tentative and conducting a data grounded approach to reformulate the problem led the concept of self-disclosure. This shifted focus toward the views and practices of everyday women in disclosing their identities in media, as part of a wider vision, supporting inclusion of women in the public sphere. This is in line with suggestion of Friedman and Nissenbaum [91] of identifying pre-existing bias early in the design stages to minimize its effect on the design process. It is also in line with Liedtka’s [157] suggestion of mitigating bias by “*insisting on the collection of deep data of [users’] concerns and perspective as central in the need finding stage*”.

In turn, shifting the focus demonstrated how a bottom up approach addresses another problem reported in design as the tendency of designers to overreact to a specific factor of the design space at the expense of others, commonly known as the *focusing illusion* [157]. Thus, by adopting a bottom up approach to formulate the design problem as a primary step in the VSD methodology, I was able to examine my assumptions and the existing social bias, as well as establish a wider understanding of the context and the core problem identified at the end.

#### **8.3.1.2. Working with a Transnational Population**

The target population of this research are a very important segment of Saudi society due to their cultural fluency, being a moving target and reflecting the ongoing cultural changes in Saudi Arabia. I discussed in the **Chapter 2** the concept of *transnationalism* as a unique form of identity which is “*the dual (or multiple) identifications, ties and interactions connecting people across the borders of nations*” [243]. This duality is maintained by deliberate selections among different facets (national vs transnational), values and social structures acquired from different sources. I argued that such a population presents a culturally fluent segment of the society who can articulate core cultural values in their process of acculturation and decision making of maintaining or abandoning certain norms. I also discussed how such a population, due to their dualism, represents the cultural changes in their society [44,243]. The overall point here is that transnational populations represent a vital segment for cross-cultural designers seeking a clear access and articulation of participants’ core cultural values. This is especially the case when the design space is associated with ongoing cultural changes. Congruent with my previous argument about conceptualizing culture as a fluid and dynamic concept, this segment of the society provides this dynamic view of culture that cannot be obtained from people not from a transnational background.

With regards to transnational Saudis, I pointed to the lack of research examining their impact on their society. This limited my understanding of this population to their conceptualization and perceptions of women's visibility in the digital media. Nonetheless, such a provocative topic provided a space to build a sophisticated understanding of their national and transnational values. Therefore, to gain an initial understanding of this context I conducted a foundational study of three focus groups of transnational Saudis in the UK to explore the publicly shared views and values among participants. The setting reflected the duality in that it was in a group setting with members of the same culture (to constrain the discussion to the culturally shared views), but it was in the UK as an environment reflecting their transnational facet (e.g. the way participants were dressed and the mixed gender group were not typical to their home culture). On reflection, I argued that this population provides a wide range of intensities and directions of the cultural values which made identifying core cultural values a more rigorous process.

#### **8.3.1.3. *The Unified Secondary Analysis and Triangulation***

Another factor that provided depth and rigor in my conceptualization of culture throughout this work was the unified (secondary) analysis conducted with another researcher who worked with the same population (different participants). Although this unified analysis was not the initial goal of the two studies (mine and my collaborator's), the similarities were discovered on informal reflection between the two of us. Thus, I argued that such an approach should be considered as it is one of the advantages of qualitative analysis, which is the expected serendipity at different stages of the research [52]. I then found that the differences in the original goals, the configurations and methods of each of the two studies furnished us with a triangulation which was a key element lending significant weight to the validity of the findings. As such, I suggested the use of a unified approach, particularly for under researched cultures/populations. Indeed, triangulation is a common strategy in social research for validation and confirmation to gain a total picture about the same phenomenon [53,79,181,182]. Scholars have identified other different types of triangulation, [53,79,147,181] including data sources [79,147], methods [53,79,147,181], and researchers (observers) [53,79,147,181]. In my case, I use a combined triangulation [79] of researchers, data sources and methods. I noted that although triangulation is widely understood as a strategy for validation [53,78], however, the focus now has shifted justifying and expanding the gained knowledge, to add more depth and breadth to the analysis and theory development [77,78,79,147,253].

Indeed, this triangulation, not only allowed us to cross validate the concordance between our findings, but also extended our understating of the wider cultural context. As such, I argue that triangulation provides a vital technique for cross-cultural designers to consider in their attempt to gain a fuller picture of the cultural context of the population they are designing for.

#### **8.3.1.4. *Establishing A Closed List of Core Values***

In **Chapter 3**, I discussed the difficulties, critiques and efforts in respect of understanding the concept of 'culture'. Mainly I highlighted the gaps within pre-existing cultural models which attempt to provide overall conceptualizations of different culture. I stated that models might be beneficial for cross-cultural comparison due to the fact they pre-define cultural dimensions and compare different cultures across these dimensions. These models are quantitatively

measured and not sufficient for understanding the specificity of cultures, particularly when working with indigenous populations.

I demonstrated how tackle the specificity of cultures by adopting a bottom up approach in which the cultural dimensions of each culture should be defined in a unique set of values driven particularly from field data. I also argued against static models of cultures which specify given scores or fixed traits of culture. To address this, my approach was to conceptualize culture into a set of values whilst encapsulating the nuances within culture. This was made possible by establishing that cultural values that are not necessarily held (believed in) by all participants, rather, the values that people would take in consideration whether or not they believe in them. This mean, these values influence individuals due being too dominant or too sacred for their societal circles. I recognize that a closed list of values to conceptualize culture is a useful strategy to cover such a multi-dimensional concept. Thus, I retain this aspect from the cultural models discussed in the literature (e.g. Hofstede's).

I concluded three criteria of what makes for a core cultural value. First, in line with Weaver's [251] notion that 'culturally competency' when working with indigenous people can best be obtained from the people themselves, I argued for a bottom up approach to conceptualize culture. Second, on reflection, I then suggested that core cultural values not only have to be contextually constructed but also have to meet two other criteria: a strong connection to the other core values, and a strong influence on individuals regardless of the value's intensity or direction. I, thus, found the use of a closed set of values to conceptualize culture is helpful to reduce ambiguity and sharpen focus to the most relevant aspects of culture (core values).

#### **8.3.1.5. *Questions-Based Framework***

In **Chapter 3**, I proposed a framework for cross-cultural designers working in this context to take cultural values into account throughout the design process. The framework aimed at providing scaffolding questions to guide designers toward more effective investigation and to ask more relevant questions of the users and their context. I asserted that the proposed framework must be taken as a broad lens rather than a comprehensive tool to integrate the cultural values into design considerations. Thus, this proposition addressed the critique of the cultural models providing comprehensive analysis of culture which results in creating a static image that would be rapidly outdated due to ongoing cultural changes. By doing so, I argue that conceptualizing culture is a fluid process characterized by ongoing and rapid advancements and multiple nuanced views. Hence, my main contribution to the cultural models is that the questions-based framework and bottom up approach add more specificity and nuances within one culture.

The framework is suggested a broad guide and a starting point to help designers being aware of core cultural factors beyond the cross-national dimensions. By having that level of cultural orientation, designers can better articulate and ask more relevant questions to which their intuition and cultural background might not be enough to lead them. This means shifting the attention from integrating culture as set of outcomes (design consideration) to a question-based tool to guide the whole design process. Consequently, (and hopefully) asking the right questions can empower the voice of culturally specific users to be more effectively incorporated in the design process.

### 8.3.2. Users: Culturally Sensitive Method to Elicit User's Values

Taking my understanding of culture forward, I suggested the development of a user research method should incorporate that understanding into the design of value eliciting methods. Thus, I introduced scenario co-creating cards as a culturally sensitive method for value elicitation. This builds on my previous argument about integrating culture as an ongoing guidance throughout the research/design process. The cards deck was developed carefully based on literature of how people express values and based on understanding of the cultural context conducted in this thesis alongside previous cultural work on the same context. In the following, I discuss how the combination of different elements contributed to the development of a culturally sensitive method. These elements are:

- Understanding what values are and how they are expressed
- Incorporating cultural understanding into the design and mechanism of the employed value eliciting method

#### 8.3.2.1. *Understanding values and value expression*

In **Chapter 4**, I pointed to a gap in VSD literature in regard to having a clear reflection on what makes for a value eliciting method; and how to account for the cultural factors when working with culturally specific groups. Thus, I provided an extensive definition of values and established principles of how people express their values. By doing so, I laid the foundation for developing a culturally sensitive method to elicit values. This because, I argue, values are inherently cultural, thus, we cannot understand one detached from the others. As such, my exploration of participants' culture was precedent to eliciting their individual values. Despite acknowledging the complexity of the two concepts: 'values' and 'culture', exploring values might be more difficult, and indeed more intrusive, especially when discussing sensitive topics. Whereas exploring culture presumably less personal to participants and is crucial to consider when designing an approach to explore a more personal concept: values. This influenced the sequence of my studies where creating a culturally sensitive method for exploring values comes after conducting a bottom up approach to exploring culture (or a value sensitive - where value refers to the cultural values – not individual).

#### 8.3.2.2. *Careful design of culturally sensitive methods*

The cultural difficulty associated with my target population, including mistrusting researchers [129], and expressing values in terms of their collective identity (as found in **Chapter 3**) posed a challenge for selecting a research method that allows autonomous expression of values. This is because - as identified in the first case study- participants expressed their values in terms of their collective self as oppose to their autonomous self. Yet in some occasions implicitly revealed a conflict between the two facets of the selves. Thus, for such a collectivist society, considering methods for autonomous self expressing are crucial in the value eliciting process. Another identified challenge was the need to select a method that facilitates bypassing the perceived power relations between participants and researchers. In **Chapter 4**, I argued that the different techniques other researchers employed - intentionally or not- when working with this population to facilitate their value expression, lend weight to the argument that cultural

sensitivity is key to the efficacy of a value elicitation method. As such I called for a careful and intentional (re)design of value eliciting methods.

To do so, I developed a method that accounts to these barriers in its conceptual, physical and mechanical design. By conceptual design, I refer to the content and its inherent meaning – albeit open for interpretation. The content in the cards included the images used -and their organically perceived meaning. These were inspired by both the cultural understanding obtained from the previous case study and from the literature on Saudi culture. The physical design refers to the look and affordances of the method. In this case, the method was designed as a set of cards which is an affordance widely associated with games context. As such, this provided a playful tool to take pressure away from participants [122] and shift focus to the game rather than participants [35]. This element was intentionally chosen to address a cultural barrier impeding participants' willingness to express values and trust researchers [129]. The mechanism by which the 'rules' of the game was set, was also designed carefully to encourage participants reveal their autonomous self and transcend the collective self. The main element here was the 'projection'. Projective techniques work by projecting a participant's subjective experience onto an external stimulus [118,187]; typically this stimulus will be some kind of physical artefact, such as a collage [144], metaphorical cards [135], or painting and photography [191]. Projection is acknowledged in the literature as an efficient approach to facilitate participants articulation of subjective experience [32,118,187] and discussion of sensitive topics [118,135,144]. Projection proved useful due to the lack of intrusion [187], ability to access hidden content [144,187,191], and ability to depersonalize participants' responses [144].

Thus, overall, I demonstrated and argued for a careful and intentional design of the value eliciting method used with participants, a goal cannot be achieved with a prior understanding of their cultural context. The findings of the study, indeed, revealed an enhanced overt and implicit articulation of values, a wide range of nuanced values and a clear distinction between participants' own values and their cultural values. Thus, this work contributes to value eliciting methods by proposing and demonstrating the incorporation of the cultural factor in the development of such methods.

### **8.3.3. Designers: Designer-Centered Communication of Research Deliverables**

Another step towards integrating culture in the design process is the communication of the research findings to the design team. However, due to the nature of the qualitative data gained from the field as fragmented and not easy to share [163], it is a challenging task to effectively communicate it. Thus, the main concern in this step is:

*How to communicate all the qualitative data and the cultural understating gained in the user research to the rest of the team effectively and efficiently?*

The third case study addresses this question. In **Chapter 6**, I discussed how the communication of the research findings to the wider design team has been acknowledged as one of the difficulties of conducting a truly user centric design. This is commonly known as the researcher-designer gap where the researcher knows so much about the user and their context yet transferring that knowledge to the rest of the design team is a challenging task. Further, I

discussed an added difficulty when there is a cultural gap, where the design team does not share the same cultural background with the users.

Thus, I conducted an extensive review of the principles and methods suggested in literature to guide the communication process between researchers and designers. Based on this I identified a gap in that there no clear guidance into the selection of the communication technique and the application of the principles suggested. I argued that this creates a risk in perpetuating the researcher-designer gap as it is dealt with as a one-way communication process in which researchers have a full control over how to structure that communication. I argued for a more inclusive (designer-centered) approach in which designers' need are attended to in the communication technique. This is especially vital for cross-cultural designers in terms of *how to best communicate a culturally specific research to them*. In this regard, perhaps the only approach I found in literature addressing this challenge is that of the *double ethnography* approach [198]. This approach consists of two phases: learning about designers' need, then communicating the research outcomes to them in a manner tailored to their needs. However, there is little work in the literature demonstrating the effectiveness and the structure of this approach. Thus, adopting this approach in my work contributes a case study investigating the effectiveness of using the double ethnography approach. This addresses the lack of work examining the use and effectiveness of the double ethnography approach, despite being a promising approach for addressing a longstanding problem, the researcher-designer gap. Particularly, the case study I examine, is a culturally specific case, which contributes to the lack of literature regarding the *cultural* gap as opposed to the *functional* gap, which has been the focus of literature on the researcher-designer gap. Moreover, the case of communicating culturally specific research to a multicultural team of designers demonstrated practical steps of integrating culture in the design communication phase as a part of a culturally sensitive design process.

To start the first phase of the double ethnography approach, I conducted one-on-one interviews with 14 designers to learn about their needs and practices in terms of communicating the research outcomes (or as some call 'design requirements' in industry terms). Based on the data I proposed three levels of access designers need to have in order to understand user research: access to raw data (for credibility), access to the interpretation process (through conversation), and an access to the user experience (for immersion).

The significance of this finding, the 3-levels access is it provides a practical approach as both a user centered and designer-centered approach. This contributes to the literature on methods and principles in that it is more concrete deliverables of what to *provide* for designers (e.g. provide evidence of user research) as opposed to abstract frameworks of what to *expect* from designers (e.g. help designers establish empathy). Thus, I argue that such a practical approach is an essential step into integrating culture in design as it provides a progressive and deep access into the cultural context of the user, and thus address the researcher-designer gap, a longstanding dilemma in theory and practice.

The second phase of the double ethnography approach provided a case study of employing the method developed (i.e. Research Snippets) based on the findings from the first phase. The case study contributes to literature in HCI in that it provides guidance and practical steps to apply

already suggested principles in the literature into both the design and evaluation of communication methods. The design was guided by the three elements (credibility, conversation and immersion), though specifically identified from my case study, however these are critical elements addressing the gaps identified in the literature, mainly the practical aspect of the suggested principles. The evaluation of the method, a rarely discussed aspect in the double ethnography literature, demonstrated a combination of three criteria to be considered for evaluation: the first phase findings, the literature and the user research. This means that the findings from the second phase are compared against these three criteria, the more congruency found between the two side the more effective is the method.

#### **8.4. Designing for The Visibility of Saudi Women**

Responding to the formulated question of *how might we support Saudi women's self-disclosure in the digital media with minimum violation of their cultural values?* The study with the 18 transnational Saudi women revealed values, practices and pain-points associated with online self-disclosure. The overall narrative was that my participants strongly advocated and valued women's visibility and regarded that as a positive influential factor for the current cultural reforms in the country in respect to women's rights. However, in practice they expressed some pain points, with a focus mainly on their straggle for consistency between how they would appear online and offline, and how they would appear in public in their home country and abroad.

To bridge the gap between their views (advocacy for visibility) and their practice (refusing visibility), the data revealed what I called 'envisioned visibility', which is a set of conditions or criteria that would facilitate a more socially accepted visibility. To visualize the status quo and the aspired reality I created a table representing where each participant sits in terms of their current practices, accepted practices, and aspired practices that ultimately represent their individual values and views (despite a perceived conflict with their collective/cultural values). Collectively, from the table we can see the current practice was clearly 'complete invisibility' whereas the most accepted/desired practice was 'visible with a hijab' (i.e. head cover-not including the face cover). In between, different types of visibility were identified. From these, the table shows that 'audio visibility' was the most acceptable practice for participants in their current reality (noting that some them stated positively that things would change in a few years). Taking these insights forward, in the following, I discuss how they fit in the overall picture of the cultural context and design practices. This contributes to an understanding of designing for a culturally specific and under-researched group in HCI, and a demonstration of case study employing the previously discussed approaches. Mainly, I discuss the dilemma between two major positions: designing for perpetuating users' values or designing for social change (user empowerment), a dilemma has been acknowledged in feminist HCI literature [27]. This study contributes to the debate in HCI regarding this dilemma by expanding our understanding of how to deal with it in a patriarchal context. This also builds on the recent study of Sultana *et. al* (2018) [229] who investigated how to design for women's empowerment in in a deeply patriarchal society. The authors' case study was on rural Bangladeshi women, however the suggested some general strategies for designers to take when dealing with this dilemma. Applying these strategies, my study provides practical considerations for a specific

design space (self-disclosure online) with an under researched population (transnational Saudi women).










#### 8.4.1. Perpetuating or Challenging Values?

In light of adopting value/culture sensitive approaches, while taking the stance of design for social change, a question perplexes designers in this context is would they design for perpetuating or challenging the identified values and cultures? This is especially the case when we identify societal biases within these concepts. To answer this question, I take the stance that, value sensitive approaches, and design for social change are not (and should not be) mutually exclusive.

On the one hand, I would emphasize that the role of designers should transcend the mere making of good and valuable products and services. Rather, designers should be guided by a wider vision towards contributing to the societal development, including eliminating things like social inequalities. This is because understanding people current values and social structure would almost always reveal some societal biases that when embedded in the design of technology can perpetuate and magnify existing social inequalities [83].

On the other hand, designers should carefully account for people's values and not play the role of reform agents. Such a move could actually be endangering the people that designers are seeking to empower [229]. This is especially crucial with disempowered groups as the researcher's imposing a vision would create another bias to them. Indeed, several of my participants who expressed on the one hand the societal restrictions on them based on their gender, then on the other hand took the position that westerners or feminists might add another barrier imposing visions that are not congruent with Saudi women's values.

Thus, it is the responsibility of designers to identify these biases both coming from society and from designers themselves, with a vision towards eliminating them within people's values and cultures, "designing within the patriarchy" [229]. To illustrate this argument on my study of women's self-disclosure, I will apply this on the header of **Table 5.1** in **Chapter 5** which represents a spectrum of women's visibility.

Invisibility	Symbols (non-human, flowers ...)	Symbols (human emoji, avatars)	Name (name + accomplishments)	Writings (tweets, articles)	Voice (audio)	Physical / anonymized (no face)	physical / with niqab (no face)	physical / with hijab	Physical / no hijab
(blank, zero visibility)									

*Table 8.1 The header of the table used to illustrate each participant's position in terms of values and practices towards visibility*

This header illustrated the different levels of visibility that participants situated themselves on in terms of practice, acceptance, and preference. These three in most cases were not the same position. For instance, a participant's practice might be situated in the (zero visibility) box while her maximum accepted level would be (audio visibility), but if it was a society that was less (culturally) conservative, her position would be preferring to be visible physically with a hijab.



Now, applying the previous argument on this case, if I would take a position of fully attending to the users' culture and current preferred practices I would design for complete invisibility for Saudi women as most participant situated that as their most common and comfortable practice, free from societal judgment. This would certainly perpetuate the exclusion of women from the public sphere and situates the designer as a mere 'maker' of what the data shows. Conversely, if I would take the position of a reform agent, not attending to users' values and culture, I would perhaps take the extreme position on the other side of the spectrum, namely, designing for women's complete physical visibility (no hijab). While this might be my ultimate vision as a designer, I should not impose it on users if it is not congruent with their vision. Indeed, most of my participants have a vision of a future where they can be physically visible with hijab.

This means, understanding the nuances in between is actually the key ingredient for designing for social change while attending for people's culture and values. For instance, in the header above I was able to identify what accepted levels of visibility come in the gap between participants current practice and future vision. Within these different levels it was apparent from the table that most participants accepted audio visibility as a maximum level they can afford taking into account their current reality.

This was identified thus as 'the sweet spot'. It is the optimum point where a designer can design to challenge the current practices (in this study: zero visibility) while attending to what people perceive as a safe space to be part of that challenge. It is perhaps the best possible tactic to bridge the gap between participants practices and views, and thus create a trajectory with a vision of closing that gap. Finding the 'sweet spot' is a practical step towards apply the three strategies suggested by Sultana et. al [229] to design within the patriarchy: (i) empower within, not against, (ii) enable situated tactic, and (iii) design beyond the user. The main goal of finding the sweet spot within the data is to define a safe point to create a trajectory towards a cultural change (empowering the users). It is a situated tactic because it is shifting the focus from the identified problem (in this case, zero visibility) towards the tactics defined as socially acceptable but not yet commonly practiced. The sweet spot is by default considering the collective identity of the user as it seeks to define what is 'socially acceptable' and thus taking into account the cultural environment of the users.

Indeed, understating the core cultural values of my participants alongside the individual values of women and their perceptions of what makes for a safe space for visibility, all made it possible to identify a bias (visibility of elite women), a vision (visibility of everyday women without a face cover), practical design considerations to bridge that gap (auditory level of visibility, ephemeral media, and high achievement context), and the sweet spot where designer can both design for people's values and cultural change, illustrated in **Table 8.2**. This is also in line with the modernization movement introduced by the government in Saudi Arabia which is happening *within* Islam framework under guidance of the religious scholars [18]. This a strategic tactic to consider as such substantial reforms might backfire and cause social chaos[18].










Invisibility	Symbols (non-human, flowers ...)	Symbols (human emoji, avatars)	Name (name + accomplishments)	Writings (tweets, articles)	Voice (audio)	Physical / anonymized (no face)	physical / with niqab (no face)	physical / with hijab	Physical / no hijab
(blank, zero visibility)									
Designing for culture/values					Designing for the sweet spot	Designing for social change			

Table 8.2 Designing for the optimum point between value sensitive and social change positions

## 8.5. Challenges & Opportunities for Culturally Sensitive Design

This work contributes to cross cultural design work in HCI by both conducting field work within a sensitive setting in a real-world context and by developing a culturally sensitive approach (and methods) to guide the adoption of a more inclusive design of technology. Throughout this work, I have identified challenges and opportunities for a culturally sensitive design process, illustrated in the context of Saudi women's visibility in the digital media. This section highlights these challenges and opportunities contributing to further development of cross-cultural design.

### 8.5.1. Challenges

The notion of conceptualizing culture from the bottom up and integrating it throughout the research process in this project, though proved fruitful for gaining a deep understanding of users and their context, it require an expansive approach to delve deep into people's culture and values and spanned a rather long time. Applying this expansive approach in real world projects (i.e. commercial and industrial settings) might be challenging and less pragmatic in terms of time and resources, a typical problem in academic work within HCI [213]. Additionally, on reflection, I believe this would not have been possible without my unique position as both a cultural insider and (to some extent) outsider. In practice, not every project would have that kind of researchers, and particularly in indigenous populations it might be difficult to find a researcher with that position.

Another challenge is that despite constantly arguing for acknowledging the concept of culture and conceptualizing it early at the design process, this endeavor might not be achievable without studying only one specific segment (group) of that culture. It is the designer's responsibility to clearly identify how that segment can be a lens to the overall culture by identifying both their specific traits and their "core" cultural values. Finding a group that is more articulate about these two dimensions might not always be available.

Additionally, even within that availability there is a high possibility of inaccurate data resulting from difficulty to distinguish between the group specific traits and the overall cultural traits they draw on. This was clear in my data where the concept of *pluralistic ignorance* was vivid in the data. This concept refers to a phenomenon where majority of people falsely perceive a social norm as desired by their society, which in actuality is not [154].

For instance, my data revealed that all participants supported women's visibility, yet all believed that others do not support it and will negatively judge anyone who is physically visible. At a first glance, this can be described as a pluralistic ignorance. However, two factors made me eliminate this possibility and not consider this concept as an accurate description of the findings. First, I established an understanding about this group as 'transnational' and representative of the social change in the country. Thus, their perception of others judging them is more likely to be related to the overall society and other transnational people. Second, I investigated studies on supporting women's right and gender equality, the result is that there is a clear difference between men and women as men are less supportive than women these aspects [176,178,240,267]. As such, while referring to others to be more likely to judge them, they were referring to the overall society, particularly the males, and not those who identify as both 'females' and 'transnational'.

Therefore, defining such inaccurate concepts that seem on a surface level as descriptive of the findings can be easy trap to fall into when focusing only on one segment of the society. This fallacy however can be detected by establishing a deep understanding of that group and their overall cultural background. This provides a crucial consideration for cross-cultural designers to be attentive to. Because if the concept of pluralistic ignorance is being mistakenly considered in the design of new technologies, it will lead to providing solutions for the wrong problem. For instance, in my study, if we mistakenly consider pluralistic ignorance is the right description of this case, we would design with an assumption that everyone advocates women's visibility, including those who do not identify as 'transnational women'. The design role thus is to make this advocacy public and raise awareness about it to encourage women to be more comfortable disclosing themselves. Whereas, based on the discussion above, this assumption is completely false and would make us lose sight of the actual problem.

A final challenge I identified was relating to communicating culturally specific research to a multinational team of designers. Adopting the double ethnography approach though proved fruitful, resulted in rich data with varied views and practices. Partially, this is because the designers I recruited came from different backgrounds and companies. The findings, nonetheless, yielded general overarching needs of designers coming from different points of views which makes them versatile and applicable to other contexts. Thus, other studies applying the principles identified either by using the same method (the research snippets) or developing new method can test and build on this study.

### **8.5.2. Opportunities**

I have discussed in the first case study that a transnational population proved invaluable for cross-cultural design as a culturally fluent segment of the society which facilitate learning about the overall culture. Taking this argument forward, there is an opportunity for cross-cultural design to either consider transnational populations in their cultural studies, or to suggest another societal segment and discuss how why this segment provides a lens to the overall culture, in a similar manner to how I structured this in **Chapter 2**.

Regarding value eliciting methods, the Scenario co-creating cards which is proposed as a versatile method, I employed it specifically for my study participants and their culture. Since the method proved successful in my context, there is an opportunity for designers to utilize it

in other context, build on it and critique it for further development in VSD methods. Similarly, the research snippets were designed as a culturally specific method, yet their content can be modified for other contexts. This also provides an opportunity for researchers in design communication to build on it and critique it for further development.

Finally, the ideas generated in the ideation session by the design teams, and the combination thereof provide promising concepts contributing to promoting visibility and cultural changes in Saudi Arabia. These ideas provide an opportunity for future work building on this thesis to create actual products or services and test their relevance for real users.

### **8.5.3. Concluding Reflection**

Despite the fact this work started from an interest focused on the role of technology in creating cultural change, over the course of conducting the field work and analyzing the data the focus shifted into the role of us, researchers, in integrating human's values in every phase of the design process. I came to realize, the real challenge is not creating cultural change through technology, rather the challenge stems from incorporating the current momentum of the current cultural change to create a transformative trajectory that is based on the current affairs rather than the researcher's vision. That realization made it imperative for me personally to detach from my own vision and values and step into my participants world views in order to understand where they fall in that transformative trajectory and how to build on it. This would not have been possible without the qualitative nature of this work which allowed me as a researcher to acknowledge my subjective reality and interpretation of the world before attempting to create an objective interpretation of my participants reality. As a wider effect, this qualitative work was not a mere academic project contributing to the field of HCI, it was also a personal development journey that led me to question my decisions, my beliefs, my values and my reality as both an autonomous agent and a part of the collective.

## **8.6. Conclusion**

The ultimate vision and motivation behind this project are to contribute to the ongoing sociopolitical reforms regarding women's rights in Saudi Arabia. Focusing particularly on women's visibility in the public sphere and how the design of technology can promote that as a new norm. This work takes the stance that cultural change should take place within people's values and culture, not through coercing new norms nor defying existing norms. To achieve this, I have argued throughout the thesis for adopting a bottom up culturally sensitive and value sensitive approaches of design. I emphasized the significance of these approaches in all phases of the design process starting as early as from the formulation of the design problem, to conceptualizing the cultural context, to integrating the cultural understanding into all design methods and communication processes. Adopting these approaches not only helped me establish a deeper empathy and understanding but also created a genuine aspiration to design for this context. Conducting the three case studies revealed rich insights on how to design for this cross-cultural context. Such findings would not have been possible to obtain without all the previous foundation work, namely understanding the cultural context and developing a culturally sensitive method. [224]

I provided empirical and methodological insights into conducting a culturally sensitive design process. By following the double ethnography approach, I was able to establish a deep

understanding of both users and designers, and thus communicate to each group based on their own needs. In turn, this allowed building a bridge between these two groups without them necessarily having direct contact with one another. By doing so, I demonstrate and emphasize the role of design researchers to carefully establish and transfer the knowledge gained from the field to incorporate it effectively in the design process. Attending to the users' values and cultural context, I re-formulated the research problem based on the data gained from my participants. By doing so I demonstrated the difference between how I, as a researcher, framed the problem initially, and how the data, gained from my participants, made a significant shift to the formulation of the design problem. Thus, I emphasized the needs for HCI work, to explicitly articulate and justify this step before embarking on the design process. Whereas attending to the designers' needs, I conducted in-depth interviews to learn about their needs, experiences and practices in regard to how they would like to learn about the research to inform their design decisions. Since most designers typically do not have direct contact with end users, I aimed at understanding their needs in order to establish a bridge to effectively expand their understanding and empathy with users.

Responding to the understanding established with the two groups, namely users and designer, I developed two methods, both can be classified as communication methods, although they have different purposes. I demonstrated and emphasized the need for design communication methods to be tailored to the target group and purpose of communication in order to "speak their language". As such, to speak the user's language, I developed Scenario Co-Creating Cards, a culturally sensitive method designed especially for my target group based on a previous study to understand their cultural context. This has successfully provided an implicit approach to elicit a broad range of values from a population for whom the articulation of values might be expected to be difficult. Further, to speak the designer's language, I developed Designer-Centered Research Snippets. As the name suggests, this method is developed based on an initial interview with designers learning about their needs and incorporating these in the design of a method to communicate key aspects of the research in the form of 'digestible' snippets. The method proved successful in engaging designers and allowing them to both understand and generate a wide range of design concepts relevant to the users and their cultural context. Both of these methods are versatile and can be used in other contexts by changing the content and images to adapted to different research projects. It is my intention that this work will assist VSD to become increasingly inclusive of a range of groups and cultures going forwards, by more effectively responding to their underlying values.

Finally, applying these methods, and the overall culturally sensitive approach, in the context of the visibility of Saudi women in the digital media, provided critical insights into the role of design in taking part in the creation of cultural change. I demonstrated how understanding the views and practices of these women is a key step for designers to consider in order to create safe digital spaces for women's visibility. By doing so, I introduced the notion of designing for "the sweet spot", a specific spot in a spectrum between users' practices and vision, which represents the most 'currently' accepted practice which could lead to bridging -what I called- the view-practice gap. Further, the visualization of the spectrum not only facilitate detecting the "sweet spot" but also helps designers locate their own vision on the spectrum and their

users' vision, which demonstrate they are not always the same. Such a process is critical for value sensitive approaches and feminist approaches to design as it makes explicit which points of the spectrum would be classified as 'imposing' designer's vision, and which points are classified as mere 'passively' responding to users' values which could led to perpetuating social biases. [21]

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## 10. Appendices

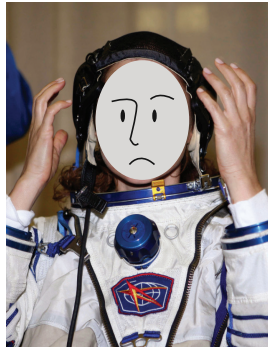
### 10.1. Scenario Co-Creation cards

Below are pictures of the full deck of Scenario Co-Creation Cards.



## 10.2. Research Snippets

Below are the cards used representing the “Research Snippets” where each card has two faces: On one face there is a quote of two from the data, on the other, there is a visual representation of interpreted parts of the research related to the quotes.



Lack of appreciation  
for women's achievements

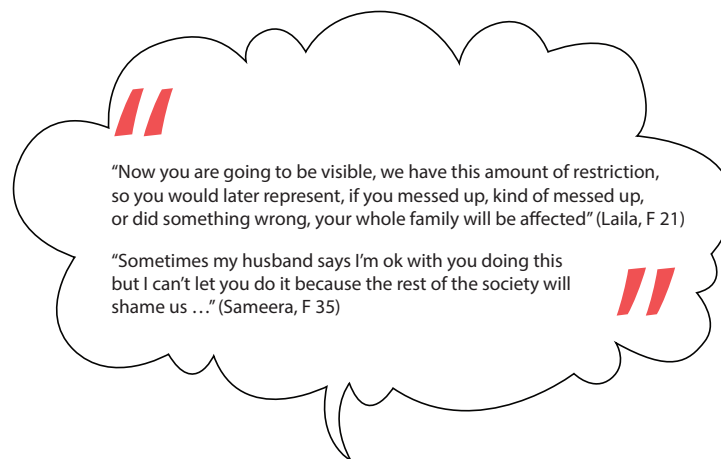


Lack of visibility of  
women in media (& public)

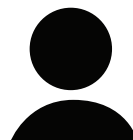


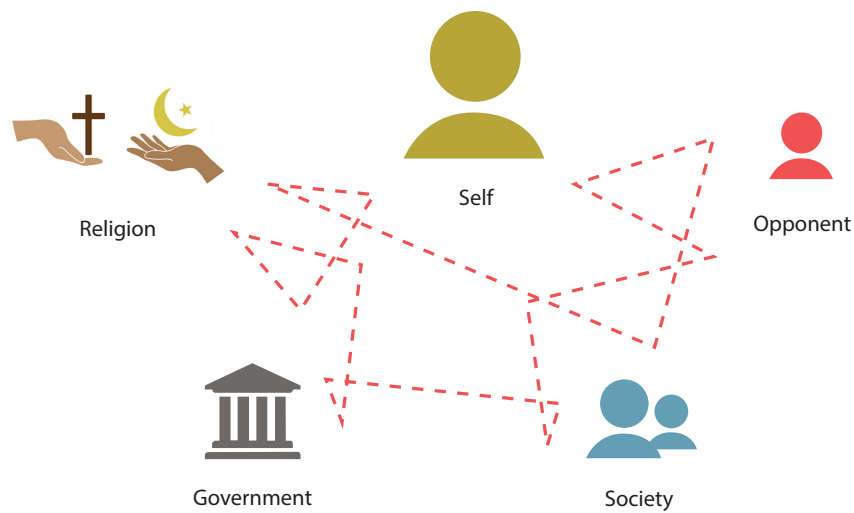
Lack of self-disclosing  
among women

**This is a piece of our research findings.  
Can you guess what it represents?**



This is a real quote.  
Think of who would say this quote, in what context ...?

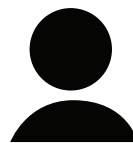


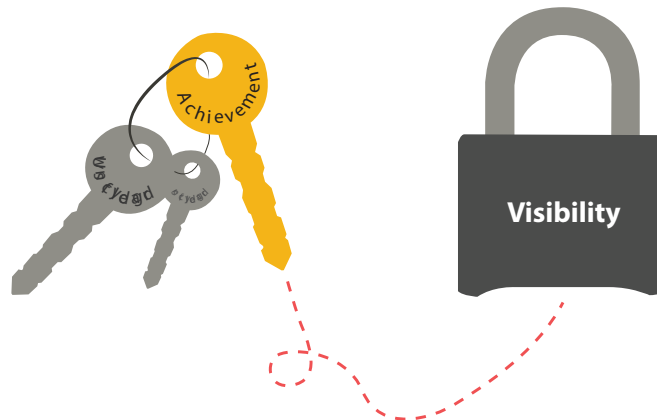


**This is a piece of our research findings.  
Can you guess what it represents?**

“I want the change strongly... We are tired of the life of hypocrisy where one lives 100 different lives but can't live his own [desired] life ... everything in our society, every category of your life, family, school, tribe, city, state. All of them are expecting specific things from you. All of them are creating molds for you and want you to stick to, and you [might] not fit so you can't squeeze yourself in more than that, just to satisfy all of them... so social media [can be] the only opportunity to vent.”  
(Dalia, F 27)

This is a real quote.  
Think of who would say this quote, in what context ...?





**This is a piece of our research findings.  
Can you guess what it represents?**

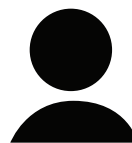
//

"I would only use my picture if I made like a great discovery or something like that, so I would deserve to be there ..."  
(Ahlam, F 22)

"This is a bit confusing, I mean, I do not know, it all depends on why I would be visible, if it is something nice and honorable, I would, but if it is just something regular no I would not [want to] appear [in media] or something ..."  
(Tahani, F 29)

//

This is a real quote.  
Think of who would say this quote, in what context ...?





**This is a piece of our research findings.  
Can you guess what it represents?**

“

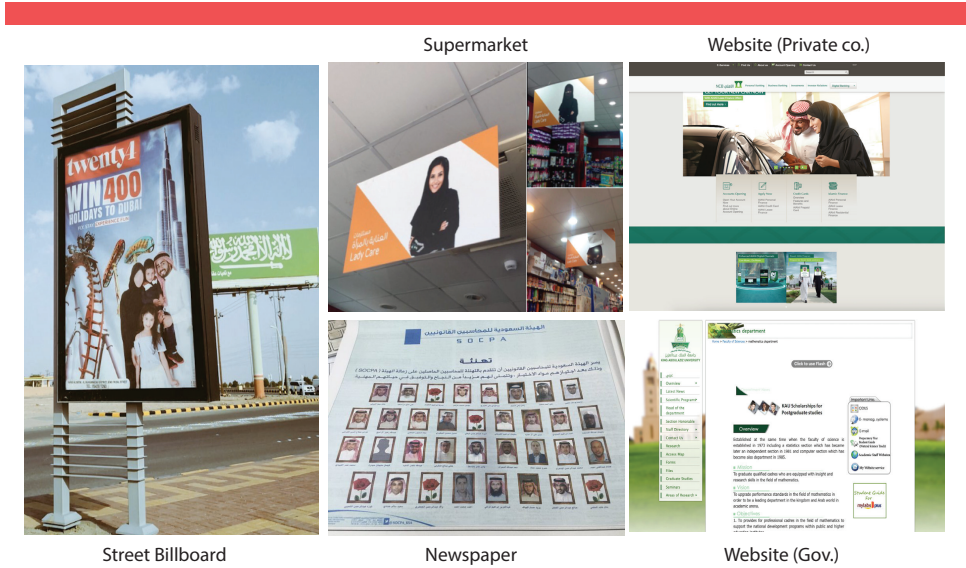
"I feel that [women's visibility] is normal now, this subject has become more relaxed especially in the recent period. Many academics and many in the Shura Council are not veiled or covered. It is becoming more and more acceptable that that women just wear the veil [with no niqab]."  
(Thamar, F 28)

”

This is a real quote.  
Think of who would say this quote, in what context ...?







**This is a piece of our research findings.  
Can you guess what it represents?**

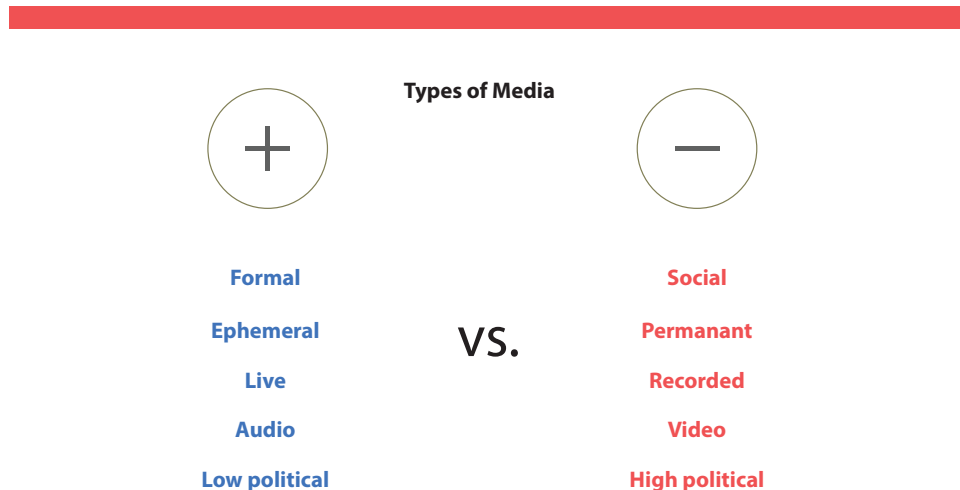
“

“I love to see these [Saudi women in media], I'm not against women being visible. But I wouldn't [want to] force them to, ... no way ... I really feel happy when I see that Saudi women started to appear [in media], they were closed before, if one appears for example, 'oh look at what she is doing!'; you get my point?, I mean, before one appears uncovering her face, 'oh stop talking to her forever!!' you know what I mean?, [but] for me with my current personality and my life now, no, I would not like to appear [in media].” (Wafa, F 24)

”

This is a real quote.  
Think of who would say this quote, in what context ...?

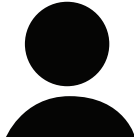




**This is a piece of our research findings.  
Can you guess what it represents?**

**//** "Appearing in a government [website] would be less criticized [than a personal one], if my photo is publicized, it is not me who put it there (laughter), but blogs are more personal." (Kareema, F 21)

"I do not think [I'd post a photo of me or a video of you talking in Instagram], maybe audio only as I said. I don't think people have any interests in seeing how I look like, the content [I post] is what matters here, my appearance doesn't matter ... if it is showing myself just to say something, if feel this is kind of showing off, then people might drift to other topics other than what I am talking about ... so I prefer audio, and not to show myself." (Abrar, F 23) **//**



This is a real quote.  
Think of who would say this quote, in what context ...?