

# **Beyond Universal Gamification: Exploring Persian Gamification Strategies**

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## ABSTRACT

### Beyond Universal Gamification: Exploring Persian Gamification Strategies

Hosna Salimi

The variety of culture across the world, leads to the existence of distinctive values and dissimilar behavior among people. Taking this into account is crucial in the interaction design process. This research aims to integrate the unique values of a cultural background into the design of persuasive technologies, specifically applications and websites. Persuasive technology is where persuasion and computers overlap. It is where through the means of technology, we can help people improve their lives.

This research targets Persian culture, and investigates its notable traits through practical and theoretical research methods. It connects the findings to the theories of motivation and gamification, and brings up new motivational strategies for an exercise running/walking app. Exercise was chosen as the theme of the work since it exemplifies a domain that many people require extra motivation to get to and it has been one of the highly in-demand fields in the area of gamification.

This research evaluates the amount of effectiveness of the Persian motivational strategies on various audiences with direct and indirect connections to Iran. It also examines the reflections of people who have no connection to Iran at all. Throughout this process, the goal is to validate whether or not gamification can exist in different cultural registers, and if so, defines the parameters of Persian gamification.

*Keywords: interaction design, experience design, persuasive technology, gamification, culture, cultural gamification, Persian gamification*

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# TABLE OF CONTENTS

<b>Table Of Figures</b> .....	vii
<b>Chapter 1: Introduction</b> .....	1
<b>Chapter 2: Theoretical Framework</b> .....	5
2.1 Cultural Diversity Matters .....	5
2.2 The Engagement of Interaction Design and Culture.....	8
2.3 Persuasive Technology .....	9
2.3.1 Persuasive technology as tool .....	11
2.3.2 Persuasive technology as a Medium .....	14
2.3.3 Persuasive technology as a Social Actor .....	14
2.4 Gamification and the Octalysis framework .....	16
2.5 Theories of Motivation and Behavior Change.....	22
<b>Chapter 3: Methods, Methodology, and Creative Process</b> .....	26
3.1 User/Culture Research: Getting to Know Persian Culture .....	27
3.1.1 Expert Interviews .....	28
3.1.2 Natural Observation and Literature Review .....	29
3.1.3 Situatedness.....	31
3.2 Creation: Putting the parameters into practice.....	33
3.3 Evaluation: Testing the Parameters .....	33
<b>Chapter 4: Design-Research: Persian Gamification Parameters</b> .....	38
4.1 Poetry, Mystery.....	38
4.2 Family .....	39
4.3 Hospitality.....	40
4.4 Home.....	40
4.5 Education .....	41
4.6 Cleverness .....	41
4.7 Helping Others .....	41
4.8 Social Status.....	42
4.9 Invention of Traditions .....	43
4.10 Complications .....	44
4.11 Dualism.....	45
4.12 Theism.....	46
4.13 Love .....	46
4.14 Inner Need For Collective Happiness.....	47

4.15 Heroism.....	47
4.16 Summary.....	47
<b>Chapter 5: Design-Creation: five mini applications .....</b>	<b>50</b>
5.1 Benchmark on existing applications .....	50
5.1.1 Run keeper .....	50
5.1.2 Zombies, RUN!.....	51
5.1.3 Nike+.....	51
5.2 Five mini applications.....	52
5.2.1 Application One: Finding Routes .....	53
5.2.2 Application Two: Collective Activities .....	55
5.2.3 Application Three: Sharing Feelings .....	56
5.2.4 Application Four: Teamwork! .....	58
5.2.5 Application Five: Caring! .....	59
<b>Chapter 6: Design-Evaluation: Testing the Parameters and Getting to know the Personas</b>	<b>61</b>
6.1 Group 1 .....	64
6.2 Group 2 .....	66
6.3 Group 3 .....	67
6.4 Summary of the tests.....	68
6.7 Participatory approach in the exhibition .....	70
<b>Chapter 7: Conclusion .....</b>	<b>73</b>
<b>References .....</b>	<b>76</b>

## TABLE OF FIGURES

FIGURE 1 - SHWARTZ CULTURE THEORY ADDED FROM THE CHAPTER "GAMIFICATION AND CULTURE", FROM THE BOOK THE GAMEFUL WORLD.	7
FIGURE 2 - MOST COMMON DESIGN AFFORDANCES USED IN THE DESIGN OF PERSUASIVE TECHNOLOGIES – ADDED FROM THE ARTICLE (ORJI & MOFFATT , 2018).	11
FIGURE 3 - THE MOST PREVALENT ELEMENTS OF GAMIFICATION DESIGN – THE IMAGE IS A SUMMARY OF THE POINTS FROM THE BOOK, THE GAMEFUL WORLD (KHALED ET AL., 2014)	19
FIGURE 4 - EIGHT CORE DRIVES OF OCTALYSIS FRAMEWORK – ADDED FROM THE BOOK ACTIONABLE GAMIFICATION (CHOU,2014).	20
FIGURE 5 - INTRINSIC AND EXTRINSIC MOTIVATION IN THE OCTALYSIS FRAMEWORK - ADDED FROM THE COURSE GAMIFICATION & BEHAVIORAL DESIGN: THE OCTALYSIS FRAMEWORK (CHOU, 2014)	23
FIGURE 6 - BLACK HAT AND WHITE HAT GAMIFICATION - ADDED FROM THE COURSE GAMIFICATION & BEHAVIORAL DESIGN: THE OCTALYSIS FRAMEWORK ( (CHOU, 2014).	24
FIGURE 7 - SCHWARTZ CULTURE THEORY – A SUMMARY OF THE SCHWARTZ CULTURE THEORY(SCHWARTZ, 2006)	28
FIGURE 8 - THE DESIGN OF THE WEDDING PRESENTS FROM THE GROOM FAMILY. (IRAN TRIP – TAKEN BY THE RESEARCHER)	30
FIGURE 9 - PERSIAN FAMILY GATHERING WITH MUSIC AND POETRY, AND PARTY DECORATIONS. (IRAN TRIP – TAKEN BY THE RESEARCHER)	31
FIGURE 10 - TYPES OF SERVING THE FOOD. (IRAN TRIP – TAKEN BY THE RESEARCHER)	31
FIGURE 11 - PERSIAN GAMIFICATION PARAMETERS.	32
FIGURE 12 - EXERCISE SHEET THAT PARTICIPANTS FILLED AFTER THEIR WORKOUT.	35
FIGURE 13 - FIRST PDF, INSTRUCTIONS OF THE PROJECT AND THE FIRST QUESTIONS.	34
FIGURE 14 - FEEDBACK SHEET THAT WAS SENT TO PARTICIPANTS TO GIVE FEEDBACK TO.	35
FIGURE 15 - FEEDBACK OF OTHERS ON THE PARTICIPANT'S EXERCISE.	36
FIGURE 16 - FINAL QUESTIONS OF THE TEST.	37
FIGURE 17 - PERSIAN CULTURE AND SCHWARTZ THEORY (SCHWARTZ, 2006).	48
FIGURE 18 - POSITIONING IRAN IN SCHWARTZ CULTURE MAP.	48
FIGURE 19 - CONNECTING PERSIAN CULTURE TO THEORIES OF MOTIVATION BY (CHOU,2014), (RYAN, DECI, 2000).	49
FIGURE 20 - ROUTE FINDING APPLICATION (1)	53
FIGURE 21 - ROUTE FINDING APPLICATION (2)	54
FIGURE 22 - COLLECTIVE ACTIVITY APPLICATION	55
FIGURE 23 - SHARING FEELINGS APPLICATION (1)	56
FIGURE 24 - SHARING FEELINGS APPLICATION (2)	57
FIGURE 25 - TEAMWORK APPLICATION	58
FIGURE 26 - CARING APPLICATION	59
FIGURE 27- GROUP 1 MOTIVATION LEVELS DURING THE EXPERIMENT	63
FIGURE 28 - GROUP 2 MOTIVATION LEVELS DURING THE EXPERIMENT	63
FIGURE 29 - GROUP 3 MOTIVATION LEVELS DURING THE EXPERIMENT	64
FIGURE 30 - TEST RESULTS(1)	69
FIGURE 31 - TEST RESULTS(2)	70
FIGURE 32 - EXHIBIT STRATEGY FOR SHOWING PERSIAN GAMIFICATION PARAMETERS	71
FIGURE 33 - THEORETICAL FRAMEWORK SUMMARY	73

## **Chapter 1: Introduction**

People today are becoming increasingly accustomed to using technology in their daily lives. Applications and websites accompany and assist them through every step of their day, from entertainment purposes such as sharing their photos on social media to more productive purposes such as tracking their health or logging in a workout. Consequently, technology can help people improve their lives in many ways. Fogg is regarded as one of the pioneers in this field who introduced the concept of persuasive technology which is designed to encourage people to improve their attitudes and behaviors in areas such as education, health, exercise, and productivity (Fogg, 2003). There have been a number of approaches developed to drive people's interest in an activity, including using motivational theories and applying game design elements to nongame contexts, an area that is called gamification.

The topic of gamification has gained in popularity since 2011 (Deterding et al., 2011). Digital assistants (i.e. productivity apps, health apps, etc.) often incorporate gamification to encourage people to accomplish mundane tasks. The problem is that many applications are developed only by adopting existing western gamification mechanics and design strategies. According to human computer interaction researcher Winschiers-Theophilus (2009), western values are “believed to be universally-valid” and design methods are often left unquestioned and validated as effective when taken shape in the developed world (Winschiers-Theophilus, 2009). But seeing design as a fixed technique is rather contradictory to design’s nature. Design is concerned with the wicked real life with very different layers and branches that are ongoingly changing and entering new hatches. Design should be a flexible approach and integrate different ways of thinking based on the audience’s lifestyle (Kamppuri, 2011a; Latour, 2008).

When it comes to persuasive technologies, it’s vital to take into account that not everyone is motivated similarly. People with different cultural backgrounds are motivated differently and can have various experiences with a product (I. Lee et al., 2008). We can gain a better understanding of this by looking at some real-life examples. Often, people serve food at parties based on the norm that runs between their peers. The differences become evident when a stranger attends and sees how different their lifestyle can be. For instance, for some cultures, sitting around a table and enjoying a calm meal is the norm, while for others, sitting on the ground, sharing food, and appreciating the warm chaos of the meal is expected. Similarly, by generalising that example,



some cultures are more competition-oriented and people want to stand out from the crowd, while others prefer to blend in with the crowd. All media target their own cultural audience, whether it is movies, advertisements, books or stories. It is for this reason that a very successful person in American movies is an exceedingly common theme compared to others. The focus of this research is that persuasive technology needs to target its audience as well, because if it matches the norms, it will be much more effective.

Cultures are a constitution of values and the basis of our behavior and our actions. It is why we enjoy some activities and despise some (Hofstede, 1928; Maehr, 1974; Schein, 1991; Wyer et al., 2013). It is why some behaviors are considered respectful in one culture and disrespectful in another. Cyr et al. had done a study that revealed users from different cultural backgrounds perceive mobile commerce apps differently and have differing preferences at the various levels of design (Cyr et al., 2009).

For example, in mastery-focused and individualistic cultures such as United States, achievement and competition drives people's excitement. Therefore, when designing an app such as an exercise app, competition can be one of the main motivational strategies. Is it possible to use the same strategy in a country that puts a greater value on groups and social environment than on individual accomplishments? In which people prefer group achievements over competition.

Each cultural background should be researched and designed for based on their centric values (Khaled et al., 2014). Points, badges, leaderboards, rewards, and other proposed mechanics can be used in the design but we must first get to know the culture and come up with new mechanics altogether!

No matter how exotic the ideals of an unfamiliar context may seem, we cannot simply apply gamification mechanics and design strategies from one culture to another. As Papanek (1972) states in their work, quoting Sanders and Stappers, we cannot "just move objects, tools, or artifacts from one culture to another and then expect them to work" (Papanek, 1972; Sanders & Stappers, 2008). Papanek's example on Japanese tatami-covered floor describes this well. It is curated for a Japanese style of living which is walked on by clean bare feet. In an American home where the norm is to walk around with "leather-soled shoes and spike heels which destroys the surface of the mats and carry much more dirt into the house" (Papanek, 1972), using the tatami-covered floor not only does not make sense, but it degrades the elegant Japanese culture

of using tatami-covered floor. In return, a Japanese styled house consists of “fragile sliding paper walls and tatami give the house definite and acoustical properties which makes a piano, designed for western homes and concert halls, not a good option to be introduced into a Japanese home without reducing the brilliance of a Rachmaninoff concerto to a shrill cacophony” (Papanek, 1972).

Khaled refers to Schwartz's theory in her chapter of the book *The Gameful World*, about gamification and culture, stating “seven cultural orientations giving rise to three cultural value dimensions” (Khaled et al., 2014). The value types are placed on opposite sides of each other, emphasizing the idea that if a country's cultural value leans to one side, it must de-emphasize the one opposite.

As Athinen states in their research when examining and comparing Fins and Indians using a wellness mobile app, even the meaning behind concepts such as *wellness* is dissimilar between people with distinctive backgrounds. He realized they had different goals, different ways of seeing things, and different values. With all that, considering cultural factors in website design “can increase user satisfaction and work efficiency” (Ahtinen et al., 2008).

This being said, there is still a lack of focus on topics in the cultural design field other than identifying aesthetic stereotypes such as national shapes or colors and information design. It should be expanded into other major aspects of a product (i.e. “invisible and intangible” (K.-P. Lee, 2004)) such as interactions or motivational strategies and gamification methods used in a persuasive technology (K.-P. Lee, 2004). The focus of this exploratory research is looking at the design of motivational digital products with a different outlook on the research design process and that outlook is culture. As discussed above, there is little research on gamification from non-western perspectives. The studies that have been done are mostly about incorporating culture into web design concentrating on user interface, and the products' usability, with little attention to motivational strategies. I aimed to bridge this gap by exploring how to design motivational strategies for people from non-Western cultures, focusing on Iranian users specifically. Taking a cultural approach not only makes it more inclusive but also breaks the box filled with previously existing Western dynamics and strategies that make it hard to think beyond. In other words, designers of other nationalities can propose new ways of thinking outside of this pre-made box filled with gamification mechanics.

Through research-creation methodology and using my own “situatedness” (Anderson, 2020) as a Persian, I investigated the unique qualities of Persian culture and integrated them into motivation theories to create a set of Persian-based persuasive strategies. I proposed new provocative procedures of using gamification elements for five mini exercise applications, that target a Persian audience, to bring into life what I call **Persian Gamification**. To develop this further, I came up with a testing method to evaluate the effectiveness of those strategies on users with both direct and indirect connections to Iran. The idea was to get to know the audience through empirical research and examine how the new design strategies will work on people of other nationalities.

Throughout this process, my goal has been to explore answers to the following question: **If persuasion and gamification can exist in different cultural registers, what should gamification designed for Persians include?**

## **Overview of Chapters**

**Chapter two** will look at the theories of culture, persuasive technology, gamification, motivation, and behavior change that had been used as a foundation for this research.

**Chapter three** goes through the research methods and the steps taken to reach the parameters of Persian Gamification, which is broken down into three parts: Research, Creation, Evaluation.

**Chapter four** goes through the findings of the research section.

**Chapter five** explains the creative part of the project and the five mini applications designed.

**Chapter six** takes us through the tests and the results.

The research concludes in **chapter seven**.

## Chapter 2: Theoretical Framework

### 2.1 Cultural Diversity Matters

*“All cultures constitute so many somewhat distinct answers to essentially the same questions posed by human biology and by the generalities of the human situation (Hofstede, 2011).”*

According to Ernst Cassirer in his book *The Philosophy of Symbolic Forms*, culture is a symbolic system and human beings are symbolic animals (Cassirer, 1963). Indeed, what makes us human beings different from animals is the way we communicate meanings and knowledge through symbols such as language, garments, behaviour, etc. These values and attitudes, meanings and cognitive styles, belief systems and communication styles are what differentiates a society from the other (Hofstede, 1928; Plocher et al., 2012; Schwartz, 2006; Williams, 1979). When it comes to one society, the structure and the system of the mind of its members are somewhat similar to each other.

Social Psychologist, Geert Hofstede illustrates the concept of culture using the analogy of computer software (Hofstede, 1928). He conceives culture as “the mental software for humans” (Hofstede, 1928), which is the main factor that we live, think, feel, and act in certain ways. In fact, depending on the geographical land that each person lives in, the social environment that they grow up in, the period of their lifetime, the government that has the authority over their landmarks, etc. their *mental program* and the person’s culture takes shape and accordingly becomes very diverse. Schwartz, another social psychologist and cross-cultural researcher explains this in another way. He elaborates that there are seven cultural orientations, resulting in three dimensions of cultural value (Khaled et al., 2014; Schwartz, 2006). The first one being *autonomy versus embeddedness* (Schwartz, 2006), addresses the amount of what Hofstede calls *collectivism and individualism* present in a culture (Hofstede, 1928). In the autonomy focused cultures people are concerned about their own values, needs, and success. It is based on choosing their own path and succeeding as an individual. Contradictorily, in cultures with an emphasis on embeddedness, the meaning of life is based not on individual endeavors but on the collective groups’ shared goal. With social relationships being at the center of these cultures, they aim for group success, and thrive for the values and traditions structuring their community.

The second dimension of Schwartz's theory is *egalitarianism versus hierarchy* (Schwartz, 2006). Similar to Hofstede’s *power distance dimension*, an egalitarian culture sees people as equal

members of society and strives to equalize social justice and improvement for the welfare of others. Quite the opposite, hierarchical societies are defined by unequal distribution of power and people are expected to abide by the rules commanded by those in authority and wealth. Lastly, the third dimension (similar to Hofstede's *long term versus short term orientation*), addresses the *harmony versus mastery based societies*. In harmony-based societies, people are more appreciative of what they already have rather than trying to change it. Whereas, in a mastery focused culture people are ambitious to improve and constantly striving to bring what they have to a higher level.

Hofstede's theory has two more aspects to it. Firstly, *uncertainty avoidance* which is about the amount of ambiguity about the future a society tolerates (Hofstede, 1928). For example, in some parts of the world societies are used to not having sufficient information about their future because of the instability of their country, on the other side of the spectrum, people cannot tolerate ambiguity. They thrive for planning, are comfortable with stability, and knowing exactly what is going to happen in their futures. Secondly, the other dimension is *masculinity versus femininity*, in which gender roles matter in their degree of involvement in different tasks (Hofstede, 1928).

Each culture, when plotted on a map (figure 1), can be seen to be close to one or more of these dimensions to a certain extent. It is important to take note that if emphasis is placed on any given value type, it necessarily de-emphasizes the polar opposite value. For example, in a country like China where hierarchy is emphasized, egalitarianism is definitely deemphasized, and vice versa. The United States in which people enjoy competition and standing out is near the mastery diagonal of the culture map and stands opposite to Egypt, for example, which is mostly towards the embeddedness diagonal and far from the mastery point (Khaled et al., 2014). Given how distinctive people's values and preferences are, how can we design the same motivational strategies in an assistive technology for those whose values are on the opposite side of the spectrum?

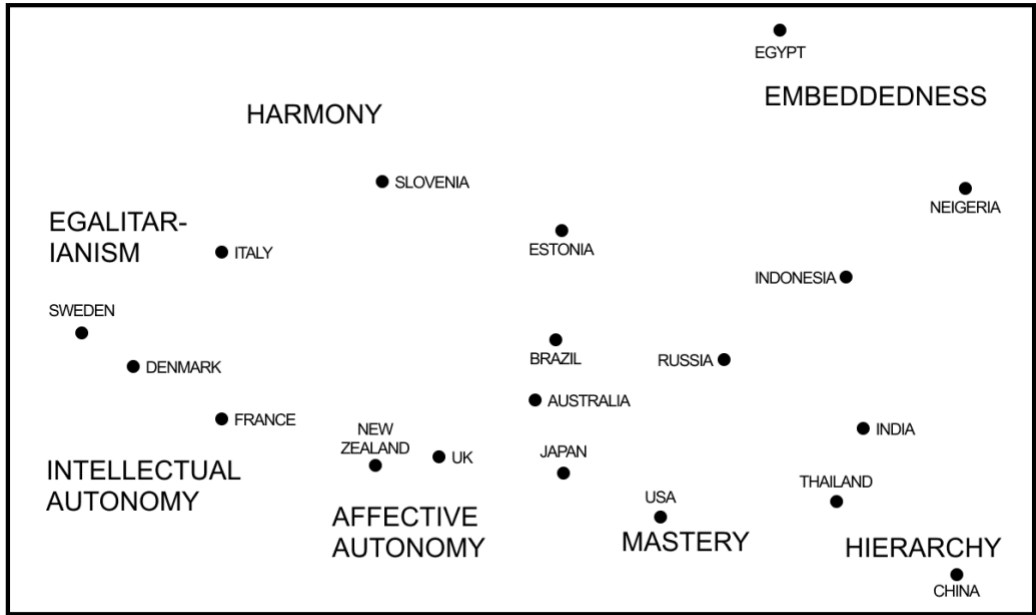


Figure 1 - Shwartz culture theory added from the chapter "Gamification and Culture", from the book *The Gameful World*.

The *monocultural* perspective believes that culture belongs to people deemed superior to others, and that others need to change in order to be recognized as civilized or cultured (H. Salimi, personal communication, 2020). Colonization occurred as a result of this perspective. Indigenous people had been regarded as lowbrow and uncultured by colonizers and had to look like them i.e. assimilate if they wanted to be civilized or considered worthy of being respected. We can contrast this point of view with multiculturalism, wherein intercultural relationships and dialogues between civilizations shape our world. It is impossible to consider anyone in the world as uncultured or lowbrow when seen from this perspective. This approach is one of the key foundations of this work. Where everyone is valuable because of their differences (H. Salimi, personal communication, 2020; Schultz et al., 2018; Sue DW, 2004; T.C., 1993; Tuck & Yang, 2012).

## 2.2 The Engagement of Interaction Design and Culture

*“Rarely can a product achieve global acceptance with a ‘one size fits all’ solution” (del Galdo & Nielson, 1996).*

In today’s world, we are surrounded by interactive digital products every day. Websites, applications, games, etc. are now being used all around the world and therefore designing them requires an understanding of a multitude of perspectives (Sato & Chen, 2008). There has been a growing body of research indicating that the integration of culture into interactive product design has a great deal of value and should be explored further (Alexander et al., 2017; Hsieh et al., 2009; Kamppuri, 2011b; Khaled et al., 2014; Lin et al., 2009; Marcus, 2002; Winschiers-Theophilus, 2009; Young, 2007). It started with del Galdo and Nielson who scrutinized the importance of globalization and incorporating cultural differences into the design process. They stated that if a product is to be used in the global market, it has to be customized for each cultural orientation and customization does not just mean translation of serves the language but also means the revision of “user interface characteristics in accordance with cultural models of how local people work and communicate , as well as the adaptation of usability methods to specific countries” (del Galdo & Nielson, 1996; Winschiers-Theophilus, 2009). For instance, McDonalds the same burger everywhere in the world. The branches, however, can vary in design, service, etc., based on country norms. Otherwise, there is a possibility that the deeply ingrained cultural differences may lead to a lack of understanding and misconnection to the products (Sheikh et al., 2009). The localization of a product goes even further. It involves tailoring the product to the needs of the target audience in a way that reflects their values and preferences (Horton, 2005; Young, 2007). On the opposite side, there is internationalization, which is about eliminating the culture specific aspect of the design and coming up with a *generic culture-neutral* universal language that works for everyone no matter what their cultural background is (Young, 2007).

As discussed previously, internationalizing persuasive technologies can alienate target audiences from their culture and product, which is not an effective strategy. However, if and when globalization and localization take into account the needs of the target audience, it leads to increasing the chances of success. Nonetheless, one of the main issues to be addressed in the process of integration of culture into design is “planning, design, and evaluation methods” (Sato & Chen, 2008) that is based on superficial solutions. One of the proposed solutions is using cultural models like Hofstede's as a basis for designing visuals and information structures. For

example, “a cultural group with high power distance orientation are looking for highly structured information presentation” (Marcus, 2002; Winschiers-Theophilus, 2009).

However, in order to represent users' values and their true needs and preferences, it is imperative that the designers fully comprehend the target audience's culture, which is revealed in design strategies and design solutions (Winschiers-Theophilus, 2009). For instance, if the problem is that users need extra motivation to exercise, and the designer suggests that they join competitive group challenges as a design solution, it means that the designer understands that the audience they are designing for is competitive and they are near the culture map's mastery diagonal. Alongside this, when designers understand their audience really cares about their family and wants to showcase to them, they can build competitive challenges between family members rather than those who are not as essential. Despite this, designers sometimes employ existing motivational strategies without understanding the culture behind them and simply because they believe these strategies will be successful because they have worked in another country such as the United States.

Ahtinen et al. argues that wellness application with motivational features have mostly risen in popularity in the developed countries, leading to the subscription of the design elements to a specific set of values and perspectives (Ahtinen et al., 2008). With other parts of the world adopting similar design mechanics, we are falling into the trap of adhering to the same values and goals of a culture we are not part of, and having other parts of the world left out. Khaled states this about the design of gamification systems and that it is important to align design strategies with culture because “If culture gives us rules for how to behave with others when gamification gives us different rules, we are faced with a values clash with potentially damaging results over the long term” (Khaled et al., 2014).

### **2.3 Persuasive Technology**

*“Today computers are taking on a variety of roles as persuaders, including roles of influence that traditionally were filled by teachers, coaches, clergy, therapists, doctors, and salespeople, among others. We have entered an era of persuasive technology, of interactive computing systems designed to change people’s attitudes or behaviors (Fogg, 2003).”*



“Captology”, a term coined by B.J. Fogg stands for *Computers As Persuasive Technologies*, and its focus is on the “design, research, and analysis of interactive computing products” that aim to help people change their attitudes or behavior in a positive direction (Fogg, 2003). Effective persuasive technology (PT) must be designed strategically in order to achieve a behavioural goal. (Lockton et al., 2008). The strategies are built through design affordances which leads to interactions a product facilitates and the actions users perceive as possible (Norman, 2004). Figure 1 shows the most prevalent affordances used in PT that promote healthy(Orji & Moffatt, 2018). Websites, mobile apps, chatbots, smart environments, and video games are among the technologies that use these affordances.

These affordances range from “*tracking and monitoring, feedbacks, social support and sharing, persuasive messages and alerts, rewards and points, goals, competition and leaderboards, customizations, praise, cooperation, virtual simulation, emotions and persuading images, progress, positive and negative reinforcement, suggestions and advice, etc.*”(Orji & Moffatt, 2018)(figure 2) They are based on the theories of persuasive technology and gamification which will be discussed in this section and the next. Diving deep into their fundamentals will help us familiarize with the reasoning behind why each strategy is employed and tailor them to the needs of our target audience for this research: Persians.

Computers are able to persuade by taking on three different roles: "tools, media, and social actors" (Fogg, 2003). Each of these forms is a staple of persuasive techniques and approaches persuasion differently. As we proceed through the following paragraphs, we'll elaborate on each role of captology.

Motivational Strategies/ Affordances	Studies with positive result	Studies with partially positive results	Studies with negative results or others	Total
Tracking and monitoring	27	4	3	34
Audio, visual, and textual feedback	19	3	6	28
Social support, sharing, and comparison	20	1	2	23
Persuasive messages, reminder, and alert	12	5	2	19
Rewards, points, credits	14	1	2	17
Goal and objectives	9	3	1	13
Competition, leaderboards, ranking,	10		1	11
Tailoring, personalization and customization	6	1	1	8
Praise	4	1	2	7
Cooperation and collaboration	4	1		5
Virtual rehearsal and simulation	4			4
Emotions and persuasive images	3			3
Progress	2		1	3
Positive reinforcement	2	1	1	4
Negative reinforcement	1	1	1	3
Suggestions and advice	2	1		3
Video-based persuasion	1			1
Not specified	6	2		8

*Figure 2 - Most Common Design Affordances Used In The Design Of Persuasive Technologies – Added from the article (Orji & Moffatt , 2018).*

### 2.3.1 Persuasive technology as tool

In their role as **tools**, persuasive technologies focus on simplifying the users' experience and making tasks easier to accomplish. There are seven types of persuasive technology in the form of tools listed by Fogg which will be discussed in this section. *(All the content of this section is sourced from B.J Fogg's Persuasive Technology book (Fogg, 2003))*

*Reduction or persuasion through simplification:* The simpler the procedure is, the more likely an individual is to use it. Extending on this, it naturally follows that, when complex tasks are simplified or monotonous tasks are automated, users are more likely to complete them. As an example, automating the laborious tax work we must do every year provides significant comfort for people and allows them to do it more quickly. In a similar vein, internet providers who

contact people and offer them to switch to their service should be aware that if they ask people to sign documents, fill out new forms, opt out of the previous service, and sign new ones, they are likely to decline. However, if they just get verbal approval over the phone, automate the steps, voila! There is nothing left to do for the customer to do and the rest of the work is already handled. When people find things difficult, simplicity motivates them to accomplish them.

*Tunneling or guided persuasion:* showing the correct path to people and guiding them through a predetermined step by step process is called *tunneling*. There are plenty of people who would trust somebody else to show them the right path instead of putting the burden on themselves. For example, they would get a personal trainer to get in shape. They enter a tunnel that they know nothing of, knowing they will have no control over the things they will experience. Taking this approach simplifies the user's journey and puts other people in charge of showing them "the content, possible pathways" (Fogg, 2003), and the kind of activities they will be engaged with. "In essence, the user becomes a captive audience member. If users wish to remain in the tunnel, they must accept, or at least confront, the assumptions, values, and logic of the controlled environment"(Fogg, 2003).

*Tailoring or persuasion through customization:* The purpose of this tool is to provide users with information that is relevant to them rather than generic information. Studies have shown that people are more likely to respond to information that is tailored to their specific situations, needs, pain points, characters, etc. As an example, when beauty applications suggest users products that are suitable for their specific skin types, as well as based on their spending history that match those products with their budget, the user will be more likely to be interested in that product and buy it. Using this tool shows how imperative it is to tailor products to users' needs as well as why targeting cultural differences can be an effective persuasion tool.

*Suggestion technology:* "An interactive computing product that suggests a behaviour at the most opportune moment. To be viable, a suggestion technology must first cause you to think, "Should I take the course suggested here? Or should I continue along my current path?"(Fogg, 2003)

When presenting a change, it is key to offer it at the right time. For instance, people tend to accept alternative ways to reach their goals when faced with a difficult situation and continuing on the current path doesn't make sense anymore. These moments can range from when they are in a good mood to them wanting to return a favor and feel "indebted", when they've made a

mistake, if their requests are declined, etc. Finding the best timing is not limited to the ones mentioned but ranges many things. It can have negative impacts as well, because sometimes it meets one need but contradicts another. For instance, when one is hungry one might be especially enticed by food that looks delicious, even if one is not intending on spending money on food at that moment. In conclusion, this form of persuasion can be extremely effective because it aims for the right timing. As Fogg says, the reasoning behind the suggestion systems on smart apps, for example “time to pay your bill” or even smart watch “time to stand” reminders, is when you see them at the right moment you easily accept the suggestion (Fogg, 2003).

*Self-monitoring technology:* Technology of this type is characterized by tracking as its primary motif. A computing device can monitor key aspects of behaviour that are targeted for change and allow the user to learn about themselves, gain insights into their progress, and discuss them with others. The combination of all these factors makes this a motivating tool which makes tracking easier and provides them with concrete feedback. The evidence they have accumulated along the way and how well they are progressing can give people a sense of value and give them real evidence of their abilities.

*Surveillance or persuasion through observation:* Unlike *self-monitoring*, *surveillance* focuses on tracking others’ behaviors rather than themselves. This tool *allows* for observing individuals while doing a certain task and because they know they are being watched, they are likely to adjust their conduct towards observer’s expectation. Fogg’s example is the delivery companies that stamp "how am I driving" tickets on their delivery trucks in order to motivate drivers to drive safely by allowing others to call the center and report their unsafe driving. In addition to this, a personal example: when I began running for exercise, my supervisor started following me on the app I was using. Since I knew she could see my journey I wanted to do better and not skip a run. This shows how powerful this can be for some people.

It is critical to design this tool carefully because it can raise ethical issues. It shouldn't be used invasively tools or to force people to perform certain behaviors because they might not continue the behavior when they realize they're not being observed.

*Conditioning technology:* Mainly advocated by B.F. Skinner, *operant conditioning* or *behaviorism* or *instrumental learning* is a powerful tool that uses “positive reinforcements or

rewards to increase the instances of a behavior or to shape complex behaviors” (Fogg, 2003; Skinner, 1988). A complex behavior is broken down into simple steps and the learner gets rewarded for every improvement they make. This also explains why simple praise may motivate someone to do more when they do something good. Sending thank you notes, giving gifts, etc. can all reinforce positive behavior. Games usually use this tool by rewarding players with sound and visuals, collecting points, scores, and showing them how they're improving by leveling up. A successful game keeps its players playing, and rewards are one of its main strategies. They can be extremely powerful, especially when they are unpredictable.

### **2.3.2 Persuasive technology as a Medium**

When acting as **mediums**, they provide a space for people to explore, and experience things that are not possible or challenging to achieve in real life. By simulating the *real world* or a hypothetical one, people can experience a compelling and persuasive experience. Fogg divides computer simulations into three categories: “*simulated cause-and-effect scenarios, simulated environments, and simulated objects*”(Fogg, 2003). The first one allows people to experiment with actions, habits, or behaviors in a space where they know their actions will not impact the real world, but are able to explore what will happen as a result. Similarly, the latter creates a safe environment for people to experiment with various actions, but this time with a specific target behavior in mind, and uses reward systems, role-playing scenarios, rehearsing behavior, as well as putting the user in control of frightening situations. In the last case, a simulated product is envisioned, which will accompany users in their day-to-day living environment. As Fogg explains, it might be a baby doll with embedded technology that warns teenagers about the consequences of an unplanned early pregnancy and what they might experience, or it can be a game involving drunk driving that would deter students from driving under the influence of alcohol (Fogg, 2003).

### **2.3.3 Persuasive technology as a Social Actor**

When acting as a **social actor**, the computer builds a social relationship between humans and itself by providing positive feedback, support, etc. to give them a human-like experience (Fogg, 2003). As Fogg elaborates, persuasion can be made easier with social cues because humans are sensitive to them and instinctively react to them. People can sense social presence by observing

five social cues that Fogg introduces in his book. (*All the content of this section is sourced from B.J Fogg's Persuasive Technology book (Fogg, 2003)*)

*Physical characteristics*, the first social cue, can be linked to live features, *like face (eyes, mouth, nose, etc.) body (hands, legs, etc.) and movements*. A product that is more aesthetically pleasing has been proven to persuade people better, since people are more likely to listen and be influenced by attractive people.

*Psychological cues*, the second social cue, such as emotions, personality traits, preferences, etc., provide further clues about social presence. The message "I'm sorry" when an error appears conveys empathy, and might make people feel as if they are dealing with a living artifact. Moreover, psychological cues such as similarity are powerful. According to the principle of similarity, we are motivated and persuaded more easily by people we believe are similar to us (in personality, preferences, or other characteristics) than by people who are unlike us.

*Language*, is the third social cue and it is used in dialogue boxes, with audio agents such as Siri and Alexa, etc. Language usage is influenced by the target audience's communication style, their daily language, and the app's context. Language using praise is a powerful method of persuasion that makes people feel appreciated, confident, and powerful as a result of their persuasion. Games and gamified apps use messages of congratulations, "smart move", "good job", etc. to motivate users and to make them feel rewarded as if by a human.

*Social dynamics*, is the fourth social cue and one of the main staples of this project. "Most cultures have set patterns for how people interact with each other – rituals for meeting people, taking turns, forming lines, and many others. These rituals are social dynamics – unwritten rules for interacting with others" (Fogg, 2003) in order to reflect social presence, technologies mimic these patterns and use them in their infrastructure. Online shopping websites, for instance, design their products based on what people experience when they shop in person. "They greet users, guide people to products they may like, confirm what's being purchased, ask for any needed information, and thank people for making the transaction"(Fogg, 2003). But don't these rituals differ from culture to culture? Aren't they supposed to be adapted to each specific cultural context and how they operate? It is in this way that western culture is marketed everywhere. The western way of shopping may be viewed as the proper way in other parts of the world.

*Adopting social roles* is Fogg's last social cue. It refers to computers taking on human roles such as therapists, customer support agents, teachers, experts, etc. and play the roles of *authorities*, *entertainers*, and even *lovers*. Robots are built on this premise because they behave like humans and have a high chance of convincing and connecting with people. For example, the movie "Her" portrays a man falling in love with an AI computer program and shows how powerful computers can be (Jones, 2013). Here designers must identify their target audience's needs and design to meet their preferences. An authority role can motivate a specific audience, but can discourage another. For some people an entertainer role will be thrilling, while for others it will be a bore. The key solution is getting to know your audience.

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The sections above explained the three ways in which computers can be used as persuasive technologies. All that being said, identifying the right tool, medium, or social actor is crucial to technology's effectiveness. A review of state of the art research about persuasive technology found that 75% of PT interventions were “fully positive” at promoting healthy behavior, 17% were “partially positive – a combination of positive and negative results or no effect”, and only 7% were unsuccessful (Orji & Moffatt, 2018). They also stated that the most frequently used technology platforms are mobile with handheld devices accounting for 28%, followed by games at 17%. Nevertheless, another study found that people need new rewards and motivation systems in addition to these affordances in order to change their behavior (Purpura et al., 2011). Things that resonate with people will help them grow and get closer to their ideal selves (Zimmerman, 2009). Having a sense of identity and building their sense of self is what keeps them attached to a product and encourages them to behave healthy (Zimmerman, 2009).

## **2.4 Gamification and the Octalysis framework**

Fogg adds two levels to the above discussed forms of persuasion: *macro* and *micro* (Fogg, 2003). *Macrosuasion* elements are used in products designed solely to motivate people towards an overall goal, such as quitting smoking. On the other hand, *microsuasion* elements are used in products that don't have an overall goal but rather use smaller persuasive elements to accomplish a larger business goal. For instance, the overall goal of an education product is for users to complete their study sessions. *Microsuasion* elements, such as praise and stars, will motivate them to finish their sessions and succeed in achieving the app's main goal.

From *microsuasion* elements the concept of gamification emerges. Since 2008, gamification has been around, but in 2010, Deterding et al. a group of designers and researchers, defined the term lucidly as follows: “the use of game design elements in non-game contexts” (Deterding et al., 2011; Llagostera, 2012). Gamification is the process of adding game-like, playful affordances to an activity that does not look or act like a game. The concept is not limited to digital applications, but it can be applied to anything. For example, when a mother tries to motivate her children to brush their teeth, she gamifies the experience by rewarding them or playing with their toothbrush, or even singing them a song. This way, in children’s minds tooth-brushing is not as hard and tedious a task anymore, it’s actually a fun experience that keeps their teeth healthy.

Definitions of gamification can be found both in academia and in the business environment. According to Llagostera (2012), the industry usually defines it with "fuzzy" words and concepts such as "gamification mechanics" and "dynamics" which portray it as a valuable strategy to bolster product engagement (Llagostera, 2012). Gamification refers to the process of integrating gaming mechanics into activities and platforms to increase user engagement, participation, and positive behavior, while also adding a sense of fun to a non-game experience. They emphasize efficiency and immediate results as a way to achieve productivity and "customer retention" (Llagostera, 2012).

Deterding et al.’s definition of gamification however, takes a neutral stand making it clear that it is through the “*use of game design elements in the non-game contexts*” that we can gamify artifacts. Llagostera emphasizes three main aspects to this definition:

*“1) Its relationship with play and games, 2) the use of game design elements instead of full-fledged games, and 3) the non-game contexts in which gamification systems are deployed.”*

Firstly, let’s talk about the relationship between play and games. As Caillois noted, there are two poles of playfulness that are opposite but mutually exclusive of each other. *Ludus*, defined as *gamefulness* and *paidia* as *playfulness* (Caillois & Meyer, 1961; Lucero et al., 2014). Growing up as a child, we are usually given a set of toys, colours, materials from the kitchen or other parts of the house, to play with. Our joy comes from freely improvising with them and experimenting without worrying about the outcome. In other words, this is called *playing or paidia*, in which things are tried out freely and adventurously without knowing what will happen at the end, leading to creativity. The excitement and happiness children feel when playing, is a result of



them trying out every single idea they have without any limitations springing unexpected results. In the digital world, it is plausible to understand “mindless swiping between home screens on our smart phone” (Deterding et al., 2011; Llagostera, 2012), or scrolling through Instagram or Tiktok with no specific purpose as a sort of play. In a study by Huizinga (1970), he introduces the concept of Homo Ludens as *man the player*. He states that play is freedom, it is outside of ordinary life (rules don’t apply), it has a distinct space and time, and has no material interest (not connected to any sort of profits) (Huizinga, 1970; O’hara, 2018).

On the opposite side of the spectrum, there are games and their rule-oriented approach. A game player is given predetermined goals to achieve under the restrictions and rules of the game. By following these rules and getting closer to the game’s goal, the player is usually rewarded, and thus motivation is reinforced extrinsically. This concept is called *gamefulness*. To mirror the notion of playfulness but to evoke the qualities of *ludus*, Deterding et al. propose the term *gamefulness* (Deterding et al., 2011; Llagostera, 2012).

Secondly, it is critical to understand that a gamified application is different from a full-fledged game (Lindholm & Monsen, n.d.; Lucero et al., 2014). There is sometimes confusion between gamification and serious games. Serious games are full-fledged games developed with the aim of educating users on “real life issues”, promoting healthy behavior, etc (Bontchev, 2015). The aim of gamification however is to improve users' engagement with a product and improve their lifestyle rather than learning. Juul argues that a product is considered a game if it has the following characteristics all at once: “*A game is a rule-based formal system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort in order to influence the outcome, the player feels attached to the outcome, and the consequences of the activity are optional and negotiable*” (Juul, 2005).

Deterding et al cite Juul and state that “no part of this definition on its own constitutes a game. Only together do they set apart a clear figure against the background of other phenomena” (Deterding et al., 2011). In contrast, gamification uses game design elements rather than being a pure game.

Thirdly, gamification is a form of persuasion technique which can be achieved by its attachment to another non-game activity. These activities can range from exercising to education, productivity, etc. These are part of our daily lives rather than those that are solely attached to a

parallel virtual world (Khaled et al., 2014). Therefore, it's vital to integrate people's cultures and check their social foundations, as well as how they understand fun and gamefulness. Considering the reality they live in, it's imperative to integrate people's cultures and scrutinize their social foundations and perception of fun and gamefulness to align with how they expect to operate in the world. As Khaled states, *“If culture gives us rules for how to behave with others, when gamification gives us different rules, we are faced with a values clash with potentially damaging results over the long term”* (Khaled et al., 2014).

Figure 3 describes the most prevalent gamification design element based on the book, *The Gameful World* (Khaled et al., 2014). **Points** are numbers or similar entities attached to the actions the user should take to go to the next step. It is contingent on the “difficulty, time, or effort required” (Khaled et al., 2014) for the task to be accomplished. **Achievements** are a way for the users to see they have accomplished something, and **rewards** are granted to users to acknowledge their efforts.

Points	Achievements	Rewards
<p>“Typically, points are attributed to tasks and activities that contribute toward the core use objectives of the application in question. Usually the points accrued per activity depend on the difficulty, time, or effort investment required.”</p>	<p>Achievements are awarded on the basis of whether users have completed tasks and actions, typically aligned with core use objectives underlying the system in question, signifying progress. They also enable individuals to receive recognition for their feats. Achievements can serve a valuable expectation management and informational function.</p>	<p>“Points and achievements can be viewed as a form of reward. Rewards refer to abilities, advantages, or gifts granted to users within an application as acknowledgement for their effort, commitment or skills, and can be put to use diagetically (within the application) or nondiagetically (in the material world).</p>

Figure 3 - The most prevalent elements of gamification design – The image is a summary of the points from the book, *The Gameful World* (Khaled et al., 2014)

To motivate people reach their goal, these elements usually tie into a real-world goal such as losing weight, starting a habit, learning a lesson, etc. Gamification theorist, You Kai Chou was one of the people who saw life as a game and continually strived to make his life more like an exciting and enjoyable gaming experience (Chou, 2014). It seemed logical to bring elements of game design into his real life, since game designers have spent years creating joyful experiences

for people. He began considering gamification more and based his research on more than ninety gamification case studies, from companies including SAP, Cisco, Nike, Volkswagen, etc. He realized that, although gamification improves the user experience, "gamification mechanics themselves do not ultimately result in effective design" (Chou, 2014). In his view, gamification is not just about adding mechanics like points and badges to applications. They can be helpful, but "they are not necessarily exciting" (Chou, 2019).

Chou spent a decade researching the core drives that motivate people. Based on his analysis of the differentiating factors between motivational theories, he developed a framework called *The Octalysis Framework*. There are eight core drives (figure 4) in the framework that can motivate individuals, and if none of these elements are present in a persuasive strategy, there will be "zero motivation" (Chou, 2014, 2019). This framework is one of the leading guidelines in both industry and academia and tries to touch every aspect of a motivational product.

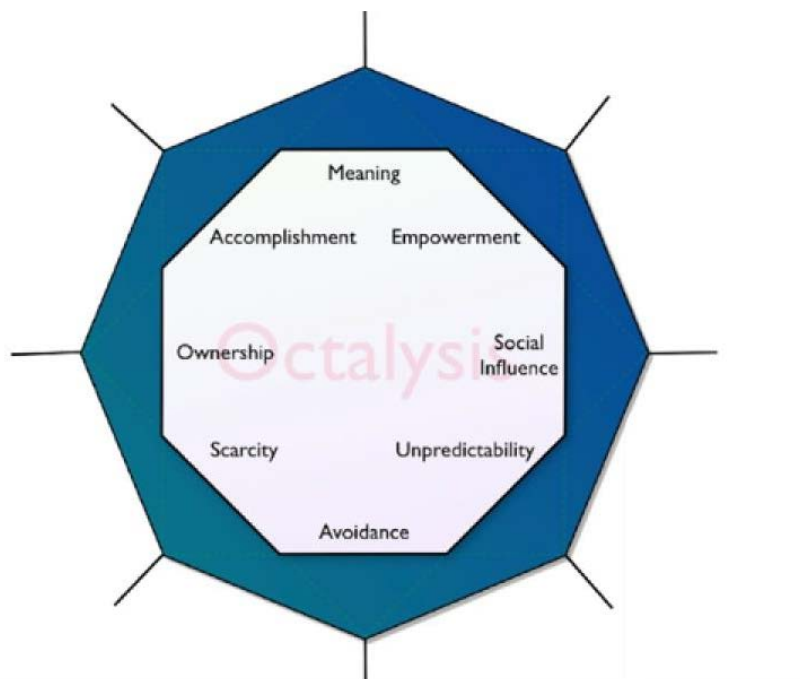


Figure 4 - Eight Core Drives Of Octalysis Framework – Added from the book *Actionable Gamification* (Chou,2014).

1. *Epic meaning and calling*: in which a person feels a sense of connection to something broader than themselves, such as contributing to Wikipedia to preserve human knowledge.

2. *Development and accomplishment*: It touches the feeling of overcoming challenges and achieving something. Users are usually rewarded with badges for their accomplishments.
3. *Empowerment of creativity and feedback*: Using the concept of play as a driving force, people can experiment and become creative in this core drive, while gaining feedback on their creativity.
4. *Ownership and possession*: When someone feels that they have control over something, or are in possession of it, they tend to devote more time to it, protect it, and improve it. Alternatively, people can feel possessive of something they spend considerable time on, such as making an avatar for their profile.
5. *Social Influence & Relatedness*: This core drive is essentially about all the social factors that motivate people. The feeling of belonging to similar people such as your friends and being motivated by them; seeing familiar scenes or music that gives you a sense of nostalgia for your childhood; and feeling accepted by others, are examples of how this core drive might be expressed.
6. *Scarcity and impatience*: When something is rare, hard to come by, or not readily available, human beings tend to want it more and occupy their minds with it. As a result, this core drive can be used to motivate one to keep going the path they took.
7. *Unpredictability and curiosity*: Seeing what happens next, not knowing what to expect, and the mystery of unexpected results are what make us want to keep playing a game such as gambling and watching the next episode of a TV show.
8. *Loss and avoidance*: This core drive is motivated by fear of change or the loss of a good thing, combined with a desire to avoid negative results. Suppose a shop offers something on sale for a limited time and we don't want to lose the opportunity. Or if a new job opportunity comes along, for instance, we may be scared of losing the things we have built in our current job, such as our community, familiarity with work, etc. and start over. Meanwhile, we might think of all the positive things we have in our new job that we don't have here.

## 2.5 Theories of Motivation and Behavior Change

In the Octalysis framework, two key motivation theories are used to structure the framework.

The first is the *self-determination theory* with key elements of *intrinsic* and *extrinsic motivation*, which he defines as *right brain* and *left brain*, respectively (Ryan & Deci, 2000). Extrinsic motivation happens when someone starts doing something not because they are passionate about it, but because they want to reach an outcome or earn a prize. Since they don't enjoy the process as soon as they receive the reward or reach their goal, they stop doing the activity. Suppose a child dislikes studying for exams, but whose parents promise to treat them to a gift that they have been wanting for so long, if they succeed. Despite their hard work, they stop studying once they earn the prize. However, if the topic they've been studying appeals to them, they'll keep studying it regardless of what the reward is. It is at this point that intrinsic motivation kicks in. A person is intrinsically motivated when they are so engrossed in the activity that they don't need any prize to continue that but may even pay to continue doing it (Chou, 2019; Ryan & Deci, 2000).

Designers now use the combination of both as a powerful tool. Extrinsic motivational strategies can serve as triggers for users to begin doing something, and once they begin doing it, intrinsic motivational strategies can help them enjoy the activity itself so they'll be willing to do it even on their own (Reiss, 2012; Ryan & Deci, 2000)

Humans have three basic needs that must be met in order to be intrinsically motivated. Firstly, they need to feel cared for and connected to others, a sense of belonging or *relatedness*. A two-way relationship in which you play a significant role in someone else's life as well as they play an important role in yours. Secondly, a feeling of mastery and competence in something. It is deeply rewarding and satisfying to achieve proficiency as a human being. Thirdly, intrinsic motivation is enhanced by the ability to make choices and initiate one's own actions, valuing one's feelings and making decisions independently, also known as *autonomy* (Ryan & Deci, 2000).

SDT points out that when people's basic psychological needs of autonomy, competence, and relatedness are met, they are more likely to engage in activities because they find them satisfying and enjoyable. By encouraging autonomy, people may take part in activities they deem meaningful and fulfilling. By giving people the chance to improve their skills and abilities, they may become more motivated to work toward their objectives. Finally, by encouraging a sense of relatedness and connection with others, individuals may be more inclined to cooperate and work

together to achieve common objectives. However, if these needs aren't met, people may instead turn to external rewards, such as money or praise, as motivational elements.

In the Octalysis framework, intrinsic motivation is driven by the core drives on the right hand side, and extrinsic motivation is driven by the left hand side (figure 5). One's sense of

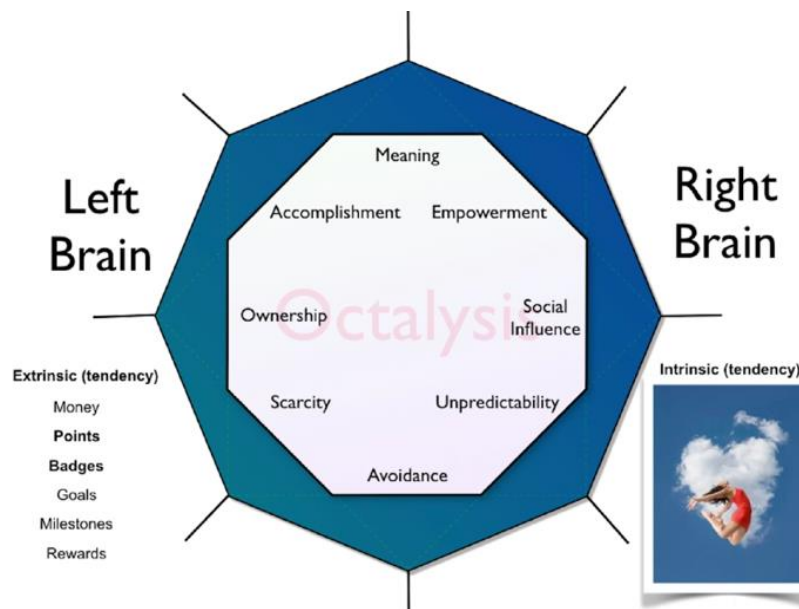


Figure 5 - Intrinsic And Extrinsic Motivation In The Octalysis Framework - Added from the course Gamification & Behavioral Design: The Octalysis Framework (Chou, 2014)

*empowerment* ignites their creativity and allows them to test their potential to feel competent and successful. *Social influence* and *epic meaning and calling* give us a sense of belonging, support, and relatedness. In addition, unpredictability induces the sense of making decisions about unrecognized situations, contributing to an autonomy-enhancing experience. In contrast, seeking to attain a goal, wanting to possess something, doing something to avoid negative results, and getting something just because of its scarcity are what drives our sense of extrinsic motivation.

A second underlying theory of Octalysis is what he calls *black hat* versus *white hat gamification* (figure 6). The core drives are differentiated by the feelings they evoke as part of the process. For instance, “unpredictable events can lead to anxiety, fear, and uncertainty”(Chou, 2019).

Avoiding negative consequences is accompanied by a feeling of guilt and urgency. On the other hand, while a sense of accomplishment focuses on rewards at the end of the process, it also includes positive feelings during the process. In order to avoid the negative consequences of gamification, designers must refrain from using all black-hat strategies, as this can result in

unhealthy experiences and a loss of interest in the product. However, a black-hat strategy isn't inherently wrong. It's simply a strategy many people need to shift their behavior, and when combined with white hat, can yield positive results.

Additionally, it is important to look into the theories of behavior change as the main goal of gamification is to ignite people to change their unhealthy behavior. It is crucial to go through some of the most important underlying reasons on why we do certain things, how we make decisions, and how do we walk towards a certain goal. Below, three of the important theories of behavior change that are used throughout this research project are listed and is used as the basis of this project.

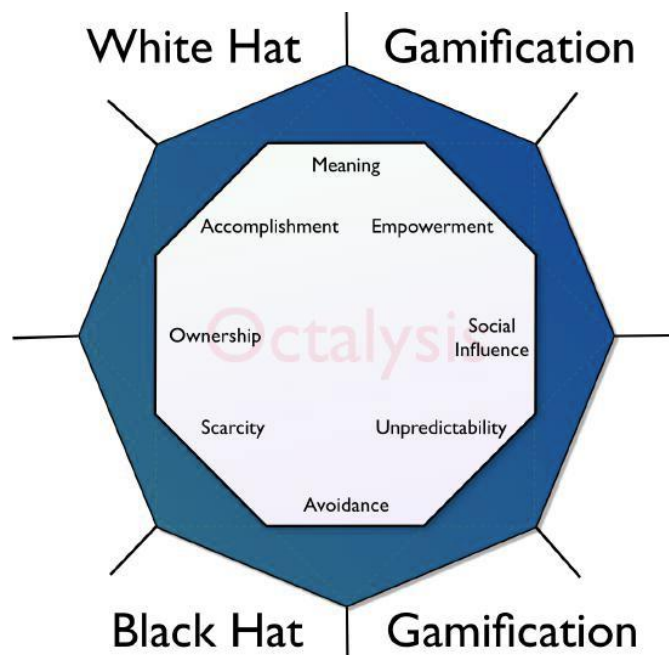


Figure 6 - Black Hat And White Hat Gamification - Added from the course Gamification & Behavioral Design: The Octalysis Framework (Chou, 2014).

**Self-regulation**, in which the self is understood as an agent wanting to constantly adapt and be responsive to the complex environment. All the decisions we make in our daily lives, such as deciding not to over eat, overcoming procrastination, putting on a smile, listening to a boring meeting, etc. are called *self-control* or *self-regulation*. *The executive function* is the part that makes decision for us and enables us to “initiate the behavior” (Baumeister & Vohs, 2004). According to self-regulation theory, people are capable of controlling and managing their own thoughts, feelings, and behaviors in order to reach their goals. The theory states that people

regulate their own behavior using a variety of strategies and techniques, such as setting goals, monitoring progress, and making adjustments. Setting goals provides people with a sense of direction and helps them focus their efforts, which can in itself be motivating. Monitoring progress towards goals can give people feedback and stimulate them by showing how far they have come. Further, a sense of control over their behavior allows them to adjust their behavior as needed to achieve their goals. It can inspire a sense of agency and empowerment in people, which is highly motivating. This theory is used across many disciplines that promote people's wellbeing, performance, health, etc. (Kuhl et al., 2006). Persuasive technology can be designed based on self-regulation theory, which is helpful in encouraging healthy behavior.

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To Conclude, Identifying which of these motivational elements is most influential on the designer's target audience is key. Our sense of pleasure is derived from our needs, and our needs are shaped by our socio-cultural background. It is essential to know the audience before using theories and understand what motivates them. A user researcher identifies the main problems and pain points of users, resulting in a product and the main business goal of a company. As an example, the problem is that tired, unfocused students who come from school are unable to study for their exams. Students could benefit from a product that helps them deal with their disorientation and stay focused on their studies. However, in order to motivate them, we must also identify their culture and what they find enjoyable.

Using these core drives along with gamification mechanics such as points, badges, and leaderboards in the same way for every single audience may not be as effective. Is there a way designers can design differently based on the type of audience they are targeting? Perhaps the answer lies in reorienting video game mechanics toward cultural events. Perhaps we need to look beyond gamification, which merely involves adopting game-design elements. The definition could be expanded to include 'using cultural events' or 'having a cultural outlook'. Instead of being limited to game design, this will allow for unconventional motivational strategies. Culture will break the box of pre-determined gamification mechanics and inspire novel design strategies.



## Chapter 3: Methods, Methodology, and Creative Process

*“The purpose of design research is to improve design practice, with the focus on design process (Savic & Huang, 2014).”*

Winschieurs cites Young who asks designers to rethink the way they incorporate culture into their design process and argues that “the current state of research representing culture in the design of ICTs serves a limited scope of what culture can be in the design process” (Winschieurs-Theophilus, 2009; Young, 2007). The designer needs to fully recognize the underlying structure of the target people’s minds and not rely on the pre-approved design strategies. They need to be able to think differently and think like one of the members of the group. *Culture-specific study* and *ethnographic research* for designers is a way of getting to know the audience and become able to specify their culture through design language (Kamppuri, 2011b; Sheikh et al., 2009; Young, 2007). It entails methods such as “participant observation, interviewing, and data collection (e.g. field notes, videotapes, audio tapes, photography, etc” (Fetterman, 1998; Young, 2007). Through collecting cultural symbols such as “religious items, political objects, books”, food, gatherings, etc. a range of valuable authentic data can be gathered that help in the recognition process. “Careful user needs research conducted in the target cultures at the very beginning of a development will ensure that the product, service, or application concept and requirements will support the tasks and lifestyle of the intended users and be compatible with their environment. The methodology for user needs research must be adapted to the local customs, attitudes, and behaviors of the culture being studied” (Plocher et al., 2012).

However, Young argues that sometimes designers (non-ethnographers) lack the ability to interpret the research appropriately. The matter is, we cannot always hire ethnographers in a design process. One of the solutions provided for this matter is asking “members of the target audience who can assist and inform design decisions” (Young, 2007) to act as cultural informants, and make sure that design researchers are on the right track of perceiving the traditions and interests of the community. Cultural informant are the experts of their lived experiences and having them is like taking on a participatory design approach (Sanders & Stappers, 2008; Vines et al., 2013). They are like a bridge between the target audience and designers (Young, 2007).

Designers themselves can be members of the group or society they are designing for. This way, there is no need to hire a cultural informant and they can take on the role using their own *situatedness* (Anderson, 2020; Haraway, 1991). The process can be reflective in action (Schon, 1991). When they go deep into their memories and realize a certain pattern that motivated them or other people they knew and start building ideas on that. Cultural cues that can be transformed into their designs are manifested in every corner of their daily lives. They also have the ability to recognize similarities and differences the cultures have. Because recognizing similarities is as important as recognizing the differences. “A focus on cultural differences fails to see culture as an asset in the design process”(Powel, 1997). Designing with an outlook on culture brings out new ideas, and under-explored avenues of design. It is about looking at things through a new angle, where you can explore things differently.

*User demographics* and *Personas* are a way to start getting to know the audience. It consists of identification of the target users culture and the specific needs for differentiation along with verifying common attributes among user groups to save time reusing the same components for groups with similar characteristics. Along with this, it is helpful to identify the appropriate *technology* for the target audience, and look for *metaphors* in a culture which is about recognizing what design concepts will be the most and least effective on the target audience (e.g. “Indians relate more easily to the concept of books, bookshelf, chapters, etc. rather than desktop, folders, files,etc.” (del Galdo & Nielson, 1996)). At last, pinpointing the best “navigation system”, “appearance”, and “interactions” of the final product is important when designing a cross-cultural product (del Galdo & Nielson, 1996).

In conclusion, ethnographic research and an understanding of cultural model dimensions that affect a user's interactions with technology will allow us to design products that truly meet people's needs. In this study, the creative process is divided into three categories: research, creation, and evaluation. The following sections describe the methods used in each category. Each category is then discussed in detail in the next three chapters.

### **3.1 User/Culture Research: Getting to Know Persian Culture**

The target of this research is the Persian audience and holistic research is needed on the cultural aspects to be able to move forward. The key factors that need to be identified are Persian belief systems, communication style, and cognitive style. Schwartz's cultural orientation theory is also

a focus of attention in the research process (figure 7). In the following three parts, I explain the methods I used to gather information about Persian culture. A set of Persian gamification parameters are defined based on this research which will be discussed in the next chapter.

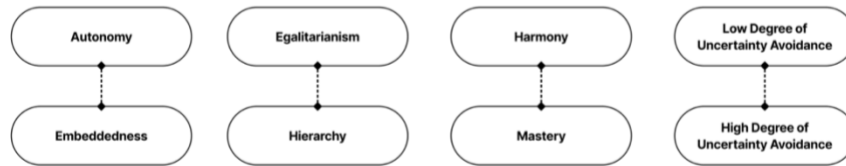


Figure 7 - Schwartz Culture Theory – A summary of the Schwartz culture theory (Schwartz, 2006)

### 3.1.1 Expert Interviews

An expert interview is a qualitative semi-structured or open interview with a subject matter expert (Adler & Adler, 1994; Baker, 2006). Most of its roots can be found in humanities majors, such as political science and international relations since experts and elites play such a crucial role in shaping policies and regulations. Experts possess valuable, reliable wisdom gleaned from years of experience and exclusive knowledge. Additionally, they can simplify their knowledge for others to use, such as designers, by making it more understandable and accessible. During expert interviews, interviewees provide designers with data on a subject matter. The designer controls the flow of the conversation and leads it in the direction the project needs; the other person defines the situation, and talks about the problems and questions the designer has asked (Van den Bulck et al., 2019)

To gather qualitative reliable information, I chose to do interviews with two knowledgeable people in the area of Persian culture. Firstly, I did an interview with Dr. Hossein Salimi, a full professor in international relations at Allameh Tabataba'i University of Iran. He was the former president of the university and throughout his presidency built Iranian foundations throughout the world. One example is “Khayyam Center for Iranian Studies” which was established at Nebrija University of Madrid in 2018. “The CKIS is a cultural, scientific centre, introducing the Iranian culture, customs, language, and history” (Allameh Tabataba'i University, 2018; Tehran Times, 2018). He was also the head of Iran's center for performing arts and theatre for three years (1997-2000).

My second interviewee was Dr. Vahid Shalchi, an associate professor in Sociology from Allameh Tabataba'i university of Iran, who has done many research exploring the unique qualities of Persian culture and comparing the cultural characteristics to the west.

The main questions I was looking to answer during the interviews were:

- What sort of feelings excite Persians and makes them happy?
- What makes Persians feel accomplished?
- How can we symbolize those achievements?
- What is their cognitive style? (The structure of their minds and the way they see things)
- What are their belief systems?

Although these were the main questions I had in mind, the flow of the interviews was extremely open-ended and started with holistic questions such as “In five minutes, how would you describe Persians to someone who has no understanding of Persian culture?” I would then proceed with the discussion based on the answers I received. All the information was collected and written down at the end. To further investigate and scrutinize these findings, I spent a month in Iran observing and examining the behavior of people there. In addition to validating the information I gathered in interviews, the observation enabled me to gain a deeper understanding of the culture.

### **3.1.2 Natural Observation and Literature Review**

*“Adler and Adler (1994) stated that Aristotle used observational techniques in his botanical studies on the island of Lesbos and that Auguste Comte, the father of sociology, listed observation as one of the “four core research methods” (p. 377) (Adler & Adler, 1994; Baker, 2006).*

By spending a certain amount of time observing people in their natural environment, researchers can better understand *things* from the target audience’s perspective through this qualitative research method. The method of observation and the researcher's role when performing it can depend on the "insider's willingness to be studied, as well as the researcher's prior knowledge of the insider's world"(Adler & Adler, 1994). A researcher who is a member of a cultural group can not only observe but also participate in activities (Adler & Adler, 1994; Baker, 2006). The month I spent in Iran involved consciously monitoring and reflecting on the behavior of people around me and interpreting these behaviors based on my own lived experience and deep familiarity with Persian culture. In addition to attending parties and listening carefully to people's conversations, I analyzed how food was served, how decorations were displayed, etc. The street habits of people, how they shop, and so on have also been studied.

My observations were complemented by reading about Persian culture and reviewing existing literature, which helped me understand what I was viewing and analyze the characteristics I found. I read authors such as Edward Granvile Brown (British Iranologist) (Browne, 1893), (Karimnia & Afghari, 2010), (Kamehkhosh & Larina, 2020), and Jamalzadeh (Jamal Zadeh, 1966) one of the most prominent writers of Iran on “socio-political and cultural studies” (Kamshad & Mozaffari, 2008) and focused my attention on the book, “Our Iranian Character Traits”, “Kholghiate ma Iranian” in Persian, which is: *“A compendium of writings on the positive and negative traits of Iranians by foreigners and Iranians in history that was first published in a serial form in the magazine Masā’ele Irān (Problems of Iran) in 1965, and then in book form in 1967. The aim of this book and of the others mentioned above was to shed light on the social problems of Iran, and to provide a self-critique, which would pave the way for finding solutions (Kamshad & Mozaffari, 2008).”*

Based on the two methods discussed, I was able to identify the most prominent Persian cultural characteristics. However, another key method I used along the way was making use of my childhood experiences and situated knowledge of Persian culture. My situatedness grounded my interpretations and sparked new ideas.



*Figure 8 - The design of the wedding presents from the groom family. (Iran trip – Taken by the researcher)*



Figure 9 - Persian family gathering with music and poetry, and party decorations. (Iran trip – Taken by the researcher)



Figure 10 - Types of serving the food. (Iran trip – Taken by the researcher)

### 3.1.3 Situatedness

*Situated knowledge* refers to a researcher's *axiology* - morals, values, and their cultural background (Anderson, 2020; Haraway, 1991). It reflects itself on the research the researcher is conducting and affects the research questions, methods, and validate the answers and ideas. Every artefact that we see in the world that is made by human beings is narrative of who the



maker is, their values, and their situatedness. Knowing that our designs are narratives of who we are will allow us to take advantage of that and use it as the best way possible. (Anderson, 2020; Haraway, 1991).

Being a Persian impacted first on validating the findings from previous methods, and second on developing strategies for each parameter that would motivate a Persian audience to achieve their goals. For me, the strategies were achieved by revisiting my earlier memories, "back in the early days before I learned too much" (Abloh, 2017). Examining the ways in which I and other people around me were encouraged, their happiness, and what was meaningful to them. By doing so, I generated "new ideas based on recognizable parts of human emotion."

\*\*\*

The three research methods discussed resulted in twelve Persian gamification parameters that will be discussed in the next chapter (figure 11). When developing persuasive strategies for a Persian audience, these factors are essential to having them motivated.

Family	Hospitality	Helping Others
Social Status	Love	Inner Need for Collective Happiness
Defferent relationship levels	Mystery	Invention of Traditions
HEROISM	DUALISM	cleverness

Figure 11 - Persian Gamification Parameters.

### **3.2 Creation: Putting the parameters into practice**

I designed five mini-applications to see how the parameters can be transformed into a digital application. They all contain some of these parameters as motivational strategies. I developed mini-applications, not complete ones, to reduce complexity and focus on the leading strategies and how they can be used in real life. The mini-applications were prototyped and showcased in the Master of Design graduate exhibition at Concordia University and received positive feedback from the audience. Yet, a testing strategy had to be developed because they had to be tested in real-life applications.

### **3.3 Evaluation: Testing the Parameters**

The parameters had to be tested on Persian and non-Persian audiences to gauge differences in reaction and preference styles. Due to this, users were recruited for this study, including Iranians, Persians in Canada, New Zealanders, Indians, etc. Ethics approval was received to conduct this research from Concordia University. This evaluation method was inspired by the Wizard of Oz testing method, which is a method that allows designers to test a prototype on the audience without them knowing that the prototype is actually not functional but rather the responses are being generated by a moderator behind the scenes (Harwood, 2018). This approach allows feedback to be received quickly and reduces costs and time spent on failed initiatives. For this research, this method had to be customized to a new version for it to work. The reason for it was that there were many strategies to be tested and building a digital prototype for them was very time consuming even though it required no backend, the website had to be designed, developed, and wasn't adaptable enough for each audience's needs. The result was creating fillable PDFs to send to each participant. The questions for each form were designed based on the strategies. For instance, for the hospitality parameter, I asked participants to give each other gifts and evaluated differences in their way of receiving gifts and giving them. When a group was heading in a different direction, I changed some of the questions in the PDFs and adapted them to their needs. This allowed me to customize the evaluation further to reach the best results. The method not only identified the audience's needs but also included some of the proposed strategies that were to be evaluated.

**Step 1:** The participants were asked to go for three walks/runs during the course of two weeks. I designed computer based PDFs that asked them to reflect on their exercising session each time



they worked out. In the first PDF, respondents provided information about their background, their exercise goals, and their motivation level (figure 12). Using the information I was able to learn about the Personas and evaluate their answers in light of their needs. Their run/walk session was completed with an exercise sheet, adding details about the experience they had, and their feelings along the way (figure 13).

**Step 2:** Once they sent me their information, I sent a copy of their experience sheet to other participants for feedback. Individuals were required to give feedback to three participants before running or walking again (figure 14). The purpose of this would be to evaluate their reactions to others, as well as how motivated and inspired they were by them for their next exercise. Participants were also asked to give imaginary gifts to each other to test the *hospitality* and *helping others* parameters. To motivate each other for their next exercise, they also exchanged comments. Afterward, they would go through their second exercise and complete the exercise sheet as they did previously. The second round ended with me receiving both files for evaluation.

The image shows two pages from a PDF document. The left page is titled "Welcome to my project" and "Guide On The Process". It contains a welcome message, contact information (email: hosnasimresearch@gmail.com, phone: 514-692-8111), and a list of instructions for the process. The right page is titled "Information" and "Personal Info". It contains a disclaimer and a form with several questions and input fields.

**Welcome to my project**

Hi there,

Thank you for agreeing to spend your precious time participating in my project. This means so much to me and you'll be taking an important step in my Master of Design thesis project. If you have any questions anytime during the process, do not hesitate to contact me.  
email: hosnasimresearch@gmail.com phone: 514-692-8111

(Please note that you have the right to discontinue your involvement to the program, in case you feel any kind of discomfort.)

**Guide On The Process**

- You will go on a short walk/run three times in total. You have two weeks to do that. But it's better if you do all three in the first week.
- After each walk/run session you should fill out some information about your experience in the page of that exercise in this sheet.
- You then send that to me through email, and I will send you other participants' exercise sheets to you to give feedback to. Note that, you should give feedback to the participants before going for your next exercise.
- I will also send you a leaderboard wherein you could see where you stand in comparison with other participants, so far.
- That's it! You will finish with a answering a few questions about your experience.
- Try to have fun with going on beautiful routes and exploring the environment surrounds you. Take pictures of them and put them in the reflection sheets. I will be sending the routes you explored to other participants so maybe they'd like to try them out.
- Should you wish to go for a run/walk in the streets, please use the pedestrian side walk to avoid any unexpected accidents.

**Information**

**Personal Info**

Note that this information will not be disclosed to anyone with your name on it, except to the researcher and her committee members.

Name

Age

Where are you from?

Where do you live?

How often do you exercise?

What is your main goal when you exercise?

Do you think you need extra motivation?

Figure 12 - First PDF, Instructions of the project and the first questions.

**Exercise 1**

**Where**

Area - Streets Visited  When?

Favorite places you walked/ran

Rate how much you enjoyed the route from 0 to 10

Pictures of what made you happy during that run/workout session.

**Feelings** 😊 😐 😞 😡 😢 😭 😏

Describe your feelings

What do you think motivates you to go exercising again?

What was frustrating to you?

**Diary**

Write a short diary of your feelings


Figure 13 - Exercise sheet that participants filled after their workout.

**Feedback 1**

**Participant #1**

Area - Streets Visited Back alleys and streets near home, nexus of Alexandroplaz 1 October 2022, in the afternoon during My son's nap

Favorite places I actually walked much the same route as last time, specifically because I like that area so much. There's an area next to the train tracks with stunning autumn foliage growing on the fencing (see pictures).




Feelings 9/10 😊

It was a very peaceful walk, lots to look at. I thought about how this particular exercise and the photos component lead me to look more closely at my surroundings (hence the picture of the single berry, which I wouldn't have seen otherwise). Fell good about life and was already having a good day. The weather is a big motivation for me - it was beautiful out in the weekend and I like the fall weather in general, a little cooler. Mostly though I kind of separate walking from exercising, perhaps because we walk a lot to get anywhere anyway, so it doesn't feel like exercise to me, just a way of being in the world. I use the walk to focus on noticing the world - the feeling of the cool air, the small details around me, the sounds floating around. Not really thinking about work or anything else!

**Participant #2**

Area - Streets Visited Atwater - Montreal - 8 p.m.



Feelings 8/10 😊

While crossing such streets, I experienced peace and calm. Walking inspires me as I take in my environment and the people around me. When I could see the changes in my body and realized that I felt better than I had in the past, it inspired me to start working out once more. My big frustration is that I became annoyed when I have to keep going down the same path, especially if it is boring.

**Feedback to Participant #1**

**Researcher Only**

Your Feelings about this Person's experience

It is nice to see that the participant is noticing new things on their walks. And I am happy that they are able to enjoy their time outdoors!

How inspired are you with this participant's experience?

The fall is a beautiful time to enjoy walks and see new colors around you. This participants journey is inspiring and I do see that they are more motivated this time to walk! I too am extremely motivated to step out, compared to last week the fall is really inspiring me to get out and see what the city has to offer!

**Shared with Participant**

What comments do you give to the participant?

I think that walking around the neighborhood is different each time. I am very happy that you are noticing new things and seeing things from a different perspective each time you walk!

Would you like to try the same route for your next exercise?

Yes  No

If you wanted to give a gift to this participant, what would the gift be?

I wouldn't give a gift  Gift: I would like to give the participant a Polaroid Camera to capture some beautiful moments

Figure 12 - Feedback Sheet That Was Sent To Participants To Give Feedback To.

**Step 3:** In addition to the previous files, the individuals received one more file alongside the other two: A reflection sheet where they could see the comments they received from others on the last exercise, the gifts they received, a map to see where the participants are from, medals and leaderboard to rank them and compare them (figure 15). At the end, they saw their whole journey and reflected on how far they had come and answered the following questions: “How do you feel about this sheet? Did any of the things you saw cause feelings in you? Please elaborate and let me know what you expected to see and you liked to see but you didn’t. Was there something you didn’t like about this sheet. Is there anything else you’d like to add to this sheet?”

They finished off by answering a few questions (figure 16). The insights helped me iterate the strategies, develop them and come up with new ideas. They also validated some of the previously proposed strategies.

The image shows a digital interface divided into two main sections: 'Feedback of others on your last exercise' and 'Your Group'.

**Feedback of others on your last exercise:** This section contains an 'Inbox' of feedback messages. The messages are categorized into 'Exercise 2' and 'Exercise 1'. Feedback includes comments like 'Your journey is inspiring. I too am extremely motivated to step out and see what the city has to offer!' and 'I think that walking around the neighborhood is different each time. I am very happy that you are noticing new things and seeing things from a different perspective each time you walk!'. Below the feedback is a 'Your Gifts' section with items like 'Somebody gave you a Polaroid Camera to capture more beautiful moments' and 'A music device'.

**Your Group:** This section features a world map with markers for four participants. Below the map is a 'Leader Board' titled 'Your timings, amount of workout and other factors have affected this leader board.' The leaderboard shows four participants with their ranks and medals: Participant 4 (Rank 1, Gold), Participant 2 (Rank 2, Silver), Participant 3 (Rank 3, Bronze), and Participant 1 (Rank 4, Non). Each medal includes specific feedback, such as 'Your overall work was the best!' for the Gold medalist.

Figure 13 - Feedback Of Others On The Participant's Exercise.

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**Final Questions**

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You have finished the test! Thank you! and Well Done!

Now let's finish with some final questions

How did you feel about the whole experience?

What excited and motivated you during the process?

Which parts of the process you didn't feel connected and inspired by?

Tell us about your main frustrations when you went for an exercise

Do you think you are gonna continue exercising from now on?

Do you feel any changes in your life?

*Figure 14 - Final Questions Of The Test.*

The idea behind this method was to track participants' feelings throughout the whole journey. What are their feelings, what motivates them, and what is their reaction to seeing other participants' journeys? Does this motivate them? Do they want to, as they say, keep up with the Joneses? Are there only specific audiences they are interested in? Or do they not care at all? What are the differences between them? One example of the participant's feelings about the experience:

*“There's a lot to like about this kind of summation and seeing words from other real people who I've otherwise only followed silently through their descriptions of their outings. Didn't love the rankings as I've described elsewhere, but really like the idea of a (random) social network like this. The reconfiguration of my three outings into a little story was particularly nice - it's a good point that there's value in reflecting on the past and the images along with texts about the specific walks (though this would be hard to generate automatically) add something special.”*

Having the active actors of the process say what they need would lead us to the most suitable innovative solutions as well as fixing their real problems (Sanders & Stappers, 2008). (Sanders & Stappers, 2008)

## Chapter 4: Design-Research: Persian Gamification Parameters

*Watching Virgil Abloh's video, I became very inspired by Duchamp idea of "ready-made": "The idea that an artist over thought the game, understood the parameters, provided something proactive, provided something that became a launch pad for other forms of art (Abloh, 2017)."*

This aforementioned triangulation process allowed for the classification of the data and defined Persian culture parameters for persuasive technology design. Parameters that weren't useful for designing a digital product (those marked with an exclamation point, "!") were then eliminated. As examples of motivational strategies, I proposed a few of them for each parameter. The project focused on running/walking applications.

### 4.1 Poetry, Mystery

An important aspect of Persian culture is poetry. Iran has always been known for its outstanding poets such as Hafez, Saadi, Khayam, Molavi, Ferdowsi, etc. Poems fit the Iranian spirit. Dr. Shalchi says: "Philosophy flourishes in Greece and Poetry in Iran. This is the major difference between east and west, where they are opposed—the confrontation between logic and emotion. Iran is the land of poetry rather than philosophy. Iranians can look at the world through their sentiments and mystery. Mystery is another one of their characteristics." They love to use metaphors in their speeches, and not be explicit, so everyone can grasp the meaning behind it in their own way. They also like to converse about something that has no definite answer and express their own thoughts about it.

#### *Strategies:*

- Levels will change based on users' overall achievements. However, it is unclear what factors affect it. People guess it all the time and feel clever guessing it. (Also aligned with cleverness)
- They can tell a future story about a person based on their profile, and if their predictions become true, they will be rewarded. This can motivate participants to see their future stories through the eyes of others and not give up.
- Mark the places they want to visit in the future on a section of the map. They will opt for a run/walk when they visit those places to mark that they have made their wish. With the

pins on the map, they can create a pattern so people can guess a story they're trying to tell.

## 4.2 Family

Like other eastern countries, family is significant in Persian culture. The way they support each other is incredible. You may see an older man in Iran working all day to provide for his thirty-year-old son. This rarely happens in a western country. You may still be supported by your family in Iran, no matter how old you are. *Language* demonstrates the importance as well. In English, the same word is used for a person's mother's sister and father's sister, *aunt*. However, in Persian, each role has its own word *khale* and *amme*. Culturally, they play significantly different roles as well. Only an Iranian could grasp the difference. For the aunt's kids, in English, all of them are called cousins, but in Persian, each has its own word (*Dokhtar Amme, Dokhtar Khale, Pesar Amme, Pesar Khale*).

The importance of family in Iran is such that lot of the decisions people make during their lives is heavily shaped by their parents opinions. Family's opinions are super important and people can feel proud of themselves or ashamed of themselves when they make choices favouring certain directions No matter their age, many parents can implicitly or explicitly influence children's choices.

### *Strategies:*

- Imposed choices: Family members are grouped and an order is given for their runs. For instance, if it's my turn today, I should go running so the next person after me, who is my father, can have their system activated for a run. Following this, my father needs to go for a run so that my sister, who is after him, can go for a run. This way, the members are put under the pressure of knowing that if they don't start running today, the subsequent participant can't go and it's unsafe for their health.
- Family seeing each other on the platform and supporting each other through video messages.
- Managing another family member's account. Tracking their progress and then filling in about their improvement through a customized report that you would send them in the end.

### 4.3 Hospitality

Hospitality is a crucial aspect of Persian culture. Iranians do everything for their guests. Not so long ago, guests were so important that there was a section in every home called *mehmoon khoone* or *guest home* reserved for guests. No one used that space except for the times they had guests over. Even nowadays, homes (apartments or houses) are built with two living rooms. In one there are fancier, more luxurious furnishings that are used for important ceremonies and guests. In the other room, the environment is more comfortable and used on a daily basis by the family.

From Dr. Shalchi, I learned of a Persian sociologist from Tabriz who once said: “about ten degrees of hosting a guest exist in Tabriz. From standing on ceremony to being more comfortable. The types of food, the variety of food, the number of food, the way you serve the food (on the ground, on the table, the dishes you use, the decoration, etc.) can be at ten different levels.”

#### ***Strategies:***

- On the platform, based on finding routes, people can exchange gifts to motivate each other when they like the route they are suggested. They can be creative with their gifts. An imaginary gift, a voice, a written message, a drawing, a piece of knowledge they are willing to share, etc.
- Hosting running/walking events. Each time they host an event, they can be creative with the way they host their guests.

### 4.4 Home

The home enjoys a tremendous amount of respect in a Persian family. Each of the commodities used in the house matters. The atmosphere, the cleanness, the beauty of the home matter. A typical Persian home is usually immaculate, and even though it's a collage of different cultures, as a whole, it represents Iran. The artistic and poetic soul that they have is of high value. Their tastes in decoration, art, and design are incredible. They rigorously choose everything that belongs to their homes. They may be poor and spend all their money on the appearance of their belongings and pretend that they are kings (Jamal Zadeh, 1966).

#### **4.5 Education**

Education is vital in Persian families. The tendency to show off with certificates may be one reason, but Iranians value the importance of high education. About one thousand four hundred years ago, this was said about Persia. “If knowledge were subject to the majority of the descendants, Persians would be the ones who reach it” (Jamal Zadeh, 1966). Their desire to educate is to the extent that there is a story of a poor peasant who hired a blind literate person to educate his children and said it doesn’t matter if we are hungry and lack food, I will procure food for the man so that my children receive an education.

#### **4.6 Cleverness**

Persians live in a country where they should learn to be adroit and skillful at obtaining opportunities and dealing with difficult situations and sudden changes. Their psychological background puts them in a situation where they constantly seek smarter, more accessible ways of reaching their goals. Sometimes, they feel like they should be better than others and find a more intelligent way. Some would then talk about it in public to obtain social approval and some will admire themselves in private. Most of them love to be considered as a clever intelligent person. They compete to be perceived as competent.

#### ***Strategies:***

- Persians are really confident when it comes to knowing routes. When they show they know a path, they feel clever. When people go running or walking, they can discover a new route and suggest it to others. If others like it, this makes them feel admired.
- Levels going up. Their levels change based on their overall achievements. But it is a mystery what variables affect it. People would guess it all the time and feel clever guessing it. (Also aligned with Mystery)
- They can tell a future story about a person based on their profile, and if they’re predictions become true, they will get rewarded. This will result in them feeling clever. (Similarly aligned with mystery)

#### **4.7 Helping Others**

Another characteristic of Iranians is helping others. Many schools are built in Iran with the help of people. Many families support charities and have a yearly ritual of helping others. For



instance, some people prepare packages full of food ingredients such as rice, oil, pasta, pastes, etc., and go to needed districts and give the boxes to the needed families and individuals. Also, they like to share their own experiences and therefore help others who are tackling the same problem they have already faced.

***Strategies:***

- A collective activity that results in them helping the poor. The more they exercise, the more of their subscription money goes to the charity. They can see how much money they got to the charity together and this will motivate them to exercise more. (aligned with others seeing them, social status)
- Sharing your energy on the days, you feel excited about going for a run. What is it that makes you excited? If others see it and get inspired, you will be notified. There would be a section in your profile indicating how many times you have helped others. (Social status too!)

**4.8 Social Status**

In Iran, social status (credit, credibility), by which I mean how people are seen and talked about, matters. Indeed, this is so powerful in Iran that some Iranians have emigrated abroad to escape it. They become tired of living for others; they seek a place where no one would judge them, and they would live for themselves. They would keep their faces sharp and blushed with a slap (Jamal Zadeh, 1966). In Iran, you are considered to be of high status if your phone number starts with the number ‘1’. The higher the first number goes, the cheaper the price for the phone number becomes. Nowadays, if you want to buy a phone number that starts with the number ‘1’, you should pay the same price as purchasing a cheap car. That is not because the country is hierarchical, but because they want to keep up with the Joneses. Even in education, many children struggle with their parents when they want to choose a major to pursue their career because some parents insist on them pursuing majors with higher social credibility, such as medical degrees or engineering majors.

With higher education and higher employment positions, people are given a great deal of respect. The opinions of high status people matter the most. People are proud to announce a relationship (family-related, friendship, or even friends of friends with that person) with

them. For that reason, people usually obtain higher education even if they do not intend to stay in academia.

***Strategies:***

- A person that you see as of higher social rank sees you running, and comments on it. In other words, motivation through people you find of higher social status than you.
- Putting yourself in a higher social status, as your level goes up. The higher your level goes, the more your rank goes up in the leaderboard. That leaderboard should be in between your friends (followers) so that you know everyone you are competing with.
- Seeing running history on the map. This showcases what parts of the world you went running and this way people get motivated to show off with their adventures. (Check in on the places you go running. inspired by ‘swarm’ app)

**4.9 Invention of Traditions**

Iranians are a fan of the invention of traditions (Hobsbawm & Ranger, 1983). Hobsbawm, the British historian, was the first to throw this term. According to him, “many of the traditions which we think of as very ancient in their origins were not in fact sanctioned by long usage over the centuries, but were invented comparatively recently” (Hobsbawm & Ranger, 1983). Iranians are very welcoming to other cultural elements. They love diversity. They are fond of integrating those different new elements into what they already had and inventing new traditions, but label them as old, original, and ancient. In the end, they collage all the different elements into a single Persian style. An example of this would be Persian food. As we said, Persians are in love with wisdom and complications. This is evident from Persian food, which has evolved over time. It’s on the opposite side of pressure cooking. It takes time to boil and be prepared. Food from other sides of the world have been gradually added and integrated into Persian style foods. For instance, Gheyme is a very famous Persian dish that has been around since the Sasanian empire (224 to 651 AD) (“Gheyme Name (قغمه نام),” n.d.). Then, the ingredients included meat and onions fried in oil, along with chickpeas, dried lemons, and seasoning. The food has been altered over time and in various areas of Iran, they have added different elements, such as potatoes, etc. that entered Iran later. Or the pizza style we have in Iran is neither American nor Italian, even though it is called American and Italian. We learned pizza from them and then adapted it to Persian taste and style.

Moreover, you can sometimes find paintings of Mary, Jesus' mother, in their homes, even though they are Muslims. Years ago, when some foreign tourists visited Iran, they saw Muslim Iranians visiting Wank church in Isfahan to pray because it gave them a spiritual sense. The tourists considered it strange that Iranian Muslims would visit non-Islamic religious sites to connect with God. Dualism is one of their main characteristics. They have duality in everything. They are fans of modernism, even though they are lovers of traditions. They like to combine these two. They would integrate traditional Persian cultural symbols to the newest technologies to represent the Persian style. When Islam entered the country, they were among the few countries that became Muslims but kept their language, *Farsi*. The dualism showed itself again. They adopted the religion and kept their language at the same time. They love to live with contradictions. Contradictions can produce harmony, like how painters use complementary colors next to each other to draw the viewers' eyes. It creates harmony.

***Strategies:***

- Connecting with people across the world, with different cultural backgrounds. Reading their feelings, getting to know them and being inspired by the way they live. Then integrate them into their own lifestyles.
- Joining collective activities with people with different cultural backgrounds. Each week one member would define a challenge based on their own culture. For example, this week's challenge, "Going for thirty minutes runs every day, eating this kind of lunch, and kissing your mother goodnight so you make them happy."

**4.10 Complications**

This parameter is not fully eliminated but has been integrated into social status and dualism. Persians are in love with complications. From their relationships to their parties and family gatherings, to their design of architecture. Dr. Shalchi tells a story about this: "I was on my way back to Tehran from Paris, sitting next to two women on the flight, one from Tehran and the other from Isfahan. The woman from Tehran came to the flight crying and started complaining about her daughter in law who lived with her son in Paris. During her visit, she got into a fight with her daughter-in-law because she accidentally heard her talking with his son. The other woman, who was from Isfahan, was sagacious. An expert on complications of Persian culture.

She started teaching the crying woman tips on how to treat her daughter-in-law. For instance, she said, “Why did you hear what she said? Sometimes, You should not hear even though you would. It would be best if you pretended that never happened. In my case, I don’t hear many things that I hear”. I realized why my grandmother sometimes didn’t hear many things intentionally at that moment! It wasn’t because she was deaf or didn’t care; it was her way of protecting the family. Another thing that the woman said was, “Don’t go to their house too much. Let them come to your house whenever they want. That would prevent conflicts from happening. Or whenever you call them, first talk to your daughter-in-law, not your son!” This simple example shows how complicated the relationship between a mother and daughter-in-law can be. Everything can be complex like this in Iran” (V. Shalchi, personal communication, 2022). In throwing parties, there are many controversies on who is invited and who is not. What to cook, what are the variations, how to decorate. As I said, complications!

#### **4.11 Dualism**

Persians are not collectivists or individualists. We can categorize them in both based on the situation they are in. In a recognized community that they are part of, they are collectivists (One of the reasons is the social status). In society, where they are not recognized, they are individualists. For instance, if they are driving a car in the streets, they may treat others as if they do not exist. But if they recognize the car’s driver, they suddenly act differently.

This dualism also shows itself in other parts of the culture. Different relationship levels, separating guest rooms and living rooms, etc. They are fans of modernism, even though they are lovers of traditions. They will integrate traditional Persian cultural symbols to the newest technologies to represent the Persian style. When Islam entered the country, they were among the few countries that became Muslims but kept their language, *Farsi*.

They love to live with contradictions. Contradictions can produce harmony, like how painters use complementary colors next to each other to draw the viewers’ eyes. It creates harmony.

#### ***Strategies:***

- Customizing accessibility levels. Maybe you don’t want certain people to find you. Or maybe you would like them to find you but not see the information others see. (Also aligns with Different relationship levels)

- If you see someone who looks similar to you in different ways, you will be motivated more because you feel a certain resonance with them. You might think that if that person managed to reach a certain point, I can too, due to our similarity. By finding people that are similar to them and reading their stories, individuals can be inspired and persuaded to exercise.

#### **4.12 Theism**

A theme of theism has always existed between Iranians. How they believe in God is different from other Muslim parts of the world. I'm talking about the typical Iranian citizen, not the government. They don't believe in rigidness. They believe in kindness and tenderness. In their opinion, God belongs to everyone.

#### **4.13 Love**

The tendency to *be in love* or amour or *eshgh* is paramount in Persian culture. That is one of the reasons that poetry is enormous in Iran. Hafez keeps talking about love. God is described through love in Poetry. Even evil does not have a negative connotation in Persian mystical literature. The reason being that they would say that the devil was in love with God, and he was jealous of humans, therefore, did not want them to exist. He wanted God for himself.

Being in love is respectful in Iran. Being in love with family, being in love with religious legends, even in politics, leaders always try to play with this characteristic and ask people to love their super leader.

#### ***Strategies:***

- Showcasing your love to someone by taking care of them. If you go running, they (your loved ones) will get rewards.
- Getting to know other people's personalities, and getting inspired by them.
- Learning to love yourself more as you improve. Even though some individuals may feel they are not trying, seeing their journey shows them how far they've come. Tracking their feelings along the way, how much they have helped others, their growth, etc. will be motivating for them.

#### **4.14 Inner Need For Collective Happiness**

Iran is not an easy place to live. Despite the differences in situations, many people in Iran share a similar sadness. They are always looking to find collective happiness so that they would replicate a happy society. When the Iranian soccer team wins, regardless of how much they like soccer, everyone goes into the streets and expresses their happiness. They become deeply happy and for a few days, they all feel united, contented, and cheerful.

Being united and feeling they are part of something that finally won, makes them the happiest!

##### ***Strategies:***

- People would choose an art medium, and then based on the questions they answer; they are assigned to a group to exercise. Each person is given a color, and the more they exercise the more colorful the artwork becomes. They will compete with another group that has similar artwork and members. Each team that finishes the artwork sooner, will win the game and compete with more tougher members and tougher challenges. The artwork (mainly mandala) becomes harder and bigger, and members should run more and on schedule to win the challenge.

#### **4.15 Heroism**

Making heroes out of people is what I've seen in the culture many times. Creating heroes out of influencers and people who flaunt their skills has always been part of the culture, whether in politics, myths, or religious legends.

##### ***Strategies:***

- Giving voice to everyone and making people feel like they're being heard and it's their turn to be a hero. They will try hard to shine whenever it's their turn. If it doesn't work they will try harder the next time. The thing is they're all assigned a turn to shine. And they all have a chance of being a hero!

#### **4.16 Summary**

Among the fifteen parameters listed, three of them are not relevant in persuasive technologies design. As a result, the final parameters of Persian culture are the following:

*“Family, Hospitality, Helping others, Social status, Love, Inner need for collective happiness, Different relationship levels, Mystery, Invention of traditions, Heroism, Dualism, cleverness.”*

In terms of Schwartz theory, Persians are mostly in the middle (figure 17). Their values can be opposite, as was said in the dualism parameter. For instance, they are neither individualists nor collectivists. But they can be both based on the situation and the people around them. Indeed, they can also be closer to one diagonal than the other. In figure 18, the Schwartz culture map is displayed, which was sourced from the chapter titled *Gamification And Culture* in the book *The Gameful World*. The map visually represents several countries positioned within the cultural framework. To incorporate Iran into this map, lines were drawn connecting the relevant parameters, and a dot was placed at the corresponding location. Through this integration, the position of Iran within the cultural map was determined.

Figure 19 illustrates how some parameters are merged with motivational theories and gamification concepts. Developing these strategies required significant reflection, introspection, and creativity. The ideas and theories were merged together and then transformed into five mini applications. To evaluate the participants' reactions, some strategies were incorporated into the testing method.

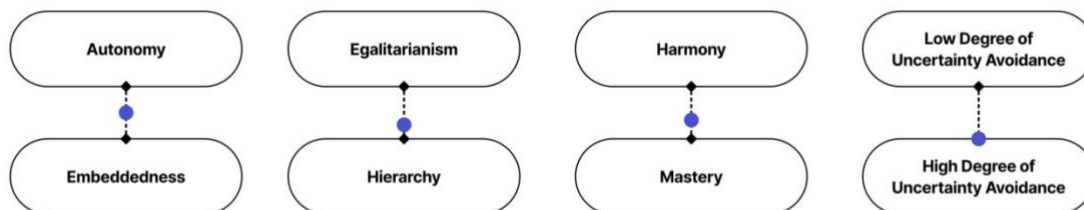


Figure 16 - Persian culture and Schwartz theory (Schwartz, 2006).

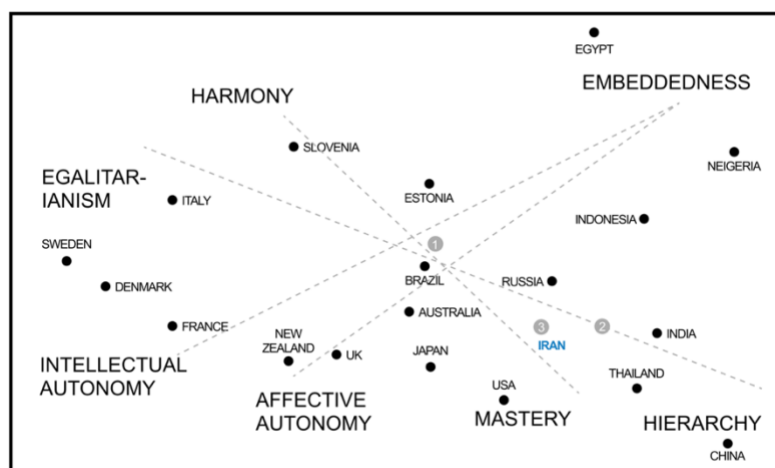


Figure 15 - Positioning Iran in Schwartz culture map.

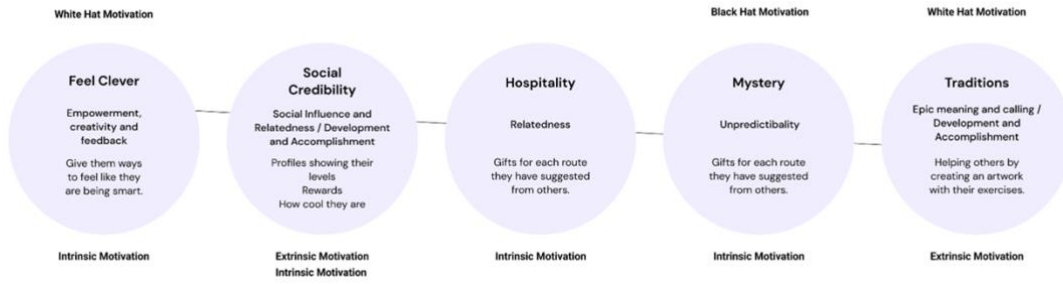


Figure 17 - Connecting Persian culture to theories of motivation by (Chou,2014), (Ryan, Deci, 2000).



## **Chapter 5: Design-Creation: five mini applications**

*“Earlier versions of Christ’s last supper, painted during the sixth and seventh centuries, depicted Christ lying or reclining in the place of honor. For nearly a thousand years, the well-mannered did not sit at table. Leonardo da Vinci disregarded the reclining position follow by earlier civilizations and painters for Jesus and his Disciples . To make the ‘Last Supper’ acceptable to Italians of his time on an associational plane, Leonardo seated the crowd around the table on chairs or benches (Papanek, 1972).*

### **5.1 Benchmark on existing applications**

#### **5.1.1 Run keeper**

Exercise application Run Keeper is a running-focused app that helps the user set goals (e.g., increasing average pace, losing weight), track exercises, receive personalized coaching plans, participate in several challenges, and join virtual groups. This application tracks our pace, heart rate, and other metrics using our phone's GPS and sensors (Asurion, 2022; Chambers, 2017; Lindholm & Monsen, n.d.; Mendoza, 2020; Steber, 2021). The results are summarized at the end. In addition to following each other, users can take pictures of their sweaty faces during their runs or share pictures of their environment. Furthermore, they can share their paths with their followers, who can comment on them as well.

As part of its motivational strategy, Run Keeper places a strong emphasis on accomplishments. Your achievements are presented as characteristics that describe you. You will find the number of kilometers and activities that a person has completed on their profile when you want to make friends with them. This ties in with the differentiation dynamic, where based on the number of kilometers they ran, the players become more valued. A badge-based reward system is also used in the app.

Apps like this one are beneficial because people can have various experiences with them. A person can value less about accomplishments and more about his or her friends, the paths they take, and the images they present. They can make each other excited about their next run by commenting for each other! And vice versa! People with more interest in accomplishments can focus on that aspect of the app and enjoy their run!

### 5.1.2 Zombies, RUN!

The storytelling concept is at the heart of this application. Users are told a series of stories about zombies or other scary creatures chasing them and that will act as an extrinsic motivation element to keep them running. They play the role of the people trying to prevent zombies from taking over the world (I Run Things(Suzie), 2020; Rocket Runner, 2018). A story with subsections will be played for them as they select a mission, put their headphones on, and run. Without following the storyteller's lead, the zombies will catch them and kill them (I Run Things(Suzie), 2020; Rocket Runner, 2018).

A mission may occasionally prompt users with *robo-prompts*, such as collecting a bottle of wine or a medical kit . These items are listed in their *codex*, where they can see their achievements (I Run Things(Suzie), 2020; Rocket Runner, 2018). Achievements can help players receive badges, unlock artifacts, and uncover mysteries related to the zombie apocalypse (Ravenscraft, 2012; Rocket Runner, 2018). Furthermore, they can collect supplies in case they get lost or caught by zombies.

Another section of the app is called *Base* in which players can build their own buildings such as hospitals, housing, and recreation areas in the town that they find (zombies have taken over!). The base consists of a farmhouse, a defense tower, and an armory (Vaquero, 2020). Buildings can be done with supplies and materials they earn from the runs. The town's status can be improved by upgrading buildings along the way and leveling them up. At the top of the screen, a bar indicates how many people live in your town (based on the housing you created), how happy the residents are, and how well your town defends itself against zombies. As a final note, this app will not display any charts or diagrams regarding the number of calories burned. However, it provides them with a summary of their average pace and how many kilometers they ran. There is a vast difference between a Zombies, Run-type app and a run keeper app (Cramer, 2021; Ravenscraft, 2012).

### 5.1.3 Nike+

Competition and challenges are the main features of Nike Run Club's gamification (Good UX by Appcues, n.d.). Similar to the Run Keeper app, the running mechanism provides users with the audio of a trainer, their own playlist, distance, time, and speed information about their run. The

difference is that Nike has a leaderboard section in which they compete with your friends and family for the top spot (Strive Cloud, n.d.).

As a result, individuals are driven to improve every day because they surpass the sense of competition they feel. Nike also offers the opportunity to create and participate in organized challenges and sometimes win prizes like a free trip to Nike headquarters. There is a deadline to complete the challenges since deadlines create a sense of urgency and because of a psychological concept called FOMO (“fear of missing out”), the users want to complete the challenges (black hat motivation) (Brown, 2023).

“The app also measures sports performed transcribing them into points, rewarding users for their efforts. Customers are rewarded with trophies and badges after completing different levels.” (Digital marketing industry case study library, n.d.).

## **5.2 Five mini applications**

When I moved to Canada, I did not have many hobbies to keep myself amused. I stopped working out and felt increasingly more dissatisfied every day. My supervisor suggested I use an application called *Run Keeper*. She told me that the app would help me with running, as well as connect me with other runners. I really wanted to start running, but I was lacking motivation. It was only out of fear of disappointing my supervisor that I finally got up and started using it. Appearing as someone who could handle their problems convinced me to start. My feeling after was great, and the app was quite helpful. However, I was most excited about the comments my supervisor left on my running posts the day after I ran. I looked forward to seeing her reactions to my posts every morning when I woke up.

After a while, I recommended the app to one of my Indian friends. She downloaded the app, created a profile, and began commenting on my posts. Although I felt happy, I knew I did not need to impress my friend. Therefore, I wasn't motivated as much. For me, impressing people at an upper level is extremely encouraging. Likewise, the majority of the people I know in Iran are the same as me. When I told one of my Canadian friends this story a few weeks later, he said this is not motivational for me at all, and that's super interesting that it is for you! That's when I realized how much culture can affect how people are motivated.

I asked several Iranians if they used self-improvement apps, and most replied negatively. The most widely used application in that low percentage was Strava, which is based on route finding,

therefore tackling a domain connected with satisfaction and cleverness in Iran. This was the basis of why I decided to build applications that could actually work for a Persian audience. Through the use of mini-applications, I brought to life the twelve parameters of Persian gamification. They are presented as "minis" because the purpose is to emphasize motivational strategies rather than the design of the application itself. There are at least one or more of these parameters in each of the applications. In this study, we will examine how cultural backgrounds can be used to strategize the design of motivational digital products.

### 5.2.1 Application One: Finding Routes

A route-finding strategy is at the core of the first application. A good understanding of routes gives Persians a sense of **cleverness**, which is the key parameter used in this app. Using the app, users can locate new routes and suggest them to others (figure 20). In addition, people enjoy seeing places others have explored, so a section that suggests routes they might enjoy can also be helpful.

In addition, if people use a person's suggested route and like it, they can gift them as a sign of

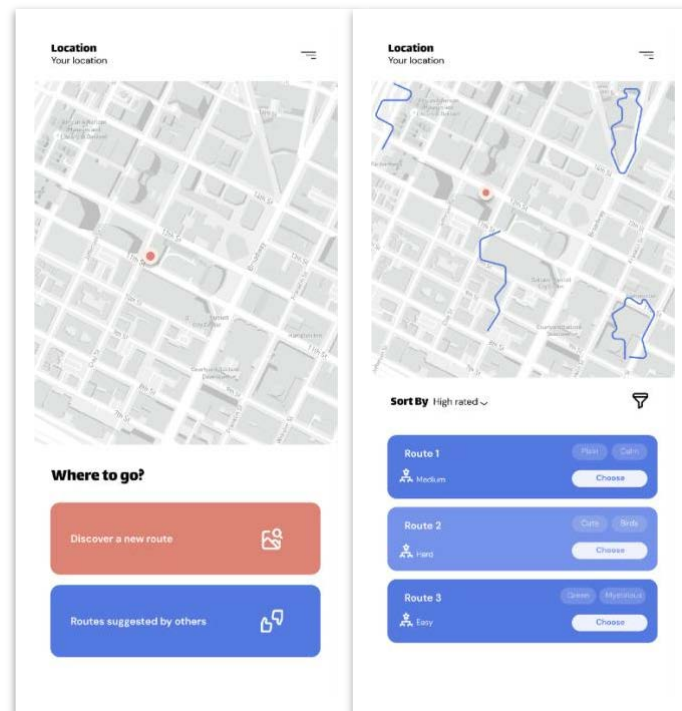


Figure 18 - Route Finding Application (1)

**hospitality**. As well as making gifted people feel happy and clever, it would also make gift-givers feel intrigued as well (figure 21). Their exercise history can also be viewed on a map. As a

way of showcasing how impressive they are and establishing **social credibility**, they show how many places they have visited and travelled. They can also switch to the future and mark the places they want to visit. This triggers the feeling of **happiness and optimism** in them.

Their levels change based on their overall achievements. The variables that affect it will remain unknown to the user. There will be a sense of **mystery** that will excite them, and people will feel clever figuring out those parameters, and thus will be motivated to guess the logic underlying level changes.

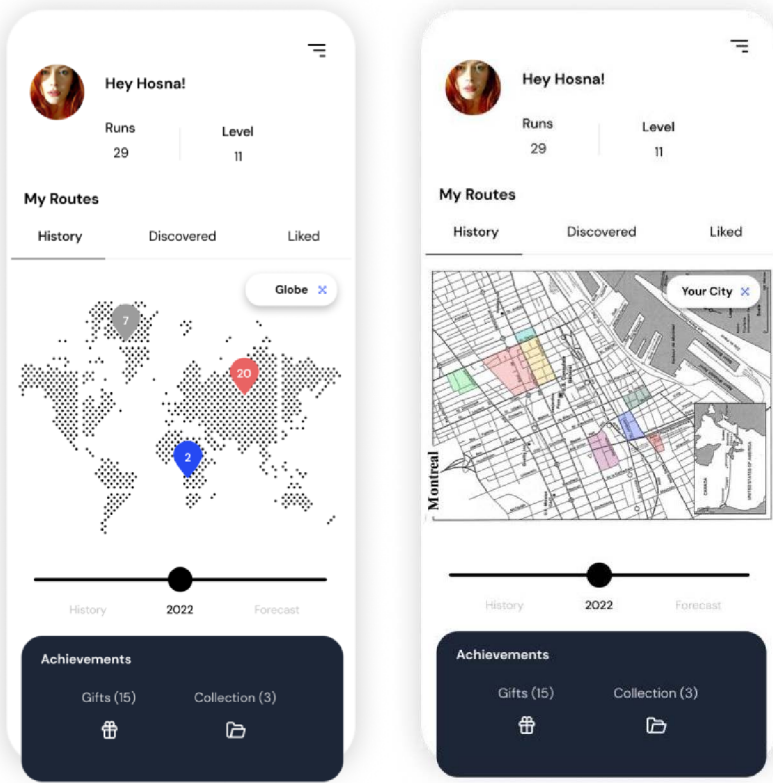


Figure 19 - Route Finding Application (2)

## 5.2.2 Application Two: Collective Activities

**Collective activities** and **the inner need for collective happiness** form the basis of the second application. A group of people working together to achieve something and finding collective satisfaction is the heart of this app. People can choose to join a group based on their pace, level of exercise, and personality (figure 22). Every time they join a group, they are supposed to play a role and assist the group in filling up a mandala. Mandala is chosen as the core medium because of the popularity it has amongst Persians. Persian rugs look like mandalas and their appearance appears familiar to them. However, any other form of artwork or medium can be substituted. When they join a group, they will be assigned a color or a shape. As they run, the mandala fills up with their shapes and colors. As they run at a reasonable pace and for a sufficient distance, they fill up the mandala and advance to the next level. As the levels progress, the shapes become more complex, then the mandalas become colored, and then they become animated, etc.

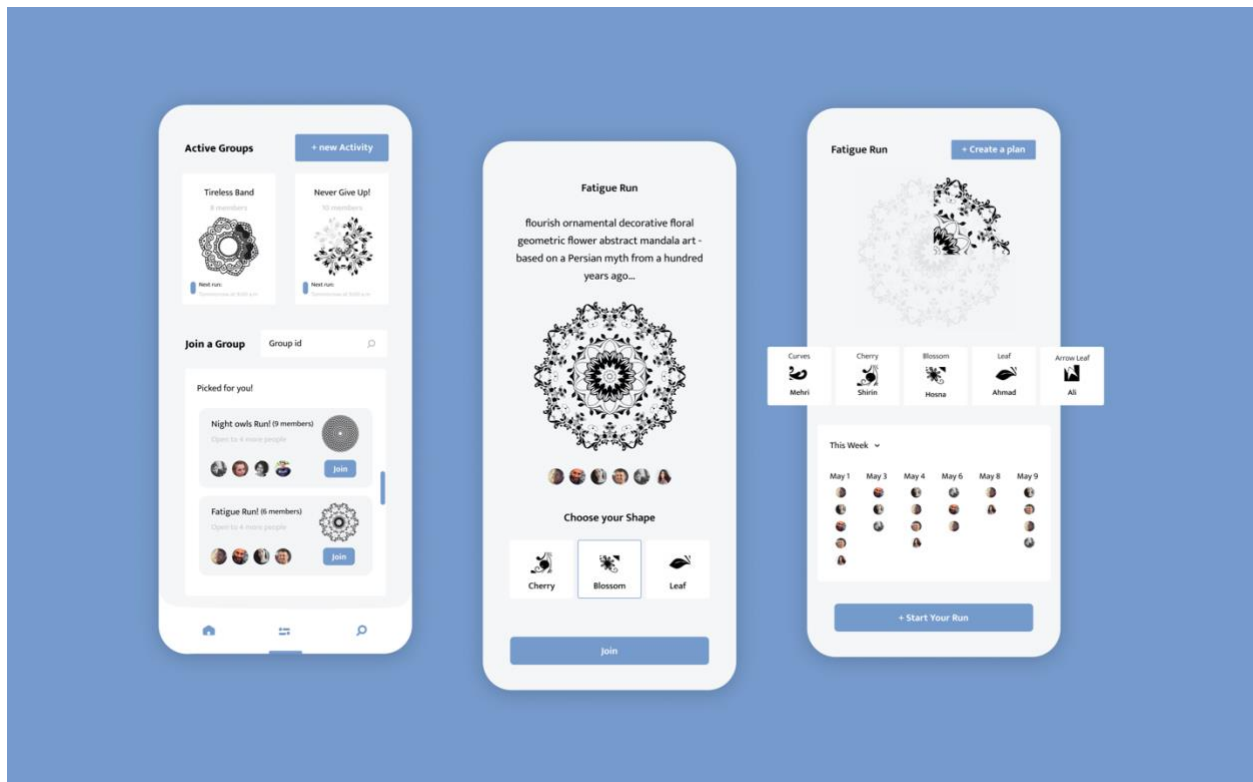


Figure 20 - Collective Activity Application

### 5.2.3 Application Three: Sharing Feelings

The third app is based on **Social status, helping others, showing off, invention of traditions, and hospitality**. Using this app, users can share feelings, pass positive energy, and help each other cope with negative feelings. In designing persuasive technology, you are more likely to overcome a challenging stage if you see other people who have overcome similar challenges or feelings (Fogg, 2003). The reason is that you see yourself in their shoes and you become inspired. This application can therefore help users find people with similar problems, read about how they overcame them, and get inspired when they are feeling down.

When they click on the button "overcome", they will write their feelings and add hashtags (figure 23). Using hashtags allows them to find other people who have dealt with similar issues.

Afterward, they can read their journey, see their profile, what they do, how similar they are, and how many times they've helped others. They will select those that inspire them, customize them to fit their personalities, and come up with a solution tailored to their needs. If they succeed in overcoming this, the people who motivated them will be notified! They can also exchange gifts, such as texts, voice messages, music playlists, images, and even imaginary ones. Additionally, when they feel super positive, they can share them so others who need the positiveness can get inspired.

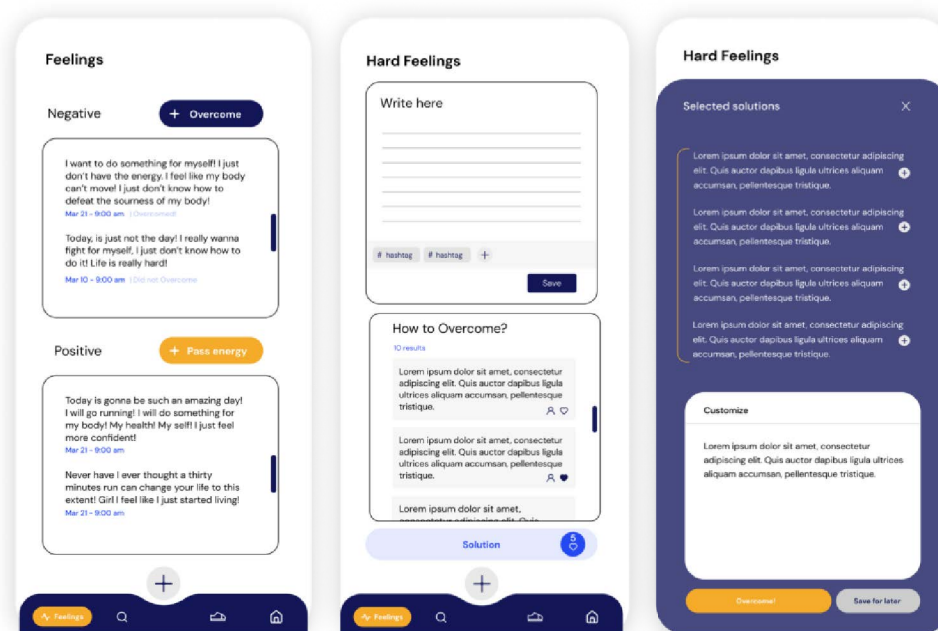


Figure 21 - Sharing Feelings Application (1)

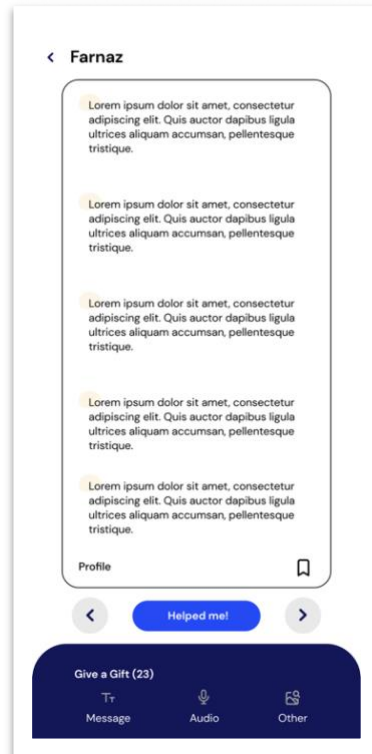
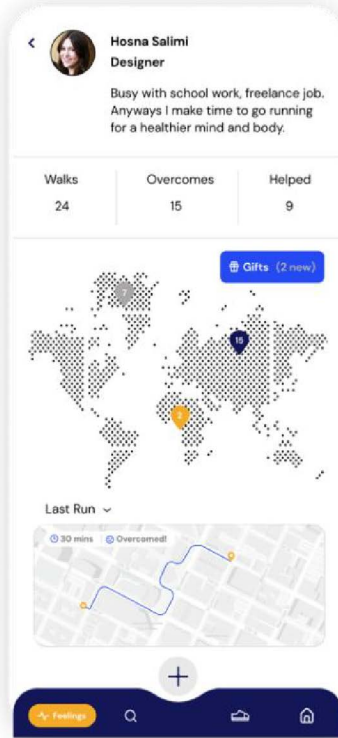
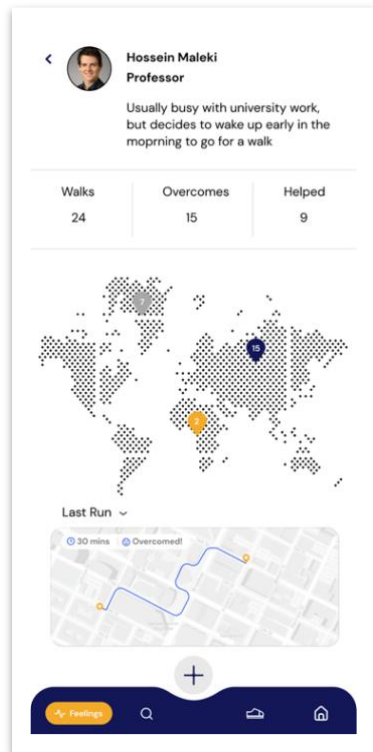


Figure 22 - Sharing Feelings Application (2)



This application has a feelings map that lets users see others dealing with similar issues from all over the world and drag a bar to adjust the similarities (figure 24). They can click on the problems to read about their journeys, and they can also view their profiles.

Social status is displayed in the profile section. In other words, they can see that person's profession (and become inspired and motivated on learning that this type of person also suffers from the same problem), their exercise routine, how much they have helped others, and the extent to which they have overcome their feelings. Public display motivates each person to do better!

### 5.2.4 Application Four: Teamwork!

The fourth app is based on the premise of **family** and sort of wears the black hat of extrinsic motivation. In the system, people form groups (family or friends) and exercise in an order determined by the system (figure 25). Individuals can only use the system when it's their turn, and to be able to use it, the person before them must complete their exercise. So it is kind of a combination of an imposed choice from the family, but this time from the system but again for the family, and also the fear that if they don't complete their exercise, their mom can't do hers and it's bad for her health! In addition, each individual is evaluated according to their

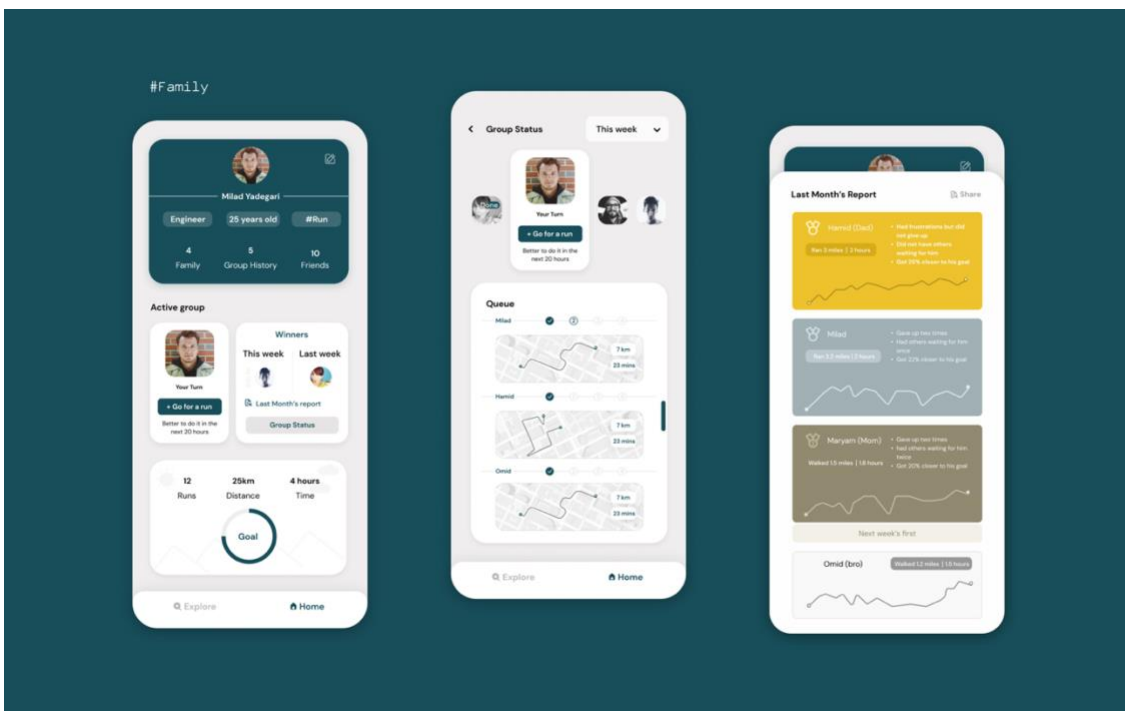


Figure 23 - Teamwork Application

circumstances and goals and assigned one of four cards: Gold, silver, bronze, or white. This ranks them weekly and the comparison between family members motivates them to do better every week.

### 5.2.5 Application Five: Caring!

This application is mostly based on the premise of **love**, **helping others**, and **different relationship levels**. Individuals can use this application to see their growth journey and learn to care for themselves. Seeing their growth journey helps them realize that they've come a long way and have tried for themselves. Despite feeling down sometimes, they continued. They have changed even though they may not notice it now. A lot of steps have been taken, and that's how life works. They can take pictures of themselves and see a summary of their growth map and a calendar that shows their healthy habits throughout the week (figure 26).

The reward system is also different in this app. Exercise won't reward people themselves; instead, it will reward the people they care about. They can only be rewarded if they are on someone else's list of loved ones. This way, they are not only taking care of themselves with their workouts, but they are also taking care of you and reminding you that you are loved.

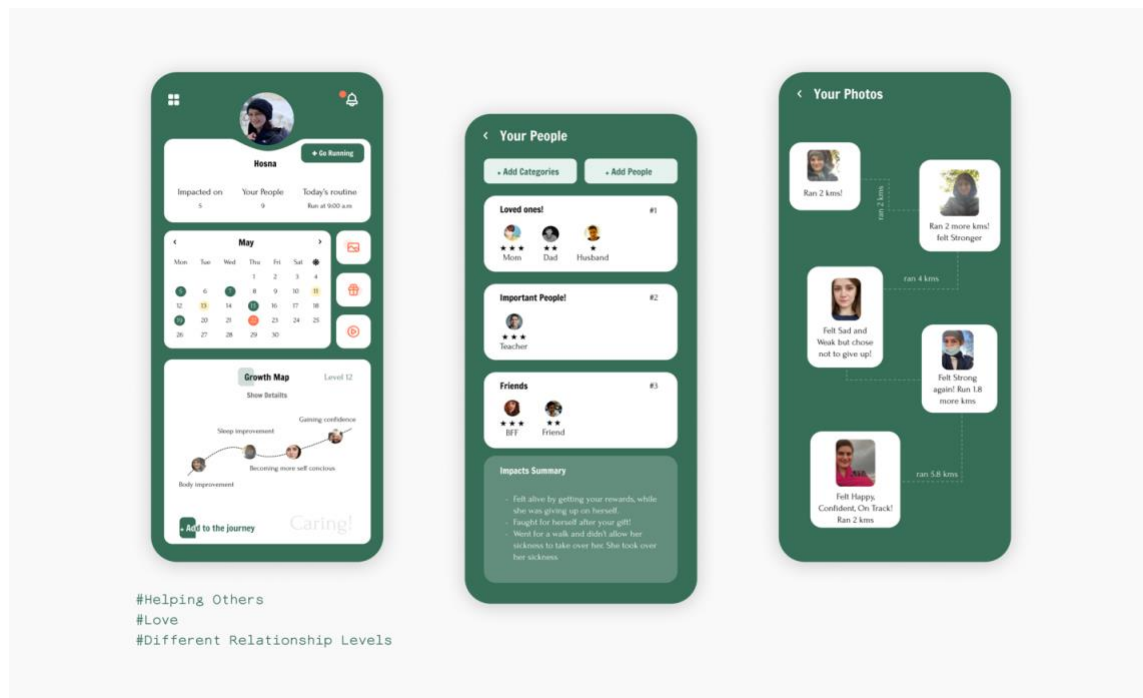


Figure 24 - Caring Application

A section called "People" allows users to list the people they care about (figure 26). According to their importance and relationship, they can place them in several categories, and the rewards will vary. Therefore, a friend is given a different reward than a family member or a supervisor.

## **Chapter 6: Design-Evaluation: Testing the Parameters and Getting to know the Personas**

The participants were grouped into groups of four and five. They were chosen from a diverse range of backgrounds: Two of the participants were raised in New Zealand and now live in Canada (one of them had eastern roots). Two Indian participants living in Canada, four Persian participants who currently live in Canada, two Persian participants living in the US, and three Persian participants living in Iran. They all had a good understanding of the English language so the tests were conducted in English. Throughout the whole experiment, they gave feedback to their team mates and, despite not knowing each other, they developed smooth relationships through gifts and feedback. The participants are introduced fully in this chapter and they have numbers associated with them (P1,P2,...,Pn).

This research was evaluated qualitatively, as I examined the feedback of each participant, including their texts, images, reactions, etc. The reason that different types of people were chosen for the study was to explore the differences in their reactions to the strategies. As mentioned before in the thesis, the goal of this research was to come up with Persian gamification strategies and this does not mean that they only will work on the Persian audience. They can work on other people with similar backgrounds. They are also a way to think beyond pre-existing gamification mechanics. To think of the new ways of being and integrate left-out cultures into the digital world.

To examine how these parameters influence the participants' experiences, I asked them to share their run/walks sessions in detail with me and others including images of their surroundings, their feelings, their motivations and frustrations, and their final impressions. This had helped them to create a visual record of their journey bringing us to the love parameter, and sharing their experiences with others for social status parameter. They were asked to give each other comments (helping others parameters) and exchange gifts for the hospitality parameter.

Adding all these parameters to PDF sheets and combining them to explore their reactions was the main focus of this test. As the limitations of the study including the small sample size and the limited amount of time prevented me from fully validating the strategies. Therefore, the results were evaluated into "positive" and "negative" context. As an example, one participant (P5) was sick when she began the journey and felt super frustrated. As a runner, other people's experiences

did not motivate her, and she did not care about seeing other forms of exercise such as walking. Furthermore, she did not find the idea of giving gifts to be appealing. It was only one participant who resonated with her on the importance of incorporating exercise into a busy schedule that caught her attention.

However, as she received comments from others about her exercise, she began to become interested in the experiment and became motivated to continue. She said: *“I loved seeing people’s feedback on my experience! And the presents - even if hypothetical - actually seem really sweet. I now feel bad about not giving anyone imaginary presents :D”*

She started giving thoughtful gifts and others enjoyed receiving them. She also appreciated reading the experiences of individuals who "went the extra lengths in terms of sharing their experiences thoughtfully." Consequently, she provided more details about her own in the subsequent exercise.

Among the other participants, she connected most with the Persian participant from Iran (P9), given their traditional backgrounds and professional careers. It was enjoyable for them both to share their experiences with each other. Now, this example shows that her experience with the parameters and strategies was POSITIVE.

On the other hand, the Canadian participant (P6), for example, had difficulty connecting with the idea of giving gifts and was not motivated enough to complete the experiment as it wasn't matching her interests. Hence, we can conclude that her experience was NEGATIVE.

Another example was the Iranian participant (P12) who started the journey with so many frustrations. He was super disappointed with the polluted weather of Tehran, the chaotic roads, and the noisy streets. He did not enjoy his walks at all until he saw how other participants who were living in the same city as him enjoyed their walks and visited places with nicer environments. He also received thoughtful gifts from other people in his group who gave him a book that he could read to change his mind set and some peaceful music. He started changing in his next walk sessions and said that he starts to enjoy his walks way more and he actually wants to continue doing them! Therefore, his reaction with the experience was POSITIVE.

Figure 27, 28, 29 show how participants' motivation levels changed during the journey. Then, every single participant of the research is introduced to explain their background, their interests and their frustrations. The chapter will conclude in with a final summary of the tests.

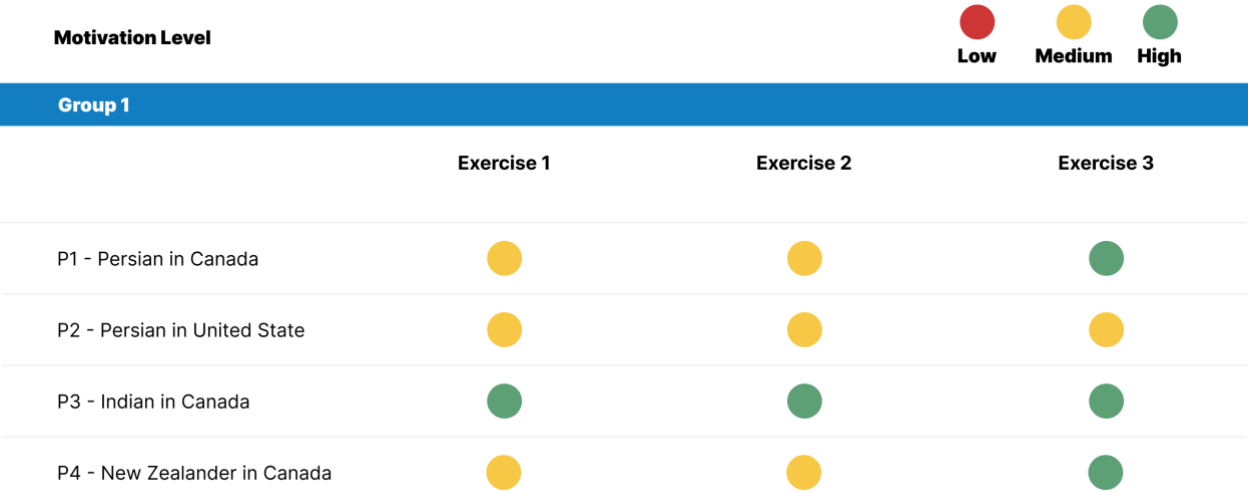


Figure 25- Group 1 Motivation Levels During the Experiment

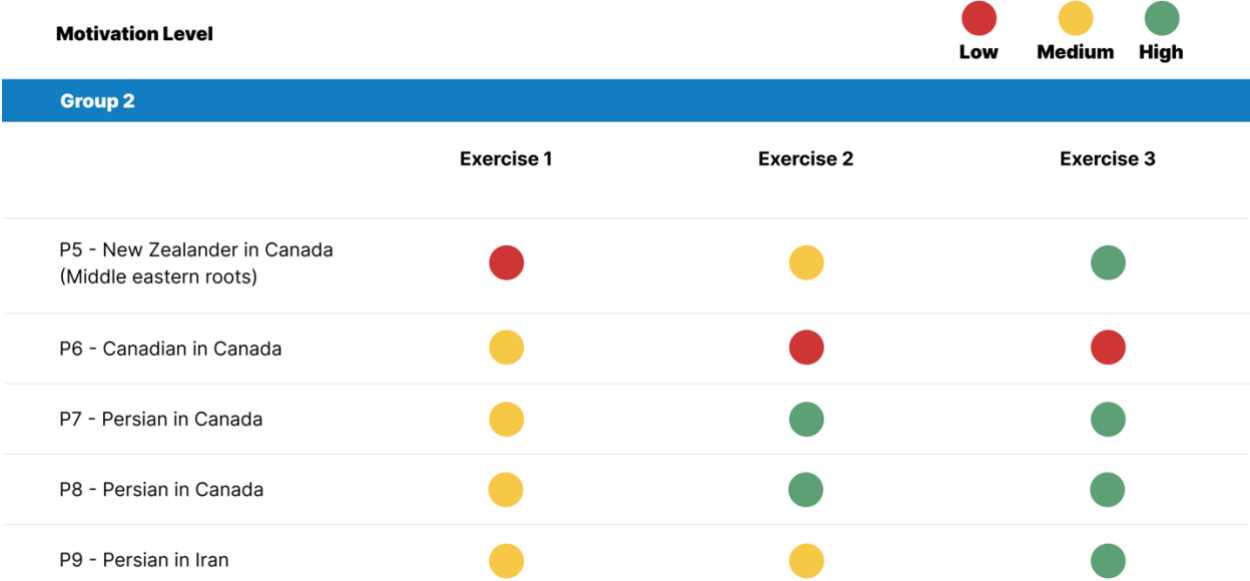


Figure 26 - Group 2 Motivation Levels During The Experiment

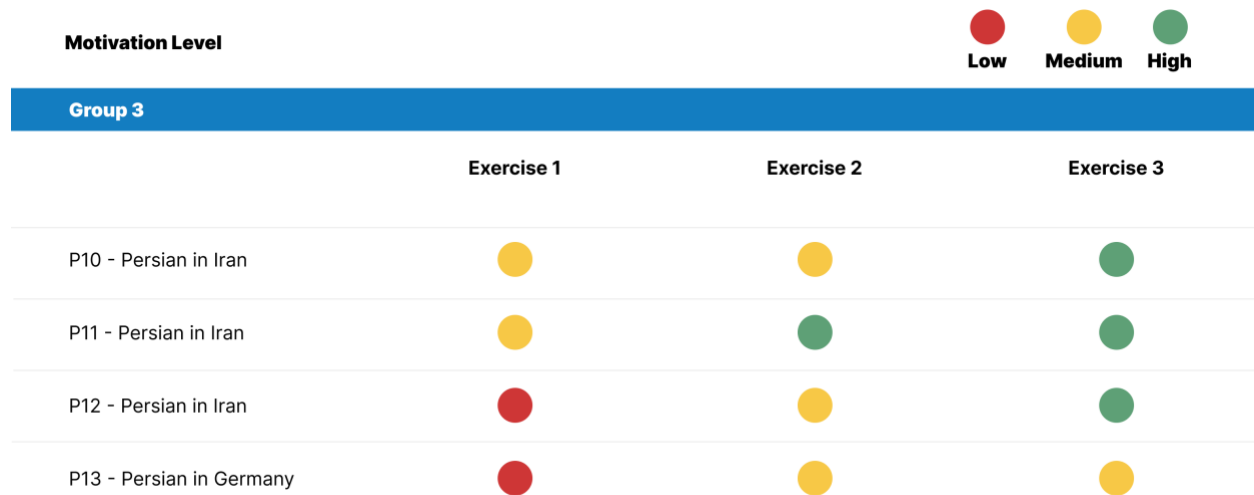


Figure 27 - Group 3 Motivation Levels During The Experiment

## 6.1 Group 1

### P1 - Persian in Canada

Twenty-four year old Iranian who moved to Canada about a year and a half ago. Walking with his friends is one of his favorite pastimes. Walking reduces his stress levels and enables him to feel relaxed throughout the day. However, he needs extra motivation to step outside when stressed out.

His other main frustration is that when the weather is unpleasant, he refrains from exercising. Furthermore, the same path does not interest him every day, so he enjoys exploring new paths.

His experiment enabled him to learn about the places other people went. Among his group members, he found inspiration in people who spoke about the environment and viewed the world through an aesthetically pleasing perspective. Aside from this, he was particularly interested in reading about people who shared similar thoughts and whose words resonated with him. He found this fascinating and was motivated to make friends with them and even offered to accompany them on their walks.

### P2 - Persian in United States

Twenty-eight-year-old Iranian who moved to the United States in the last six months. Prior to his immigration, he had an exercise routine which he had fallen out of and was in need of extra motivation in order to get back on track. A major frustration for him was the amount of work he

had to do as a Ph.D. student and the stress associated with his studies. He needed to make time for himself which he found difficult. Meeting people in similar living situations was of interest to him. Also, he was excited to see images of other participants and their surrounding environment. After taking pictures of the sky in his city and receiving positive feedback from other participants, he came to appreciate the sky even more, and was more inclined to take walks under it after a long day at work. As compared to the first exercise, he felt much better after the last exercise.

### **P3 - Indian in Canada**

Twenty-six year old who wants to exercise to feel more refreshed and productive in her day-to-day life. Taking pictures helped her see her surroundings in a better way and she felt a sense of peace as a result. Seeing other people's beautiful images also inspired her to step out! For her, reading about others' positive journeys was very motivating. Her favorite thing to do is spend time with people and talk to them about positive experiences. After this experiment, because of the feedback she received, she felt much more motivated and confident about her abilities.

*“I was very happy to read the feedback from the other Participants! I was just very happy that the participants could see my journey and understand my feelings as I was walking those paths. It also makes me happy to know that the participants feel motivated and inspired from my experience. I was also very inspired from the participants and this whole exercise of seeing and noticing things around us is so important to enjoy our walks. It makes me happy to see everything in a sequential order from my first walk to my last! So I am very happy to see my progress and even a few months after the exercise, I continue to walk and I am much more active even though it is winter, so thank you!”*

### **P4 - New Zealander in Canada**

A forty-three-year-old who already exercises about five times per week. His main goal was to do cardio and gain strength to play more with his son. As he indicated, he does not require motivation for that, but rather some means of avoiding disruptions that lead to the interruption of routine. It was initially unclear to him what the experiment was all about. Nevertheless, as he had to record his experiment for others, he began to take a closer look at his surroundings, which motivated him to step outside and observe things in a different perspective, which was very interesting for the other participants as well. As a result, he became more aware of the beauty of



life and his surroundings. In contrast to the other participants, he preferred to try similar routes he already liked, but he was also open to trying new ones.

Additionally, he found it more enjoyable to read about the experiences of his teammates than to be motivated for more exercises. He also enjoyed receiving feedback from them. His personal journey also inspired him and he enjoyed walking through it. The ranking part did not appeal to him at all. A hierarchical structure is not something that he is particularly fond of.

## **6.2 Group 2**

### **P5 - New Zealander in Canada (Eastern Roots)**

A forty-year-old who tries to develop a running habit and wishes for a faster running pace. The beginning of the experiment was a bit harsh for her as she felt sick, but she pushed herself to complete the first exercise. As noted on the first feedback sheet she filled out, she wished there were more runners like her than walkers. She did not connect with the gift idea either. But as she moved on through the journey and received feedback from others, she felt much more inspired and motivated. Having received imaginary gifts from others, she felt excited and began to give thoughtful gifts to her teammates. Her favourite part of reading was reading about other experiences, their ways of thinking, and how they viewed the environment. Her interest was piqued by the images they shared from their experience.

### **P6 - Canadian in Canada**

A twenty-nine-year-old who exercises a couple times a month and wants to improve her physical fitness and needs extra motivation for that. She had a calm walking experience at first. As she did more walking and running, she felt more intrinsically motivated. By seeing other people doing the experiment in different ways, such as running, or heading to the gym, she became inspired.

Because of her studies, she took a long time to get back to me with her exercises so hypothetically, the journey was less inspiring to her than the other people in the group.

### **P7 - Persian in Canada**

A twenty-six-year-old who moved to Canada around three years ago. He usually exercises three times a week to lose weight. Unlike others, he started the journey in his home gym by running on a treadmill. Exercise helps him throw away the tension that builds up in him during the work

week. It also helps him gain self-confidence, because of this he was one of the people who did not need any sort of extrinsic motivation to start exercising. This was also inspiring for other participants on his team. He was mostly inspired by seeing his teammates' routes, images, and the feedback others gave him.

#### **P8 - Persian in Canada**

A thirty-three-year-old who moved to Canada around a year ago and now exercises about four times per week. Her main passions are cycling, walking, and running. The beauty of the environment was the main reason she stepped out and explored new places and exercised. It was her favorite thing to observe how others viewed the environment and how they navigated it. Through the experiment, she was able to acquire new perspectives on how to view and comprehend her surroundings.

#### **P9 - Persian in Iran**

A fifty-nine-year-old who often exercises three times per week and wants to improve his mental and physical health. He feels he is getting older and that is frustrating for him. He enjoys walking with his friends and having a good time to feel younger. Among his favorite things was to give thoughtful gifts to other participants. He also liked receiving gifts but not as much as giving them! Upon completion of the experiment, he expressed that he enjoyed being able to share his feelings with others. In his opinion, the feedback taught him things about himself that he previously was unaware of.

### **6.3 Group 3**

#### **P10 - Persian in Iran (Participant 1)**

A thirty-two-year-old who usually exercises three times per week. Exercising makes him forget all the bad things going on and enjoy the beauty of nature. His motivation was affected by the energy of his teammates when they did exercises. Due to the fact that he knew everyone on the team, he felt a sense of connection throughout the journey with his friends. He found the experiment exciting rather than motivating. Even though he already exercised, going through it with his friends, taking photos, reading their reflections, made him extremely excited and he wanted to do it with them forever. He would love having this as a mobile application one day!

### **P11 - Persian in Iran (Participant 2)**

A twenty-four-year-old who usually works out twice a week to lose weight. He is mostly frustrated by the lack of time to exercise. He is also annoyed by Tehran's air pollution, which makes being outside difficult. With all that, he felt much better and more energetic after starting the experiment and taking regular walks. He was motivated by other people's positive experiences and negatively affected by their negative experiences. The fact that he did not give gifts to those with negative experiences was interesting. It was so exciting for him to see different areas of the city on his walks. After the experiment, he felt better about his life and plans to keep it up. He also liked sharing his journey with his best friend! In the experiment, he didn't like the number of questions he had to answer. He also wanted to be able to record videos besides taking images.

### **P12 - Persian in Iran (Participant 3)**

A thirty-eight-year-old who usually exercises once a week and needs extra motivation for that. At first, he found it disgusting to walk in the busy and noisy streets of Tehran which were also heavily polluted. Over time, however, as he received others' comments encouraging him to be more positive, and read their journeys as well, the positiveness affected him. He began to enjoy his walks more and more. He really liked the gift exchange as well.

### **P13 - Persian in Germany (Participant 4)**

A twenty-eight year old who enjoys walking and cycling outdoors but requires additional motivation. Walking and listening to music relieves her of stress which is very prominent in her life. Overall, she found it super interesting to see her journey at the end and how much improvement she had. She realized she could find time for herself even on busy days. She also liked to share her journey with everyone else in the group so they could see her improvements as well.

## **6.4 Summary of the tests**

By looking at their answers and the variables that drive their excitement, we could see that age, personal characteristics, etc. also impacts interests, but also where they live, their everyday struggles, and their values are different. Persians mostly enjoyed medals and rankings. However, New Zealanders, Canadians, and Persians who have lived in Germany for a while did not enjoy it

as much. For almost all participants, feedback was the most motivating variable, except for the Canadian. The personal journey was also one of the most inspiring parts for the majority of participants. The table below summarizes some of the strategies used and participants' reactions to them.

<b>Group 1</b>	Ranking and Medals	Leaderboard	Feedbacks	Gifts	Seeing other's images	Reading other's feelings	Personal Journey	Trying out different routes
Persian in Canada	<b>High</b>	<b>Medium</b>	<b>High</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>Very High</b>	<b>High</b>
Persian In United States	<b>High</b>	<b>Medium</b>	<b>Medium</b>	<b>Low</b>	<b>High</b>	<b>High</b>	<b>Medium</b>	<b>High</b>
Indian in Canada	<b>Very High</b>	<b>High</b>	<b>High</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>Very High</b>	<b>Very High</b>
New Zealander in Canada	<b>Very Low</b>	<b>Very Low</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>Low</b>
<b>Group 2</b>								
New Zealander in Canada	<b>Medium</b>	<b>Medium</b>	<b>Very High</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>Low</b>
Canadian in Canada	<b>Low</b>	<b>Low</b>	<b>Low</b>	<b>Medium</b>	<b>Low</b>	<b>Low</b>	<b>Low</b>	<b>High</b>
Persian in Canada	<b>Very High</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>Medium</b>	<b>Very High</b>
Persian in Canada	<b>High</b>	<b>Low</b>	<b>High</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>High</b>
Persian in Iran	<b>Very High</b>	<b>Medium</b>	<b>High</b>	<b>High</b>	<b>High</b>	<b>Medium</b>	<b>High</b>	<b>Medium</b>
<b>Group 3</b>								
Persian in Iran	<b>High</b>	<b>Low</b>	<b>High</b>	<b>High</b>	<b>Very High</b>	<b>High</b>	<b>Very High</b>	<b>High</b>
Persian in Iran	<b>High</b>	<b>Medium</b>	<b>High</b>	<b>Medium</b>	<b>Very High</b>	<b>High</b>	<b>Very High</b>	<b>Very High</b>
Persian in Iran	<b>High</b>	<b>Medium</b>	<b>High</b>	<b>Very High</b>	<b>High</b>	<b>High</b>	<b>Very High</b>	<b>Very High</b>
Persian in Germany	<b>Low</b>	<b>Low</b>	<b>High</b>	<b>High</b>	<b>Medium</b>	<b>Low</b>	<b>High</b>	<b>Low</b>

Figure 28 - Test Results(1)

The limitations of this study prevented the testing of every single parameter as well as validating them. However, figure 31 illustrates the strategies that were proposed and yielded positive experiences during the tests. Moreover, as shown in figure 28, the strategies were primarily positive for Persian-speaking audiences. This is due to the fact that they were developed using parameters that were based on their cultural background and the things that motivated them in their daily lives. Non-Persian audiences, especially those with non-western backgrounds, also responded well to some of them. It is important to remember that culture-based-design involves more than just motivating a specific audience, it also involves thinking outside the box and proposing new strategies that may be effective for people of other cultures.

Application	Application 1 Finding Routes	Application 2 Collective Activities	Application 3 Sharing Feelings	Application 4 Teamwork	Application 5 Caring
Parameters	#Cleverness #Hospitality #Social Credibility #Happiness #Mystery	#Inner need for collective happiness	#Social Status #Helping Others #Invention of Traditions #Hospitality	#Family	#Love #Helping others #Different relationship levels
Strategies	Route finding: <b>Positive</b>	Group of people working together towards a goal: <b>Positive</b>	Seeing how others overcome negative feelings: <b>Positive</b>	working as groups: <b>Positive</b>	Seeing growth journey: <b>Positive</b>
	Gift Exchange: <b>Positive</b>	---	Being motivated by people similar to themselves: <b>Positive</b>	Rankings: <b>Positive</b>	Rewarding others not themselves: <b>Wasn't in the tests.</b>
	Showing the places they have visited: <b>Positive</b>	---	Gift exchange: <b>Positive</b>	A systematic order for users to complete each exercise: <b>Wasn't in the tests.</b>	People being categorized in different levels: <b>Wasn't in the tests.</b>
	Levels Mysteriously Change: <b>Positive</b>	---	Seeing others' negative feelings: <b>Negative</b>	---	---
	Switch to future to mark favourite spots: <b>Wasn't in the tests</b>	---	Seeing each other's social status: <b>Wasn't in the tests.</b>	---	---

Figure 29 - Test Results(2)

## 6.7 Participatory approach in the exhibition

The master of design program mandated an exhibition in which students showcased their creative work to professors and other individuals who visited the expo. There were a large number of individuals present, so it was an appropriate time to adopt a participatory approach

and ask people to suggest new strategies similar to those suggested by the researchers. In addition, this provided an excellent opportunity to solicit their feedback on the designs and to find out if they had any constructive criticism.

As part of my exhibit, I set up a computer with a simple website displaying the main Persian gamification parameters (figure 32). Upon clicking each parameter, a modal opened describing that parameter and suggesting persuasive strategies based on that. Visitors were also given the opportunity to enter their creative strategies in the input field provided for each. As a means of motivating them, I gave them gifts originating from Iran which were visually representative of Persian culture.

Visitors were fascinated by the idea of connecting Iranian culture with running or walking apps. Many individuals were particularly interested in the idea of working together as a family team in

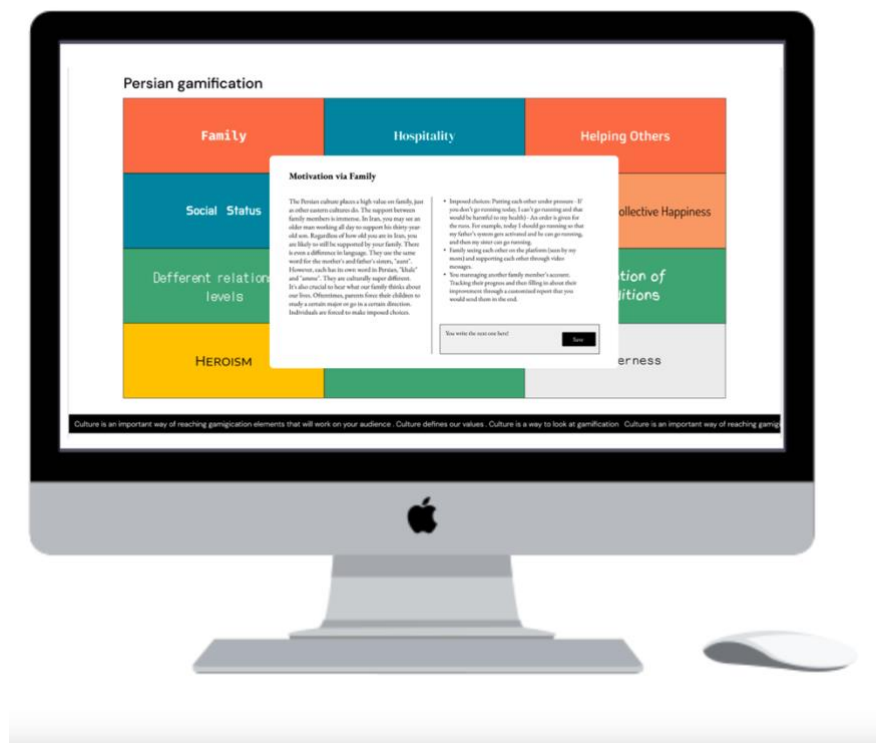


Figure 30 - Exhibit Strategy For Showing Persian Gamification Parameters

order to achieve a fitness goal. They also suggested some strategies themselves such as:

*“My best friend and I have agreed to buy each other fancy running gear once we hit a particular number of runs or speed.”*

*“Schedule exercise for such a small amount of time that it would be humiliating not to get it done!”*

*“Indian culture: I will only cook for you if you finish your workout – this is if the user is unfit / obese, they are encouraged to work out!”*

*“Having the "assignments" from the app to go run once a week with a family member. This way it could help spending time with your family when your lifestyle seems so busy.”*

*“To know that love is a constant with variables. The experience and feeling of love toward places, people and things change, and that isn't bad.”*

*“Levels going up!”*

*“Connecting with people across the world, with different cultural backgrounds. Reading their feelings, getting to know them and being inspired by the way they live. Then integrate them into their own lifestyles.... This is a cornerstone of a cohesive society”*

Based on the feedback, it appears that many ideas can be generated by considering the culture and perspective of each individual and making use of their lived experiences. It was very positive that their participation yielded positive results and validated the idea behind the study.

Gamification can exist in different cultural registers! It's just a matter of taking advantage of it!

## Chapter 7: Conclusion

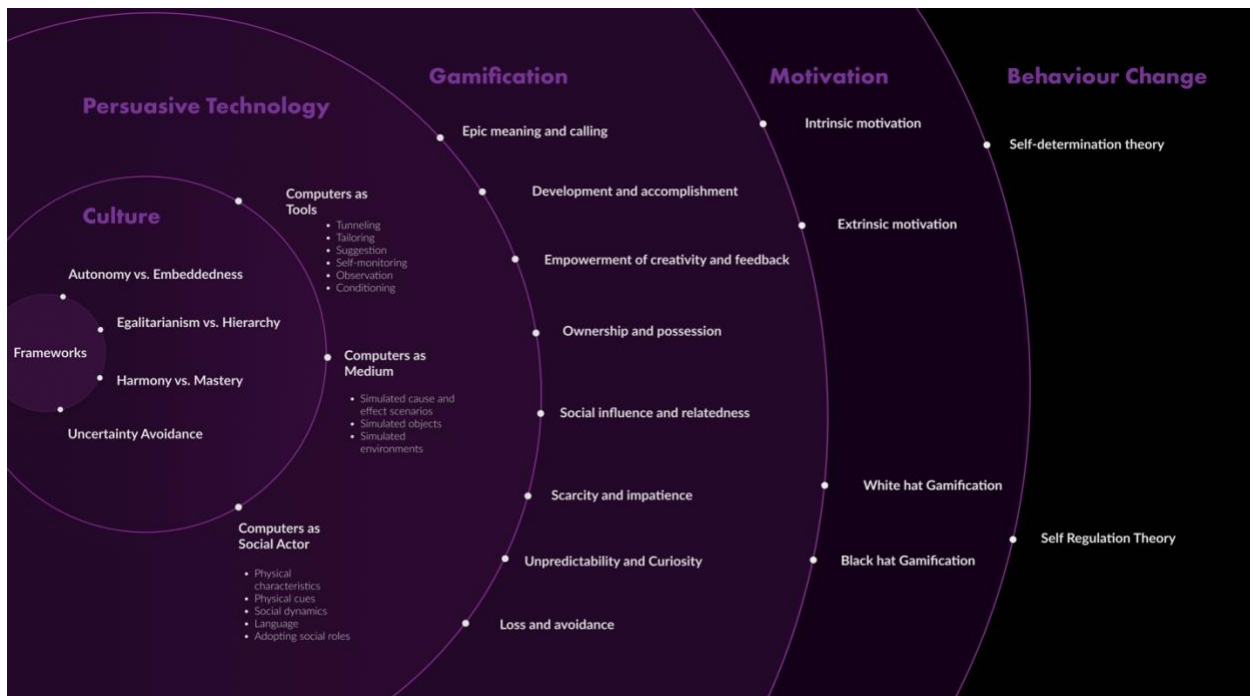


Figure 31 - Theoretical Framework Summary

Societies are differentiated based on their cognitive styles, belief systems and communication styles. Culture is like software installed in someone's mind which plays a major role in their decision making and lifestyle (Hofstede, 1928). Cultural values can be categorized into three dimensions by Schwartz (Schwartz, 2006). Autonomy vs embeddedness, egalitarianism vs hierarchy, harmony vs mastery. This research mostly focused on the basis culture, but it can be expanded and developed further to add other layers. Our lives are shaped by multiple cultures. Cultural changes occur as a result of life changes. We add layers to what we have when we move to another place and live there. An education or career change adds another layer. As these cultures interact, certain behaviors emerge and these behaviors shape who we are (Sato & Chen, 2008).

The important thing is to take into consideration the basis of these cultural backgrounds and avoid mono-culturalism. Getting to know the audience we are designing for and their needs, their motivations, interests, social status, their struggles, etc. is a step towards human centered design and invites other cultures to weigh in on design strategies that have previously been embedded in



a Western bubble. The motivational strategies/affordances can then be of use and be expanded to new ones with different outlooks.

There are three different roles computers can play in helping people change their behavior positively (Fogg, 2003). As tools, they can make complex tasks easier for users, so that even though a task is complicated, it can be undertaken in a more straightforward manner. They can also be used as a medium by providing experiences difficult or risky to achieve in real life, like simulated environments for exploring new things. Last but not least, they can take on the role of social actors and establish social connections with humans through social cues. The three roles mentioned above will be helpful for users who wish to change their habits.

One of the layers of persuasive technology is gamification, which refers to bringing game design elements into real-life scenarios and making activities more fun. In You Kai Chou's Octalysis framework, there are eight core drives that at least one of them must be present in order for motivation to occur (Chou, 2019). There are some that create pressure and stress, and use black hat motivation, as well as some that empower users with white hat motivation. Along the same lines some extrinsically motivate users in order to get them to start doing an activity, meaning that they are doing it just for the sake of achieving a desired result such as a reward.

Alternatively, some activities intrinsically motivate users to participate and individuals are drawn to them because they find the activity itself fascinating. This theory is also a fundamental factor when a change in behavior is anticipated. Using this mix of methods will help users start doing something because of extrinsic motivation and continue doing it because they are enjoying the process and they are intrinsically motivated; this is how behavior change occurs. As a result of self-regulation theory, individuals have the capacity to control and manage their thoughts, emotions, and behaviors in order to achieve their goals. *Setting goals, monitoring progress, and making adjustments* are all part of the process of *self-control* or *self-regulation*. Self-regulation empowers individuals to take charge of their lives (figure 33 summarizes the theories used as the basis of this project).

In this work, I brought a design research approach to the analysis of Persian culture and developed a set of twelve Persian gamification parameters that can be used in the design of persuasive technology. The strategies I contribute through my work move us beyond existing gamification strategies, allowing for new ways of thinking. The parameters were collected

through expert interviews, natural observation, and my own situatedness as an Iranian. As part of the testing strategy, there was a research audience and some of the proposed strategies were validated by asking participants to go for three runs/walks and share their feelings and photos of their journeys, give feedback, and imagine gifts for one another, as well as see where they rank in relation to each other. In short, for them to go on a personal journey. There is a need for further investigation into the parameters as this research focuses solely on the idea of bringing a cultural perspective on the design process and how we can go beyond mere gamification.

But to summarize my overall findings, just as knowing our loved ones enables us to provide them with what really makes them happy, if we empathize with users and seek to deeply know and appreciate their ways of experiencing the world, as designers we can make meaningful differences to their lives.

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