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INFLUENCE OF USERS' CULTURAL VALUES ON THEIR PERCEPTION OF GAMIFICATION ELEMENTS

ABSTRACT

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Influence of users' cultural values on their perception of gamification elements
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This master's thesis aims at studying how information system users from different cultural backgrounds perceive different gamification elements when they are deployed in information systems. An increasing amount of these applications are being embedded with gamification elements to boost use engagement and adoption. The thesis comprises a literature review from extant literature in the topic areas, theoretical frameworks to shore up the arguments set forth in the thesis and an empirical study. This topic is relevant for academics and industry practitioners. For academics, it helps broaden the conversation on gamification especially with respect to motivating users of information systems. It provides a theoretical framework to bolster the idea that gamification is more psychological than technical. It shows that by matching gamification elements to the cultural values of intended users, it is possible to use gamification more effectively.

The empirical part of the study was conducted to investigate the propositions contained in the research framework. The study was conducted using qualitative methods and interview data was collected from two sets of respondents that represented two culturally distinct societies. The data was analysed and interpreted using qualitative content analysis.

The study findings suggest that way information system users perceive gamification elements may be influenced by their cultural values. The results obtained are valid within the context of the study but are not generalisable due the limitations inherent in the study. The results also indicate that further research needs to be conducted in this subject area.

Keywords: Gamification, Cultural values, Social interdependence theory, Game design elements, information systems research

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1 INTRODUCTION

There has been a noticeable increase in the design and deployment of information systems for use in various spheres of human endeavour. Personal applications assist us every day; so many of these applications are systems designed to offer instrumental value to the user and help them to achieve a certain goal (Van der Heijden, 2004) such as banking, shopping, exercise, learning, etc. An increasing amount of these applications are being imbued with gamification elements to boost use engagement and adoption (Deterding, Dixon, Khaled & Nacke, 2011; Huotari & Hamari, 2017). Gamification elements are those components usually associated with games (Deterding et al., 2011); such as badges, leader boards, points, etc. The global market for gamification has been predicted to rise from USD 1.65 billion in 2015 to USD 11.10 billion by 2020 (Research and Markets, 2016, February) making it even more urgent to find better alternatives to the current ways gamification is being designed to cater for the diverse motivational mechanisms of consumers around the world.

Gamification has been defined as "the use of game design elements in non-game contexts" (Deterding et al., 2011, p.10), and it is primarily aimed at motivating users to engage in the performance of a specific activity in the hope of influencing a change in behaviour (e.g., Sailer, Hense, Mayr & Mandl, 2017; Hamari, Koivisto & Sarsa, 2014; Morschheuser, Hamari, Werder & Abe, 2017). Gamification is still an emerging trend even though it has been applied in various aspects of human endeavour such as health, education, sustainability, etc. (Dey & Eden, 2016; Lounis, Pramatari & Theotokis, 2014; Schlagenhaufer & Amberg, 2015; Hamari et al., 2014). Despite the widespread application of gamification, most gamification projects have failed, due to poor design or a lack of consideration of the needs of the users (Seaborn & Fels, 2015; Gartner, November 2012; Schöbel, Söllner & Mishra, 2017). Kankanhalli, Taher, Cavusoglu and Kim (2012) note that current design of gamification, usually advocated by vendors through their gamification platforms, promote a one-size-fits-all approach for designing gamification regardless of the objectives of the gamified applications. This prevailing approach to the design of gamification could be an explanation of why it has failed to deliver on most of its promises so far.

A small group of researchers have previously suggested alternative means of approaching gamification such as, social factors (Hamari & Koivisto, 2013) or user personality (Codish & Ravid, 2014; Karanam et al., 2014). As mentioned earlier, one of the aims of gamification is the motivation of user engagement and/or behavioural change, and for this reason it tends to skew more towards the realm of psychology rather than technology (AlMarshedi, Wanick, Wills & Ranchhod, 2017). Therefore, an understanding of how people behave and why they might make certain decisions can also provide answers on how to motivate them.

It might be possible to understand how people behave and why they might make certain decisions by studying their societal culture, i.e., the ways they have been socialised. Culture has been defined in many ways by various researchers. Hofstede (1984, p. 13) viewed it as a "collective programming of the mind" and Triandis and Suh (2002, p. 136) conceptualised it as "shared standard operating procedures, unstated assumptions, tools, norms, values, habits about sampling the environment". This portrays the importance of culture in the way people view themselves and the world around them, and how it could also be an important factor in their drives, their motivations and other aspects of their lives. Although some researchers (e.g., Khaled, 2011) have called for gamification designers to draw on cultural motivations when designing gamification, the link between users' cultural background and the design of gamification appears to be under investigated in information systems research (AlMarshedi et al., 2017). This thesis is an attempt to address this knowledge gap by exploring the extent to which users of information systems are influenced by their prevailing cultural values and how these values might affect their perception of gamification. This relationship is important to study because cultural values are shown to play an important role in the behavior, perception and motivations of human beings (Hofstede, 1980; Schwartz, 2006). This means that culture plays an important role in people's perception of themselves and how they are motivated to perform a role or an action. This research suggests, based on the literature reviewed, that the relationship between users' cultural values and their perception of gamification is important. Thus, the cultural values of potential users should be considered when designing information systems because an examination of users' cultural background, i.e., their prevailing cultural values, might provide clues on how to motivate them.

This study proposes a culturally based approach to the design of gamification in information systems in the hope that this will lead to more successful ways of designing gamification and consequently, lowers the current rate of failure of gamification design. Moreover, this approach enables organisations to take advantage of the predicted rise in the global market for gamification by designing more culturally adaptive information systems which can be readily adopted and used by users in various regions of the world.

1.1 Research question, aim and objectives

The main objective of this thesis is to investigate the link between users' cultural values and their perception of gamification elements employed in information systems. In other words, the goal of this thesis is to find out if users of information systems perceive specific game design elements differently due to their prevailing cultural value orientation or cultural values. In furtherance of this goal, this thesis will be guided by the following research question: How do users' cultural value orientation influence their perception of different gamification elements employed in information systems?
This study will try to answer this research question by examining extant literature to gain a thorough understanding of the concepts of cultural value orientation and gamification elements; and carrying out an empirical study to test the validity of the thesis.
The remaining sections of this study are structured as follows: The next section will examine gamification in the context of this thesis, this will be followed by a review of prominent studies conducted on culture., will establish the theoretical background for this thesis. The fifth section, research methodology, will explain and justify the reason for the choice of research method and detail the data collection and analysis methods used in this research. The sixth section will explain the findings of this research. The seventh section of this report will discuss and analyse the findings of this research and it is followed by the concluding section which discusses the limitations, summary of the thesis and suggests topics for future research.

2 GAMIFICATION

This section examines gamification including its various definitions, components and some of the variety of Information Systems research conducted on the subject.

2.1 Gamification

The term gamification, as is currently used, originated in the digital media industry (Deterding et al., 2011). Its first recorded usage dates to 2008 but was only widely adopted in 2010 by industry and academia (Deterding et al., 2011) and it has rapidly gained the attention of researchers and industry professionals in recent years. For industry practitioners, their interests lie in the reputed ability of gamification when employed in products, services, and other aspects of human endeavour, to motivate users and engage them (Blohm & Liemeister, 2013). Academia's interest in gamification has been divided and it has attracted a polarised response; it has been totally rejected by some, while others have expressed their curiosity in exploratory papers and conferences (Seaborn & Fels, 2015). Despite its popularity in recent years, there is no widely accepted way of designing workable methodological approaches yet, due to the lack of a thorough understanding of gamification (Morschheuser et al., 2017).

2.1.1 Defining Gamification

The most widely used definition of gamification is one offered by Deterding et al. (2011, p.10); "the use of game design elements in non-game contexts".

This definition, though widely used, is just one of the many definitions used to explain the term "gamification". Huotari and Hamari (2017, p. 23) argued that this definition was inadequate due to its several shortcomings one of which is that it "adopts only a systemic perspective to games". They proposed a new definition:

"Gamification refers to a process of enhancing a service with affordances for gameful experiences in order to support users' overall value creation." (Huotari & Hamari, 2017, p. 25)

Huotari and Hamari (2017) argue that their definition showcases the goal of gamification rather than the methods. Werbach (2014, p.266) also proposed a definition of gamification: "the process of making activities more game-like." He submits that his definition encompasses all systemised practices that are objectively carried out with the intention to produce more similar experiences that are typical of games.

These three definitions highlight different aspects of gamification but for the purposes of this thesis a more suitable definition of gamification would encompass some of the main objectives of gamification, such as motivation, helping users to achieve a certain goal, etc.

Nicholson (2012, p. 5) opined that gamification design should be meaningful and focused on the user because the user is the most important aspect of gamification. He defined meaningful gamification as: "the integration of user-centred game design elements into non-game contexts." By focusing on user-centred design, the designer avoids the pitfalls of meaningless or harmful gamification (Nicholson, 2102).

This study views gamification deployment in information systems, as a means of assisting users to solve a problem or motivating them to persist in attempting to resolve problems. The definition that captures this ethos of gamification is the one offered by Kapp (2012, p. 10);

"Gamification is using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems."

This thesis will define gamification when used in information systems as;

The deployment of game-based mechanics, aesthetics and game thinking in information systems to motivate and engage users to adopt and use these applications to solve their problems or achieve set goals. The next section will briefly discuss some of the elements used in gamification.

2.1.2 Gamification elements

The game-based practices and elements that are utilised in gamifying activities, procedures and actions in different contexts are known collectively as gamification components or elements, or game design elements (Buckley, 2015; Wood & Reiners, 2015; Deterding et al., 2011). These elements are the essential facilitators that are used to immediately prompt the needed behaviour change in users (Buckley, 2015). There is no universal classification system for these gamification elements. They are classified differently by different scholars. Examples of classification systems are, the five levels of abstraction suggested by Deterding et al. (2011); Werbach and Hunter's (2012) pyramid of game elements, The MDA (i.e. Mechanics, Dynamics and Aesthetics) framework (Hunicke, LeBlanc & Zubek, 2004), etc. A brief review of some of these classification systems are detailed below.

In a survey of existing literature on games and gamification, Deterding et al. (2011) found that previously identified game design elements can be categorized into five levels of abstraction. According to Deterding et al. (2011), these five levels ordered from concrete to abstract are:

- Game interface design patterns: Common, successful interaction design components and design solutions for a known problem in a context, including prototypical implementations (e.g. badge, leader board, level, etc.)
- Game design patterns and mechanics: Commonly reoccurring parts of the design of a game that concern gameplay (e.g., time constraint, limited resources, turns, etc.)
- Game design principles and heuristics: Evaluative guidelines to approach a design problem or analyse a given design solution (e.g., enduring play, clear goals, variety of game styles, etc.).
- Game models: Conceptual models of the components of games or game experience (e.g., MDA; challenge, fantasy, curiosity; game design atoms; CEGE).
- Game design methods: Game design-specific practices and processes (e.g., Playtesting, Play centric design, Value conscious game design).

This model differentiates interface design patterns from game design patterns or mechanics. Contrary to interface design patterns, both game mechanics and game design patterns are not involved in quintessential actualised solutions. Both (game mechanics and game design patterns) can be realised with a lot of varied interface elements. They are considered as distinct because they are more abstract (Deterding et al. 2011).

The MDA Framework

Zichermann and Cunningham (2011) use the MDA framework to classify game elements. The MDA framework was developed by Hunicke, LeBlanc and Zubek (2004) as a formal approach to understanding games. MDA stands for; mechanics, dynamics and aesthetics. In Zichermann and Cunningham's 2011 classification:

- Mechanics: The mechanics of a gamified system consist of a series of tools that, when correctly used, tends to evoke meaningful responses from the users (e.g., Badges, Leaderboards, Challenges/Quests, etc.)
- Dynamics: The mechanics deployed in a gamified system produce certain outcomes based on how the users interact with the system and each other, this outcome is known as dynamics.
- Aesthetics: This refers to the emotional responses evoked in a user when they interact with the system.

In this framework, mechanics comprises the working components of the game. Essentially, they allow a designer maximum control over the workings of the game and allow them to be able to direct player actions. Dynamics are the player's interplay with those mechanics. They influence what each player's action will be in response to the mechanics of the system, both independently

and with other players. Although, game mechanics and game dynamics are sometimes used conversely, but they are considerably distinct from each other. Lastly, the aesthetics of the system are the emotions the game invokes in a player during interaction. Game aesthetics can be seen as the combined result of the mechanics and dynamics as they combine with and foster emotions.

Pyramid of game elements (Werbach and Hunter's (2012))
Werbach and Hunter (2012) note that there are three categories of game element that are important to gamification; dynamics, mechanics and components (named in order of decreasing abstraction). They stress that each mechanic is linked to one or more dynamics and each component is linked to one or more higher level elements. They explain these elements thus:

- Dynamics: considered as the highest level of abstraction, the big-picture aspect of gamification. The authors consider the most important game dynamics to be constraints, emotions, narrative, progression and relationships.
- Mechanics: are defined as the elemental processes that move the action forward and induce player engagement. Some of the important mechanics the authors identify are challenges, competition, cooperation, feedback, etc.
- Components: are defined as the more-specific pattern that mechanics or dynamics can take. Some examples given are achievements, badges, avatars, leaderboards, points, etc.

Werbach and Hunter (2012) note that these categories of game elements exist in a hierarchy, as depicted in the figure below (figure 1)
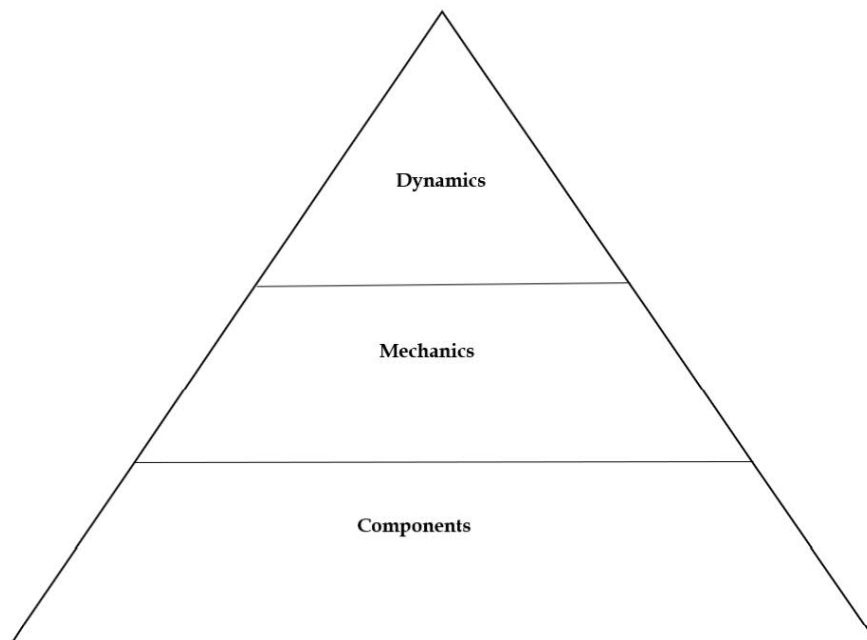
Figure 1 Game element hierarchy (Reproduced from Werbach, K., and Hunter, D. (2012))

According to Werbach, and Hunter (2012), in the figure above (figure 1): Dynamics represent the big-picture aspect of the gamified system that you have to consider and manage but which can never directly enter into the game; mechanics are the basic processes that drive the action forward and generate player engagement; and components are the specific instantiations of mechanics and dynamics.

A summary of the different classifications of gamification elements discussed above is depicted in table 1 below.

Table 1 Comparison of different classification of gamification elements

Source	Name	Classification
Deterding et al., 2011	Level Model	Game interface design patterns
		Game design patterns and mechanics
		Game design principles and heuristics
		Game models
		Game design methods
Zichermann and Cunningham, 2011	MDA Framework	Mechanics
		Dynamics
		Aesthetics
Werbach and Hunter, 2012	Pyramid of game elements	Dynamics
		Mechanics
		Components

2.1.3 Game-Design Elements and Motives

There are few existing frameworks that outline theoretical justifications and how gamification systems can be analysed (Seaborn & Fels, 2015). One existing framework is that of Blohm and Leimeister (2013). This framework exemplifies how gamification can manipulate intrinsic and extrinsic motivators to engender behavioural modification and rework mundane activities like exercise and learning. Table 2 shows game-design elements and motives suggested by Blohm and Leimester (2013).

Table 2 Game-design elements and motives (Reproduced from Blohm and Leimeister, (2013))

Game-design elements		Motives
Game mechanics	**Game dynamics**	
Documentation of behaviour	Exploration	Intellectual curiosity
Scoring systems, badges, trophies	Collection	Achievement
Rankings	Competition	Social recognition
Ranks, levels, reputation points	Acquisition of status	
Group tasks	Collaboration	Social exchange
Time pressure, tasks, quests	Challenge	Cognitive stimulation
Avatars, virtual worlds, virtual trade	Development/organization	Self-determination

According to Blohm and Leimeister (2013), table 2 features the most important gamification elements. The authors note however, that individual mechanics can cause diverse dynamics which might be equivalent to diverse motives. Although table 2 is not based on culture, it can serve as a template for matching gamification elements to inherent social dynamics in any given culture. For example, the use of rankings in a gamified system designed to reflect the competitive dynamic inherent in certain cultures.

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2.1.4 Gamification in information systems research

There has been significant research done in the information systems field that concern gamification. Schlagenhaufer and Amberg (2015) conducted a literature review on gamification in information systems research. Their stated purpose was to create an organised analysis of research activities and high-quality academic knowledge linked with gamification in current information systems research. They produced a comprehensive classification framework (depicted in

table 3) by evaluating 43 high ranking information systems journals in addition to information systems conferences and similar subject areas.

Table 3: Classification Framework for Gamification: Categories and Subcategories. (Reproduced from Schlagenhaufer and Amberg (2015))

Category	Subcategory	Examples
Application Area	Computer Aided Design	(Cheong et al. 2013a)
	Collaborative Work System	(Fitz-Walter et al. 2013, Comber et al. 2013)
	Education	(Anderson et al. 2013, Browne et al. 2013)
	Health	(Hamari and Koivisto 2013)
	Manufacturing & Production	(Korn 2012, Neil et al 2013)
	Marketing	(Cechanowicz et al. 2013, Shang and Lin 2013)
Conceptualizing Gamification	Definition	(Barata et al. 2013, Eveleigh et al. 2013)
	Design	(Merkler et al. 2013, Massung et al. 2013, Rohas et al. 2013, Kankanhalli et al. 2012)
	Development Methods and Tools	(Li, Grossman et al. 2012, Kappen and Nacke 2013)
	Types	(Flatla et al. 2011, Kappen and Johannsmeier 2013)
Management Issues	Evaluation	(Thom et al. 2012, Takagi et al. 2013, Denny 2013)
	Integration	(Thom et al. 2012, Cheong et al. 2013a)
	Planning Objectives	(Li, Huang et al. 2012, Paoli et al. 2012)
	User Behavior	(Skjölint et al. 2013, Vassileva 2012)
	User Requirement	(Shang and Lin 2013, Vassileva 2012)
	User Types	(Costa et al. 2013, Sepehr and Head 2013)
Theoretical Issues	Behavior	(Shang and Lin 2013, Skjölint et al. 2013)
	Motivation	(Knaving and Björk 2013, Barata et al. 2013)
	Research	(Yee et al. 2012, Denny 2013, Hamari and Koivisto 2013)

The authors reviewed 34 research papers which they mapped to one of the subcategories of their framework on gamification by focusing on all the relevant information in each paper. Design, evaluation, user requirement and research subcategories were divided into further sub(subcategories) as follows:

- Design: was divided into game elements, game mechanics, design guidelines and design proposals
- Evaluation: was divided into effectiveness, user satisfaction, ex ante ex post, general evaluation and data quality
- User Requirement: was divided into individual incentives and rewards and individual gamification elements
- Research was divided into references, research methodologies, and further research

This shows that at the time of writing this report, the research on gamification in the field of information systems, while broad, still has little or no research conducted on how culture impacts gamification. The current findings of the authors on the nature of information systems research on gamification is summarised below.

In the application area category; the education subcategory had the most papers (10) the other subcategories such as collaborative work systems had four papers, health had one paper, manufacturing & production had two papers, computer aided design had one paper, and marketing had two papers.

In the conceptualizing gamification category; the definition subcategory had twenty-four papers. In the design subcategory; game elements had twenty-five papers, game mechanics had eight, design guidelines had five and design proposals had eight papers. In the development methods and tools subcategory there were seven papers, and the types subcategory had twenty-three papers.

In the management issues category; the evaluation subcategory, effectiveness had nineteen papers, user satisfaction had thirteen papers, ex ante ex post had six papers, general evaluation had six papers and data quality had four papers. The integration subcategory had two papers, the user types subcategory had eleven papers, the planning objectives subcategory had seventeen papers, and the user behavior subcategory had eleven papers. In the user requirement subcategory; individual incentives and rewards had one paper and individual gamification elements had two.

In the final category; theoretical issues, the behavior subcategory had eight papers, the motivation subcategory had nine and the further research category had four papers. In the research subcategory, references had twenty-one papers, and research methodologies had eighteen.

3 CULTURE

According to Kluckhohn (1954), culture is brought about by history but, as embodied by corporeal organisms, very much active in the present. He likened the role of culture to a society to the way memory is for a person. Although it has been studied for many years by a host of researchers, a commonly accepted definition of the word culture has remained elusive. Many distinct definitions abound, and the concept of culture has been often studied under different names in many disciplines (Taras, Rowney & Steel, 2009). Despite a plethora of definitions used to conceptualise culture, Taras et al. (2009) found that virtually all of them shared some prevalent elements. These elements portrayed culture as:

- A complex, many-layered construct.
- Shared among individuals that are members of a group or society.
- Developed over a comparably long period of time, and
- Somewhat stable.

Taras et al. (2009) noted that different models and different tools for measuring culture are aimed at different levels (e.g., national, organisational and individual) and aspects (e.g., observable artifacts and rituals, and values). Moreover, the term "culture" and "cultural values" have often been used interchangeably particularly in the fields of psychology and management (Taras et al., 2009). This is because of the focal shift from the study of culture through artifacts and cultural practices to the study of culture through cultural values and attitudes in current cross-cultural literature (Taras et al., 2009).

3.1 Definitions of Culture

As noted earlier, there have been different attempts to conceptualise culture using various definitions and measurements. A brief review of some of the more prominent studies of national culture is detailed below.

3.1.1 Hofstede's Definition of Culture

Although he was not the first person to attempt to define and classify distinct cultures, Hofstede's book Culture's Consequences (1980) remains one of the most influential studies on national culture and his methodology and framework has made an impact on most of the cross-cultural studies conducted by scholars ever since (Taras et al., 2009).

Hofstede (1984, p.13) defined culture as: "a collective programming of the mind that distinguishes the members of one group or category of people from others." He noted that culture is always a collective phenomenon. It can be used to refer to different collectives and each collective comprises individuals. The term culture has broad usage and it can be used to describe tribes or ethnic groups, nations, organisations, genders, generations or social classes, occupations, etc. The societal, national and gender cultures children acquire early on, he argues, are much more ingrained in the human mind than occupational and organisational cultures obtained at school or at work. This is because while occupational and organisational cultures are seen in visible and deliberate practices; societal cultures exist in often unconscious values (Hofstede, 2011).

Hofstede's conceptual dimensions of culture
Hofstede initially conceptualised culture in four dimensions including power distance, uncertainty avoidance, individualism versus collectivism, and masculinity versus femininity. By 2010 long term versus short term orientation and indulgence versus restraint where added to these dimensions (Hofstede, 2011). These six categories are:

- Power Distance relates to how societies try to solve the basic problem of human inequality. According to Hofstede (2011), power and inequality are basic facts of all societies and this dimension is a representation of inequality. It is the magnitude to which less powerful members of institutions (e.g., family) and organisations accept and expect that power distribution is unequal.
- Uncertainty avoidance relates to the amount of stress in a society when faced with an unknown future. It is an indication of the degree a culture conditions its members to feel either comfortable or uncomfortable in unstructured situations. Unstructured situations are new, unheralded, unrecognizable and different from the norm. Cultures that are uncertainty avoiding try to reduce the occurrence of such situations by

the enactment of laws and rules, rigid behavioural codes, the discouraging of deviant opinion, and faith in absolute truth.

- Individualism versus collectivism relates to how individuals of a society are structured into primary groups. It is a societal distinction. In individualistic cultures, according to Hofstede (2011), the bonds between individuals are loose and it is everyone for themselves or their immediate family. Collectivist cultures, on the other hand, integrates its members from birth onwards into close-knit, strong in-groups, such as extended families, that continue to offer protection in demand for undivided loyalty and opposition to other in-groups. This issue as addressed by this dimension, Hofstede (2011) stressed, is extremely basic and it pertains to all societies all over the world.
- Masculinity versus femininity relates to how emotional roles are divided between men and women. This is also a societal distinction that is concerned with the portioning of values between genders. There are many ways societies try to solve this basic issue. According to Hofstede (2011), studies show that; women's values vary less among societies than men's values; and among countries men's values range from very assertive, competing, and largely different from women's values in some countries to modest, nurturing and identical to women's values in others. The assertive and competing pole is referred to as 'masculine' while the modest, nurturing pole is called 'feminine'.
- Long term versus short term orientation relates to how people focus their efforts, either on the future, the present or past. This dimension was not originally in Hofstede's (1980) four dimensions. The long-term orientation in this dimension is represented by values such as, perseverance, thrift, having a sense of shame and structuring relationships by status. The short-term orientation is represented by values such as, respect for tradition, exchange of social obligations, safeguarding one's 'face', etc.
- Indulgence versus restraint relates to the gratification or control of fundamental human desires in relation to enjoyment of life. Indulgence represents societies that permit relatively free satisfaction of fundamental and natural human desires in relation to enjoyment of life. Restraint represents societies that limit the fulfilment of needs and monitor it through rigid social norms.

The importance of Hofstede's seminal work on culture has portrayed the significance of studying national cultures. It shows what people from different cultures deem important to them and perhaps offers a way to improve to a large extent all aspects of human societies.

3.1.2 Schwartz's Definition of Culture

In his theory of Cultural Value Orientations Schwartz (2006) argues that societies evolve as they try to address fundamental issues or problems in

managing human activity. His theory consists of seven cultural value orientations including, autonomy, embeddedness, egalitarianism, hierarchy, harmony, mastery that form three cultural value dimensions.

He conceptualises culture as; "the rich complex of meanings, beliefs, practices, symbols, norms, and values prevalent among people in a society" (Schwartz 2006, p. 138) and argues that the predominant values stressed in a society might be the main feature of culture in that society. He posits that a society's cultural value importance fashions and substantiate "individual and group beliefs, actions, and goals" (Schwartz 2006, p. 139) and articulate the cultural ideals, i.e., what is considered desirable and good. According to him, the cultural values that a society emphasises are expressed in its institutional arrangements and policies, its norms and daily practices.

Schwartz's cultural value dimensions

Schwartz derived his value dimensions for comparing cultures by taking into consideration three of the crucial issues that all societies face (Schwartz, 2006).

These three issues are; autonomy versus embeddedness, egalitarianism versus hierarchy, and harmony versus mastery. These three issues are explained further below.

- Autonomy versus Embeddedness: Autonomy represents cultures that view people as "autonomous, bounded entities" (Schwartz, 2006, p. 140). In these cultures, people nurture and communicate their own preferences, ideas, feelings, and find significance in their uniqueness. There are two types of autonomy according to Schwartz:
  - o Intellectual autonomy; inspires individuals to seek their own ideas and intellectual paths by themselves. Broad mindedness, curiosity, etc., are examples of important values in such cultures.
  - o Affective autonomy; which inspires individuals to seek affectively rewarding experiences for themselves. Pleasure, excitement and varied life are examples of important values in such cultures.

  Cultures that emphasise embeddedness view individuals as entities embedded in the collectivity. Significance in life is found mainly in social relationships, group identification, participation in shared way of life, and striving to achieve shared goals. These cultures stress preservation of the status quo and limit actions that might affect in-group solidarity or the traditional order. Respect for tradition, social order, obedience, etc., are examples of important values in such cultures.

- Egalitarianism versus Hierarchy: Egalitarianism encourages people to view each other as moral equals- human beings with shared basic interest. People are inculcated with the idea of cooperation and feelings of concern for the welfare of everyone. They are expected to choose to act in others benefit. Equality, social justice, honesty, etc., are examples of important values in such cultures.

  Cultures that emphasise hierarchy rely on hierarchical systems of assigned roles to guarantee responsible, productive behaviour. They

legitimise the unequal distribution of power, roles and resources. In these cultures, people are socialised to accept the hierarchical distribution of roles for granted and follow the rules and obligations attached to their roles. Humility, social power, wealth, etc. are important values in such cultures.

- Harmony versus Mastery: Harmony represents cultures that stress fitting into the world as it is. They seek understanding and appreciation of the world instead of changing, directing or exploiting it. Protecting the environment, unity with nature and the world at peace are examples of important values in such cultures.

  Cultures that emphasise mastery reward active self-assertion for mastering, directing and changing the natural and social environment for the attainment of group or personal goals. Ambition, success, daring, competence, etc. are examples of important values in such cultures.

3.1.3 Trompenaars's Definition of culture

In 2011 Trompenaar defined culture as; "a shared system of meanings. It dictates what we pay attention to, how we act and what we value." (p. 13).

He noted that culture's essence is not what is seen on the surface but the shared ways that groups of people make sense of the world. It is the way groups of people solve their problems and rectify their predicaments. He argued that although culture presents itself on varying levels, the highest level is the culture of a national or regional society.

Trompenaar's cultural dimensions

According to Trompenaar (2011), every culture differentiates itself from others through the unique solutions it selects to address certain problems which appear as dilemmas. He identified seven dimensions namely, universalism versus particularism, individualism versus communitarianism, neutral versus emotional, specific versus diffuse, achievement versus ascription, attitudes to time, attitudes to the environment. He classified these dimensions under three headings; those that stem from relationships with other people; those that stem from the progress of time; and those that concern the environment. These in total make up seven fundamental dimensions of culture identified by Trompenaar (2011). These dimensions include; relationships with people, attitudes to time, attitudes to the environment. Theses dimensions are explained further below.

- Relationships with people: this dimension is divided into five and they include;
- o Universalism versus particularism: Universalist cultures believe that an idea that is good and right can be defined and has universal applicability. Particularism represents cultures that give much more attention to the commitments of relationships and unique situations and pay less attention to abstract societal codes.

- o Individualism versus communitarianism: Individualism represents cultures that places more focus on the individual and less on the community. Communitarianism represents cultures that place their focus more on the community and less on the individual.
- o Neutral versus emotional: Neutral cultures suppress the expression of emotion in their interactions and are more objective and detached. Emotional cultures do not hesitate to express their emotions in their interactions.
- o Specific versus diffuse: Specific cultures afford individuals with a large public space which is readily available to others and a closely guarded small private space that is only available to people close to them. In diffuse cultures, the public and private space are of similar sizes and public spaces are closely guarded since access to public space allows access to private space too.
- o Achievement versus ascription: Achievement represents cultures that judge individuals on their most recent accomplishments and how skilled they are. Ascription represent cultures that give preference to status attributed to individuals by birth, kinship, gender or age, connections and educational record.

- Attitudes to time: According to Trompenaar (2011), societies differ culturally through the way they view time. Some societies value past achievements rather than more recent achievements, while some societies place more emphasis on present performance and plans for the future rather than past achievements.
- Attitudes to the environment: Another way in which cultures differ can be found in their attitude to the environment. Some cultures view nature as an entity to be feared or imitated, they see the world as more powerful than human beings. Other cultures see the predominant focus affecting their live and the source of virtue and vice as emanating from within the individual. These cultures view motivations and values as determined from within.

3.1.4 Triandis and Suh's Definition of Culture

According to Triandis and Suh (2002), "Elements of culture are shared standard operating procedures, unstated assumptions, tools, norms, values, habits about sampling the environment, and the like." (p. 136). They noted that culture includes passing on to future generations what has worked in a society's experience. The next section will examine Triandis and Suh's dimensions of culture.

Triandis and Suh's dimensions of culture
Triandis and Suh (2002) identified four dimensions of culture including complexity, tightness, collectivism, and individualism as described below.

- Complexity: Cultures can be differentiated by their level of complexity. Gross national product per capita is an indication of cultural complexity. Other indicators are percentage of urban population, city size, personal computers per capita, etc. Triandis and Suh (2002) also note that hunters/gatherers society and information societies have the most contrast between them.
- Tightness: Tight cultures observe strict norms. Loose cultures tolerate deviation from norms. Such tolerance exists in societies that are relatively heterogeneous, with low population density and are less dependent on each other.
- Collectivism: Collectivist societies are characterised by individuals that are interdependent with their in-groups (family, tribe, nation, etc.), prioritise the goals of their in-groups, base their actions primarily on in-group norms, and behave communally. Triandis and Suh (2002) note that there are different types of collective cultures and offer examples such as: vertical collectivist cultures: these cultures are traditionalist, they stress in-group cohesion; reverence for in-group norms; and respect for the instructions of authorities, and horizontal collectivist cultures: these cultures value empathy, sociability and cooperation.

Individualism: There are vertical individualist cultures which are characterised by high competitiveness and hierarchical differentiation and horizontal individualist cultures which value self-reliance, uniqueness and independence from others.

A summary of the studies on national culture and their dimensions is shown in table 4.

Table 4 A summary of the studies on national culture and their dimensions

Source	Definition of Culture	Dimensions of Culture
Hofstede (1980, 1984, 2011)	"a collective programming of the mind that distinguishes the members of one group or category of people from others." (1984, p.13)	Power Distance
		Uncertainty avoidance
		Individualism versus Collectivism
		Masculinity versus Femininity
		Masculinity versus Femininity
		Long Term versus Short Term Orientation
Schwartz, 2006	"the rich complex of meanings, beliefs, practices, symbols, norms, and values prevalent among people in a society" (p. 138)	Autonomy versus Embeddedness
		Egalitarianism versus Hierarchy
		Harmony versus Mastery
Trompenaar, 2011	"a shared system of	Universalism versus

Table 4 (to be continued)   23

	meanings. It dictates what we pay attention to, how we act and what we value." (p. 13).	Particularism
		Individualism versus Communitarianism
		Neutral versus Emotional
		Specific versus Diffuse
		Achievement versus Ascription
		Attitudes to time
		Attitudes to the environment
Triandis and Suh, 2002	"Elements of culture are shared standard operating procedures, unstated assumptions, tools, norms, values, habits about sampling the environment, and the like." (p. 136).	Complexity
		Tightness
		Collectivism (Vertical and Horizontal)
		Individualism

It can be seen from the various definitions and dimensions of culture dis-cussed above that, conceptualising culture and its dimensions depends on the facets of culture being studied and the researcher's approach to studying it. This study will view the 'culture' of any given society as the habits, norms, assumptions, values, etc. that are prevalent in that society. This is because it might not be feasible to represent all the cultures and sub-cultures that coexist in a given society when designing an information system.

Countries with homogeneous societies and cohesive cultures rarely exist (Schwartz, 2006), which means outliers and groups with distinct values, norms and assumptions may be present in most societies. When considering the cultural values of the potential users of an information system, designers, while mindful of these differences, should always strive to design for the values of most of the potential users in the targeted society. This thesis will focus on culture at the national level and use cultural values as measurements of different aspects of culture because national culture usually involves large populations and according to Hofstede (2011), it is usually acquired from childhood and ingrained in the mind. It also exerts a lot of influence on individuals due because it exists in mostly in unconscious values (Hofstede, 2011). In addition, cultural values (Schwartz, 2008) have been measured for some national cultures and these value measurements are publicly available. Based on the studies done on culture reviewed above this study will define culture or cultural values of the users of an information system, within the context of this study, as:

The rich complex of meanings, beliefs, practices, symbols, norms, and values common among most of the targeted users in a society.

This section examined extant literature to operationalise and define the major concepts used throughout this study. It examined culture by highlighting a few studies on national culture conducted by different scholars. It defined culture within the context of this study. In conclusion, this section established, by re-

viewing the literature, that: There is no commonly accepted definition of culture. Several definitions exist, each depending on the level or aspect of culture that the researcher(s) studies it from. The next section will discuss the theories used in this study and present a theoretical framework based on the theories.

4 THEORETICAL BACKGROUND

This chapter consists of three sections. The first two sections are about theories; the theory of cultural value orientation and the theory of social interdependence. The arguments and suggestions proposed in this study will be framed and buttressed with these theories that explain cultural values and motivation. These theories explain the reasons why people act the way they do and how cultural values often influence human thoughts and actions. The last section in this chapter is the theoretical framework. The framework consists of assumptions and suggests propositions that ought to guide the selection and use of gamification elements.

4.1 Theory of Cultural Value Orientations

Schwartz (2012) argues that the structure of values is similar across culturally disparate groups, which means that there is a universal organisation of human motivations. He also noted that even though the nature of values and their structure appear to be universal, groups and individuals vary to a large extent in the relative significance they ascribe to the values. According to Schwartz (2012, p. 3) "Values are used to characterize cultural groups, societies, and individuals, to trace change over time, and to explain the motivational bases of attitudes and behaviour."

Values signify what individuals think is important to them in life and everyone holds many values with differing levels of significance (Schwartz, 2012). Scholars generally agree on the conceptualisation of basic values and identify six features of basic values:

- they are beliefs that are linked to emotions and feelings
- they motivate action
- they surpass particular actions and goals

- they serve as standards or criteria that govern the choice of actions, people, policies, etc.
- they are prioritised according to importance, which makes them different from norms and attitudes
- the relative importance of values govern action; etc. (Schwartz, 2006).

Schwartz, in his theory of cultural value orientations (2006), argues that the average value priorities of a society's members show the basic cultural emphases of that society. It posits that a society's cultural value importance, fashions and substantiate "individual and group beliefs, actions, and goals" (Schwartz 2006, p. 139) and articulate the cultural ideals, what is considered desirable and good.

This theory will be an appropriate theoretical basis to approach the issue of culture and its influence on individuals' and societies' behaviours, motivations and decision making. It is relevant to this study because gamification when deployed in information systems is about finding means to motivate people to adopt and use these systems to achieve certain goals (Deterding et al., 2011). By taking into consideration the dominant motivational mechanisms inherent in the targeted users' background culture suitable gamification elements that mirror these mechanisms can be selected and applied in designing information systems for specific user groups. This is particularly relevant when designing gamification for large swathes of people (e.g. countries or regions).

4.2 The Theory of Social Interdependence

Another theory that can be used to explain human motivations and behaviour is the social interdependence theory (Johnson & Johnson, 2005). The theory's main premise is that the way goals are structured establishes how individuals interact, which then leads to outcomes (Johnson & Johnson, 2005). According to Johnson and Johnson (2005), social interdependence occurs when individuals' outcomes are influenced by each other's actions. They distinguish two types of social interdependence: positive and negative. Positive social interdependence exists when the achievement of joint goals is promoted by the actions of individuals and negative social inter-dependence exists when individuals obstruct the achievement of each other's goals by their actions. Social interdependence leads to promotive interactions, where individuals support and aid each other's efforts to finish tasks and achieve group goals. While negative interdependence promotes competitive interactions, where actions taken by individuals may benefit some but not others (Johnson & Johnson, 2009).

The relevance of this theory to this study is underscored by how it can be used to explain group dynamics in a society. Users of information systems in societies characterised by high positive social interdependence, where their cultural values prioritise cooperation, collectivism, etc. can be motivated by the

deployment of dynamic gamification elements that reward team building, co-operation, etc. In societies that value autonomy and are characterised by low positive interdependence users of information systems can be motivated by the deployment of dynamic gamification elements that reward competition, independence of action, etc. Schöbel et al. (2017) note that each type of social interdependence delivers specific psychological processes and as such are motivated by different gamification elements.

These two theories are crucial in elucidating and interpreting the interplay between users' cultural values and gamification elements when designing gamification. The theory of cultural value orientations portrays the values deemed most important by a society as sources of (intrinsic) motivation for their thoughts, actions and their way of life. While the theory of social interdependence explains how the dynamics of a society can reveal how they are motivated; either collectively (positive interdependence) or competitively (negative interdependence). A research framework based on these two theories will be presented in the following section.

4.3 Theoretical Framework

The cultural value orientation emphasised by different societies were developed over time as means to solving fundamental issues related to managing human activity (Schwartz, 2006). This suggests that cultural value orientations are societies' in-built mechanisms or templates for problem solving. Many societies fall between polar groupings, such as, autonomy or embeddedness, egalitarianism or hierarchy (Schwartz, 2006). By coupling the theory of cultural value orientations with the social interdependence theory, which explains how positive or negative the interrelationships in a society is, it is possible to ascertain the nature of the gamification elements that might suited to motivating individuals in a given society when designing gamification for them.

The following constructs taken from these two theories comprise the research framework used in this study. The constructs taken from the theory of cultural value orientation (Schwartz, 2006) are:
- Egalitarianism: In egalitarian societies, people are taught to view each other as having a shared basic interest. People are inculcated with the idea of cooperation and feelings of concern for the welfare of everyone.
- Embeddedness: In embedded societies, people are taught to view individuals as entities embedded in the collectivity. Significance in life is found mainly in social relationships, group identification, participation in shared way of life, and striving to achieve shared goals.
- Autonomy: In autonomous societies people can nurture and communicate their own preferences, ideas, feelings, and find significance in their uniqueness.

- Hierarchy: In hierarchical societies, people are taught to rely on hierarchical systems of assigned roles to guarantee responsible, productive behaviour. They are socialised to accept the hierarchical distribution of roles for granted and follow the rules and obligations attached to their roles.
- Mastery: Societies where mastery is predominant reward active self-assertion for mastering, directing and changing the natural and social environment for the attainment of group or personal goals.
- Social interdependence: This construct is taken from the theory of social independence and its main assumption is that the way goals are structured in a society determines how the people in that society interact which leads to outcomes (Johnson & Johnson, 2005).

This study makes certain assumptions based on the prevailing cultural value emphases of a society and the level of interdependence portrayed in that society. Schwartz (2006) theorises that societies that emphasise egalitarianism and intellectual autonomy are of the assumption that individuals should and can accept personal responsibility for their behaviours and make decisions because of their own understanding of situations. He also noted that hierarchy and embeddedness are orientations most central to collectivism. Societies that emphasise these orientations are of the assumption that an individual's duties in and obligations to collectivities are more imperative than personal ideas and ambitions.

Assumptions

Mastery as a cultural orientation, according to Schwartz (2006), rewards aggressive self-assertion to influence, master and affect the natural and social environment to achieve personal or group goals. Societies that emphasise mastery socialise individuals to be ambitious, daring and competent (Schwartz, 2006). The theory of social interdependence (Johnson & Johnson, 2005) can be used to explain the interaction pattern and the way individuals and groups within a society interact to achieve their goals. They can work together collectively, by working towards common goals or outcomes (positive interdependence) or compete against each other to achieve their goals (negative interdependence). There can also be no interdependence which is when individuals perceive that there is no link between the achievement of their goals and others' achievement of their goals.

Based on these two concepts (Mastery and Social Interdependence) this study will assume the following:

- Assumption 1: by gauging a society's penchant for mastery, it is possible to ascertain the level of competitiveness expected of individuals in that society.
- Assumption 2: by gauging the extent of social interdependence in a society, it is possible to ascertain the types of gamification dynamics (group level or individual level) to employ when designing gamified systems for that society.

These assumptions can be relevant when designing gamification. The first assumption helps determines the kind of gamification dynamic (ranging from high competition to high collaboration) to be utilised. While the second assumption is used to gauge the dynamics of a society to find out how they are motivated, whether collectively as in positive interdependence or competitively as in negative interdependence, before deciding on the type of gamification element, whether group level or individual level, to utilise. These assumptions are explained further using the research framework (figure 2) below.

Egalitarianism

Q2   Q3

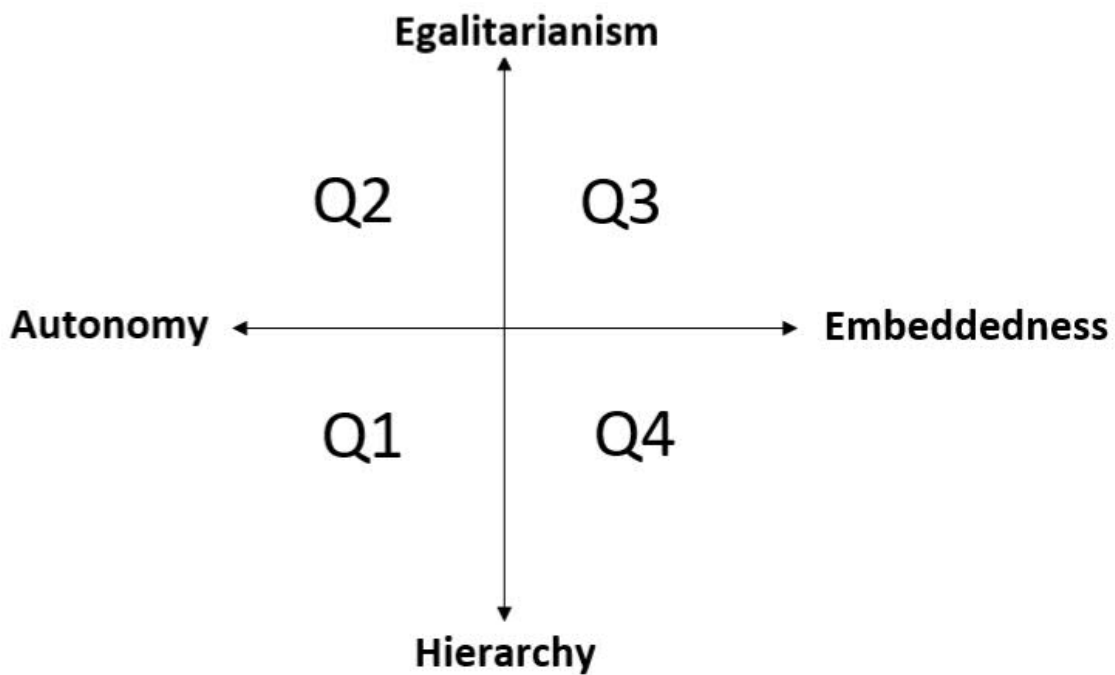**Autonomy** ←——————————→ **Embeddedness**

Q1   Q4

Hierarchy

Figure 2 Research Framework showing the organisation of societies based on their cultural value orientation and suitable gamification elements.

In figure 2 above, the Y- axis depicts the level of mastery in a society, from high in hierarchical societies to low in egalitarian societies.
The X-axis depicts the level of social interdependence in a society, from low in autonomous societies to high in embedded societies.

Propositions
This study will suggest the following propositions which are based on the research framework (figure 2) and the assumptions stated above.
The first quadrant, Q1 shown in figure 2, depicts autonomous and hierarchical societies. These societies also have low social interdependence but high mastery. Therefore, this study will propose that:

- Proposition 1: Individuals socialised in autonomous and hierarchical societies might prefer to use information systems imbued with gamification elements that reward competition with other individuals.

The second quadrant, Q2 shown in figure 2 depicts autonomous and egalitarian societies. These societies are less socially interdependent and low in mastery.

- Proposition 2: Individuals socialised in societies autonomous and egalitarian might prefer to use information systems imbued with gamification elements that reward individual achievements.

The third quadrant, Q3 shown in figure 2, depicts embedded and egalitarian societies. These societies are also high in social interdependence but low in mastery.

- Proposition 3: Individuals socialised in embedded and egalitarian societies might prefer to use information systems imbued with gamification elements that reward group identity and group performance and collaboration.

The fourth quadrant, Q4 shown in figure 2, depicts embedded and hierarchical societies. These societies are high in mastery and are highly socially interdependent.

- Proposition 4: Individuals socialised in societies embedded and hierarchical societies might prefer to use information systems imbued with gamification elements that reward competition with other groups and in-group collaboration.

It should be noted, however, that these assumptions and propositions are mainly relevant when designing gamification in information systems that will be utilised by large groups of people in these different types of societies. This because by when groups of people with the same cultural orientation are going to use information systems designed for them, from the context of this study, it is judicious to try and replicate the existing social dynamics in their society.

The assumptions and propositions stated previously are based on the reviewed literature. An empirical study will be conducted by using data collected from at least two societies that appear to be culturally different to investigate them.

This section explained the link between users' cultural values and the design of gamification by using two theories. It also introduced a research framework (including assumptions and propositions) to theorise why individuals socialised in different societies might perceive gamification elements used in information systems differently due to the prevailing cultural orientations and the extent of social interdependence (positive, negative or negligible) existing in those societies. The final part of this section was dedicated to establishing the theoretical frameworks, research model, assumptions and propositions that are used to validate the arguments in this study. The next section will detail the approach and process used in conducting this study.

5 RESEARCH METHODOLOGY

The purpose of this research is to explore the relationship between users' cultural values and their perception of gamification elements. The methodology and process for conducting this study is explained in this section. This section details the processes of answering the research question posed in the introductory section of this thesis. It also explains and justifies the decisions made in the selection of the research process, research method, method of data collection and method of data analysis.

5.1 Research Purpose

The relationship between users' cultural values and the design of gamification appears to be under studied in Information Systems research (AlMarshedi et al., 2017). Information Systems (IS) is a field of study that links business with computer science. This study explores the extent to which the users of information systems are influenced by their cultural values in their perception of gamification elements. The use of exploratory research is usually applicable in a subject area lacking much available information and the researcher seeks to gain more understanding about the problem (Wohlin & Aurum, 2015). Wohlin and Aurum (2015) further state that exploratory research is conducted to explore a problem area and yield background information that can be used for descriptive or explanatory research.

5.2 Research Process

This study is conducted using a qualitative research process. Myers (1997) notes that qualitative research process is a method of inquiry that uses qualitative data like interviews, documents and participant observation for understanding and explaining social phenomena. Qualitative research is performed when re-

searchers want to ascertain mindset of their research subjects, and by so doing access novel ways of perceiving the world (Myers, 1997). Qualitative methods are also suitable for theory building, the explanation of relationships, writing detailed descriptions, and portraying collections of norms, such as, standards, models and frameworks (Wohlin & Aurum, 2015). IS qualitative research endeavours to empirically study a range of phenomena related to IS by employing qualitative data from diverse sources, e.g., interviews, observations, design efforts, interventions, and archival materials (Conboy, Fitzgerald & Mathiassen, 2012).

This study is a comparative study of users' perception of gamification due to the influence of their cultural values. The users involved in the study are drawn mainly from two societies (Finland and Nigeria) that appear significantly different based on cultural value measurements (Schwartz, 2008). These two societies also fit into different quadrants of the research framework.

This study was conducted in two stages; a review of the relevant literature and an empirical study. The processes involved in the literature review and the empirical study will be explained in the following sections.

5.3 Literature Review

The literature review process began with searches on search engines (Google scholar, aisnet.org, etc.) with the key words "gamification" and "culture" for papers or articles written on these topics. The initial search result yielded a lot of papers, so a cursory reading of the titles and abstracts of some of these papers was done to find papers relevant to the subject area and IS. This process yielded a few relevant papers which led to other papers (from looking at the list of references in these papers). The next step involved a review of the papers collected. This led to the development of a theoretical framework based on the literature reviewed. The framework, based on two assumptions, comprised four propositions. The next step was to conduct a field study to investigate the validity of the propositions.

5.4 Empirical Study

To investigate the propositions inherent in the research framework developed from the reviewed literature an empirical study was conducted. It was not feasible to test all the propositions in the framework due to constraints such as time, finance, etc. In the end, two propositions which represented opposite quadrants in the research framework were investigated. The propositions were investigated using a qualitative research method. This involved using qualitative interviews as a data collection method from willing participants.

Qualitative interviews are social interactions where the researcher and re-spondents have conversations, which are usually question and answer sessions, with the aim of gathering data for research. They are the most frequent and most essential data collection tools in qualitative research (Roulston, 2012; Myers & Newman, 2007).

There are several types of interviews, such as structured interviews, un-structured or semi-structured interviews, and group interviews.

Structured interview- these types of interviews are usually scripted, leave little room for improvisation and are prepared prior to the interview. They are often used in surveys and the interviews may not be conducted by the researcher. Unstructured or semi-structured interview- these types of interviews are par-tially scripted, and the researcher may prepare some questions before the inter-view and improvises during the interview.

Group interview- in group interviews two or more people are interviewed simultaneously one or more interviewers and they may be structured or un-structured (Myers & Newman, 2007).

This study utilised semi-structured interviews which combined open-ended questions with questions with multiple choice answers.

5.4.1 Data Collection

The process of data collection commenced by deciding how and where to col-lect the data with which to examine the research framework. As stated earlier, it was not possible to examine all the propositions in the framework. The decision to explore two propositions that represented opposite quadrants of the frame-work was made after careful consideration of the available resources.

Two countries, Nigeria and Finland, were chosen to represent opposite quadrants of the framework. The choice of these two countries reflects their scores from a measure of these values in the National Cultural Value Orienta-tion Scores (Schwartz, 2008). The scores indicate that these two countries are significantly culturally different, of the two countries Finland appears to be more autonomous and egalitarian while Nigeria appears to be more embedded and egalitarian, which corresponds to quadrant 'Q2' and 'Q3' respectively (fig-ure 2). The decision to investigate the propositions that represent cultures on opposite ends of the framework was also made in the hope that the differences in culture will be reflected in the results of the study.

Interviews were used as the means for collecting data in this study. The inter-views consisted of general questions (e.g., age, level of education, etc.) com-bined with scenario-based questions from which interviewees were asked to select the ones that appealed most to them (see Appendix 1). Scenarios, as used here, refer to brief sketches depicting actions and situations involving the use of gamification elements and dynamics within the context of a mobile application, Memrise used for learning languages. The use of a learning language applica-tion was due to its popularity, the ability to learn many languages by using it

and the ease with which it can be explained to the respondents. The Memrise application was also designed using gamification.

The interviews were semi-structured, all the participants were asked similar set of questions which combined a few general questions with some scenario based. However, in some instances follow up questions based on some of the responses of the participants, were asked. The structured nature of the interviews offers freedom to use the interview explore interesting areas that arise, and if possible, address the respondent's interests or issues (Smith, Harré & Van Langenhove 1995).

The questions used in the interviews were evaluated using pilot interviews during which three students from a Finnish university were interviewed to ensure that the questions and scenarios were expressed clearly and were easy to understand. The questions and scenarios were chosen to measure certain aspects in the research framework explained previously.

To conduct the empirical part of the study, participants who were born and raised in the selected countries (Finland and Nigeria) were sought. Potential participants also had to be conversant with the use of applications on devices such as, smart phones, laptops, tablets, etc.
A total of 20 interviews were conducted in English. Ten interviews were conducted in Finland in the early part of summer 2018 and ten interviews in were conducted Nigeria in March 2018. The participants for the interviews were approached and asked if they wanted to be part of the study and they ranged from 18 to 39 years and there were students and professionals amongst them. The interviews' setting was informal, and all participants were informed about the nature and purpose of the study; and they were all assured of the confidentiality and anonymity of their contributions. They also agreed to the recording of the interviews.

In Finland, the interviewees selected to participate in the study were also approached and asked if they wanted to be part of the study and their ages ranged from 20 to 40 years. The consisted of students and professionals. The composition of the respondents interviewed in during the various stages of the data collection is shown below (table 5).

Table 5 Composition of interviewees

STAGE	Interviewee ID (ID #)	AGE (YEARS)	SEX	BACKGROUND
Pilot (Finland)	-	18	Male	Student (Bachelor)
	-	24	Female	Student (Master's)
	-	25	Male	Student (Master's)
Nigeria	1	23	Female	Professional
	2	25	Female	Professional
	3	38	Male	Professional
	4	23	Female	Student
	5	37	Female	Professional

Table 5 (to be continued)

	6	20	Male	Student (Bachelor)
	7	18	Male	Student (Bachelor)
	8	26	Male	Student (Master's)
	9	32	Male	Student (Master's)
	10	25	Male	Student (Master's)
Finland	11	35	Male	Professional
	12	34	Male	Professional
	13	40	Female	Professional
	14	29	Male	Student (Master's)
	15	32	Female	Student (Bachelor)
	16	33	Female	Student (PhD)
	17	24	Male	Student (Bachelor)
	18	29	Male	Student (Bachelor)
	19	20	Male	Student (Bachelor)
	20	30	Female	Professional

As shown in table 5, the respondents were interviewed in both Finland and Nigeria, they consisted of students and professionals between the ages of 18 to 40 years. All the respondents interviewed in Nigeria admitted to using a mobile phone most of the time except one respondent who preferred using a tablet. Among the Finnish respondents interviewed; 5 preferred using their mobile phones, 4 of them admitted using their mobile phones and personal computers equally, and 1 person preferred using a personal computer. Only two participants had ever used Memrise. Those that had not used it were shown the application and given a brief explanation on how to use it.

Some scenario-based questions (see Appendix 1) were posed to the respondents. Their choice ranged from a to h, what these options represent is tabulated below (table 6):

Table 6 Options in the scenario-based questions and what they represent

Option	Represents
a	Personal motivation
b	Personal motivation (with rewards)
c	Personal competition
d	Personal competition (with rewards)
e	Collaboration
f	Collaboration (with rewards)
g	Group competition
h	Group competition (with rewards)

By selecting from options a to h in table 6, the respondents suggest the kind of gamification element they prefer.

5.4.2 Data Analysis using Qualitative Content Analysis

The data gathered in the conduct of this study is analysed using qualitative content analysis (Hsieh & Shannon, 2005). Qualitative content analysis is one of many methods for analysis text data and it is one of a few descriptive approaches suited to studies wishing to apply a comparatively low level of interpretation (Hsieh & Shannon, 2005; Vaismoradi, Turunen, & Bondas, 2013). Qualitative content analysis is defined as "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (Hsieh & Shannon, 2005, p. 1278).

Zhang and Wildemuth (2016, p. 1) argue that qualitative content analysis

> "goes beyond merely counting words or extracting objective content from texts to examine meanings, themes and patterns that may be manifest or latent in a particular text. It allows researchers to understand social reality in a subjective but scientific manner."

The authors note that qualitative content analysis focuses on unique themes that highlight the extent of the significance of the phenomenon instead of the statistical importance of the instances of specific texts or concepts. They also prescribe certain steps that can be applied generally when conducting a study using qualitative content analysis. These steps were used as guidelines in the conduct of this study and they are summarised and tabulated below (table 7).

Table 7 : The general stages of qualitative content analysis (Zhang & Wildemuth, 2016)

Stage	Explanation
1: Prepare the Data	Data gathered should be transformed into written text.
2: Define the Unit of Analysis	The 'unit of analysis' which refers to the "basic unit of text to be classified" should be defined.
3: Develop Categories and a Coding Scheme	Categories and coding schemes can be derived from three sources; the data being analysed, previous similar studies or theories.
4: Test Your Coding Scheme on a Sample of Text	Develop and validate coding schemes during the early stages of the process.
5: Code All the Text	The entire text should be coded after achieving coding consistency. However, new themes and concepts might emerge as the entire text is being coded. These new themes need to be added to the coding scheme.
6: Assess Your Coding Consistency	The coding consistency needs to be reassessed after coding the entire text.
7: Draw Conclusions from the Coded Data	At this stage, meaning should be made about the themes or categories classified and their properties. This involves making inferences and presenting reconstructions of meanings sourced

Table 7 (to be continued)

	from the data. This is an important stage in the analysis procedure and its success depends almost entirely on ones' reasoning capacities.
8: Report Your Methods and Findings	To ensure replicability of the study, there needs to be monitoring and reporting of analytical proceedings and processes as entirely and candidly as possible. These include, decisions and methods relating to the coding procedure, in addition to the processes used to demonstrate the reliability of the study.

At the initial stage (figure 3), all the data gathered from the interviews conducted were transcribed and recorded in a spreadsheet. Each respondent's answer to the questions were written side by side, question by question, so as to compare and contrast the answers easily.
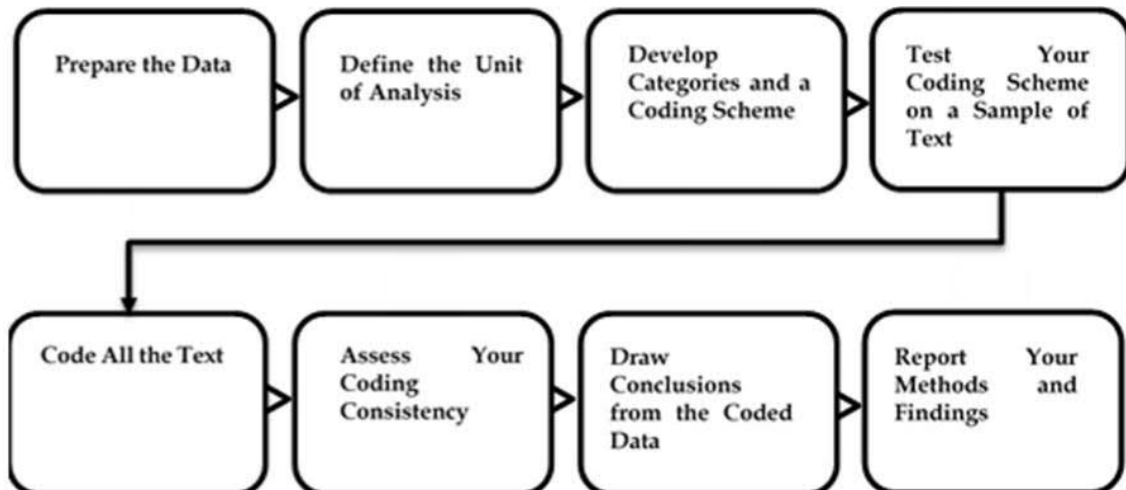

Figure 3 Process model showing data analysis using content analysis

The second stage involved the definition of the unit of analysis (usually an individual theme, or the expression of an idea) which can be instances of a theme represented by a single word, a phrase, a sentence, a paragraph, or an entire document. In this case, ideas and themes centred around competition, collaboration, self-motivation and gamification elements (leader-board, points, badges, etc.) which had already been embedded in the questions and scenarios discussed with the respondents.

In the third stage, the categories and coding schemes were derived deductively from the framework (figure 2) introduced in the preceding chapter. A sample of the coding agenda will be depicted in the following section. Coding schemes can be generated inductively or deductively. In studies where there are no previous theories, categories must be generated inductively from the data, while for studies based on a preliminary model or previous theory, a list of initial coding categories can be generated from the model or theory. Although coding categories should be defined in ways that are "internally as homogene-

ous as possible and externally as heterogeneous as possible", a unit of text can be assigned to more than one category concurrently.

Activities in the fourth stage included, coding samples of the data gathered to ensure that the categories and coding scheme derived were consistent and ensuring that the coding rules were clear, precise and easy to understand. This stage usually entails coding a sample of the data to test the clarity and consistency of category definitions. After coding a sample of the text, the coding consistency is scrutinised. If the consistency is low, the coding rules should be revised. This process is carried out repeatedly until coding consistency is realised.

During the fifth and sixth stages, the entire data was coded using the coding scheme and inherent consistencies in the scheme were assessed, this is because human factors such as, fatigue, errors, etc. can occur during the coding process. In addition, new codes may have been added after the initial consistency check, and the coder's understanding of categories and coding rules may adjust slightly as time progresses. All these factors can lead to coding inconsistency. There were very few clear-cut ideas and themes gleaned from the data, as some of the ideas expressed by the respondents apparently fit into more than one category.

Drawing conclusions and finding meaning in the coded data were part of the activities performed in the seventh stage. This was largely done by scrutinising the coded data from the context of underlying assumptions stated in the framework, the theories cited in the literature review and personal observation.

This chapter detailed the research methodology used while conducting this thesis. It stated the research purpose and the research process used. It discussed the data collection method and the stages involved in analysing the data gathered. The next chapter will present the results gleaned from the analysed data.

6 RESULTS AND CONCLUSIONS

This chapter present the results of the empirical study. It is divided into sections. The first and section looks at the data gathered from the Nigerian then Finnish respondents, respectively, that examine their habits when using information systems. The third section examines the respondents' preferences when it comes to gamification elements. The chapter also analyses the results and presents the conclusions of the study. A brief summary is included at the end this chapter.

6.1 Overview of the interviews

The research question in this study revolves around user perception of gamification. In a bid to answer this question, data was gathered from the respondents using interviews. The relevant questions were; what applications they enjoy using, why they enjoy using those applications and if given a set of specific gamification scenarios and asked to select from them, what they would choose and why. The following sections display the results of this study by using charts to illustrate how the respondents answered the questions.

6.1.1 Interviews with Nigerian Respondents

Before asking the respondents scenario-based questions to find out their gamification preferences, they were asked questions that were aimed at finding out their habits when using information systems. These questions were used to find out the type of computer devices they preferred using, their favourite applications and why they liked using their favourite applications. The main theme of this section is respondents' attitude towards the applications they choose to use very often and the devices they often like to use. It also includes the influences behind respondents' choice of preferred application.

When asked to name the type of device they frequently used, it turned that most of the Nigerian respondents frequently used a mobile phone (figure 4).
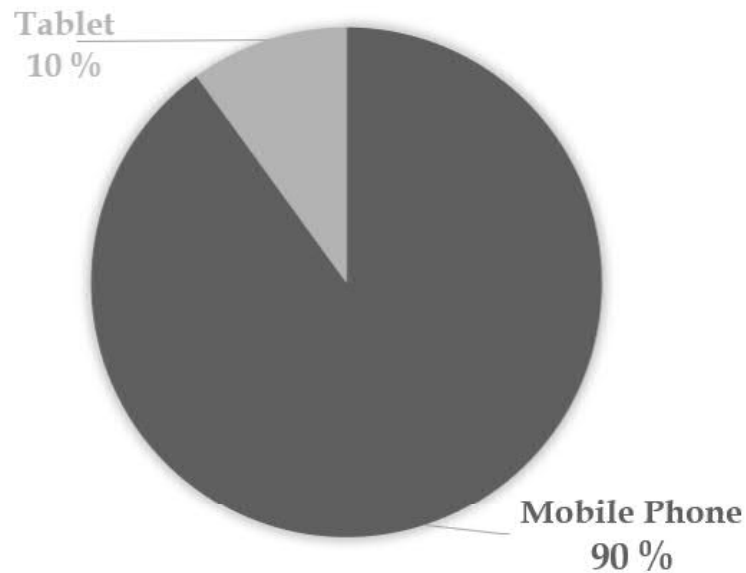

Figure 4 Type of device used frequently by Nigerian respondents

When asked to name their favourite application, 70 percent of the Nigerian respondents admitted using social media applications like Twitter, WhatsApp and Instagram very regularly, often daily, and most of the reasons they gave for using these applications centred around entertainment, fun, getting information, communication, etc. For example, one of the interviewees (ID #1) said, "*Instagram is for the fun, entertainment, fun happenings, trending stuff*" while another interviewee (ID #5) mentioned "*WhatsApp…because it is easy to communicate with a lot of people*". Figure 5, below, represents the types of applications favoured by the Nigerian respondents.

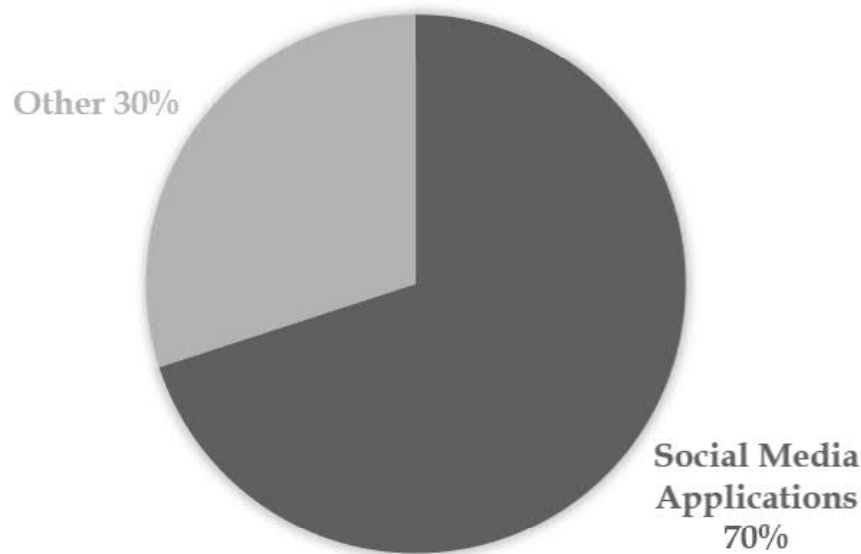**FAVOURITE APPLICATION (NIGERIAN RESPONDENTS)**

Figure 5 Favourite Applications used by the Nigerian respondents

While of the remaining respondents, 20% were most likely to use Google and 10% mostly used an astrology application. For those that frequently used Google, they were all students and they cited the need for certainty of information as one of the reasons why it was their favourite application.

For most of these respondents, hedonic use was a motivating factor in their decision to use these applications. Fun, communication and getting information were important factors for these users when deciding to use an application. All the respondents claimed to use their choice of application very frequently (at least once a day).

To probe further, the respondents were asked what aspect of their favourite application made them enjoy using it. This question was asked to uncover any underlying motivation the interviewees had for frequently using the application they selected. The interviewees when answering the question mainly focused on the benefits of using the applications. For example, a Google user (ID #10) said, *"the fact that it is a database for information, especially academic information is so vast, I usually find whatever I want"* and another interviewee (ID #6) mentioned *"I like the status aspect... I like posting some videos also"* while talking about their use of WhatsApp.

The respondents were not particularly concerned about the technical aspects of the applications they liked. Most of the reasons they gave for their continuous use of these applications were mainly centred around the functions that the applications enabled them to perform, i.e. the utility they derived from using these applications. For example, an interviewee (ID #8) said he liked using WhatsApp because *"Well, the fact that it's a means at which I communicate with the world and I communicate with people"*.

6.1.2 Interviews with Finnish Respondents

When asked to name the type of device they frequently used, the Finnish interviewees were split. Some mostly preferred using mobile phones, a few preferred either a laptop or desktop computer, while the remainder were split between using a mobile phone and a laptop/desktop computer (figure 6).
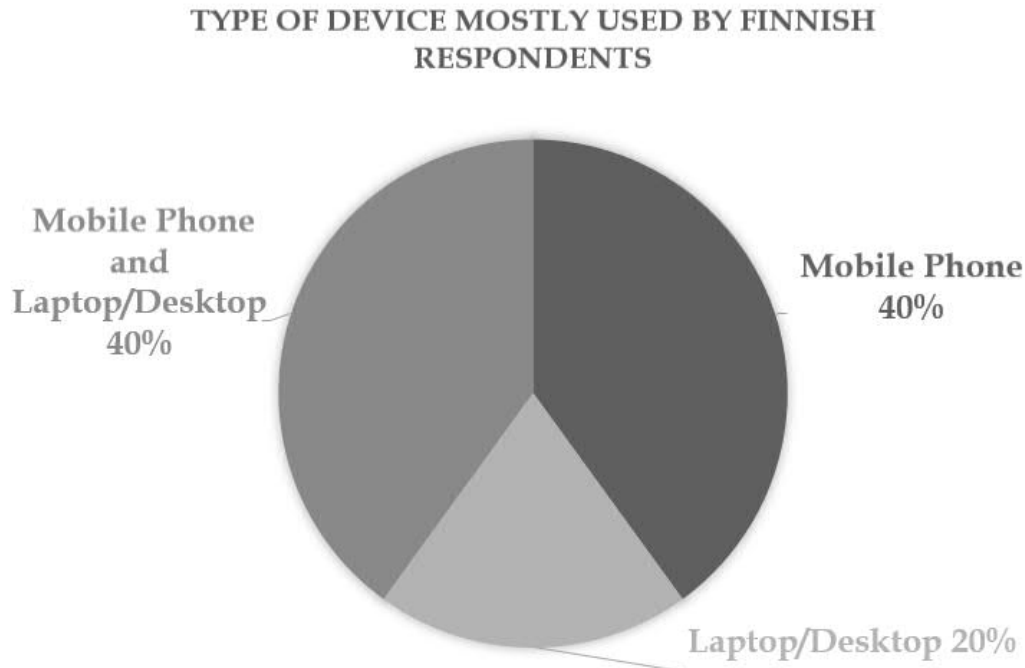

Figure 6 Type of device used frequently by Finnish respondents

When asked to name their favourite application, 40 percent of the Finnish respondents preferred using social media applications like WhatsApp and Instagram very often and most of the reasons they gave for using these applications centred around the utility of the applications, i.e., what the applications enabled them to achieve or ease of use. For example, an interviewee (ID #20) mentioned that she uses WhatsApp "...*because you can record long voice messages*" and an Instagram user (ID #16) said, "*I like it because it's so easy to use*". Figure 7, below, represents the types of applications favoured by the Finnish respondents.

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FAVOURITE APPLICATION (FINNISH RESPONDENTS)
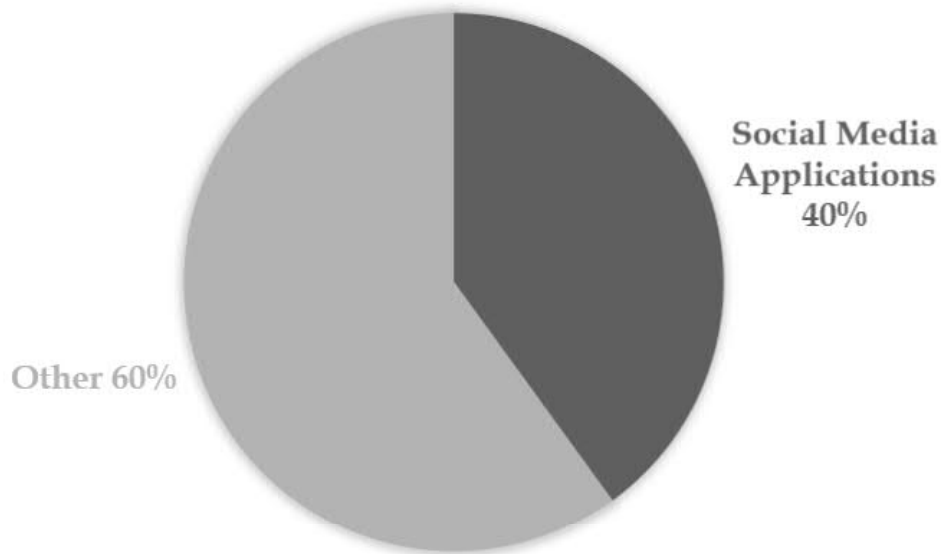

Social Media Applications 40%

Other 60%

Figure 7 Favourite Applications used by the Finnish respondents

The remaining respondents chose applications that were used to perform specific functions e.g., weather application, Google Maps, City transportation application, sports tracker, etc. The reasons they gave for selecting the apps as their favourite ranged from fun and ease of use; as evidenced in the words of this sports application user (ID #12), *"Because it's fun and easy to use"* to convenience and usability, according to this public transportation application user (ID #11), *"It is very convenient, and it utilises all the elements that I have on my phone…"*. These quotes show that for the Finnish respondents their choice of favourite application depended on what it enabled them to do, usability and convenience or fun and ease of use.

To uncover any main motivation the respondents had for frequently using the applications they selected, they were asked what aspect of their favourite application made them enjoy using it. In answering this question, the Finnish respondents gave more varied responses. Some were focused on the technical aspects of the application like this interviewee (ID #11), *"…it's also very fast. It's also very simple. simple user interface. I'm not quite sure which is better- the UI or the speed. They are both prevalent in the app"* and this WhatsApp user (ID #16), *"…and the visual part, the appearance is very clear and it's easy to follow what happens."* Others referenced the convenience of using the application like this WhatsApp user (ID #18), *"It just much easier to use WhatsApp than sending text messages and that sort of thing..."*; or the function the application performs, like this sports application user (ID #12) said, *"… it keeps track of your activities"*.

As can be seen from the quotes above, some of respondents answered the question by focusing on the technical aspects of the application they chose.

Some attributed their frequent usage to convenience, and some felt that the functions the application allowed them to perform were the reasons why they continually used the applications.

The respondents' answers to these questions highlighted a few differences between the two groups.

In the first instance, the Nigerian interviewees overwhelmingly favour the use of mobile devices (mobile phones or tablets) while the Finnish respondents are almost equally split between using mobile phones and laptops/desktop computers. When asked to name their favourite application, most of the Nigerian respondents chose social media applications as their favourite applications because they said these types of applications allowed them to communicate with other people, have fun, entertain themselves and get relevant information. For most of the Finnish respondents, applications that enabled them to perform specific functions, e.g., weather application, Google Maps, sports tracker, etc, were mentioned as their favourite application. The reasons they gave for favouring these applications centred around usability and convenience or fun and ease of use.

When asked to name the aspects of their favourite application that made them enjoy and frequently use it; most of the Nigerian respondents were focused on the benefits of using their choice of application and what the applications enabled them to do. The Finnish respondents when replying to the same question gave varied answers. Some were focused on the technical aspects of the application they favoured; some were focused on the convenience of using the application; and some felt that the functions that the application enabled them to perform was the most important aspect they liked about it.

6.2 Preferred Gamification Elements

The final part of this section deals with gamification scenarios. The respondents were given different gamification scenarios and were asked to select the one they preferred the most. The gamification scenarios were based on a language learning application called Memrise. The scenarios were used to represent different motivational elements which can be used when designing applications. The elements represented include collaboration, competition, teamwork and personal motivation.

When the Nigerian interviewees were asked to select an option they preferred from a list of gamification scenarios, 40% of the respondents selected option "a" or "b" (table 6) which implied that they were motivated by personal progress (with or without rewards). A respondent (ID #5) said, "*...monitoring my progress and helping me see what I've learnt encourages me. so that's why*". For interviewee (ID #7) it was about the badges and trophies. According to him, "*... by the time I'm being rewarded with badges and trophies, it will motivate me more to move ahead and let's see what I can achieve if I go far with this*". While for another

respondent (ID #2) the rewards did not matter; "...*I'm not after the rewards, I just want to see how I am progressing*". Figure 8 represents the gamification elements preferred by the Nigerian interviewees.
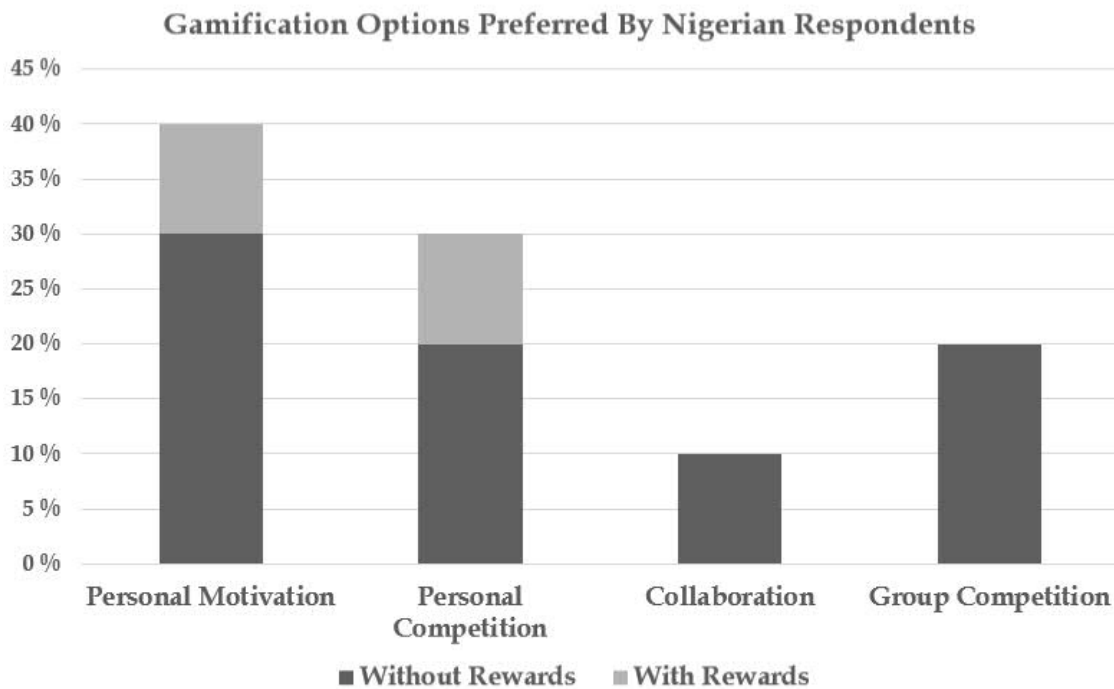

Figure 8 Gamification options preferred by Nigerian respondents

30% of the respondents selected option "c" or "d" (table 6) which implied that they were mainly motivated by personal competition with others (with or without rewards). For these respondents they said they chose this option because they were motivated by competing with other people or in the words of this interviewee (ID #8), "...*because it allows me to compete with other people and I am able to check my progress- how far have I gone, am I learning what I aim to learn? One thing is that it builds healthy competition*". Another respondent (ID #3) also said, "... *personally, motivated by competition.*"

For the remaining respondents they said they were motivated when they were collaborating, for example, in the words of this interviewee (ID #1), "...*it's easier to stay motivated when you do it with friends...when the other people are around, and they are bugging... you feel more motivated to get up and do it*". Or competing in teams, like this interviewee (ID #6) said, "...*I also like to compete with other people that's why I chose it*".

Judging from the responses given by the Nigerian respondents, the recurring themes appear to personal motivation or competition. That is, the ability to measure one's progress by personal milestones; or motivation by competing with others- personally or in groups.

When given the same set of scenario-based gamification questions, the Finnish interviewees answered them a bit differently, Figure 9 shows how they selected the options. 70% of them by choosing option "a" or "b" (table 6), indicated that they were motivated by their personal progress (with or without rewards).

When probed further, one respondent (ID #14) said, *"It sounds the most natural for me…"*. For some of the interviewees it was about the rewards, for example, this interviewee (ID #17) said, *"I like trophy ideas and such, I think they help one to visualise your progress in a way and give you some incentive to perform…I think that it makes that progress interesting"*. While another interviewee (ID #18) said, *"I don't really care about other people; I try to study myself. Well, I'm not so competitive about these things, I try to learn myself and well, I really don't try to do anything with or on teams or in groups, I just feel I would betray them, and they would lose the competition or something because my motivation just flits around"*

The remaining respondents, when answering the question, were equally split. One respondent (ID #11) indicated that he was motivated by personal collaboration by saying, *"everything is more fun when you do it with somebody and especially if they have the same goals… you can motivate yourselves by the results"*. One respondent (ID #13) opted for personal competition, saying, *"I'm personally motivated by competition… I push myself. I try to do better than my previous record."*. While another respondent (ID #20) who was in favour of team competition said, *"It allows me to work with people so it's some kind of support (for learning). The idea that there are other teams against teams and you also see how you advance … it makes it fun"*.
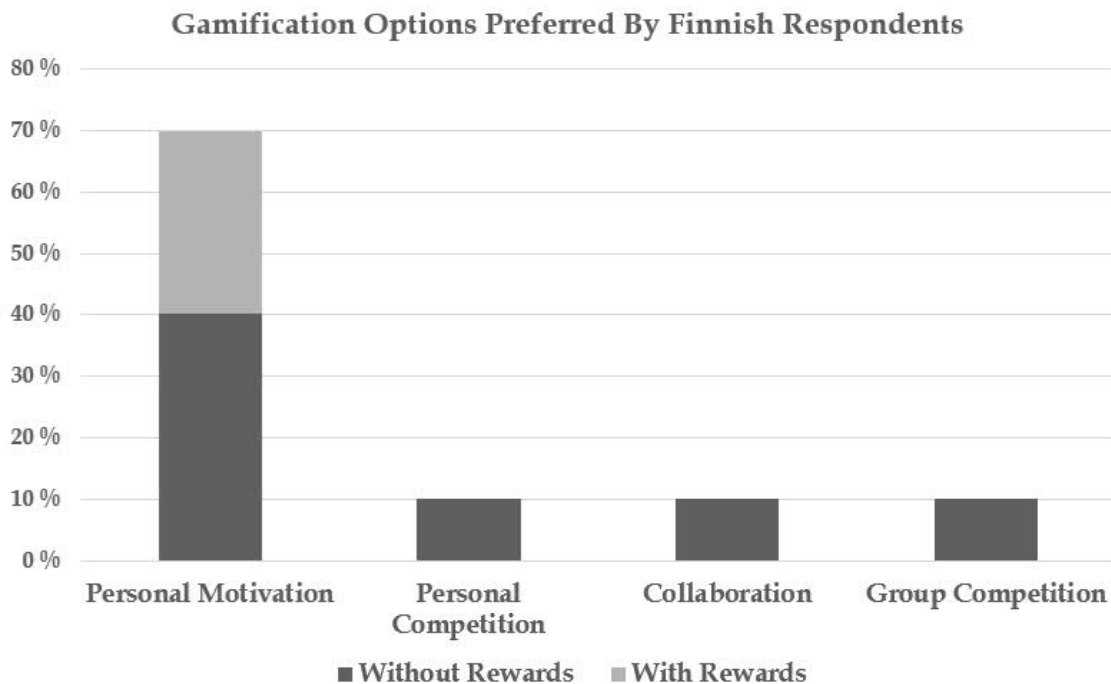

Figure 9 Gamification options preferred by Finnish respondents

The quotes above, from the Finnish respondents show that the dominant theme from the interviews conducted is motivation through personal progress. Majority of the respondents said that they are mainly motivated by how well they perform each week (with or without rewards).

The final question presented in the results was a scenario-based question which was focused on gamification. The respondents were presented with a range of scenarios used to represent different motivational elements for learning a new language on a mobile application to select from. 40% of the Nigerian respondents said they preferred to be motivated by working alone and monitoring their personal progress over time, 30% said that they were motivated by competing with other people, 20% said that they would prefer to compete in a team against other teams, and 10% will be motivated by working with others in a team. In answering this question, 70% of the Finnish respondents said that they will be motivated by working on their own and monitoring their personal progress over time; and the remaining 30% were split equally between competing alone with other people, motivated by working with others in a team, and competing in a team against other teams.

After an analysis of the results obtained from both sets of interviews, the following conclusions were arrived at:

- Finnish respondents: Favour applications that allowed them to perform a function better especially if it they derived some fun from it and the found it easy and convenient to use. Broadly suggested that they preferred gamification elements that allowed them to monitor their personal progress over time.

- Nigerian respondents: Favour applications that allowed them to communicate and engage with other people or have fun and entertain themselves. Indicated that they preferred gamification elements that allowed them to compete, whether personal competition or competition in groups. They also show a preference for gamification elements that enabled them to monitor their personal progress over time.

These results, especially the ones obtained from the Finnish respondents, generally agree with the literature. It was expected, based on Schwartz (2006), that since the respondents come from an autonomous and egalitarian society, which is also characterised by low social interdependence and low mastery, they would broadly prefer gamification elements that rewards personal improvement or personal achievements. The results obtained from the Nigerian respondents, on the other hand, show a little deviation from the reviewed literature. The expectation, based on Schwartz (2006), was that since the respondents come from an embedded and egalitarian society characterised by high social interdependence and low mastery, they would broadly prefer gamification elements that reward group identity and group performance and collaboration. This discrepancy might be attributed to one or more reasons, for example, it could be due to the number of people interviewed because this number is very small it might not be representative of the Nigerian society. It could also mean that the Nigerian society is probably less egalitarian with a higher level of mastery than what previous studies suggest. If this is true, it would also suggest that the Nigerian society is more competitive than previously assumed. This discrepancy can be addressed in further studies.

This chapter presented the results of the interviews conducted with the respondents of this study. The respondents were representatives of two countries, Finland and Nigeria. The results were presented by examining their answers to interview questions. It also analysed the results and presented the conclusions of the study.

The next chapter will discuss the results, detail the limitations of this study and proffer suggestions for further research.

7   DISCUSSION

This chapter discusses the results and the contributions and implication of this study for research and practice. The discussion begins with by comparing the findings to the reviewed literature. This is followed by examining the results obtained from the interviews. Then, the assumptions and propositions submitted in research framework earlier in the thesis are evaluated using the insights obtained from the empirical study. The chapter concludes with the limitations of the study, suggestions for further research and a final summary of the entire report.

7.1   Research question and findings

Although the use of gamification in products and services is believed by practitioners in the industry to motivate users and engage them, no compelling proof was found that gamification is being designed with the cultural values of the potential user taken into consideration. The literature highlights research conducted by different researchers that show the existence of cultural values which differ from place to place and have a marked influence on the thoughts and behaviours of groups and individuals (Hofstede, 1980; Schwartz, 2006; Triandis & Suh, 2002). Despite this link between cultural values and human behaviour there is still inadequate knowledge or research within the field of information systems on how gamification can be designed by taking into consideration the cultural value orientations of the end user (AlMarshedi et al., 2017).

The purpose of this study was to examine how users of different cultural backgrounds perceive elements of gamification especially when they are deployed in information systems. This purpose was achieved by interviewing representatives of two distinct cultures (Finnish and Nigerian) and mining their narratives to find similarities or differences in how they perceive gamification. Judging from the answers given by both sets of respondents, a case can be made

for a cultural approach to the design of gamification, especially if the aim is to motivate and engage the potential end user.

Most of the Nigerian respondents, based on the evidence yielded by the empirical study, seemed to favour applications that allowed them to communicate and engage with other people or have fun and entertain themselves. They also, to a large extent, indicated that they were motivated by competition, whether personal competition or competition in groups.

The Finnish respondents, again based on the evidence, broadly seemed to favour applications that allowed them to perform a function better especially if it they derived some fun from it, and it was convenient and easy to use. They also, by and large, suggested that they were motivated mainly by monitoring their personal progress over time.

According to Schwartz (2006), these societies (Nigeria and Finland) are quite distinct from each other, while the Finnish participants in their choice of options in the scenario-based questions reflect the egalitarianism in their culture, the Nigerian participants by choosing more competitive choices in the options deviated from the assumptions reported in previous literature, especially Schwartz (2006). The results obtained from the study was able to highlight the differences in both societies despite the limited number of interviewees. Societies that emphasise a value orientation also tend to deemphasise the opposing polar orientation (Schwartz, 2008).

These results cannot be generalised to the general population in these societies. This is mainly due to the small sample of individuals interviewed from these societies. These findings would be suitable, potentially, as an argument for a deeper exploration into the link between users' cultural background and the gamification elements best suited to motivating and engaging them.

Earlier in the thesis the research framework (figure 2) was introduced. The framework comprised four propositions which were based on two assumptions. Due to lack of adequate financial and other material resources, it was impossible to investigate all four propositions in the framework. Two propositions that represented countries (Nigeria and Finland) in opposite quadrants of the framework were investigated.

The respondents interviewed for this research were selected from two countries (Finland and Nigeria) judged to be from different quadrants (Q2 and Q3, respectively) in the research framework (figure 2). These quadrants correspond to the first two propositions which were investigated.

The second proposition was stated in chapter 4.3.1 thus:

- Individuals socialised in societies with high egalitarianism and high autonomy and therefore low social interdependence prefer to use information systems imbued with gamification elements that reward individual achievements.

Since Finland was assumed to belong in quadrant 2 of the research framework, the results from the Finnish respondents were used to investigate this proposition. When presented with scenario-based gamification questions, 70% of the Finnish respondents suggested that they prefer to be motivated

by working on their own and monitoring their personal progress over time; and the remaining 30% were split equally between competing alone with other people, motivated by working with others in a team, and competing in a team against other teams. This seems to be in line with the argument set forth in proposition two.

The third proposition also introduced in chapter 4.3.1 was:

- Individuals socialised in societies with high embeddedness and high egalitarianism might prefer to use information systems imbued with gamification elements that reward group identity and group performance and collaboration.

Nigeria was figured to belong in quadrant 3 of the research framework so the results from the Nigerian respondents was used to test this proposition. The respondents when given scenario-based gamification questions, 40% of the Nigerian respondents suggested that they preferred to be motivated by working alone and monitoring their personal progress over time, 30% indicated that they were motivated by competing with other people, 20% said that they would prefer to compete in a team against other teams, and 10% will prefer working with others in a team. With 50% of the respondents appearing to have a predilection for being motivated by competition, the results here are more nuanced.

The results of the Finnish respondents generally agree with the claim asserted in proposition one; most of the respondents indicate that they are motivated by personal achievements.

The results of the Nigerian respondents are more nuanced. It is in contrast with the argument asserted in proposition three; half of the respondents indicate that they are motivated by competition and 40% of the respondents preferring to monitor their progress over time.

The main findings of this study can be summarised thus:
- The Nigerian participants overwhelmingly favour using mobile devices, the preferred choice of application for most of them are social media applications that allow them have fun, entertain themselves while communicating getting information simultaneously. They also use these applications mainly for the utility they provide. When presented with gamification scenarios, most of them tended to prefer situations that allowed them to compete or monitor their personal progress.
- The Finnish participants on the other hand, tended to use mobile phones and laptops/desktop computers equally. They favoured a variety of applications including social media applications that allowed them to perform specific functions, have fun and are convenient and easy to use. They used these applications mainly for the utility they derived from them, the usability, convenience and the enjoyment of using the applications. They also used these applications because of the technical aspects and their usability. When given the gamification scenarios, a lot of them said they were motivated by monitoring their personal progress.

- The findings also suggest that the Nigerian society is more competitive than previous studies have reported.

Given these results, the implications are clear. The design of information systems that deploy gamification should not use a one-size-fits-all approach. Majority of the Finnish participants in this study appear to suggest, based on the evidence, that they prefer to be motivated by gamification elements that reward personal achievement, e.g., badges, trophies (table 2). This agrees with previous studies, such as, Schwartz (2006). The Nigerian respondents, on the other hand, appear to be more comfortable with gamification elements that reward competition, e.g., rankings (table 2) in addition to badges and trophies. This deviates a little from previous studies, especially, Schwartz (2006). Although this disparity can be attributed to small sample size, it can also suggest that the Nigerian society might be more competitive than previously reported. Further studies might be needed to clarify this discrepancy.

Again, there is need for caution in the consideration of these results. They appear to be applicable in the context of this study and are therefore not generalisable. These preferences may or may not be solely linked to their cultural background so further research is needed to fully understand this phenomenon.

7.2 Contributions and Implications

Although this thesis was conducted as an exploratory study, the findings suggests a connection between users' cultural background and their preference for certain gamification elements. The contributions of this study include evidence that Finns, in general, prefer to be motivated by gamification elements that reward personal achievement, while Nigerians, broadly, prefer to be motivated with gamification elements that reward competition. This study introduces a framework for gauging cultural orientation of any given society. Although the framework is very rudimentary and all the propositions were not investigated, the investigated propositions tend to show a cultural link to gamification. Further research is needed to test and refine the framework.

The results of this study also have implications for designers of information systems that employ gamification elements; firms and organisations that deploy information systems and applications to countries and regions with different cultures. They should adopt more nuanced methods in the design of these systems and take into consideration the cultural values of the end users that they are designing for. Further research in this area might lead to the availability of more culturally adaptive information systems that will in turn engender more motivated and engaged users.

7.3 Limitations

Like any other research, this thesis has some limitations. There were very few existing studies done in the area of culture and its impact on gamification. This meant that there were relevant studies to serve as foundation for this study, the literature review conducted dealt with the issue of culture and gamification separately. This limitation was mitigated by reviewing the few relevant papers found and browsing their list of references for papers relevant to the subject area.

Given the limited resources of time, scope and finance, it was not feasible to carry out a complete empirical study. This meant that qualitative interviews were used instead of a prototype gamified application built for the purpose of this research. The number of participants used in this study was limited to just ten each from the respective countries. This study tried to address the above limitations by using the available resources to focus on two countries (Finland and Nigeria) that are considered opposites of each other according to the framework used in the study. The use of a qualitative research method was cost effective and was suitable for an exploratory study such as this.

The use of qualitative methods also makes the results of this study unique and not applicable to the general population, which makes the results of this study applicable in the context of this study. The personal bias and opinion of the researcher inherent in this type of research method was a limitation in this study. This limitation can be addressed in future by using longitudinal research and using prototype applications or information systems that deploy gamification elements. In this way participants are observed, and their interactions are measured and monitored over time to collect rich data.

Another limitation is the concession that all groups and societies possess outliers and nonconformists; people who behave differently from the generally accepted norms of the society and possess a dissimilar set of cultural values. Result like those obtained from this type of study might not necessarily apply to them. This limitation can be addressed by future research by using measures and methods that account for the variance in human behaviour within a population or culture.

7.4 Further Research

This research has shown that there is a possibility that individuals socialised in distinct cultures might be biased towards certain gamification elements. This possibility presents an opportunity for further research on the link between culture and gamification elements to be conducted. This study was conducted as an exploratory research in this subject area. Further research to verify or establish a concrete link between users' cultural background and the gamification elements they prefer can be conducted using more suitable research methods,

e.g. longitudinal research to observe participants and gather rich data over time. Further research is also needed to test and refine the framework introduced in this study. The findings also throw up some uncertainty regarding the exact nature of the Nigerian society, it appears to be more competitive than previously reported. Further studies might be needed to investigate this disparity.

7.5 Conclusion

This thesis was aimed at investigating the connection, if any, between users' cultural values and their perception of gamification elements employed in information systems. It also sought to contribute to the studies on culture and gamification. It was conducted as an exploratory study due to the limited knowledge available in this subject area. The initial chapters include the literature review which explores gamification, culture and introduces a theoretical framework consisting of two theories: The theory of cultural value orientations and the theory of social interdependence. It also proposes a rudimentary research framework, comprising two assumptions and four propositions, which is tested against the results of the study. The empirical section of this report includes the research methodology comprising an explanation; of the research process (qualitative research), the method of data collection (qualitative interviews), and analysing the data gathered (qualitative content analysis). The latter chapters presented the results and discussed their relevance.

The findings of this study seem to suggest that users cultural background might play a role in how users perceive gamification elements deployed in information systems. The interpreted data gleaned from the interviews portrayed a difference between both sets of respondents in their choices of gamification scenarios. It is not clear, however, if the preferences expressed by both set of respondents can be solely attributed to their cultural values. This uncertainty can be addressed by investigating this phenomenon in future studies.

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APPENDIX 1 INTERVIEW STRUCTURE

1 General Information

Age:

Educational Background:

Gender:

Questions

1. Which type of device do you use the most, e.g., laptop, mobile phone, tablet, etc.
2. Do you have any favourite app/application/system?
3. How often do you use it?
4. Why is it your favourite app?
5. Is there any specific element or aspect of the app that you like, that makes you want to use it regularly?
6. Are you familiar with gamification?
7. Do you use any app that has some gamification in it?

   Gamification elements: (Show on Memrise application on phone)
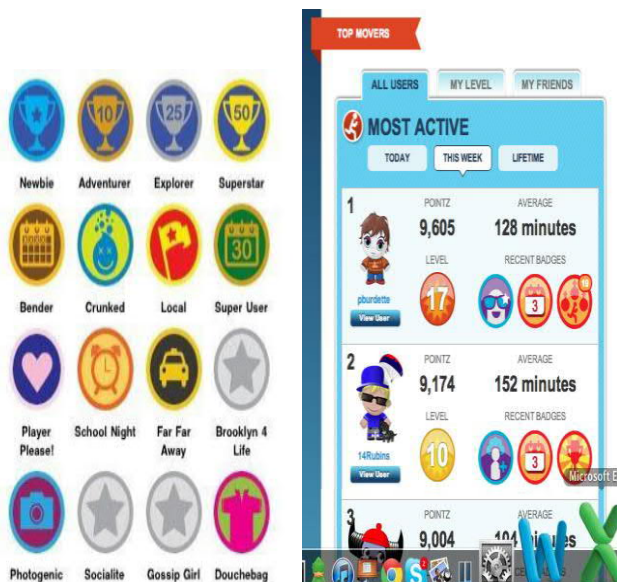
Gamification Scenarios

8. Which of the following scenarios seems more appealing to you when using this app? Select 3 scenarios, then rank them from the best option to the least.

You are using the app because you want to learn a new language (e.g. French). The app will help you track the number of times you learn and practise using the language. (You also have the option of posting your results on Social Media).

a) The app helps you monitor your efforts and rewards you with badges or trophies each time you achieve a new level and shows your progress each week.

b) You don't pay much attention to the rewards; you just focus on how well you are doing each week.

c) The app allows you to compete with other people and awards you trophies and badges each time you do better than someone else you are competing with.

d) You don't pay much attention to the rewards; you just focus on how well you are doing against your competitors each week.

e) The app allows you to select and/or invite your friends and you can set goals together and give each other advice or recommendations. The app rewards your team each time it achieves your group goals with badges, trophies, etc.

f) You don't pay much attention to the rewards; you just focus on how well your team is performing each week.

g) The app allows you form a team with friends and compete against other teams. Your team performance is ranked against other teams and each time your team does well, (e.g. beating other teams) it is rewarded with badges, trophies, etc. each time you beat other teams.

h) You don't pay much attention to the rewards; you just focus on how well your team is performing against other teams each week.

9. Why did you choose that option?

10. Will you post your results on Social Media?