DOKUZ EYLÜL UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF BUSINESS ADMINISTRATION
BUSINESS ADMINISTRATION PROGRAM
DOCTORAL THESIS
Doctor of Philosophy (PhD)

THE EFFECTS OF GAMIFICATION ON PURCHASE INTENTION: REWARDS BASED EXPERIMENTAL DESIGN IN MINDFULNESS–BASED MOBILE APPLICATION

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İZMİR- 2023

DECLARATION

I hereby declare that this doctoral thesis titled as "The Effects of Gamification on Purchase Intention: Rewards Based Experimental Design in Mindfulness–Based Mobile Application" has been written by myself in accordance with the academic rules and ethical conduct. I also declare that all materials benefited in this thesis consist of the mentioned resources in the reference list. I verify all these with my honor.

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Signature

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ABSTRACT

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Advancement of technology increases the interest in gamification and mindfulness-based mobile applications. In light of the gaining attention in these areas, it is essential to explore the impacts of gamification. However, the literature on this is still in its infancy. The main purpose of this study is to create and test a theoretical model by revealing how the rewards used in gamification affect purchase intention. In this sense, two studies were conducted within the scope of this research. In line with the first aim, in-depth interviews with 19 participant and a focus group study were conducted with eight participants. Based on the content analysis, enjoyment, social interaction, and human-computer interaction emerged as mediating variables influencing the relationship between gamification-based rewards and purchase intention. The second study aims to test the model created as a result of the findings obtained from the first study. For this purpose, an experimental design is carried out with 208 participants. Data were collected with 32 in-depth interviews and three surveys. Data gathered through in-depth interviews are analyzed with content analysis besides, regression analysis, independent sample t-tests, paired sample t-tests are conducted to analyze the data obtained from surveys. The findings reveal the effect of tangible and intangible rewards, mediating variables that are expected to have an impact on purchase intention. The study is expected to be one of the first attempts to provide an empirical basis for future models.

Keywords: Gamification, Purchase Intention, Mindfulness-Based Mobile Application, Experiment

ÖZET

Doktora Tezi

Oyunlaştırmanın Satın Alma Niyeti Üzerindeki Etkileri: Farkındalık Temelli Mobil Uygulamada Ödül Temelli Deneysel Tasarım

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Teknolojinin gelişmesi oyunlaştırma ve farkındalık temelli mobil uygulamalara olan ilgiyi artırmaktadır. Bu alanlarda artan ilgi ışığında, oyunlaştırmanın etkilerinin araştırılması çok önemlidir. Ancak bu konudaki literatür henüz başlangıç aşamasındadır. Bu çalışmanın temel amacı, oyunlaştırmada kullanılan ödüllerin satın alma niyetini nasıl etkilediğini ortaya çıkararak bir teorik model oluşturmak ve bu modeli test etmektir. Bu anlamda, araştırma kapsamında iki çalışma yapılmıştır. Birinci amaç doğrultusunda 19 kişi ile birebir görüşme ve sekiz katılımcı ile odak grup çalışması yapılmıştır. İçerik analizine dayalı olarak, eğlence, sosyal etkileşim ve insan-bilgisayar etkileşimi, oyunlaştırma temelli ödüller ve satın alma niyeti arasındaki ilişkiyi etkileyen aracı değişkenler olarak ortaya çıkmıştır. İkinci çalışma ise, ilk çalışmadan elde edilen bulgular neticesinde oluşturulmuş olan modeli test etmeyi amaçlamaktadır. Bu amaçla 208 kişi ile deney tasarımı gerçekleştirilmiştir. 32 derinlemesine görüşme ve üç anket çalışması ile veri toplanmıştır. Derinlemesine görüşmelerden elde edilen verilere içerik analizi, anket çalışmaları ile toplanan verilere ise regresyon analizi ve bağımsız t-testi analizleri uygulanmıştır. Bulgular, maddi ve sanal ödüllerin, satın alma niyeti üzerinde etkisi olması beklenen aracı değişkenlerin etkisini ortaya koymaktadır. Çalışmanın gelecekteki modeller için ampirik bir temel sağlamaya yönelik ilk girişimlerden biri olması beklenmektedir.

Anahtar Kelimeler: Oyunlaştırma, Satın Alma Niyeti, Mindfulness Temelli Mobil Uygulama, Deney

THE EFFECTS OF GAMIFICATION ON PURCHASE INTENTION: REWARDS BASED EXPERIMENTAL DESIGN IN MINDFULNESS–BASED MOBILE APPLICATION

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ABBREVIATIONS

APP   Appendix

CET   Cognitive Evaluation Theory

CE   Customer Engagement

HCI   Human-Computer Interaction

IOS   Iphone Operating System

SDT   Self-Determination Theory

TL   Turkish Lira

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INTRODUCTION

The widespread utilization of technologies in almost every area of life has prompted interest in the ability of mobile applications to increase human well-being and prosperity. Mindfulness has attracted much attention in recent years as a means to lessen cognitive sensitivity to tension and emotional discomfort. Consequently, mindfulness practices are growing in popularity in the realm of well-being and health.

Similarly, gamification has been significantly adjusted to mobile applications in the digitally connected world, and its influence on the customer experience has grown even more fundamental. Firms will gain from gamification's positive effect on purchasing intention, but the elements that affect the purchase intention must be properly identified and examined inside the framework of gamification. In conjunction with the growing interest in gamification and well-being mobile applications, the impacts of gamification on mindfulness mobile applications are attracting a growing number of researchers and practitioners.

Gamification consists of a variety of components, and it will be essential to determine which of these components influence purchase intention. The main purpose of this study is twofold. First, it is aimed to find out how the rewards used in gamification affect the purchase intention by identifying the variables that may mediate this relationship. The second objective of the current study is to test the conceptual framework identified. In this sense, two different studies were conducted within the scope of this research. In the first study, an extensive literature review, a focus group study and in-depth interviews were conducted to determine how the rewards affect purchase intention in the context of gamification for mindfulness-based mobile applications. Data gathered is analyzed via content analysis, the findings indicate that rewards result in enjoyment, social interaction, and HCI, which influences purchasing intention. The objective of the second study is to unfold the effects of both tangible and intangible rewards on purchase intention considering the mediating effects of social interaction, enjoyment, and human-computer interaction within a mindfulness application context. The research model was tested via an experimental design in which data is collected with questionnaires which are applied to the control and the experiment group, and in-depth interviews.

The effects of gamification components on purchase intention with social interaction and enjoyment were examined in the literature; however, there is a gap in the pertinent literature about the impact of human-computer interaction on purchase intention. Furthermore, there are many different types of rewards in gamification-based applications. In this sense, the investigation of the reward dimension of gamification is essential for the literature. This is one of the first studies to investigate the impact of tangible and intangible rewards on human-computer interaction. Furthermore, studies on mindfulness mobile applications have not examined the impact of human-computer interaction on purchasing intention. In this regard, the current investigation will also contribute to the literature on human-computer interaction.

Considering the literature on mindfulness-based mobile applications, there have been numerous scientific and psychological investigations. Although the gamification effect has been studied in various applications, health appears to be the primary focus. It is believed that conducting study on this subject, which is underrepresented in the marketing literature, will be of enormous value. On the other hand, when substantial investigation is carried out in the gamification and purchasing literature, it is discovered that survey research is typically employed. Currently, it is believed that it would be advantageous for the literature to research the effect of gamification on purchasing using the experimental approach and to analyze the results quantitatively and qualitatively.

CHAPTER ONE
GAMIFICATION

The gamification literature is examined in the first chapter. Definition of the game, history of gamification, definition of gamification, game-based learning, pros, and cons of gamification will all be covered sequentially for a better and deeper comprehension of the concept. Besides, gamification model, player types, gamification types, gamification-motivation relationship and examples of gamification are explained in depth.

1.1. GAME

Literature offers various explanations about games, which are defined as immersive activities with rules that are intended to be fun (Huizinga, 2010). According to Tekinbaş and Zimmerman (2004), a game is identified as a system in which individuals participate in an artificial thing, specified by rules, that results in a quantifiable conclusion (Tekinbaş & Zimmerman, 2003). Juul (2003) mentioned that game is expressed as a system that is governed by a set of rules, has a measurable outcome, and in which players attempt to influence this consequence (Juul, 2003). In a different definition, a game is described as a system containing various elements, including objectives, feedback, rules, results, competition, and interaction (Prensky, 2001). According to Seaborn and Fels (2015), rules, unknown consequences, structure, resolution, conflict voluntariness, representation, and are all themes that run through game definitions (Seaborn & Fels, 2015). Crawford (1984) stipulates that games must approximate certain realities and must be based on human-system interaction (Crawford, 1984). In summary, games originate from a broad range of combinations of these characteristics (Seaborn & Fels, 2015).

1.2. HISTORY OF GAMIFICATION

The term "gamification" refers to a contemporary trend in marketing and industry that has also attracted the attention of scholars, instructors, and specialists in many other fields. Even though the origins of gamification extend back to the 1980s, the term of gamification first appeared in the early 2000s. Gamification is certainly not

a new thing; it has historical precedents in areas as diverse as marketing like points cards and education such as grading scales (Nelson, 2012). Similarly, Deterding et al. (2011) mentioned that gamification has been adopted since the second half of 2010 and is used in the digital media sector. In addition to variables such as the lowering in technology costs and the rise in internet usage, games have had a significant impact on the development of gamification concept. Advantages of online gaming platforms have prompted individuals to experiment with other activities outside of gaming. Individuals have experimented with non-gaming activities due to the advantages of the online gaming platform, leading to the development of a gamification framework for the first time (Deterding et al., 2011). The domains of human-computer interaction (Azadegan & Riedel, 2012) and the concept of enjoyment provided background for study on the foundations of gamification (Seaborn & Fels, 2015). Evolution of gamification has resulted in the creation of technologies such as mobile applications, augmented reality, and cloud-based data programs. It is anticipated that by 2030, half of the world's population will be online and mobile(Huotari & Hamari, 2012, 2017). This highlights the need of merging several marketing services with digital technologies.

1.3. DEFINITION OF GAMIFICATION

There are various definitions of gamification, each one has a substantial contribution to the literature. Although there is no universally accepted definition of gamification and no consensus on what its theoretical underpinnings entail, the phrase is commonly used to describe components of an interactive system designed to motivate end users through the use of game elements and mechanics (Seaborn & Fels, 2015). Similarly, gamification refers to using game mechanics in contexts other than gameplay, with the goal of making those contexts more fun for users (Thom et al., 2012). Swan (2012) identified the term gamification as the incorporation of game mechanics into programs, platforms, and processes that these concepts do not traditionally use. Another essential definition explained this term as the use of digital game elements in a non-game context to improve user experience and the involvement of users. Furthermore gamification, which is the selective introduction of game aspects

into an interactive system, is an emerging concept in the marketing (Deterding et al., 2011).

Zichermann and Linder (2013) defined gamification concept as the method of incorporating elements from the game industry, which includes points, badges, and leaderboards, into real life. Gamification can be defined as the process of gaming consideration and game mechanics to encourage user participation and issue-solving (Zichermann & Cunningham, 2011). One method to improve the degree of enjoyment, overcome difficulties and motivate customers to contribute ideas is through the use of game elements, such as points and leaderboards, in a real environment; this term is known as gamification (Witt et al., 2011). According to Kapp (2012), gamification which includes game elements is a significant approach towards learning and boosting motivation. Huotari and Hamari (2012) focused on the objective of the gamification used in service improvement and mentioned that the main point is to enhance user loyalty. Fundamental gamification definitions are given in Table 1.

Table 1. Fundamental Gamification Definitions

Author	Definition
Deterding et al., 2011	The employment of game mechanics in non-game contexts to enhance UX and user engagement is known as "gamification."
Werbach & Hunter, 2015	In non-game area, "gamification" refers to the introduction of game elements and techniques.
Zichermann & Linder, 2013	Gamification implements game industry elements such as scoring, award-winning etc. into real life.
Huotari & Hamari, 2012	Gamification is a service development process to increase user loyalty.
Kapp, 2012	Gamification is an appropriate approach to learning with game elements.
Zichermann & Cunningham, 2011	Gamification is the application of game-thinking and game mechanics to engage users and solve problems.
Thom, Millen, DiMicco (2012)	Gamification is the use of game elements in non-game applications in order to make engagement in non-game contexts fun and desirable.
Witt, Scheiner, RobraBissantz (2011)	The incorporation of gaming mechanisms in a formal context is defined as "gamification".

Source: Author

Specific terms and expressions such as "gamified," "gamify," and "the gamification of" are commonly used to refer to the implementation of these notions instead of gamification (Manna et al., 2012).

1.4. GAME-BASED LEARNING

Game-based learning and gamification are similar but fundamentally distinct concepts, and these situations cause misunderstandings. Game-based learning is an educational style in which students are engaged and instructors perform a guiding role in order to achieve the desired educational outcomes (Weisberg et al., 2013). Today's widespread usage of game-based learning applications mixed with instructional programs makes educational environments more efficient and pleasant. The objective of game-based learning is to promote learning within a game environment (Bozkurt, 2017).

To constitute gamification, the system must have game dynamics with a planned activity and serve as the motivation for its execution. In game-based learning, game and learning are fully linked and learning occurs while playing the game. Game-based learning applications are typically a sort of pre-learning, with the learning process occurring concurrently with the game (O'Farrell et al., 2021).

1.5. PROS and CONS OF GAMIFICATION

Gamification approach provides numerous benefits in a variety of industries. This approach aims to engage gamers, solve problems, and utilize game mechanics (Zichermann & Cunningham, 2011). Design, structure, and game mechanics are processes in employee motivation because gamification approach is utilized to boost productivity, active engagement, education quality and interaction (Uskov & Sekar, 2015). This approach supports learning, problem-solving, motivation, and engagement with game-based mechanics in the non-game world (Kapp, 2012). Gamification enables individuals to have enjoyment, engage in social interaction and experience feelings of accomplishment. Therefore, individuals will have a more pleasant psychological state and participate more with non-game content if they have a game-like experience (Z. Liu & Lu, 2017). Gamification also provides intrinsic motivation and improves user experiences (Xi & Hamari, 2019). Furthermore, gamification approach provides several benefits

for businesses. This approach serves as a link between customers and businesses, enabling customers' wants and wishes to be met (Conaway & Garay, 2014). Gamification concept can positively affect the fundamental marketing concepts that are participation, brand loyalty, and brand awareness. This concept is, in reality, a method of mobilizing people. In addition to increasing brand loyalty and brand awareness, gamification directs individuals to perform purchases (Zichermann & Linder, 2013). Gamification requires a basic amount of brand information and causes individuals to remember the brand name (Hoyer & Brown, 1990). The increasing significance of customer perspectives in current marketing has unquestionably influenced the usage of gamification, which has arisen as a symbol of basic changes with the emphasis it places on interaction (Huotari & Hamari, 2012, 2017). Gamification facilitates the achievement of defined market objectives. Utilizing a gamification approach, several consumer loyalty-focused activities and applications can be performed (Hamari & Koivisto, 2015). On the other hand, academics and game designers have critiqued gamification that just uses points, badges, and leaderboards (Kapp, 2012).

1.6. GAMIFICATION MODELS

Considering the existing literature reveals that there are three distinct gamification models. These models are Octalysis Framework, D6 Gamification Design, and Michael Wu gamification model respectively. Each model is examined in detail.

1.6.1. The Octalysis Framework

Octalysis Framework is preoccupied with human motivation, which is defined by eight fundamental drives. This framework is founded on the idea that systems are function-oriented, meaning systems are designed to complete a function as quickly as possible. However, human-centered approaches are more complex than that, and unlike function-oriented systems, human-centered approaches include emotions, uncertainties, and specific reasons for executing or not executing activities. The Octalysis framework provides a foundation for analyzing the motivating forces behind human motivation. Framework is shaped like an octagon, and it has eight different

gamification drivers. Each of these drivers represents one of the sides of the octagon. (Y. Chou, 2014). This framework is shown in Figure 1.

Figure 1: Octalysis Framework

-Narrative
-Elitism
-Humanity Hero
-Higher Meaning

-Beginners Luck
-Free Lunch
-Destiny Child
-CoCreator

-Points
-Badges (Achievement Symbols)
-Fixed Action Rewards
-Leaderboard
-Progress Bar
-Quest Lists
-Win Prize
-High-Five
-Crowning
-LevelUp Symphony
-Aura Effect
-Step-by-Step Tutorial
-Boss Fights

-Milestone Unlock
-Evergreen Mechanics
-General's Carrot
-Real-Time Control
-Chain Combos
-Instant feedback
-Boosters
-Blank Fills
-Voluntary Autonomy
-Choice Perception

Meaning

Accomplishment   Empowerment

Ownership Octalysis Social Influence

Scarcity   Unpredictability

Avoidance

-Virtual Goods
-Build from Scratch
-Collection Set
-Avatar
-Earned Lunch
-Learning Curve
-Protection
-Recruitment
-Monitoring

-Friending
-Social Treasure/Gifting
-SeeSaw Bump
-Group Quest
-Touting

-Bragging
-Water Cooler
-Thank-You Economy
-Mentorship
-Social Prod

-Appointment Dynamics
-Fixed Intervals
-Dangling
-Prize Pacing
-Options Pacing
-Patient Feedback
-Count Down
-Throttles
-Moats

-Sunk-Cost Tragedy
-Progress Loss
-FOMO
-Evanescence Opportunity

-Status Quo Sloth
-Scarlet Letter
-Visual Grave
-Weep Tune

-Glowing Choice
-Mini Quests
-Visual Storytelling
-Easter Eggs
-Random Rewards
-Obvious Wonder
-Rolling Rewards
-Mischief
-Sudden Rewards
-Oracle Effect

Source: Y. Chou, 2014

The leading factor is epic meaning and calling. Individuals believe that they are able to contribute to something if they are selected to achieve meaningful aims. This driver's fundamental notion is to connect individuals' goals with the benevolent aspect of humanity (Kanov et al., 2004). By merging these two parts, a behavioral route to altruism is constructed that rewards individuals for activities that contribute to the community as a whole (Zichermann & Cunningham, 2011).

The second driver is development and accomplishment, which relates to the perception of growth, the development of skills, and the achievement of complex tasks, followed by a reward or a sense of significant accomplishment. This is the most popular motivation for gamification activities, often utilizing techniques such as points, badges, progress bars, and leaderboards. The human brain has an innate need for progression, expansion, and increased prevalence (Sailer et al., 2013). Players typically begin on simple levels and progress to increasingly difficult ones, establishing a system designed to encourage continued play (Medler, 2011). Indicators

of performance provide gamers with extra objectives, encouraging friendly competition and comparing among users (Montola et al., 2009).

Empowerment of creativity that is the third driver, enables people to express their personality through a creative work. They must explore several approaches to a problem and seek to recreate systems. Individuals desire and seek opportunities to express their uniqueness and creativity, while also seeking to differentiate themselves from their peers. This emotion is strongly related to the human urge to demonstrate style, identity, and personality, as well as affiliation with such an organization or community (Zichermann & Cunningham, 2011).

Possession and ownership that is the fourth factor, focus the ability to exert control over somethings. In this context, possession is a motivational tool. When people possess something, they attempt to embellish, enhance, or multiply it (Y. Chou, 2014).

The Octalysis model's fifth feature is social influence. It relates to behaviors inspired by what others think, do, or say to one another and encompasses all the social factors that encourage people: acceptance, envy, the desire to not feel ignored, competition, and friendship. A significant source of information about oneself is gained through comparison with one another (Nan, 2008; J. Wood, 1989). In gamified programs, individuals earn points and are categorized depending on their overall accumulated points, and it is typical to display the performance of others (Vorderer et al., 2003).

Scarcity and impatience are indeed the sixth motivator, whose basic idea is that individuals desire what they do not have since it is difficult to attain instantly. There really are two main types of scarcity-based strategies: restricted quantity and limited amount of time. People are informed that the goods, service, or activity could not be assured because of the limited quantity of stock (Cialdini, 2008).

Unpredictability and curiosity constitute the seventh factor. It has strategies which play on individuals' curiosity to understand what will occur (Zichermann & Cunningham, 2011). Gamification utilizes behaviors that deliver unexpected rewards as a stimulant to make people aware that they can gain anything at any point while playing (Marczewski, 2016b).

Eighth driver is loss and avoidance, is founded on loss aversion concept, states that people are more driven to react while they run the risk of losing anything as opposed to when people risk gaining something (Kahneman & Tversky, 1979). If people have a little risk of losing something instead of winning it, people will take every step possible to prevent the loss (Ariely et al., 2005).

1.6.2. D6 Gamification Design Framework

Gamification design framework is a concept which is fulfilling the need of having a design approach. Werbach and Hunter (2015) developed a design approach for gamification which is also called as, the six-step method or D6 design framework as given in Figure 2. Six D's Framework starts with defining the business objectives and followed by five more steps to complete the hole cycle.

Figure 2: D6 Model Tools
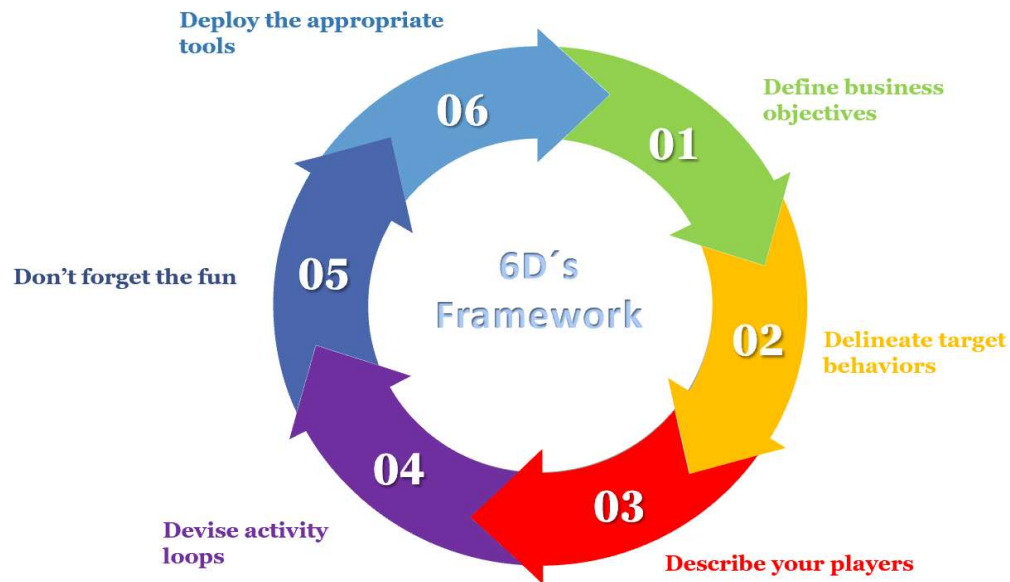
Source: Adapted from Werbach & Hunter, 2015

Define business objectives: It is crucial to establish the reason for implementing gamification. If the objective is not clearly defined, the gamification will fail as well. This objective does not align with the company's mission or

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shareholder value. They refer to specific performance objectives, such as increasing brand loyalty and customer retention.

Delineate target behaviors: It is necessary to focus on what the participants should do and how to measure them. As an example, comment on recommendations from others, buy somethings from the identified brand and share some information on Twitter.

Describe your players: Determining who will participate in the game is another crucial step. It is vital to establish what motivates the participants; intrinsic and extrinsic motivations might serve as a guidance at this stage. It is also important to consider the factors that can restrict the motivation of the participants. It should be determined whether a perceived lack of desire or perceived lack of capability exists. As not all individuals are identical, segmentation can be a useful technique. Not all players may be at the same level, but opportunities must be offered to participants at each stage.

Devise activity loops (cycles): Actions of users can also activate other players. In a gamified system, activity cycles are critical for modeling the main action. This concept is frequently seen on social media. For instance, when someone tags a photo on social media, a notification is sent to the individual who was tagged. Individual who has been tagged can leave a comment, and a notification can be delivered to the first user. Activity cycles consider what players do, why they do it, and the system's response. Progression stairs are the macro perspective of the player's advancement. Activity cycle and progression stairs are given in Figure 3 and Figure 4 respectively.

One of most effective method for representing the activities in a gamified system is using engagement cycles, a notion that has grown in popularity when discussing social media. User actions trigger another activity, which in turn triggers other user interactions. For instance, people tag their friends in a photo, they share in the social media, the posting prompts a notification to the friends, the friends leave a remark to the photo and the initial user receives another notification, and so on. In reaction to the player's activities, the system provides feedback in the manner of reactions, such as points. This feedback promotes the user to perform additional activities, etc. Most important factor is feedback that contributes to the motivational effectiveness of games. Activities create instant observable results. Almost all game

elements can be viewed as sorts of feedback. In the end, a reward is simply a form of feedback. The feedback is what motivates subsequent action. The essential stage of gamified system is the engagement loop. Nevertheless, it does not represent how players progress.

Figure 3: Activity Cycle
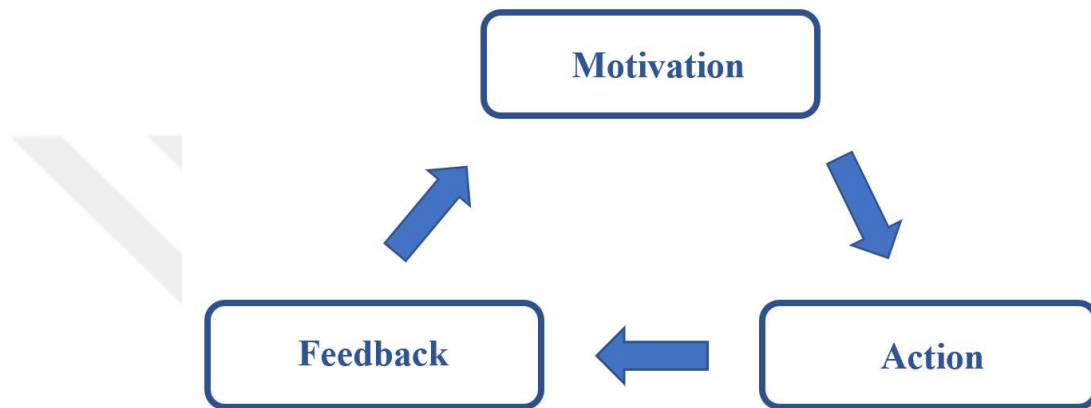
Source: Adapted from Werbach & Hunter, 2012, p.96

Ascending nature of progression stair demonstrates fact that experience of the game evolves as player advances through it. Typically, this implies an increasing level of difficulty. In general, advancement should be characterized by increasing challenge, but the process should never be linear. Herein lies the significance of the progression stair. The initial step, also referred to as onboarding, must be so straightforward and well-structured that it entices users to play the game. Once the player has surpassed this obstacle, the game's complexity can preferably climb at varying rates along so-called interest slopes. In the majority of games, the model consists of a period of steadily growing difficulty, followed by a period of relatively easy, and then a significant challenge at the conclusion of each section. Gamers might recover their breaths during the rest period. Furthermore addition, it allows individuals to experience the gratification of skill: the impression of having mastered a portion of the game. Ultimate challenge of a stage, known as the boss fight, offers a unique expertise experience (Werbach & Hunter, 2012).

Figure 4: Progression Stairs
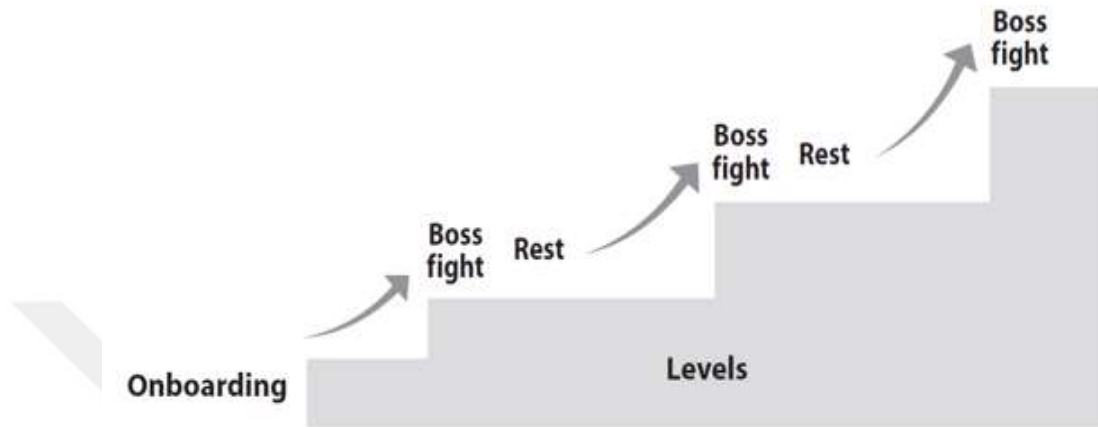
Do not forget fun: While performing a gamification design, the focus should be on providing an entertaining concept to the users. Deploy the appropriate tools: Game dynamics and mechanisms are added to the gamification process in accordance with the determined purpose and player types.

1.6.3. Micheal Wu Gamification Model

Purpose of the model is to familiarize players to practicing with small rewards and to make them feel more connected to the game by incorporating a variety of reward systems over time. In the model, all stages were identified to a specific timeline, and it was planned to apply the criteria determined on this timeline gradually. Degree of feedback is given to the player, can be summarized as follows points (first days), badges (first weeks), leaderboards (first months), trophies (after first three months), ranks (within one year), reputation (second year), and team reputation (2nd year and later). The fact that the player is not given a single goal but relatively small goals that can be achieved ensures that the player does not get bored with the game (Wu, 2018).

1.7. GAMER TYPES

1.7.1. Bartle's Player Types

According to Bartle (1996), players are divided into four, as achievers, socializers, explorers, and killers. Achievers are players who focus on leveling up, earning rewards, and the excitement of getting badges. People who focus on interacting with other gamers are socializers. Explorers focus on exploring all areas in the game, and especially finding hidden areas. Killers are players who focus on beating other players and therefore take a competitive attitude towards other participants and are happy to show off their success. It will be correct to understand the characters of the users and to determine the factors that will motivate them. Correct determination of the player type will directly affect the effectiveness or inability of gamification (Bartle, 1996).

Bartle (1996) indicated that the players are on the left side of the x-axis in Figure 5. On the other hand, the game world is located on the right side. On the Y axis, game acting is located at the top, while interacting is located at the bottom. It is observed that a player who is near to the left on the X axis plays a game that focuses on other players, while moving to the right brings the game world into sharper focus. A player at the top of the y-axis plays a game-focused, while a player near the bottom plays an interaction-focused game.

Figure 5: Gamer Types
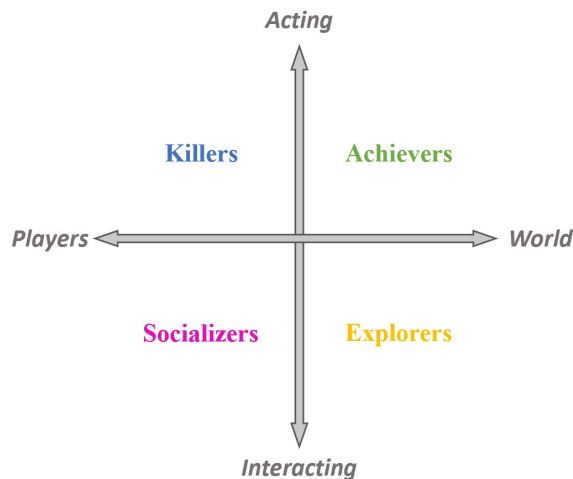
Source: Adapted from Bartle, 1996

1.7.2. Lazzaro- 4 Keys 2 Fun

Primary reason of user play games is the enchanting feeling that games create in them. 4 Keys 2 Fun is a type created to increase emotions of the users and increase gaming experience. According to Lazzaro, there are four basic types of entertainment that stimulate people's emotions in the game system, these are expressed as hard fun, easy fun, serious fun and people fun. Figure 6 shows Lazzaro's stated concept of fun model. Easy fun refers to exploratory curiosity and creative thinking. Hard fun represents the sense of winning and the pride that comes with achieving a challenging goal. People fun refers to the sense of fun and cooperation that comes from competition. Serious fun is linked to the sense of excitement provided by the player's world and changing the player (Lazzaro, 2004).

Figure 6: Types of Fun
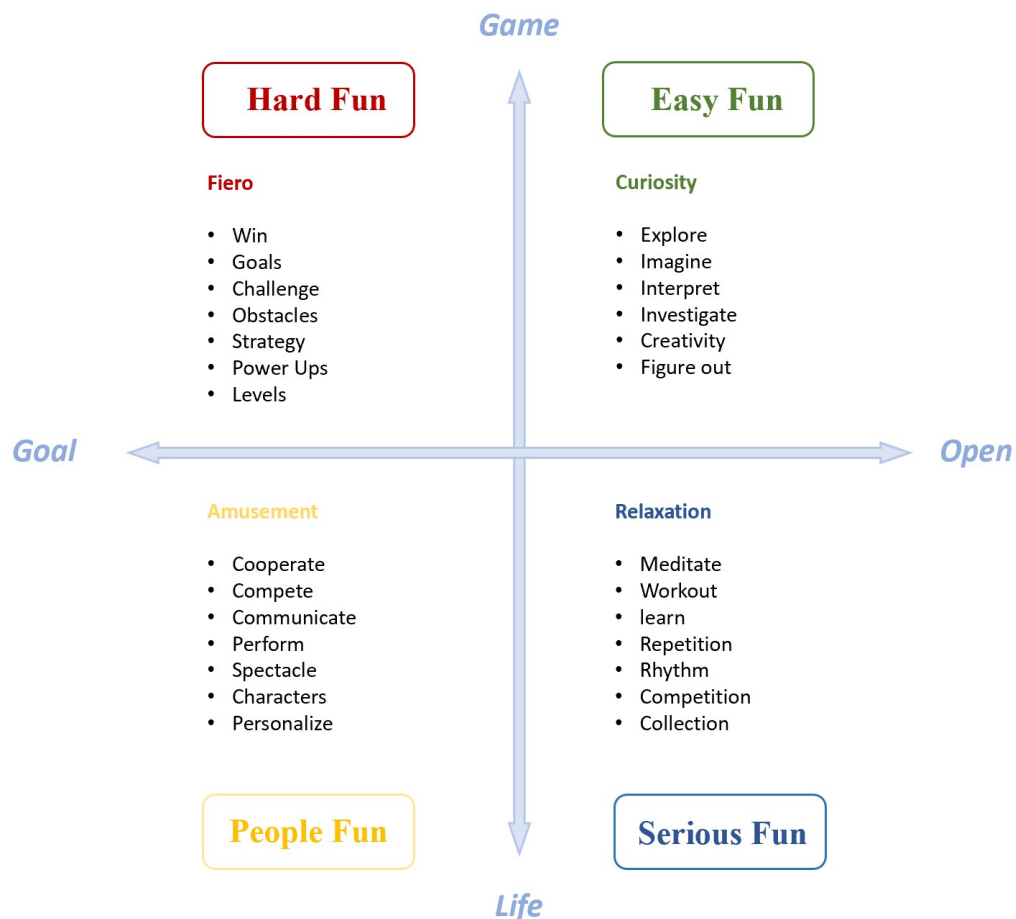
Source: Adapted from Lazzaro, 2004

1.7.3. Marczewski – Gamification User Types

Marczewski (2015) outlined six user categories in this concept, including four inherent types: achiever, socializer, philanthropist, and free spirit. These are motivated by relatedness, autonomy, mastery and purpose. Disruptor and player are the other two categories which are known from the literature. Primary motivation for player type gamers is in-game rewards. In the game, players concentrate on points, leaderboards, and badges. This sort of player is the one that advances the quickest in the game. Achievers are committed to mastering the game. This type of player focuses on difficult missions, levels, and challenges in the game where they can demonstrate their skill (Marczewski, 2015, 2016a). Socializer gamers are mostly concerned with interacting and communicating with other players. This gamer values team games and having fun with other players above anything else. Free spirit players emphasize independence. The game should be simple to play and have a more relaxed framework. These types of players like uncovering mysteries within the game. Gamers of the philanthropist type prioritize developing genuine connections with other players. They can boost their money and item levels through rigorous in-game trading. Players of the disruptor type are more concerned in critiquing the game and generating ideas for new advancements (Marczewski, 2015, 2016a). Figure 7 outlines the Gamification User Types of Marczewski.

Figure 7: Gamification User Types of Marczewski

Source: Marczewski, 2016a

1.8. GAMIFICATION TYPES

Gamification is classified into three categories as internal, external, and behavior change. Each of types has different purposes and these are explained in detail (Werbach & Hunter, 2012).

Internal gamification: Purpose of internal gamification is to make work more enjoyable and to increase employee participation in serious matters (Boer et al., 2013).

External gamification: External gamification focuses on customers from outside the company. In external gamification, it is crucial to focus on boosting customers and their experiences (Boer et al., 2013).

Behavior change: Behavior-change type gamification divides to as enterprise programs and individuals. Behavior-change gamification aims to instill desirable new behaviors in a society. There are several contexts in which behavior change is possible. For example, encouraging individuals to make better health decisions, constructing systems that assist individuals save even more savings for retirement, and restructuring the class so that children can learn so much while fun in school. In most cases, these new behaviors result in positive social outcomes (Werbach & Hunter, 2012). Gamification categories are shown in Figure 8.

Figure 8: Relationship Between Different Gamification Categories
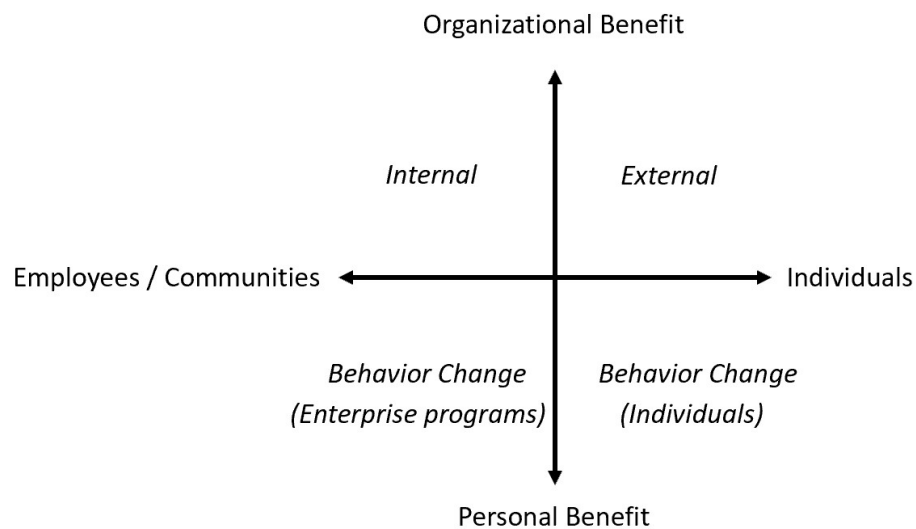
Source: Adapted from Werbach & Hunter, 2012, p.21

1.8.1. Key Elements of Gamification

In order to comprehend the gamification approach in depth, it is essential to recognize gamification elements in detail. Game elements that comprise game's design play a crucial role in both game and gamification. Depending on variables such as the game's objective, its content, and its designer, game elements manifest in various ways. However, there is no definitive information on the game's elements.

Huang and Soman (2013) categorized game elements under two headings as self and social as given in the Table 2. People's focus on recognizing their achievements and competing with themselves are self-elements oriented. In contrast, social elements include interaction operation. Points, levels, time restrictions, badges, and aesthetics are also categorized as a part of the self-elements. Social elements are used to enable the user to continue playing the game by interacting with other players and the game itself. Leaderboards and interactive collaboration are the main segments of social elements while virtual goods and storyline are included in both the self-elements and the social elements group.

Table 2: Self Elements and Social Elements

Examples of Game Mechanics

Self-Elements (Complete Stage)	Social Elements (Push Stage)
Points	Leaderboards
Levels	Virtual Goods
Trophies / Badges	Interactive Cooperation
Virtual Goods	Storyline
Story line	
Time Restrictions	
Aesthetics	

Source: Adapted from Huang & Soman, 2013

On the other hand, Brian (2014) states that gamification has five basic features. First, game mechanics include the main elements commonly used in most games like leaderboard, points, and badges. Second, experience design refers to the players' journey experience. Examples of elements here are play space, game play etc. Third, gamers interact with smartphones, wearable monitors, computers, or different digital

devices in gamification, and in this respect, it is stated that gamification is an important method for digital interaction. Forth, the main goal of gamification is to motivate people to change behavior, improve skills, or promote innovation. Fifth, it is important to ensure that the players reach their goals so that the business achieves its goals in gamification approach.

On the other hand, Werbach and Hunter (2012) mentioned that the basic elements of gamification in many studies are divided into three as dynamics, mechanics, and components. In Figure 9, these are explained by creating a hierarchical structure and each of them are explained in detail.

Figure 9: Game Element Hierarchy
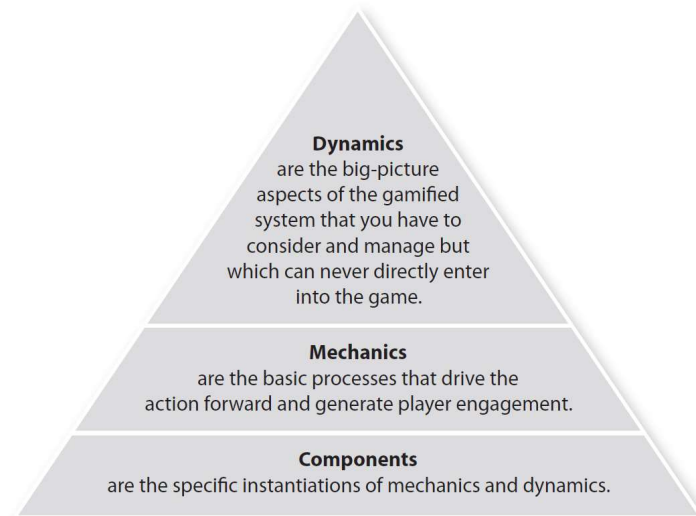
Source: Werbach & Hunter, 2012, p.82

1.8.1.1. Dynamics

Dynamics are related to emotions in game design, friendships, storytelling techniques, progression structures, and constraints (Blohm & Leimeister, 2013; Deterding et al., 2011; Gomes F. M. & Lima C.S., 2017; Robson et al., 2015; Santhanam & Liu, 2014; Urh et al., 2015; Zichermann & Cunningham, 2011). These represent the highest degree of abstraction, are the basic principles that make up the gamification design. Most significant game dynamics include constraints, emotions, narrative, progression, and relationships. Constraints represent the user's limitations or

forced trade-offs in-game. Emotions includes many different emotions such as curiosity, competitiveness, frustration, and happiness may be experienced in a game. Narrative makes the game a harmonious whole and progression shows player's progress. Relationships are related to social interactions, generating feelings of status and altruism. It is about players' interaction with other players, and this can be between teammates or opponents(Werbach & Hunter, 2015).

1.8.1.2. Mechanics

Mechanics are the fundamental structures that move the activity forward and engage player. These can direct player in the desired direction and add emotion to the game process. Mechanics include ten key elements as challenge, chance, competition, cooperation, feedback, resource acquisition, rewards, transactions/swap, turns, win states (Blohm & Leimeister, 2013; Deterding et al., 2011; Robson et al., 2015; Santhanam & Liu, 2014; Urh et al., 2015; Zichermann & Cunningham, 2011). Challenges include game system sets goals for participants to win the game or level up. Chance is related to luck factor in the game process. Competition involves one player or group prevailing over another. Players must work together to achieve the identified target, and this is related with cooperation. Feedback shows how the players are doing in the game. Informs players about when to make the right move to be successful in the game. Resource acquisition is related to players obtain useful or collectable items to achieve their goals. Rewards contain benefits of the action or achievement of the player. Transactions represents trading between players directly or indirectly. Furthermore, each player has the opportunity to play games and this mean turns. Win states refers to the state of winning the game, its shape and degree (Zichermann & Cunningham, 2011).

1.8.1.3. Components

Components consist of points, leaderboard, badge, user images (avatar), gifting/sharing, social graphics, competition, achievement, virtual products, bosses, collections, teams, tasks, solving game content and levels (Blohm & Leimeister, 2013; Deterding et al., 2011; Gomes F. M. & Lima C.S., 2017; Robson et al., 2015; Santhanam & Liu, 2014; Urh et al., 2015; Zichermann & Cunningham, 2011). A more

refined version of mechanics or dynamics may take the shape of a component. 15 essential elements of the gamification process are explained. Achievements represents rewards that are given if a player completes a specific task. Avatars means visual representation of the player character. Badges are defined as visual representations of achievements. Boss fights are challenges that must be overcome in order to move on to the next level. Collections represents collecting sets of items or badges. Combat is about fighting and defeating the opponent. Content unlocking states that the content is unlocked after fulfilling the prerequisites. Gifting represents sharing resources with other players. Leaderboard is the list where players are placed according to their success and progression in the game. Level is component that shows the level of the player in the game. Point is process of scoring actions performed in the game. Quests are the components expected to be made in the game, similar to the achievements. Social graph is the extension of the social network experience in the game. Teams are the situation of working together with other group players to achieve the same goal. Virtual goods are virtual objects that the player can obtain in the game (Werbach & Hunter, 2012).

1.8.1.4. Tangible Rewards

Several distinct nomenclatures for tangible rewards have been proposed in the literature. Examining the definitions reveals that tangible rewards provide economic advantages to the user. For instance, tangible rewards are defined as hard benefits that include gifts, discounts, and/or vouchers (Arbore & Estes, 2013). Similarly, Melancon et al. (2011) emphasize these rewards as economic rewards that provide financial discounts (Melancon et al., 2011). Other studies mentioned similar definition for this type of rewards and examined that tangible rewards are monetary rewards (Hwang & Choi, 2020; Jang & Mattila, 2005). Besides, tangible rewards refer to the gamification method that able to affect the monetary value of users as a consequence of the interchange of discounts and cost savings (Chandon et al., 2000).

1.8.1.5. Intangible Rewards

Various terms have been used in the literature to refer to intangible rewards. According to this, intangible rewards are identified as virtual advantages that given to

users. In that point, intangible rewards are referred to as soft benefits (Arbore & Estes, 2013). In the literature, the concept of points, which can be symbolized in different ways, is included in the intangible rewards. Besides, intangible rewards that are identified as points, badges, leaderboard, and virtual items, is the part of achievement-related gamification features (Xi & Hamari, 2019a).

1.8.2. Key Elements of Gamification and Process of Operation

Wood and Reiners (L. C. Wood & Reiners, 2015) mentioned that certain elements constantly interact with each other in gamification. There is a process in gamification, which starts with the user entering the game system first. Relationships between items in the graph are likened to a gear system. Accordingly, interaction occurs with components, mechanics, and dynamics, and then the main goal in gamification is achieved. Thanks to the components, mechanics and dynamics, the main purpose of gamification is to add more fun, passion and participation to this process while encouraging users to attract users, increase their motivation and enable them to achieve their goals. In this way, the outputs of the gamification system are directly affected. Key elements of gamification and the process of operation.

Figure 10: Key Elements of Gamification and Process of Operation
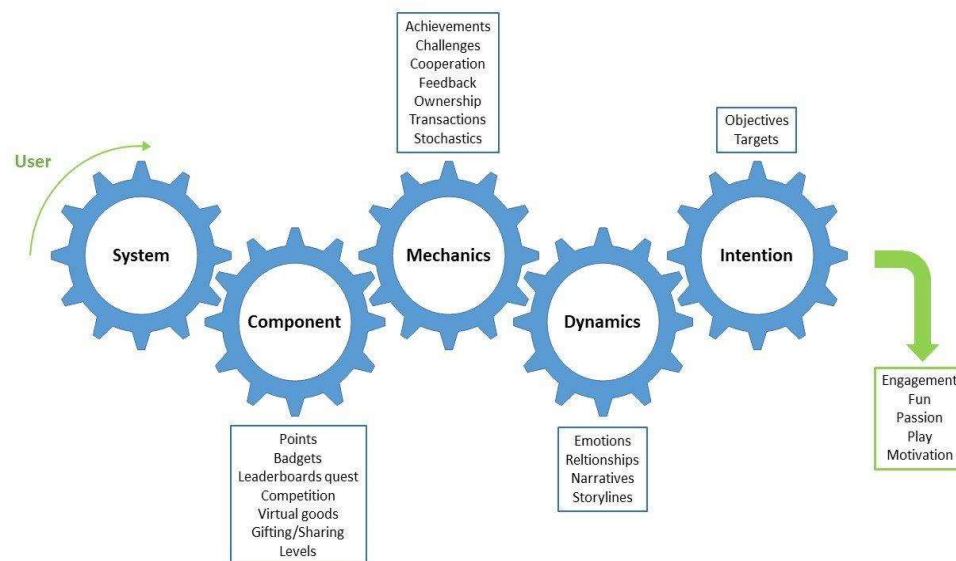
Source: Lincoln C. Wood and Torsten Reiners, 2015, p. 3041

1.9. GAMIFICATION AND MOTIVATION

The word "motivation" is derived from the Latin motivus, which means "serving to move". Humans, like inanimate objects, have an inherent resistance to motion called inertia. Motivation is a concept that expresses the interaction between the individual and the action in the situation and time (Werbach & Hunter, 2012). Motivation motivates people to reach their goals, and it is critical to examine the concept of motivation, which has a very crucial role in terms of gamification Gamification should be occurred in connection to motivational enhancement, a vital factor of games elements (Kapp, 2012). Four distinct elements of computer games increase the motivation of players. These characteristics are fun, control, curiosity, and challenge Fun is the enhancement of the player's desire to play and the creation of a world that matches the player's enjoyment. Control is related to the feeling of managing the game according to the player's preferences. To increase the player's motivation, it is essential that they believe that is advancing through his own decisions. Curiosity is the presence of unexpected scenarios will make the player wonder about other aspects of the game. Difficulty is to design the level of difficulty in accordance with the player (Malone, 1981).

Other studies discuss two distinct motivational types, intrinsic and extrinsic (Kapp, 2012; Zichermann & Linder, 2010). These types are explained in detail.

1.9.1. Intrinsic Motivation

Intrinsic motivation is because an individual is interested in and enjoys an action (Ryan & Deci, 2000a), and this encourages an individual to act willingly in accordance with their interest and curiosity to fulfil themselves (Gagné & Deci, 2005). Intrinsic motivation enables a person to experience oneself feelings such as enjoyment, achievement, and learning (Lepper, 1988). Furthermore, freedom, competition, and belonging are reward categories in intrinsic motivation. Freedom is expressed as the user`s participation in the game at any time. Reaching the goal by competing with other users and dominance in the game system refers to competition. The concept of belonging is the connection and interaction with other participants (van Lamsweerde, 2001; F. Xu et al., 2013).

1.9.2. Extrinsic Motivation

Extrinsic motivation allows the individual to associate directly with the outcome of the process, such as tangible or verbal rewards for participating in an activity; in this case, the outcome is what counts to the individual, not the action (Gagné & Deci, 2005; Ryan & Deci, 2000). Extrinsic motivation investigates the effect of external rewards, such as money or status, on the engagement of behavior (Zichermann & Linder, 2010). Extrinsic motivation is effective in increasing users' intrinsic motivation. In motivating the users, it is critical to first activate the users with external rewards and then increase intrinsic motivation of the users. Extrinsic motivation factors are of great importance for users to discover intrinsic motivations. Combining extrinsic and intrinsic motivational elements in a way that encourages each other is the ultimate goal of gamification on motivation (Zichermann & Cunningham, 2011).

1.9.3. Gamification Theories

Gamification that is widely utilized to enhance user motivation encompasses a wide variety of theories. This section will provide an in-depth explanation of common theoretical underpinnings of motivation and gamification in the field of marketing. These theories are identified as flow, self-determination, and cognitive evaluation.

1.9.3.1. Flow Theory

The fact that competition and reward are balanced supplies individuals with motivation and happiness. Furthermore, personal skills and the game's difficulties must be designed in a balanced way. Flow theory is founded on the regularity of this balance (Csikszentmihalyi, 1990; Nakamura & Csikszentmihalyi, 2014).

According to the flow theory, individuals become dissatisfied with very simple tasks. On the other side, they lose motivation while attempting tasks that are above their capabilities (Prensky, 2001). It is crucial to design experiences in accordance with people's capabilities and potential (Nakamura & Csikszentmihalyi, 2014). Well-designed games have four key elements, which are goals, voluntary participation, feedback, and rules. At that point, individuals gain experience when playing games by demonstrating motivation to achieve the given objective (McGonigal, 2011).

Flow experience is determined as an internal rewarder independent of rewarding elements such as points. The main purpose of the games is to turn them into enjoyment by providing the realization of intrinsic motivation, and it is possible to realize this with the flow theory (Lowry et al., 2013).

1.9.3.2. Self-Determination Theory

Self-determination theory can be described as the feeling of choice that enables an individual to behave independently. The self-determination theory revealed the unmotivated state of individuals in addition to intrinsic motivation and extrinsic motivation. In the case of amotivation, there is no purpose and causality in the behavior of the individual. This theory was able to shed light on the unmotivated situation that many people find themselves in. In the condition known as amotivation, the individual's action is devoid of both a purpose and a causal relationship (Deci et al., 1989; Ryan & Deci, 2000b).

Forces that motivate people are known as intrinsic motivation. It is the state in which a person appreciates the activities engages in, finds them intriguing, and is fulfilled by engaging in them of their own volition and desire. Intrinsic motivation focuses on reaching a satisfactory result for its own sake and refers to initiating an activity without the influence of external factors. Self-determination theory focuses on competence, autonomy, and relatedness. Intrinsic motivation is generated by the urge to fulfil these needs. Competence is the positive feedback supplied by the game, with the fulfilment of tasks and the accumulation of points strengthening this feeling. Competence is the desire to experience growth (Ryan & Deci, 2000b, 2000a, 2002). Relatedness is the need to be in dialogue, interact and establish relationships with others. Autonomy is the urge to personalize some aspects of one's life, and it consists of the individual making decisions that are suited to him/herself (Deci et al., 1989). Images, avatars, events, and personalization options in the game contribute to this sensation. Basic requirements in SDT are related to gamification elements, and these are shown in Table 3 (Aparicio et al., 2012).

Table 3: Game Elements by Self-Determination Theory Concepts

Autonomy	Competence	Relation
Profiles, avatars, macros, configurable interface, alternative activities, privacy control, notification control.	Positive feedback, optimal challenge, progressive information, intuitive controls, points, levels, leaderboards.	Groups, messages, blogs, connection to social networks, chat.

Source: Adapted from Aparicio et al., 2012

1.9.3.3. Cognitive Evaluation Theory

Cognitive evaluation theory is a sub-title of self-determination theory, and its goal is to explain how an individual's intrinsic motivation is affected by the society in which they live (Ryan & Deci, 2000b). According to cognitive evaluation theory, an individual's psychological requirements serve as the inspiration for their own intrinsic motivation. Intrinsic motivation can be triggered by factors such as interpersonal feedback and rewards that direct an individual's sense of competence while they are acting. The two types of rewards, verbal, and tangible, each have their own unique set of characteristics, which can be broken down into two categories: information and control. If rewards are given for performance and used as a control mechanism over the individual, motivation decreases. On the other hand, if rewards are used in an optimally difficult process in order to meet the individual's psychological needs, they can trigger intrinsic motivation if they are used in a way that does not harm the individual's feelings of autonomy and competence. This is only the case if rewards are used in a manner that does not harm the individual's feelings of autonomy and competence (Deci et al., 2001).

If the process is designed in such a way as to support the elements of the individual's competence and autonomy, then the individual's intrinsic motivation will not be negatively impacted. Organizational integration theory is another sub-title that can be used to self-determination theory. Extrinsic motivation is examined from four different angles by this theory. External regulation is reward-oriented and gives the least autonomy. The desire to obtain rewards or to keep away from punishment is the driving force behind behavior. Introjection regulation is an indication of an external motivation that is centered on the acceptance of the individual or of other people.

Identification is an extrinsic motivation that gives some autonomy to the individual and is directed towards conscious goals. Integration is the type of motivation that is the most autonomous among the extrinsic motivation forms and offers goals and reasons for the individual's own needs (Ryan & Deci, 2000a).

1.10. Gamification Examples on Mobile Application

Gamification is widespread in a variety of areas, including finance, sustainability, education, health, marketing, entertainment media, news media, and innovation (Conill & Karlsson, 2016). There are several mobile applications that employ gamification. Most popular examples are explained.

The Foursquare-Swarm program is among the most significant examples of gamification. In this application, a design has been constructed with the support of gamification's fundamental elements. Consequently, when people visited a place, they provided comments and ratings about the location. Users have earned points and badges based on the frequency with which they leave comments and reviews. The one who submits the most place notices were given the title "Mayor" for that location. Consequently, the person performed more check-ins to maintain their title (Frith, 2013; Yılmaz, 2018). Furthermore, Yemeksepeti has created a gamified interface to boost sales and attract more users. This interface contains gamification's components, dynamics, and mechanics. The objective of this gamification is to improve the process of ordering meals in a more fun way. Leaderboards are widely implemented, and users started to earn new badges for food ordering. The "muhtar badge" is presented to the user who obtains the most food orders in the area. When a user places an order from two distinct cities, a "traveler" badge is rewarded. Users that purchase twenty distinct types of food earn the "gastronome" badge. The website is connected to Facebook, and this enables to users to view their friends' meal orders. Similarly, Starbuck's mobile application created gamification activity based on rewards system. This gamified application is one of the greatest loyalty applications based on mobile customer experience. This reward-based customer experience enhances application usage (Panko, 2018).

Gamification approach is considered to have numerous favorable consequences on physical activity in health industry. For example, piano steps are one

of the most significant examples of gamification application. Purpose of the application is to improve physical activity by encouraging the usage of stairs rather than escalators in metro stations by installing piano-sounding keys on the steps (Yılmaz, 2015). Another essential example of gamification was implemented in the Moscow metro. Accordingly, people who squat 30 times in the kiosks located next to the ticket offices in the subway were given free subway tickets. In this way, physical activity was encouraged (Bellini, 2013; Yılmaz, 2015). Another outstanding example of gamification was carried out with Nike. Gamification is implemented in a software called 'Nike Run Club' which makes it a leading application in the sports environment. Mini chips are connected to the shoes, and also some smart wristbands are utilized. Thus, details such as the distance and duration of the run are gathered. Participants can compare their results with those of other participants and their friends. On the other side, they can share their personal performances via social media with their following. In addition to these techniques, users can earn new badges by completing certain app-requested tasks (Yılmaz, 2018). Need for healthcare applications has increased in recent years with the development of personalized equipment's (Krebs & Duncan, 2015). Developers of health and fitness programs have used gamification and included game elements such as points, badges, and achievements to attract their user bases (Huotari & Hamari, 2017; Lister et al., 2014). An example to this application is the Huawei Health app where users can earn badges after reaching a specified number of steps. On the other hand, several smart watch manufacturers have recognized the significance of gamification and included few new features. Gamification elements such as levels, achievements, and leaderboards are used in programs like as Strawa Fitbit, Mi Fit, Samsung Health, and Garmin Connect. Users of Strava Fitbit can share their experiences, join groups, and get likes from other users (Yüksel, 2022).

CHAPTER TWO
GAMIFICATION AND PURCHASE INTENTION RELATIONSHIP ON
MOBILE MINDFULNESS-BASED APPLICATION

In this section, the definition of mindfulness, and mindfulness-based mobile applications is examined in detail. Then, the relationship between gamification and mindfulness as well as the connection between gamification and mindfulness-based mobile applications are identified. Moreover, the definition of purchase intention, online purchasing intention, and purchasing intention factors that are determined. Besides, the relationship between gamification and purchase intention are mentioned.

2.1. MINDFULNESS

Practice of ancient Buddhist insight meditation has resulted in the emergence of mindfulness approaches in the health sector of health in the world. There has been a meteoric rise in the study of mindfulness since its inception, especially in the realms of psychology and medicine over the past two decades (Marchland, 2012). The term "mindfulness" refers to an awareness that emerges as a consequence of focusing, in the current moment to the development of the experience instant by minute (Kabat-Zinn, 1994; Korkmaz, 2022). This term, which entail the capacity to accept with self-compassion and love without being judgmental by concentrating on emotions and ideas, have a positive impact on the psychology of individuals(Korkmaz, 2022).

During the Covid-19 epidemic, nearly every individual's way of life has changed. The feeling of isolation created by long-term quarantines, increasing unemployment as a result of closed workplaces, feeling of burnout of health workers who work overtime, problems caused by the educational retardation of children who cannot go to school, anxiety caused by the risk of contracting a deadly virus, are all negative effects of the outbreak. In addition, it has been searched that illnesses are activated in persons who have previously had difficulties such as depression, psychosis, or addiction within Covid-19 epidemic. Mindfulness-based therapies have been shown to alleviate anxiety, depression, and stress disorder (Behan, 2020). Besides, practice of mindfulness has been shown to have a substantial relationship with

a number of physical and mental health factors, including higher levels of positive affect and life satisfaction (Chen & Pu, 2014; Keng et al., 2011).

2.1.1. Mindfulness-Based Mobile Applications

According to World Health Organization statistics from 2022, the COVID-19 pandemic causes a 25% rise in the global incidence of anxiousness and depression (Brunier, 2022). The growing demand for mindfulness and mental health activities is not unexpected in light of these factors. This is most essential aspect of mindfulness applications, which give advantages such as healthy sleep andmental endurance (Korkmaz, 2022). Calm, Headspace, Meditopia, Fabulous, Reflecty, Daylio, Insight Timer, Petit Bambou, Synctitution Meditation, and Relax are the ten most popular meditation applications (Chapple, 2020).

Wang and Markert's (2021) research demonstrates that throughout the pandemic, interest and usage of mental health activities, particularly mindfulness applications, have surged. According to the mentioned meta-analysis , mobile health apps are beneficial in the treatment of a variety of behavioral issues, including smoking and binge eating (Portnoy et al., 2008).

Due to the accessibility and pervasiveness of mobile devices, there is a significant amount of interest in the creation of functionalities for healthcare applications. Research has demonstrated that health care is essential area with a large potential for applications. These applications have the potential to improve the quality of life for individuals as a whole (Ventola, 2014).

2.2. GAMIFICATION AND MINDFULNESS

Gamification, the incorporation of game design elements into non-game contexts, improves motivation and modifies behaviours, hence enhancing an individual's health and well-being (Bitonto et al., 2014). Gamification does indeed have a positive impact on health and well-being; it is especially essential for health behavioral changes (Johnson et al., 2016); and gamification a comparatively new concept for human engagement, is being used to affect and empower people to participate in marketing and wellbeing activities. This method also boosts usage and spending time on wellness platforms by means of an application (Pramana et al., 2018).

Multiple experts have identified health gamification as an innovative approach to promoting healthy behaviours (Cugelman, 2013; King et al., 2013).

As mentioned earlier, intrinsic motivation is tied to feedback and goal-setting with points, badges, levels, competitions and challenges. These are connected to recognition and comparison through social feedback, leaderboards, autonomy, communications tools, that embrace customized avatars and landscapes, and user choice in the goals and stories necessary for emotional and value-based reasoning (Seaborn & Fels, 2015). Intrinsic motivation is necessary for initiating and maintaining health and wellness behaviors (King et al., 2013; Seaborn & Fels, 2015). The Headspace creators favored gamification to increase user motivation and deliver a rewarding and fun experience (Argilés, 2017). Health gamification is substantially connected to intrinsic motivation, extrinsic reward, and self-determination theory (Hall et al., 2013; Hamari & Koivisto, 2015; Zuckerman & Gal-Oz, 2014).

Numerous research on health behaviors have shown the benefits of intrinsic motivation over extrinsic motivation (Fortier et al., 2012; Patrick & Williams, 2012; Teixeira et al., 2012). Satisfying psychological needs is linked to intrinsic motivation and has direct effects on social and mental health (Ryan et al., 2008). Gamification has been shown to have a substantial beneficial impact on inspiring users ' behavior. Motivation is essential for learning, and gamification seems to have an effect on education. Moreover, gamification has been shown to influence the adoption of healthier lifestyles (Bitonto et al., 2014).

How to personalize the experience so that it is directly relevant to the individual is one of the problems of gamification (Stockings et al., 2016). The results suggested that young people are not always able to positively react to negative criticism, and their positive feedback does not always translate into increased engagement or use (Christie et al., 2019).

On the other hand, games serve functions such as enhancing engagement and offering enjoyment. In this regard, the usage of gamification in health concerns is essenial with increasing motivation (Deterding, 2015). Points and accomplishments are related with rewards for fitness improvement (Hamari & Koivisto, 2015). When partners work together instead of competitively, points, badges, and leaderboards increase physical activity (Chen & Pu, 2014). Points, badges. medals and their

conjunction with leaderboards increased patients' sense of agency and physical activity, hence decreasing their healthcare use (Allam et al., 2015). In eHealth, rewards and feedback are often desired (Sardi et al., 2017). Significant virtual characters played a role in gamified mobile attention-bias correction training. Besides, rewards in the form of points alleviate tension and anxiety (Dennis & O'Toole, 2014).

Social interaction influences favorably mental health (Hall et al., 2013) and physical actions (Hamari & Koivisto, 2015; Maher et al., 2015). It is suggested that social interaction helped college students' motivation and enjoyment in reducing alcohol use (Boendermaker et al., 2015). Levels, avatars, rewards, and story have been shown to encourage youngsters to consume more vegetables and fruits (Jones, Madden, Wengreen, et al., 2014). Gamification may be used alone or with social assistance, and it promotes physical activity, hence reducing healthcare consumption (Allam et al., 2015). Gamification has a good impact on people's motivation to exercise; social influence has proved to play a significant part at this stage (Hamari & Koivisto, 2015). People may be more motivated to exercise if they use gamification elements instead of working out alone. The focus here is on the enjoyment aspect; moreover, having the same objective with companions, sharing, and competing are crucial (Chen & Pu, 2014).

Personalities, talents, fundamental motivation, and knowledge levels of users are crucial to the efficiency of gamification. Gamification influences positively personal development and mental wellness (Hall et al., 2013; Ludden et al., 2014).

Studies indicates that gamification has good benefits on health and well-being. Potential of gamification having a negative influence is claimed to be quite minimal. It is crucial to identify the benefits of gamification for health and well-being applications. Gamification empowers individuals with intrinsic motivation, increases mobile technology accessibility, and ensures cost-benefit efficiency by enhancing current systems. In addition, gamification reaches a variety of individuals as the game gains popularity among users, directly affects well-being via good experiences, adapts activities to everyday life, and focuses on health and well-being risks and factors (Johnson et al., 2016).

Gamification is essential for motivation, learning, and therapeutic adherence (Richards & Caldwell, 2016). The findings suggested that gamification is effective for

promoting engagement with point, badges and progress ,making the acquisition of health care skills more enjoyable (Christie et al., 2019). The mHealth application incorporates gamification mechanics that facilitate patient self-management (Cafazzo et al., 2012; Miller et al., 2016). The mindfulness-based gamification strategy promotes risk awareness, user perception, leading behaviors, and risk prevention via the use of simple-to-use and easy-to-learn support awareness, role modelling, and empowerment. Gamification has been studied as a crucial method for enhancing the relationship between people and their health. The mindfulness-based, self-empowerment strategy promotes self-awareness, life satisfaction, and a pleasant mental state (Lasorsa et al., 2016).

Online customer journey must include emotional requirements, such as meditation advice, otherwise the offering cannot engage customers. The application follows users throughout the customer experience, and participants become an integral part of this narrative. In mental health, gamification increased engagement and adaption to therapy. Moreover, virtual reality is essential for use in treatment (Dias et al., 2018). Results of the studz indicated that gamification of mindfulness meditation using a mHealth application reduced college students' levels of depression (Fish & Saul, 2019).

2.2.1. Gamification and Mindfulness-Based Mobile Applications

Gamification approach has been found as an effective strategy for boosting engagement in online health interventions (Fleming et al., 2017). This approach has also been identified as the approach of strengthening a service with gameful experiences to facilitate the value creation to customers and users. Similarly, mHealth applications that include mental and physical health context, give an importance to creating value to provide improvement to the user's health The most successful mHealth initiatives that incorporate gamification have been carefully designed to include both extrinsic and intrinsic motivators. By considering the healthcare technology approach as a core service, it is easier to envision how its features might well be strengthened with encouraging possibilities. Consequently, using gamification should result in a more suitable and smooth integration into mental health care (Oinas-Kukkonen & Harjumaa, 2009).

On the other hand, the effects of gamification within the realms of digital health and mHealth are not yet well known (Johnson et al., 2016). Many mobile health applications do not make use of gamification (Hoffmann et al., 2017), while those that do typically only make limited use of it. Even though empirical research on the benefits of gamification remains in its immaturity, (Hamari, 2017) there is proof that it results in increased and more engaged user participation with an application or service.

2.3. DEFINITION OF PURCHASE INTENTION

Notion of intention is related to thinking and desiring to accomplish something. In addition, this phrase often refers to the accomplishment of a specified outcome. As a result of these set goals, behaviours evolve. Individuals' intentions relating to an activity are the driving force behind that conduct (Abdillahi, 2021).

Purchasing intention is also the basis of the behaviour performed during the buying. This term is the consumer's predisposition and desire to acquire goods and services. This refers to a condition in which a consumer is more likely to acquire a specific product. Intention to purchase is "consumers' willingness to plan or buy a specific thing in the future." Purchasing intention is the way individuals purchase a certain product or service from a specific brand in the desired quantity at a specific period. In other terms, to describe the purchase intention, it is expressed as the inclination of customers to acquire a product (Karadirek, 2017). According to Hung et al. (2011), purchase intention can be defined as a probability of future buying activity that emerges from customers' desire for products and/or services and their purchasing evaluation.

The customer's purchasing choice is a complicated process, and the purchase intention is typically tied to the consumer's behaviours, perceptions, and attitudes. Purchase intention corresponds to a concept that enables effective prediction of a consumer's behavioral reaction (Karadirek, 2017). Numerous factors, such as product quality, product knowledge, product quality, positive brand image, brand loyalty, effectiveness of the purchasing process, product and service quality, customer satisfaction with sales, and the relationship between the customer and the sales representative, influence purchasing intention. Even though the purchase choice process and desire to purchase convey quite similar notions, a buyer may abandon the

purchase of a product someone plans to acquire or select an alternative product. Due to abrupt internal and external factors, a buyer's intention to acquire might not always result in a purchase (Abdillahi, 2021).

According to Gogoi (2013), purchase intention is an efficient predictor of the buying process. Price, perceived quality, and value can alter a consumer's intent to purchase. In addition, customers' purchase decisions are influenced by internal and external motivations.

2.3.1. Online Purchase Intention

Consumer behavior receives less attention, despite the relevance of mobile applications in today's retail market (Iyer et al., 2020; Molinillo et al., 2020). Customer experience, because of interactions between consumers and the company, impact consumer behavior, including satisfaction and online purchase intention (Alnawas & Aburub, 2016). Bleier et al. (2019) demonstrated the importance of customer experience in influencing purchase intentions from a website. It has been demonstrated that cognitive experiences and their impact on future behavioral intentions for reusing the website, as well as the purchasing intention. Additional studies emphasizes that cognitive and emotional reactions can result in purchase intentions (Nah et al., 2011; H. Park & Cho, 2012). Watson and colleagues (2018) observed that when customers have a more positive affective experience, they are more likely to have increased purchasing intentions. When customers interact with a retailer's mobile app, the research seeks to ensure that they are satisfied with their customer experience. Hamouda (2021) proposed that the link among customer experience, utilitarian and hedonic returns, and the intent to purchase during using mobile applications of fashion businesses be studied theoretically and empirically. Furthermore, augmented reality considerably enhanced the experience for users and had a beneficial influence on consumers' propensity to make a purchasing decision and corroborated this result an augmented reality retailing industry(Hamouda, 2021; Poushneh & Vasquez-Parraga, 2017).

Besides, the competitive mechanism does not inspire users to value the website more and increase their intention to buy. To enhance the user experience using social media apps, some incorporate game mechanics, including rewards and competitions

(Silverman, 2011). Conducted study systematically showed how to aid customers in experiencing the fun and enjoying online shopping much more enjoyable (Y. Xu, Chen, Peng, & Anser, 2020).

2.3.2. Factors of Purchase Intention

In the literature, there are many factors related to purchase intention, among these factors, enjoyment, social interaction, and human-computer interaction are explained in detail within the scope of this research.

2.3.2.1. Enjoyment

Concept of enjoyment represents the joyful aspect of customers' tendency to utilize technology (Malik et al., 2017). Consumers' interest in mobile applications can be influenced by motivations derived from enjoyment (Z. Liu & Lu, 2017). Customers are strongly attracted to mobile applications that are fun to use. Timing, fun, and personalized services are highly valued by consumers (Anckar & D'Incau, 2002). The fact that mobile applications are enjoyable has a favorable effect on users (C.-H. Chou et al., 2013; S. C. Kim et al., 2016). Fun encourages consumers to remain in applications longer and visit more frequently (S. C. Kim et al., 2016). The idea of enjoyment, which is crucial to purchasing intention, is intimately connected with the decision to adopt technology (Malik et al., 2017). The fact that mobile applications are enjoyable influences the consumer's purchasing experience and stimulates the consumer's purchase impulse (Z. Liu & Lu, 2017).

2.3.2.2. Social Interaction

Social interaction consists of social elements that motivate people such as friendship, guidance, and competition (Y.K. Chou, 2015). Online consumers are able to interact with others through social networks, e-mail groups or forum sites. Specifically, consumers who have similar interests and respect the opinions of others want to engage in social interactions within a group. Furthermore, it is mentioned that consumers can interact with a product even if they do not know other users (Y. A. Kim & Srivastava, 2007). This circumstance influences the purchase intention of internet consumers (Cetină et al., 2012). The number of online consumers

is expanding as a result of the continual growth of social media and the pace of online transactions. Recommendations, experiences, and product feedback from online consumers are crucial for people who intend to make a purchase (Wei et al., 2017). Approval of a product by the friends of the person who has the intention to buy it can motivate people to buy that good or service. This situation also highlights the importance of social interaction on purchasing (Tsiotsou, 2016).

2.3.2.3. Human-Computer Interaction

The study of how individuals interact with computers and other forms of technology is referred to as human-computer interaction. Primary aim of human-computer interaction is the development of interfaces that are both user-friendly and productive (Zhou, 2019). Human-computer interaction refers to the way in which humans engage with computers and other forms of technology, whereas purchase intention refers to a consumer's willingness to purchase a product or service. The design and usability of technology can have an effect on a consumer's likelihood to make a purchase, which is the relationship between human-computer interaction and purchase intention (Servidio et al., 2015). A buyer may be dissuaded from making a purchase, for instance, if a website or app has poor usability or a user interface that is difficult to understand. On the other hand, if a website or app has a design that is user-friendly and simple to browse, it may improve the possibility that a customer will make a purchase using that platform. As a result, HCI plays an important part in the process of moulding customer behavior and influencing their intentions to make purchases(Sheng & Joginapelly, 2012).

2.4. GAMIFICATION AND PURCHASE INTENTION

Understanding purchasing intentions is one of the most crucial factors in determining the relationship between gamification and customer behavior. Various opinions on this topic have been provided in the literature. Zichermann & Cunningham (2011) examined that while incorporating game mechanics to enterprise seems to be the field of enhancing consumer interaction, commercial games have been under growth. It is vital to recognize how to integrate game mechanics throughout their activities in order to deliver a rewarding, enjoyable, and fun experience for customers

(Y. Xu, Chen, Peng, & Anser, 2020). In that point, Harwood & Garry (2015) investigated the effects of gamified customer engagement (CE) mechanism on CE behaviors and CE emotions, then, focused the effects of these on CE outcomes. On the other hand, Hofacker (2016) conducted a study by considering product and customer while investigating how gamification affects mobile marketing outputs.

Raman (2021) investigated gamification effects on behavioural intention through perceived enjoyment, perceived usefulness, perceived ease of use and social interaction among female online customers. Another study researched the effect of autonomy, rewards, absorption and competition on enjoyment and focused on how enjoyment affects online purchase intention in e-commerce (Y. Xu, Chen, Peng, & Anser, 2020). Although many studies have been conducted on online consumer behavior (Chen et al., 2015), there is a dearth of study on gamification from either a consumer behavior approach (Sigala, 2015; Tobon et al., 2020; Xi & Hamari, 2020).

Yang et al. (2020) focused on the gamification element that incorporates various components, such as storylines, points, badges, rewards, competitiveness, advancement, and connections, and that it seeks to evaluate the influence of competition upon brand engagement and consumers' purchase intention. Whenever it relates to brand loyalty and customer purchase intention, competition in gamification has been shown to be beneficial for both customer engagement and purchasing intention, according to research.

According to Silverman (2011), rewards have an influential impact on improving user experience using social media application. However, the competitive mechanism does not inspire users to value the website more and increase their intention to buy.

CHAPTER THREE
RESEARCH METHODOLOGY

Two different studies were conducted within the scope of the research. In this section, the aim and methodologies of both studies are provided. Furthermore, research model development, conceptual model and hypotheses are reported. Following that the information about the selected mobile application for experimental design, design of experiment, measurement scales, sampling of studies, data collection, data analysis and limitations of the study are explained.

3.1. STUDY 1

The objective of the first study is to explore the mediating variables that influence the relationship between rewards in gamification and the purchase intention of mindfulness-based mobile applications. This research intends to expand the present understanding of the impacts of rewards, with a focus on purchase intention. Furthermore, the study focuses on contributing to the conceptualization and operationalization of purchase intentions in the context of gamification.

3.1.1. METHODOLOGY OF STUDY 1

19 in-depth interviews in addition to a focus group were conducted in order to explore how rewards as a gamification component affect the purchase intention of mindfulness-based mobile applications. In order to improve objectivity and construct validity, various data-gathering methods were utilized. In April 2022, semi-structured telephone interviews in Turkey lasted between 25 and 45 minutes. With the approval of all participants, the interviews were recorded, and the records were then transcribed verbatim for data analysis. Based on the grounded theory methodology, after the nineteenth interview, it is noted that no new concepts emerge from each interview (Willig & Rogers, 2017). As a result, the saturation threshold is reached following the nineteenth interview. The focus group research lasted around one hour and was conducted using Zoom Cloud Meetings in April 2022. With the participants' approval, the meeting was recorded. During the semi-structured interviews and focus groups, the participants were asked about their impressions of rewards in mobile mindfulness

applications. The questions addressed mostly focused on how receiving/sharing/visibility of rewards makes individuals feel, the advantages sought from receiving/sharing/visibility of rewards, and whether these affect their intention to purchase mobile applications. The first author conducted the interviews and focus groups to ensure consistency. Participants were advised of the importance of effectively communicating their favorable and negative comments.

3.1.1.1. Sampling

When choosing the participants for interviews and focus group, emphasis is paid to a combination of purposive sample and convenience sampling of mindfulness-based mobile application users of all ages and genders. Eight users of a mindfulness-based mobile application participated in a focus group in which gender and age diversity was considered. Besides, in-depth interviews were performed with nineteen respondents and the demographics of the participants are given in Table 5. Eleven of the respondents are female and range in age from 22 to 54. In contrast, eight male respondents took part in the in-depth interviews. There are five women and three men in the focus group, with the youngest and oldest male members being 26 and 38 years old, respectively.

Table 4: Demographics of the Participants

Demographics						
Gender	In-depth Interview	Age	n	Focus Group	Age	n
Female	11	22-25	3	5	22-25	2
		26-35	4			
		36-47	2		26-35	1
		48-54	2		48-54	2
Male	8	22-25	3	3	26-32	2
		26-32	3			
		33-38	2		33-38	1

Source: Author

3.1.1.2. Data Analysis

Qualitative data is evaluated using content analysis techniques. Multiple phases were engaged in the analysis. Data from 19 in-depth interviews and focus group are gathered into distinct Excel files. The data are transcribed using open coding, in which

the comments are entered in separate Excel columns. According to the meaning determined from the data, provisional headers are formed. On coding sheets, the headings are collected, and a list of categories (first-order themes) is compiled and consolidated under higher-order headings (second-order themes). The supervisor of the current research contributed to the to ensure the reliability. The author and the supervisor coding process authors independently coded the initial six interviews and the initial two focus group members based on the coding technique. Disagreements in coding were reviewed, and the coding technique was amended until there was complete agreement. According to Krippendorff's alpha, the intercoder reliability for the focus group and interview analyses is 0.95 and 0.99, respectively(Freelon, 2010, 2013; Krippendorff, 2011). To prove internal validity, consistency and the importance of the results were emphasized. After data processing, the interviews and focus group members were sent the results, which were then validated by the respondents. In addition, the results were compared to similar study findings in the relevant literature. These methods increase the validity and dependability of the study findings. Interview are focus group questions are given in Appendix 1.

3.2. STUDY 2

This study aims to explore the effects of tangible and intangible rewards on enjoyment, social interaction, and human-computer interaction, as well as the influence of enjoyment, social interaction, and HCI on the purchase intention of mindfulness mobile application. In a summary, this study's objective is to examine the impacts of tangible and intangible rewards on purchasing intention through the mediation of three variables: enjoyment, social interaction, and human-computer interaction.

3.2.1. Methodology of Study 2

In line with the aims of the research, pretest-posttest control group design was organized to cover a three-week process. There are a control group and an experimental group in the study. A questionnaire is applied to the two groups at the end of each week, and in-depth interviews are conducted at the end of three weeks. Authors prioritize performing an online survey to explain the proposed research

hypotheses and focus on research targets. Then, in-depth interviews with 32 participants who are 16 users from the control group and 16 respondents from the experimental group, are performed. The purpose of in-depth interviews is to approve the accuracy of quantitative analyzes and to obtain in-depth information. In summary, both quantitative and qualitative research methods have been used to accomplish the goals of this study. Results are evaluated by content analysis, regression analysis, independent sample t-test and paired sample t-test.

3.2.1.1. Sampling

The study concentrates on participants aged between 18-64 years old because it was given the importance that the study consisted of people from different age groups. In the selection of the participants of both groups, importance was given to the participation of an equal number of participants interested in meditation. In the control group, 52 individuals are interested in meditation, while 52 individuals are not interested in meditation. Similarly, the experimental group is selected, and both groups consist of 104 respondents. The total sample contains 208 participants, and the research utilizes stratified purposeful sampling. The goal of stratified purposive sampling is to obtain large variations in the analysis and each stratum will produce as homogeneous a sample as possible (Patton, 2002). Consideration was made of the individuals' diversity in terms of gender, age, income, and education levels while choosing the sample. Based on a review of the relevant literature, it was deemed essential to generate a majority sample of young people and women. The most of mindfulness-based applications target women, and it is reported that younger generations utilize mobile applications more frequently. The sample was designed in this manner. Besides, the mindfulness-based application is available in English and research is conducted with participants who spoke English exceptionally well. Since the application can be utilized in any country, users from Turkey, the United States, the Netherlands, Germany, and Austria are included in the study. Likewise, all participants are fluent in Turkish. As a result, the implementation of the survey and interview questions in Turkish does not present any difficulties.

3.2.2. Research Model Development

Gamification elements can have a favorable impact on customers' intentions (Mullins & Sabherwal, 2020). Zhang et al. (2021) examined that rewards and badges, which are the gamification elements, have a critical impact on impulse buying with the mediators that are perceived enjoyment and social interaction. According to Raman (2021), the impact of gamification on behavioral intention through perceived enjoyment, perceived usefulness, perceived ease of use and social interaction should be investigated. In this part of the study, research method is developed. In this sense, the literature findings on the variables of enjoyment, social interaction, and human-computer interaction mediator, which are thought to have an impact on the purchase intention of tangible and intangible rewards, are analyzed.

3.2.2.1. Relationship Between Rewards, Enjoyment and Purchase Intention

In the context of a gamified e-commerce platform, "rewards" refers to the customers focus that they will earn tangible rewards and intangible rewards for accomplishing stated tasks (Suh et al., 2017). Similarly, Hwang and Choi (2020) conducted a study which found that customers' favorable behaviors regarding participation in loyalty programs were significantly influenced by monetary and non-monetary incentives. Rewards is identified as financial benefits for customers and this type of rewards can boost customer experience via enjoyment. Provision of rewards is singled out as a crucial economics-related gamification technique enhancing customers' perceptual enjoyment in online purchasing (Hassan & Hamari, 2019). Previous research on gamification indicated that economics-based gamification methods are able to generate positive feelings such as enjoyment through rewards such as coins. In online shopping festival, system implemented an economics-related gamification approach including the distribution of rewards to encourage user participation. According to this, enjoyment identified as the most fundamental user engagement purpose emerging from game design (Mullins & Sabherwal, 2020). Throughout this, rewards can considerably enhance consumers' emotional reactions (Feng et al., 2018; D. Liu et al., 2017). The expectation of getting rewards generates happiness (Mullins & Sabherwal, 2020). Furthermore, hedonic features like enjoyment

were prioritized in gamification methods aimed at encouraging youngsters to make healthier food choices (Jones, Madden, & Wengreen, 2014).

Points, badges, leaderboards, and virtual items are indicated as an achievement-related elements. These elements are related to the level which a gamification-based e-commerce platform encourages users to feel more successful while completing required tasks. In this point, users provide some themselves with a challenge by accomplishing specified targets or progressing to greater levels (Xi & Hamari, 2019a). In gamified e-commerce platform, virtual rewards are determined as a significant prerequisite that influences users' emotive impressions with hedonic perceptions like enjoyment and pleasurable (Xi & Hamari, 2019b). Besides, points, badges, leader boards and virtual items are related to enjoyment (Mullins & Sabherwal, 2020). Due to the intangible rewards system, customers are more inclined to develop a sensual behavior.

Effects of process between game elements, mechanics and dynamics on engagement, enjoyment, and motivation are critical in business (L. C. Wood & Reiners, 2015). Gamified customer experience (CE) mechanism is consisting of tasks, challenge, rewards, badges, leaderboard, and win condition. The effects of CE mechanism on enjoyment are investigated in service marketing (Harwood & Garry, 2015). Another study focused on effects of autonomy, rewards, absorption, and competition on enjoyment. According to Y. Xu et al., (2020), it is critical to investigate how enjoyment affects online purchase intention. Perceived advantage, perceived ease of use, perceived enjoyment, perceived risk, perceived novelty, personalization, and interactivity are fundamental factors for purchase intention in retail industry (Isharyani et al., 2020). Rewards and badges, which are the gamification elements, have a critical impact on impulse buying with the mediators that are perceived enjoyment and social interaction (Zhang et al., 2021). Besides, perceived enjoyment, perceived usefulness, perceived ease of use and social interaction have a significant impact the impact of gamification on behavioral intention (Raman, 2021). Consequently, following hypothesis will be offered:

H1. Enjoyment mediates the effects of tangible rewards on purchase intention.
H2. Enjoyment mediates the effects of intangible rewards on purchase intention.

3.2.2.2. Relationship Between Rewards, Social Interaction and Purchase Intention

Previous research has empirically studied the favorable association between rewards and social interaction. On a learning platform, tangible rewards like tickets; can encourage communication, sharing, cooperation, and sociability with classmates, friends, families, and instructors (Simões et al., 2013). Furthermore, investigations demonstrated that social interaction and dialogues were motivated with financial rewards in the area of internet communities (Ruth, 2012). Particularly when consumers are permitted to transform intangible rewards into tangible rewards, intangible rewards might act as a crucial major mechanism that promotes social interaction (Lou et al., 2013). When consumers perceive they can gain tangible rewards based on mutual advantages, they will connect with other participants more commonly (Feng et al., 2018). During internet shopping event, gamified portal encouraged social interaction by assigning cooperative assignments in exchange for tangible rewards (Shao et al., 2019). For example, achieving task of "inviting friends or sharing photos with friends" can provide participants incentive.

Social interaction has a beneficial influence on the expansion of gamification. Thus, it is of the paramount importance to have a comprehensive understanding of the relationship that exists between rewards and social engagement (Hamari et al., 2014). Users want to be a part of the communication process in some manner, regardless of whether they are using an application on their own or interacting in a community-based activity(Schaefer & Kaduson, 2022). Besides, user's conduct may indeed be influenced by competition, collaboration, and social interaction (Malone, 1981). Designing an efficient gamification system that motivates individuals to focus on collaboration and socialize in groups is a remarkable feat (Hamari & Koivisto, 2013; Hassan et al., 2019). This can improve social interaction between groups, for this reason, a study has been carried out in the field of education. Intangible benefits can encourage connection, collaboration, networking and sharing amongst students, colleagues, families, and lecturers in education sector (Simões et al., 2013). The influence of intangible rewards, such as points, badges, levels, and leaderboards, on information sharing was favorable (Bock & Kim, 2002).

In the literature, there are also significant studies on social interaction and rewards on online platforms. For example, Hamari & Koivisto, (2013) mentioned that intangible rewards are a significant stimulant that impacts customers' social connections in gamification-based internet shopping. Similarly, Feng et al. (2018) revealed that when customers understand they may accrue intangible rewards based on bilateral gains in a win-win situation, they will interact with other people frequently. Moreover, achievement-related gamification techniques, including such points, leaderboards, badges, and virtual products, play an essential part in encouraging social interaction in online platform (Hamari et al., 2014; Hamari & Koivisto, 2013). In the gamification literature, points, badges, leaderboards, and virtual items are highlighted as major indicators of reputation and social interaction (Xi & Hamari, 2019a). Furthermore, these elements require teamwork to accomplish the designated assignment. When customers desire to obtain success, they are much more inclined to cooperate with other people and participate in social interactions (Rodrigues et al., 2016). Additionally, intangible rewards are regarded as one of the significant gamification strategies that encourage interaction between users on social media (Bock & Kim, 2002; Lou et al., 2013).

Foursquare is an application that attaches great importance to social interaction and uses it very well. In that point, well-designed point and badge system of the Foursquare application provides a kind of social activity by allowing the individual to inform his/her friends where he/she is. Giving privileges to those who are at the top of the leader board in weekly cycles, thereby motivating users and keeping them active within the application, are among the reasons why the Foursquare application is preferred. However, after a certain point, the application started to serve a single purpose, where only "check-in" was made without commenting or giving advice on venues to earn a mayor badge. For this reason, Foursquare has decided to add levels to most of its badges (Werbach & Hunter, 2012). This program allows users to view the profiles of other users, gain points by sharing their badges on social media, and engage in social interaction (Yılmaz, 2020). As a result of the fact that social interaction has a positive impact on the development of gamification, it is of the utmost importance to have a complete comprehension of the relationship that exists between rewards and social interaction (Hamari et al., 2014).

Online platforms and social networks are the most efficient means of utilizing gamification (Moise & Cruceru, 2014). Moreover, it has been proven that the usage of gamification elements for marketing purposes yields positive effects, and it is proposed that while building gamification, businesses should pay greater attention to the elements of competition, interaction, and rewards (Y. Yang et al., 2017). Similarly, Huseynli and Bozbay (2018) mentioned that gamification positively affect consumer attitudes and usage intentions. According to this, gamification mechanics have been designed for use within a mobile application that has been created to increase purchase intention of customers in an international clothing store. Consequently, it turns out that among these game mechanics, those with social effects are the most effective (Wen et al., 2014). Gamification that enable social sharing actions to raise consumers purchases intention. Moreover, it has been inferred that most gamification activities in Turkey are designed to encourage consumer participation for creating social interaction (Karaarslan & Altuntaş, 2016).

Consequently, the following hypothesis will be offered:

H3. Social interaction mediates the effects of tangible rewards on purchase intention.

H4. Social interaction mediates the effects of intangible rewards on purchase intention.

3.2.2.3. Relationship Between Rewards, Human-Computer Interaction and Purchase Intention

The use of gamification and various technologies has a significant impact on the behavior of customers (Deterding et al., 2011; Fogg, 2002; Hamari & Lehdonvirta, 2010). Moreover, gamification elements which include components and mechanics have the potential impact to improve purchasing decisions (Poncin et al., 2017; Mitchell et al., 2020; Mullins and Sabherwal, 2020). Human-computer interaction can positively affect reuse intention and purchase intention with increasing interactivity (Kowalczuk et al., 2021; Pillai et al., 2020). The effects of gamification components on marketing output should be investigated and their marketing outputs consist of engagement, attitude, purchase, repurchase, and retention (Hofacker et al., 2016).

H5. Human-computer interaction mediates the effects of tangible rewards on purchase intention.

H6. Human-computer interaction mediates the effects of intangible rewards on purchase intention.

3.2.3. Conceptual Model and Hypotheses

This part includes the conceptual model and hypotheses of the research. Tangible rewards and intangible rewards are independent variables in the model used in the research. Enjoyment, social interaction, and human-computer interaction are expressed as mediating variables. Purchase intention is determined as a dependent variable. The model of this research is given in Figure 11.

Figure 11: Model of the Research
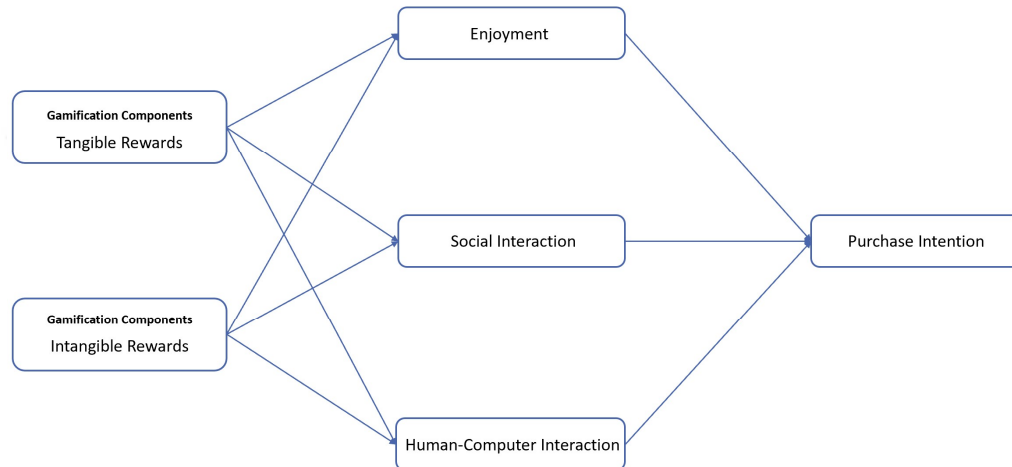
Source: Author

Hypotheses

H1: Enjoyment mediates the effects of tangible rewards on purchase intention.

H2: Enjoyment mediates the effects of intangible rewards on purchase intention.

H3: Social interaction mediates the effects of tangible rewards on purchase intention.

H4: Social interaction mediates the effects of intangible rewards on purchase intention.

H5: Human-computer interaction mediates the effects of tangible rewards on purchase intention.

H6: Human-computer interaction mediates the effects of intangible rewards on purchase intention.

3.2.4. Mobile Application for Experimental Design

A mindfulness-based mobile application named Visutate was established in California, USA, in 2019. Turkey, Europe, and America are the mobile application's primary target markets. With the intention of manifestation, the Visutate application includes active meditation through augmented reality visualisation. This application's objective is to assist users improve mental skills including concentration, imagery, creativity, and present-moment awareness. There are experience rooms in the application where users can practice visual and auditory meditation. Visutate focuses on improving user experience, hence it is crucial to comprehend user feedback.

3.2.5. Experimental Design

The experimental design consists of two different platforms which are gamified and non-gamified. The non-gamified platform is where participants directly use the Visutate platform, and this platform does not contain points, badges, virtual items, leaderboards, tangible rewards, or levels.

On the other hand, both tasks and rewards are specified on the gamified platform. This platform includes points, badges, virtual items, leaderboards, and tangible rewards. Users must complete various tasks to obtain points, badges, virtual items, high leaderboard positions, and tangible rewards.

Based on the experimental design, participants install the mindfulness-based mobile application which is Visutate on their mobile devices. Participants utilize the mindfulness-based experience rooms provided by Visutate. The research sample includes 208 participants and stratified purposive sampling is used to select the participants. In the experiment design, there are a control group and an experimental group. Fifty-two participants in the control group are interested in meditation, and

fifty-two people are not interested in meditation. The experimental group was chosen in the same way. In this sense, both groups consist of 104 participants. This experiment design covers a period of 3 weeks. Table 4 explains a summary of design.

Table 5: Summary of Design

	Experimental Group (104 participants)	Variables	Control Group (104 participants)	Variables
1. Week	No gamification (survey)	Enjoyment, Social Interaction, Human-Computer Interaction, Purchase Intention	No gamification (survey)	Enjoyment, Social Interaction, Human-Computer Interaction, Purchase Intention
2. Week	Gamification (survey)	Tangible rewards, intangible rewards, Enjoyment, Social Interaction, Human-Computer Interaction, Purchase Intention	No gamification (survey)	Enjoyment, Social Interaction, Human-Computer Interaction, Purchase Intention
3. Week	No gamification (survey)	Enjoyment, Social Interaction, Human-Computer Interaction, Purchase Intention	No gamification (survey)	Enjoyment, Social Interaction, Human-Computer Interaction, Purchase Intention

Source: Author

3.2.5.1. First Week of Experimental Design

In line with this research design, the study started with 104 participants in the control group and 104 participants in the experimental group. Accordingly, it is requested to install the Visutate application by sending a link to the participants. Considering the differences that may arise in the Android and IOS systems, two different links have been sent. Users can use the link that suits them. In this sense, it is ensured that the users of the IOS and Android system can use the application in the same way without any difference. A closed test group is established for designing experiments on the Visutate platform.

The home page of the mobile application, where gamification is not included, is shown in Figure 12. This platform does not contain tangible or intangible rewards. In this regard, there are no sections concerning the sharing of rewards, the visibility of rewards, or the user feedback regarding rewards.

Due to the crucial relevance of studying human-computer interaction, social interaction, and enjoyable aspects of the application, a variety of features have been incorporated in order to investigate these impacts. Important aspects of human-computer interaction include the ability for users to track their progress, receive feedback from the application, and provide some feedback to the application. This platform, although lacks gamification, provides users with information regarding the number of completed experiences and the amount of time spent in the application. Visutate solicits user feedback by incorporating a "send feedback" button. Moreover, this program gives feedback regarding user activity. In the section where gamification is nonexistent, users are permitted to invite their friends and participate in the social media community of the application. This is related to the application's attempt to promote social interaction. However, even if these possibilities are provided, individuals receive no reward.

Figure 12: Visutate Profile Page Without Gamification
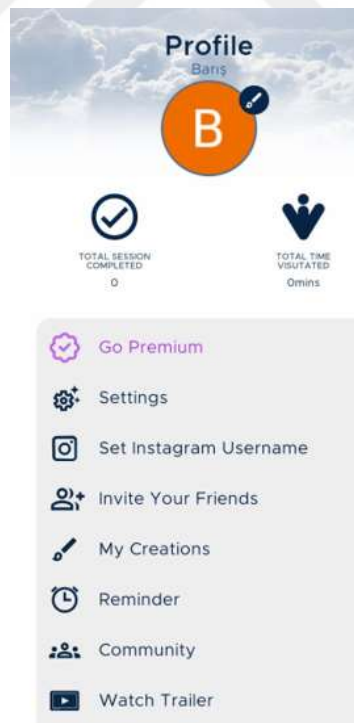
Source: Author

3.2.5.2. Second Week of Experimental Design

On the basis of experimental design, the impact of the gamification platform on the experimental group are studied. All participants from the first week are preserved for the second week. Consequently, there are a total of 208 individuals in the experimental and control groups. The members of the control group continued to utilize the program they had installed in the first week. The experimental group is notified that the application has been updated and given the option to submit the new version. The experimental group, therefore, uses the gamified platform for one week. In this week, the invitation to a Zoom meeting is sent to the reward winners of experimental group via a link. Within the scope of the interview, views on encouraging mindfulness-based education are presented to university students.

Visutask is the determined name of the platform where gamification is included. Users of this platform, whose name derives from the combination of the words Visutate and task, are required to complete a number of tasks. When individuals do at least one of these tasks, they are eligible to receive a tangible reward. Furthermore, soul power can be acquired for each assignment. Intangible rewards which are points, virtual items, leaderboards, and badges are used in the gamification part of the mindfulness-based mobile application. The point system used in the gamification system is expressed as soul power in the experiment design. Participants can earn badges and get virtual items thanks to their soul powers. Users can see their own soul powers through the system, as well as access information about other users' soul powers. When users spend time in experience rooms and finish their experiences, they can obtain soul power. Following the completion of each experience, it is possible to receive 200 soul power. 200 soul power is obtained by inviting friends, sharing photos on social platforms, and rating rooms. The visual of the total soul power section on the profile page is shown in Figure 13.

Figure 13: Profile Page and Soul Power
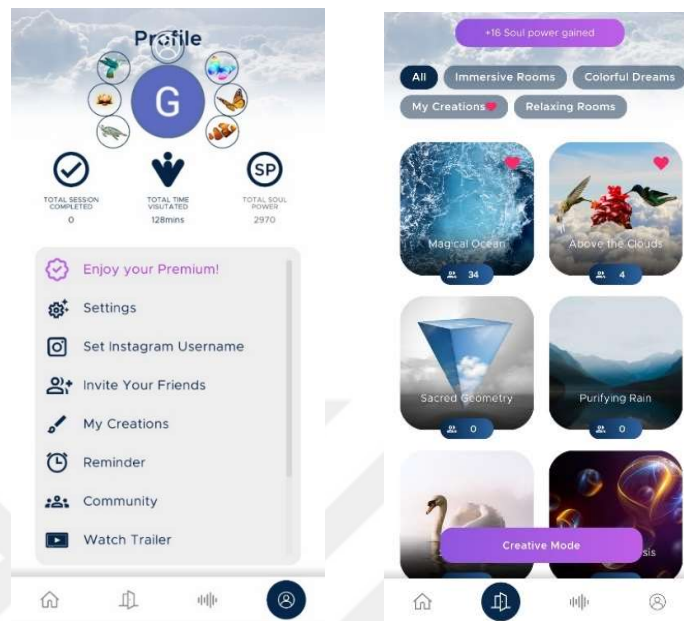
Source: Author

The Visutask platform, which includes gamification, has been added to the homepage. Visutask platform is given in Figure 14.

Figure 14: Visutask Platform

Source: Author

Users are required to accomplish a variety of tasks on Visutask. These tasks are "finish an experience," "share a photo or a content," "invite a friend," and "rate a room." Priority is given to having tasks that are simple and not overly tough for the individuals while determining the tasks. Figure 15 shows the tasks in Visutask.

Figure 15: Tasks in Visutask
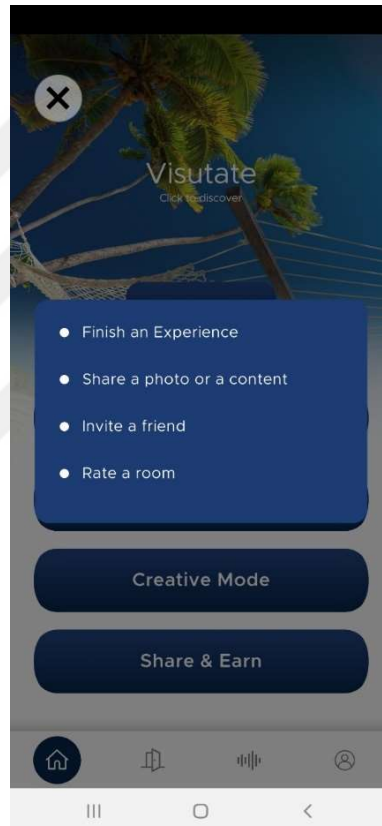
Source: Author

One of the tasks on the gamification platform is scoring the application's meditation rooms. When users score the room, soul power is gained. In fact, on non-gamified platforms, rooms are rated to stimulate human-computer interaction, but participants do not gain soul power. On a platform that incorporates gamification, this task must be performed in order to receive both tangible rewards and soul power. Figure 16 shows visual page about rate the room.

Figure 16: Visual Page about Rate the Room
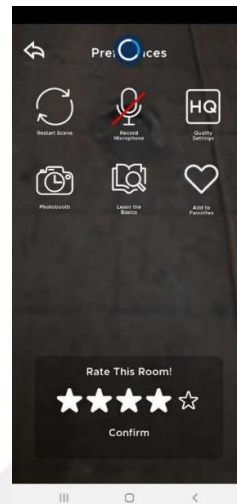
The rewards utilized in gamification include both tangible and intangible components. Users of Visutask receive soul power, badges, virtual items, discounts, and membership for free. In addition, gift saplings to be donated to the Aegean Contemporary Education Foundation on behalf of individuals are within the scope of surprise tangible gifts. Figure 17 shows the rewards information in Visutask.

Figure 17: Rewards information in Visutask
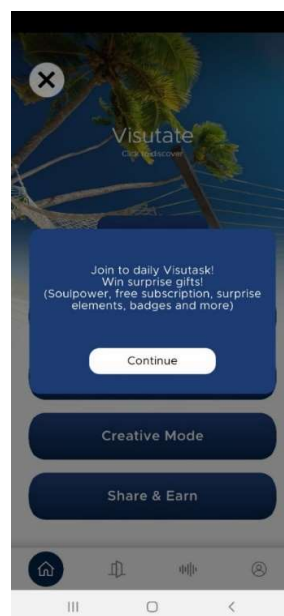
On the Visutask platform, users can access information about soul-power. Figure 18 shows gamification-based profile page.

Figure 18: Gamification Based Profile Page
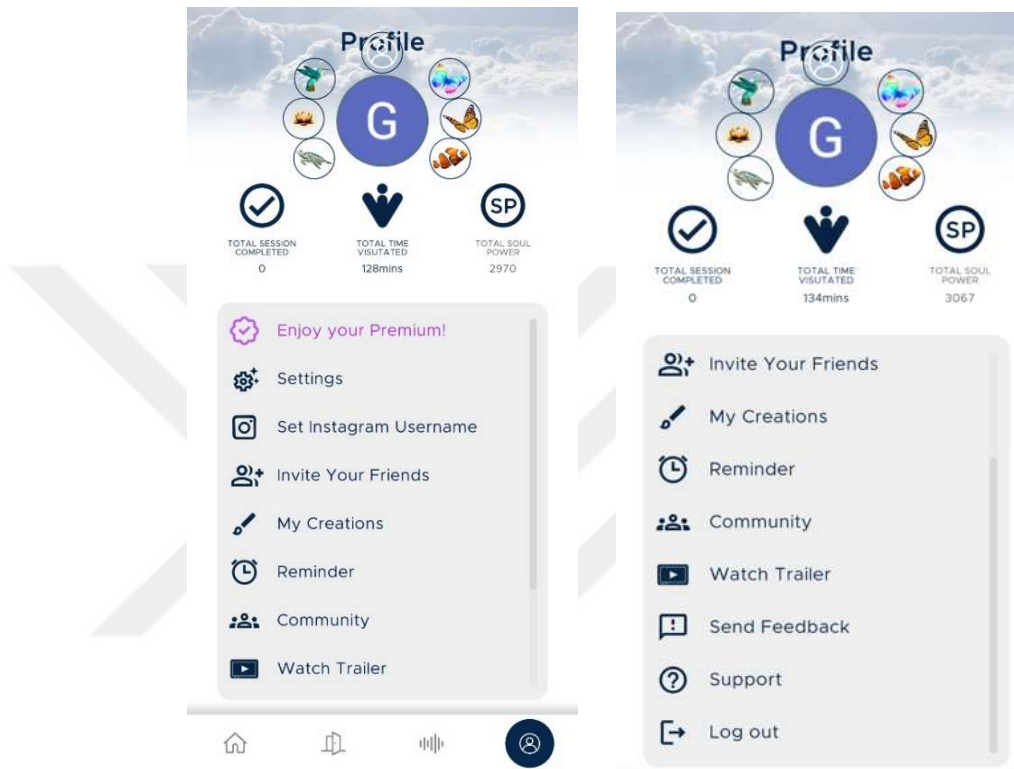
The mindfulness-based mobile application contains a vast number of experiences, such as the magic ocean, above the clouds, sacred geometry, and purifying rain. A platform has been developed in which information such as the soul power of individuals and the number of users for each experience are included. This platform contains a visible leader for each experience room. Users create a nickname at the beginning of the using application and have access to an up-to-date leaderboard. Figure 19 shows the leaderboard system is based on soul power.

Figure 19: Leadership Table
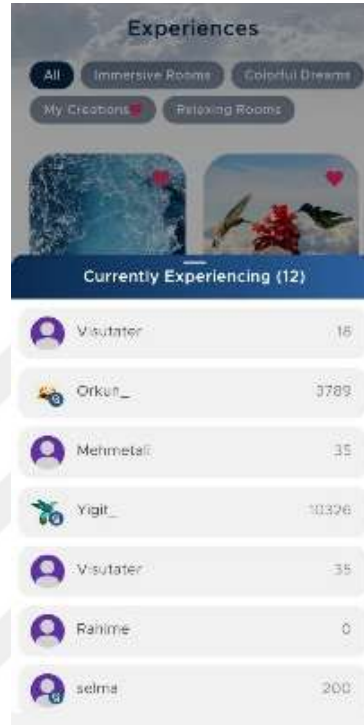
Source: Author

In the design that embraces gamification, a badge-earning platform has been built when soul power is accumulated. Accordingly, individuals who gain 100, 200, 300, 500,600, 900,1000 soul power can reach chakra, energetic, magical, portal key, Visutate bird, Visutate Guru, and Visutate Explorer badges, respectively. The gained badges facilitate social connection, allowing users to share their processes with anybody they like. A new button has been added to the program in order to improve human-computer interaction through the use of intangible rewards. Individuals are asked to review the reward in this section. Regardless of whether the comment is positive or negative, the response to this review is always "Thank you for your feedback." Figure 20 presents badges and positive feedback of user. Figure 21 shows badges and negative feedback of user.

Figure 20: Badges and Positive Feedback of User

Source: Author

Figure 21: Badges and Negative Feedback of User

Source: Author

Participants are able to win virtual items with soul power. There is a creative room section in the application, and this section contains virtual elements. For instance, 10000 soul power is required to achieve a meteor shower. Virtual items are presented in Figure 22.

Figure 22: Virtual Item Examples
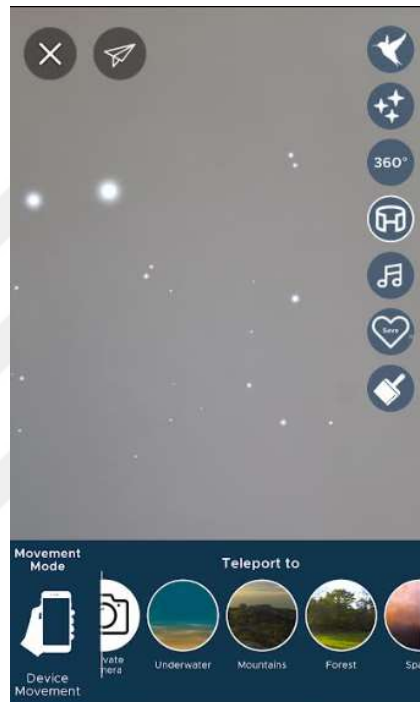
Source: Author

Tangible and intangible rewards can be earned when a friend is invited to the Visutask platform. Figure 23 Visual page of inviting friends.

Figure 23: Visual Page of Inviting Friends
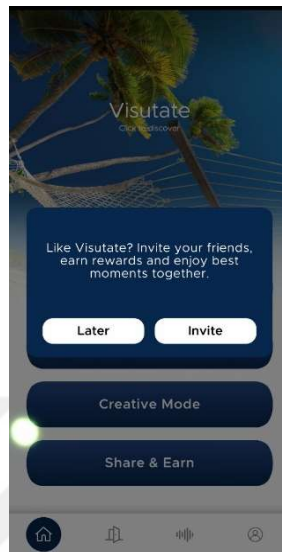
Source: Author

After clicking "Invite Your Friends," users are able to contact with their friends and acquaintances using the shared reference link. During this stage, users can obtain the soul power that collectively unlocks the features of the creative mode. Figure 24 shows sharing code with friends.

Figure 24: Sharing Code with Friends
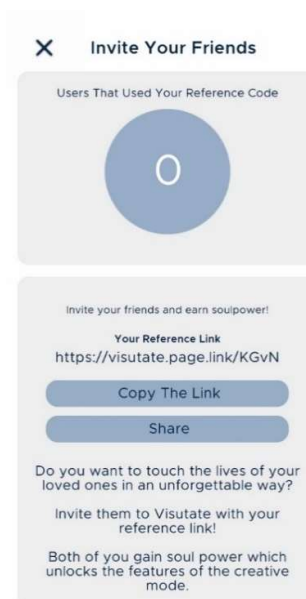
Source: Author

At least one of the given tasks must be accomplished in order to gain tangible rewards. Each participant who does so will receive a 15% discount on the application's premium version. Simultaneously, a special training link on mindfulness training are shared with winners.   Participants who complete all tasks will get additional tangible rewards. First, second and third-place winners are provided with the free premium application for one year which can be shared with one person. The fourth and fifth place people are able to use the application with a 50% discount. At the same time, donations are made to the Aegean Contemporary Education Foundation on behalf of these five participants, within the scope of surprise tangible rewards. Additionally, the person who comes in first in the race will receive these rewards as well as a year of training from the Meditation coach.

The platform allows users to share the promo code with their friends in order for tangible rewards to increase social interaction. In order to increase the human-computer interaction of tangible rewards, it is also requested that the user assess the achieved reward. Regardless matter whether the person's comment is positive or negative, feedback in the form of "Thanks for your feedback" is sent. Tangible rewards evaluation is presented in Figure 25.

Figure 25: Tangible Rewards Evaluation
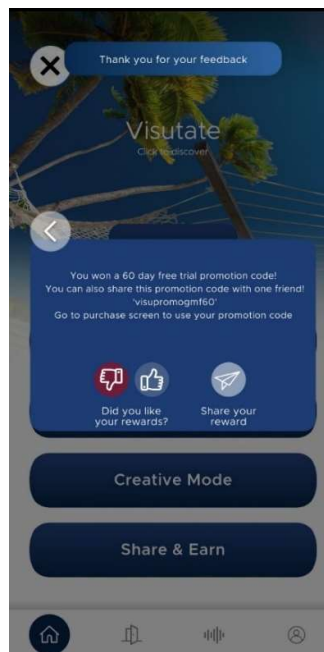
Source: Author

3.2.5.3. Third Week of Experimental Design

In the last week of the experimental design, the experimental group was informed that the application was updated. Up-to-date version downloads are requested from the experimental group. The control group continue to use the application they use for 2 weeks. The third week is the platform where the gamification components are removed and is the same as the first week. Accordingly, the experimental group and control group use the same platform. Figure 26 presents Visutate Profile Page in week 3.

Figure 26: Visutate Profile Page in Week 3
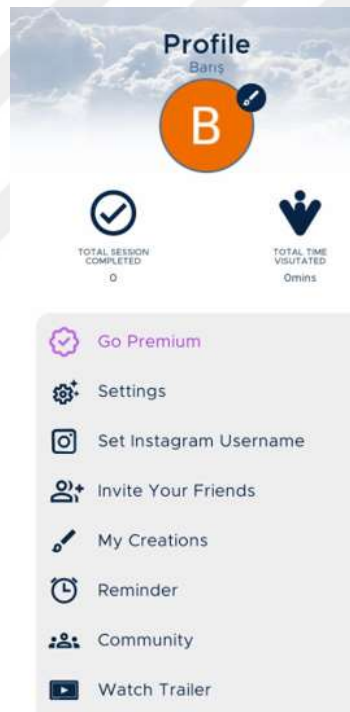
Source: Author

3.2.6. Data Collection and Analysis

In addition to the questionnaire that included reward-based gamification questions, a survey for the version without gamification was also developed. Consequently, there are two different types of questionnaires. In the first section, which did not involve gamification, questions were provided to measure the enjoyment, social interaction, and human-computer interaction dimensions. The

second section of the questionnaire contains purchasing intention questions. In the final section, demographic questions are posed. These questions include of participants' interest in meditation, age, gender, level of education, and monthly income. In the questionnaire, in which gamification was included, questions about tangible and intangible rewards were added in the first part. In the second part, questions were asked to understand the enjoyment, social interaction, and human-computer interaction dimensions of the rewards. The third section covers the questions about purchase intention. The last part consists of demographic questions. A questionnaire is given to participants to measure their opinions on the application and purchasing intentions at the end of the first week. The same questionnaire is sent to the control group participants for three weeks. A different questionnaire is sent to the experimental group participants only in the second week. A survey is given to users to measure their opinions on the gamified platform at the end of the second week. Questionnaire questions sent to the experimental group in the first and third weeks are the same as those sent to the control group. The instrument is adopted from the extant literature, and each construct is measured with three items. The measurement scales used for the variables are tangible rewards, intangible rewards(Shao et al., 2019), enjoyment, social interaction (Du et al., 2020), human-computer interaction (M. Park & Yoo, 2020) and purchase intention (Lu et al., 2010). The English questionnaire is translated into Turkish by the researcher and consultant. A five-point Likert scale is used to design the instrument, ranging from 1 (strongly disagree) to 5 (strongly agree). A pilot test is performed with 50 participants to examine the instruments' content and construct validity. Survey questions are designed with the thought that supporting the research with quantitative data would increase the reliability of the research. Regression, independent sample t-test and paired sample t-test are used for the analysis of these data. Besides, detailed measurement items are given in Appendix 2 and 3.

32 in-depth interviews are evaluated with content analysis. Following the completion of the data processing, the members who participated in the interviews were sent the results, which were subsequently checked by the respondents. In particular, the findings were compared to those of other studies that had been published in the relevant academic literature. The validity and dependability of the study's conclusions are improved as a result of these approaches. Besides, the interview

questions contain a manipulation check, which is a technique used to verify the efficacy of manipulation in experimental design. Interview questions are given in Appendix 4.

CHAPTER FOUR

TESTING THE IMPACTS OF REWARDS IN GAMIFICATION ON PURCHASE INTENTION ON MOBILE MINDFULNESS-BASED APPLICATION

This chapter consists of the findings of both studies. In this sense, the findings of the first study that are related to in-depth interviews and focus study are presented comparatively.

Following that findings of the second study are explained in detail. Findings of the in-depth interview with a control group and experimental group are presented. The analyzes of the control group are concerned with understanding the enjoyment, social interaction, and human-computer interaction dimensions of the application without rewards. The experimental group, on the other hand, evaluate the enjoyment, social interaction, and human-computer interaction dimensions of the platform on which the rewards are included. Accordingly, comparative analyzes are made. In the last part of this section, the findings of the statistical analyzes related to the survey are explained. In this sense, the findings of the descriptive analysis, normality test, regression analysis, independent sample t-test and paired sample t-test are presented.

4.1. FINDINGS OF STUDY 1

The findings of content analysis are presented in terms of the getting/sharing/visibility of rewards in mindfulness-based mobile applications. As shown in Table 6, data from in-depth interviews and focus groups reflect respondents' perspectives on receiving rewards in mindfulness-based mobile applications. In in-depth interviews (f=46), and the focus group study (f=36), participants explain that getting rewards is "fun/enjoyable" with the highest frequencies. Furthermore, getting rewards make them happy ($f_{in-depth}$=28; f_{focus}=10); they feel "motivated" ($f_{in-depth}$=16; f_{focus}=16), "good" ($f_{in-depth}$=21; f_{focus}=4) and feel a "positive impact" ($f_{in-depth}$=12; f_{focus}=13). In-depth interview participants explain getting rewards as "exciting" (f=15), "important" (f=14), "intriguing" (f=10), as a "necessity" (f=6).

Focus group respondents examine that getting rewards is "useful" (f=7) and gives a "sense of accomplishment" (f=6) ". Respondents also stated that "tangible rewards are important" (f=6) and "losing a reward feels bad" (f=4) as explained in Table 6.

Table 6: Users` Perceptions on the Getting Rewards

Interview		Focus Group	
1st Order Theme	f	1st Order Theme	f
Fun/Enjoyable	46	Fun/Enjoyable	36
Making Happy	28	Making Happy	10
Motivating	16	Motivating	16
Positive impact	12	Positive Impact	13
Good (I like it)	21	Good (I like it)	4
Exciting	15	Losing a reward feels bad	4
Necessity	6	Usefulness	7
Intriguing	10	Sense of achievement	6
Important	14	Tangible rewards are important	6

Source: Author

Table 7 illustrates the opinions and frequent distribution of users on the sharing of rewards. In-depth interview and focus group research analyses provide two prevalent second-order themes: social interaction ($f_{\text{in-depth}}$=82; f_{focus}=60) and emotions ($f_{\text{in-depth}}$=43; f_{focus}=37). Social interaction is the highest frequently examined theme for analyses, in which attendees mentioned that "sharing is important" ($f_{\text{in-depth}}$=20; f_{focus}=17), and sharing rewards help them socialize with friends and new people ("socialization with friends" $f_{\text{in-depth}}$=38 f_{focus}=23; "socialization with new people" $f_{\text{in-depth}}$=9; f_{focus}=8) and leads to a feeling of "competition" ($f_{\text{in-depth}}$=5; f_{focus}=2). Social interaction theme emerged from in-depth interview analysis also embodies perceptions of "being popular among friends" (f=4) and "supporting friends" (f=6).

According to both interview and focus group data, "happiness" ($f_{\text{in-depth}}$=8; f_{focus}=17) and "feeling good" ($f_{\text{in-depth}}$=19; f_{focus}=5) are the most prevalent first-order emotions themes. According to the respondents, the emotions category also includes "fun/enjoyable" ($f_{\text{in-depth}}$=6), "exciting" ($f_{\text{in-depth}}$=10), "motivating" (f_{focus}=9), and "positive impact" (f_{focus}=6).

According to the responses,

"I feel good when I share a reward. I believe that sharing is very important and exciting. Sharing rewards with people I know is a great happiness. We live in a digital era now, and we can think of reward sharing as a social activity." (In-depth interview Participant 6)

In-depth interview analysis showed a second-order topic, technological innovation, that did not emerge from the focus group research analysis. This category includes the attributes "digitalization" (f=6) and "related to technology" (f=4).

Table 7: Users` Perceptions on Sharing Rewards

In-depth Interview			Focus Group		
2nd Order Theme	1st Order Theme	f	2nd Order Theme	1st Order Theme	f
Emotions (Total Frequency= 43)	Feeling Good	9	Emotions (Total frequency= 37)	Feeling Good	5
	Happiness	8		Happiness	17
	Fun/Enjoyable	6		Motivating	9
	Exciting	10		Positive impact	6
Social Interaction (Total Frequency= 82)	Sharing is important	20	Social Interaction (Total frequency= 60)	Sharing is important	17
	Being popular among friends	4		Cooperation	10
	Supporting friends	6		Socialization with friends	23
	Socialization with friends	38			
	Socialization with new people	9		Socialization with new people	8
	Competition	5		Competition	2
Technological Innovation (Total Frequency= 10)	Digitalization	6			
	Related to technology	4			

Source: Author

Table 8 reflects the opinions of users on the visibility of rewards. "Emotions" ($f_{in-depth}$=36; f_{focus}=29), "human-computer interaction" ($f_{in-depth}$=88; f_{focus}=58), "analysis/tracking" ($f_{in-depth}$=10; f_{focus}=10), and "importance to the user" ($f_{in-depth}$=20; f_{focus}=15) are the four most prevalent second-order themes uncovered through in-depth

interview and focus group research analyses. "Feel good" ($f_{\text{in-depth}}$=6; f_{focus}=5), "feel motivated" ($f_{\text{in-depth}}$=5; f_{focus}=5), "like to see rewards" ($f_{\text{in-depth}}$=19; f_{focus}=12), and "feel approved" ($f_{\text{in-depth}}$=6; f_{focus}=7) are the most often mentioned subjects needing improvement in both analyses. Human-computer interaction includes "nice to interact with the application" ($f_{\text{in-depth}}$=21; f_{focus}=13), "necessity of getting up to date information" ($f_{\text{in-depth}}$=32; f_{focus}=8), "necessity of viewing rewards instantly" ($f_{\text{in-depth}}$=15; f_{focus}=26), and "digital trend" ($f_{\text{in-depth}}$=20; f_{focus}=11). The Analysis/Tracking theme encompasses "to be able to analyze the competitive situation" ($f_{\text{in-depth}}$=6; f_{focus}=10). Nonetheless, in-depth interview research includes " tracking competitors " (f=4). Visibility of rewards is defined as "important" ($f_{\text{in-depth}}$=9 f_{focus}=5), "not so significant" ($f_{\text{in-depth}}$=1; f_{focus}=4), and "more important for young generations" ($f_{\text{in-depth}}$=5; f_{focus}=6), respectively. This theme interview analysis also identifies a new ranking of significance that is "not the most important thing" (f=5).

Table 8: Users` Perceptions on Visibility of the Rewards

In-depth Interview			Focus Group		
2nd Order Theme	1st Order Theme	f	2nd Order Theme	1st Order Theme	f
Emotions (Total Frequency= 36)	Feel Good	6	Emotions (Total Frequency= 29)	Feel Good	5
	Feel Motivated	5		Feel Motivated	5
	Like to see rewards	19		Like to see rewards	12
	Feel approved	6		Feel approved	7
Human-Computer Interaction (Total Frequency= 88)	Nice to interact with the application	21	Human-Computer Interaction (Total Frequency= 58)	Nice to interact with the application	13
	Necessity of getting up-to-date information	32		Necessity of getting up-to-date information	8
	Necessity of viewing rewards instantly	15		Necessity of viewing rewards instantly	26
	Digital trend	20		Digital trend	11
Analysis/Tracking (Total Frequency= 10)	Tracking competitors	4	Analysis/Tracking (Total Frequency= 10)	To be able to analyze the competitive situation	10
	To be able to analyze the competitive situation	6			
Importance to User	Important	9	Importance to User	Important	5

(Total Frequency= 20)	Not so important	1	(Total Frequency= 15)	Not so important	4
	More important for young generation	5		More important for young generation	6
	Not the most important thing	5			

Source: Author

The effect of rewards on purchasing intention is shown in Table 9. Through in-depth interview and focus group research analyses, four prevalent second-order themes are explored: "emotions" ($f_{in-depth}$ = 77; f_{focus} = 107), "social interaction" ($f_{in-depth}$ = 69; f_{focus}= 104), "human-computer interaction" (fin-depth = 59; f_{focus} = 69), "competition" ($f_{in-depth}$ = 15), and "benefit in app" (f_{focus}= 15). The terms "enjoyable/fun" ($f_{in-depth}$ =57; f_{focus}=45) and "happiness" ($f_{in-depth}$ =20; f_{focus}=37) are used to describe emotions. "Intriguing" (f=10) and "feeling approved" (f=15) are two separate first-order theme derived only from focus group research that stand out within this topic. Within the "social interaction" subject, respondents indicated that sharing is essential to them in terms of rewards, and that sharing rewards motivate them to engage with both friends and strangers and to collaborate. Social interaction includes "socialization with friends" ($f_{in-depth}$=19; f_{focus}=38), "socialization with new people" ($f_{in-depth}$=10; f_{focus} =10), and "cooperation" ($f_{in-depth}$=22; f_{focus}=22)). Human-computer interaction is the third second-order theme uncovered by the investigation. This topic consists of two first order themes: "necessity of getting up-to-date information" ($f_{in-depth}$=33; f_{focus}=44) and "necessity of viewing rewards instantly" ($f_{in-depth}$=17; f_{focus}=25). In-depth interview respondents also indicated that rewards are viewed as a "digital trend" (f=9).

Table 9: How Rewards Influence Purchase Intention

In-depth Interview			Focus Group		
2nd Order Theme Interview	1st Order Theme	f	2nd Order Theme Focus Group	1st Order Theme	f
Emotions (Total Frequency= 77)	Enjoyable/Fun	57	Emotions (Total Frequency= 107)	Enjoyable/Fun	45
	Happiness	20		Happiness	37
				Intriguing	10
				Feel approved	15

Social Interaction (Total Frequency= 69)	Sharing is important	18	Social Interaction (Total Frequency= 104)	Sharing is important	34
	Socialization with friends	19		Socialization with friends	38
	Socialization with new people	10		Socialization with new people	10
	Cooperation	22		Cooperation	22
Human-Computer Interaction (59)	Necessity of getting up-to-date information.	33	Human-Computer Interaction (Total Frequency= 69)	Necessity of getting up-to-date information	44
	Necessity of viewing rewards instantly	17		Necessity of viewing rewards instantly	25
	Digital Trend	9			
Competition (Total Frequency= 15)	Negative Impact of Competition	6	Benefit in app (Total Frequency= 15)	The rewards should provide benefits in the application	15
	Positive Impact of Competition	5			
	Competition is not the most important thing	4			

Source: Author

Competition as the final second order topic that developed from the content analysis of in-depth interviews includes "negative impact of competition" (f=6), "positive impact of competition" (f=5), and "competition is not the most important thing" (f=4). Focus group analysis yields benefit in application as a unique second-order theme. Attendees indicate that "the rewards should provide ease on the application" (f=15).

4.2. FINDINGS OF STUDY 2

4.2.1. Tangible Rewards In-Depth Analysis

The experimental group's opinions about tangible rewards are summarized in Table 10. This group determines three common second-order themes which are emotions (f=47), social interaction (f=23), and usage (f=9). Emotions are the most

frequently emerged theme, in which interviewees mentioned that "enjoyable" (f=12), "happiness" (f=10), "motivation" (f=6), "contribution" (f=5), "feeling valuable" (f=5), "reality" (f=4) "wonder" (f=3), "positive impact" (f=3). Social interaction theme contains "sharing" (f=10) "sociability" (f=7) and "communication power with friends" (f=6). Usage includes "increases usage" (f=9).

As one of the respondents indicates:

"I think it is enjoyable and it was motivating. I felt valued with these rewards. Also, tangible rewards express reality for me and we had the opportunity to share tangible rewards." (Experimental group interview participant 10)

Table 10: Opinions about Tangible Rewards

Experimental Group		
2nd Order Theme	1st Order Theme	f
Emotion **(Total** **Frequency=47)**	Enjoyable	12
	Happiness	10
	Motivation	6
	Contribution	5
	Feeling valuable	5
	Reality	4
	Wonder	3
	Positive impact	3
Social Interaction **(Total** **Frequency=23)**	Sharing	10
	Sociability	7
	Communication power with friends	6
Usage **(Total** **Frequency=9)**	Increases usage	9

Source: Author

4.2.2. Intangible Rewards In-Depth Analysis

The participants' opinions of the experimental group about intangible rewards are analysed in Table 11. The experimental group identify two prevalent second-order themes which are "emotions" (f=56), and "social interaction" (f=26). Emotions are explored as "enjoyable" (f=16), "positive impact" (f=10), "motivating" (f=8), "happiness" (f=8), "exciting" (f=6), "it didn't affect me much" (f=1), "loyalty" (f=4) "feeling of improve" (f=3). Interviewees mentioned social interaction themes as

"interact with my friends" (f=10), "sharing" (f=8), "sociability" (f=6), "challenge" (f=2).

One of the respondents expressed as:

"Intangible rewards can be enjoyable, but they didn't affect me that much. I may be thinking that way because I am not very good with technology." (Experimental group interview participant 12)

Table 11: Opinions about Intangible Rewards

Experimental Group		
2nd Order Theme	**1st Order Theme**	**f**
	Enjoyable	16
	Positive impact	10
Emotion	Motivating	8
(Total	Happiness	8
Frequency=56)	Exciting	6
	It didn't affect me much	1
	Loyalty	4
	Feeling of improve myself	3
	Interact with my friends	10
Social Interaction	Sociability	8
(Total	Sharing	6
Frequency=26)	Challenge	2

Source: Author

4.2.3. Enjoyment In-Depth Analysis

The participants' comments regarding the enjoyment factor are analysed in Table 12. While participants in the control group evaluated the enjoyment dimension of the application, the experimental group assessed the enjoyment dimension of rewards in the application. In both groups analysis, only "emotions" ($f_{control}$=22; $f_{experimental}$=35) emerged as the second-order theme. Emotions contains "pleasure" ($f_{control}$=2; $f_{experimental}$=20), "monotonous" (f=3), "a little enjoyable" ($f_{control}$=6; $f_{experimental}$=1). Furthermore, control group mentions "boring" ($f_{control}$=9) and "monotonous" (f=5). On the other hand, experimental group identifies "exciting" (f=7), "happiness" (f=4) and "motivation" (f=3).

As two of the respondents discussed:

"I think the application is monotonous. I am not interested in meditation, and it was boring to me." (Control group interview participant 12)

"Even though I am not normally one to meditate, I had the pleasure and it motivated me. I felt happy." (Experimental group interview participant 16)

Table 12: Opinions about Enjoyment

Control Group			Experimental Group		
2nd Order Theme	1st Order Theme	f	2nd Order Theme	1st Order Theme	f
Emotions (Total Frequency=22)	Pleasure	2	Emotions (Total Frequency=35)	Pleasure	20
	Monotonous	5		Exciting	7
	A little enjoyable	6		A little enjoyable	1
	Boring	9		Happiness	4
				Motivation	3

Source: Author

The effect of tangible rewards on enjoyment is analysed in Table 13. Experimental group mentions only "yes" (f=16).

Table 13: Impact of Tangible Rewards on Enjoyment

Experimental Group		
	1st Order Theme	f
(Total Frequency=16)	Yes	16

Source: Author

Table 14 shows the impact of intangible rewards on enjoyment. Experimental group defines "yes" (f=15) and "not too much" (f=1).

Table 14: Impact of Intangible Rewards on Enjoyment

Experimental Group		
	1st Order Theme	f
(Total Frequency=16)	Yes	15
	Not too much	1

Source: Author

Table 15 explains the effect of enjoyment on purchase intention. Experimental group defines "yes" (f=16).

Table 15: Impact of Enjoyment on Purchase Intention

Experimental Group		
	1st Order Theme	**f**
(Total Frequency=16)	Yes	16

Source: Author

4.2.4. Social Interaction In-Depth Analysis

Opinions of social interaction is presented in Table 16. Two second-order themes which are "emotions" ($f_{control}$=24; $f_{experimental}$=47), and "socialization" ($f_{control}$=13; $f_{experimental}$=34) are investigated through interviews with control experimental groups.

Emotions are mentioned as "pleasant" ($f_{control}$=2; $f_{experimental}$=12), "happiness" ($f_{control}$=2; $f_{experimental}$=6). Furthermore, "bored" (f=10), "inefficiency of app" (f=7) and "normal" (f=3) are three various first order themes obtained only from control group. Moreover, "feeling valuable" (f=10), "felt good" (f=6), "feeling of popularity" (f=2), "benefiting" (f=4) and "exciting" (f=7) are different first order themes acquired from experimental group.

Control group respondents mention socialization theme as "no joint activity" (f=5), "no sociability" (f=4) and "so individual" (f=4). On the other hand, experimental group participants explain socialization themes as "spending time with my friends" (f=10), "meeting new people" (f=5), "evaluating together with friends" (f=4), "competition" (f=1), "joint activity" (f=8), "communication with different people" (f=4), and "being active" (f=2).

As two of the respondents explained:

"There was no socialization, so I think the application was inefficient about this." (Control group interview participant 8)

"I felt it was very beneficial for me. Particularly participating in the joint activity made me feel more popular. I also felt valued." (Experimental group interview participant 16)

Table 16: Opinions about Social Interaction

Control Group			Experimental Group		
2nd Order Theme	1st Order Theme	f	2nd Order Theme	1st Order Theme	f
Emotions (Total Frequency=24)	Pleasant	2	Emotions (Total Frequency=47)	Pleasant	12
	Happiness	2		Happiness	6
	Bored	10		Feeling valuable	10
	Inefficiency of app	7		Good	6
	Normal	3		Feeling of popularity	2
				Benefiting	4
				Exciting	7
Socialization (Total Frequency=13)	No joint activity	5	Socialization (Total Frequency=34)	Spending time with friends	10
	No sociability	4		Meeting new people	5
	So individual	4		Evaluating app with friends	4
				Competition	1
				Joint activity (positive)	8
				Communication with different people	4
				Being active	2

Source: Author

The effect of tangible rewards on social interaction is evaluated at Table 17 and experimental group defines "yes" (f=16).

Table 17: Impact of Tangible Rewards on Social Interaction

Experimental Group		
	1st Order Theme	f
(Total Frequency=16)	Yes	16

Source: Author

Table 18 shows impact of intangible rewards on social interaction is analyzed. Experimental group mention "yes" (f=14) and "not too much" (f=2).

Table 18: Impact of Intangible Rewards on Social Interaction

Experimental Group		
	1st Order Theme	**f**
(Total Frequency=16)	Yes	14
	Not too much	2

Source: Author

Table 19 explain social interaction on purchase intention. Experimental group explains "yes" (f=14) and "not too much" (f=2).

Table 19: Impact of Social Interaction on Purchase Intention

Control Group		
2nd Order Theme	**1st Order Theme**	**f**
(Total Frequency=16)	Yes	14
	Not Much	2

Source: Author

4.2.5. Human-Computer Interaction In-Depth Analysis

The participants' opinions regarding human-computer factor are evaluated in Table 20. While participants in the control group evaluates human-computer interaction factor of the application, experimental group respondents evaluate human-computer interaction factor of rewards in the application. One second theme is occurred from control group and three second themes are obtained from experimental group. Both groups emerge "emotions" ($f_{control}=15$; $f_{experimental}=26$) as the second-order theme. Furthermore, experimental group identifies "technology" (f=11) and "getting information" (f=19).

Participants of control group mention emotion as "inefficiency of app" (f=7), "boring" (f=4), "monotonous" (f=3) and "not enjoyable" (f=1). On the other hand, respondents of experimental group identify emotion as "motivation" (f=4), "feel valuable" (f=8), "feeling loyal" (f=1), "enjoyable" (f=4), and "positive" (f=9).

Experimental group mentions technology as "technological benefit" (f=6) and "digitalization" (f=5). Furthermore, getting information that is second-order theme contains "personalized information" (f=6) "tracking status of reward" (f=5) "detailed information" (f=4) and "current information" (f=4).

As two of the respondents discussed:

"I have found interaction with the application as inefficient and boring." (Control group interview participant 5)

"I think this is a technological benefit. I would like to get detailed and current information. In this respect, I was motivated and felt valuable." (Experimental group interview participant 4)

Table 20: Opinions about Human-Computer Interaction

Control Group			Experimental Group		
2nd Order Theme	1st Order Theme	f	2nd Order Theme	1st Order Theme	f
Emotions (Total Frequency=15)	Inefficiency of app	7	Emotions (Total Frequency=26)	Motivation	4
	Boring	4		Feel valuable	8
	Monotonous	3		Feeling loyal	1
	Not enjoyable	1		Enjoyable	4
				Positive	9
			Technology (Total Frequency=11)	Technological benefit	6
				Digitalization	5
			Getting Information (Total Frequency=19)	Personalized information	6
				Tracking status of reward	5
				Detailed information	4
				Current information	4

Source: Author

Table 21 shows the impact of tangible rewards on human-computer interaction Experimental group mention "yes" (f=16).

Table 21: Impact of Tangible Rewards on Human-Computer Interaction

Experimental Group		
	1st Order Theme	f
(Total Frequency=16)	Yes	16

Source: Author

Table 22 shows the effect of intangible rewards on human-computer interaction Experimental group participants mention "yes" (f=15) and "not too much" (f=1).

Table 22: Impact of Intangible Rewards on Human-Computer Interaction

Experimental Group		
	1st Order Theme	f
(Total Frequency=16)	Yes	15
	Not too much	1

Source: Author

Impact of human-computer interaction on purchase intention is explained in Table 23. Experimental group participants mention "yes" (f=15) and "not too much" (f=1).

Table 23: Human-Computer Interaction on Purchase Intention Code

Control Group		
	1st Order Theme	f
(Total Frequency=16)	Yes	15
	Not too much	1

Source: Author

4.2.6. Suggestion to Purchase In-Depth Analysis

Participants of both groups were asked if they had any suggestions for purchasing the application, and the results were analysed as shown in Table 24.

Six prevalent second order themes are discovered through interview with control group and three second order themes are revealed with experimental group interviews. Three common second themes are occurred from both groups. These themes are "emotions" ($f_{control}$=13; $f_{experimental}$=5), "diversity" ($f_{control}$=10; $f_{experimental}$=7) and "personalization" ($f_{control}$=12; $f_{experimental}$=11).

Enjoyment theme contains "peace" ($f_{control}$=3; $f_{experimental}$=3), "relax" ($f_{control}$=2; $f_{experimental}$=2). Furthermore, control group adds expressions as "enjoyment" and (f=5), "energy" (f=3).

Diversity that is second-order theme are occurred with "visual variety" ($f_{control}$=4; $f_{experimental}$=3) "music variety" ($f_{control}$=3; $f_{experimental}$=2) "content diversity" ($f_{control}$=3; $f_{experimental}$=2).

Personalization contains "personalized element" ($f_{control}$=5; $f_{experimental}$=6) "personalized music" ($f_{control}$=4; $f_{experimental}$=3) and "playlist" ($f_{control}$=3; $f_{experimental}$=2).

Social interaction theme includes "more communication" (f=4), "talking with friends" (f=3), "more participation" (f=4), "joint activity" (f=5), "sharing" (f=4), "meeting new people" (f=3).

Tangible Rewards is occurred with "discounts" (f=7), "promotion" (f=6), and "reasonable prices" (f=5).

Human-computer interaction contains "communication with the application" (f=7) "informative information" (f=6) "access to information" (f=3) "guidance" (f=3), "tracking progress" (f=3) and "interactive platform" (f=3).

As two of the respondents discussed:

" There should be a variety of music and enjoyable. As a student, I prefer to get some discounts and can request a playlist." (Control group interview participant 1)

"I think there should be content diversity as well as personalized elements like avatar." (Experimental group interview participant 9)

Table 24: Suggestion to Purchase

Control Group			Experimental Group		
2nd Order Theme	1st Order Theme	f	2nd Order Theme	1st Order Theme	f
Emotions **(Total Frequency=13)**	Enjoyment	5	**Emotions** **(Total Frequency=5)**	Relax	2
	Energy	3		Peace	3
	Peace	3			
	Relax	2			
Diversity **(Total Frequency=10)**	Visual Variety	4	**Diversity** **(Total Frequency=7)**	Visual Variety	3
	Music variety	3		Music variety	2
	Content Diversity	3		Content Diversity	2
Personalization **(Total Frequency=12)**	Personalized element	5	**Personalization** **(Total Frequency=11)**	Personalized element	6
	Personalized music	4		Personalized music	3
	Playlist	3		Playlist	2
Social Interaction **(Total Frequency=23)**	More communication	4			
	Talking with friends	3			
	More participation	4			
	Joint activity	5			
	Sharing	4			
	Meeting new people	3			
Tangible Rewards **(Total Frequency=18)**	Discount	7			
	Promotion	6			
	Reasonable price	5			
Human-Computer Interaction **(Total Frequency=25)**	Communication with the application	7			
	Informative information	6			
	Access to information	3			
	Guidance	3			
	Tracking progress	3			
	Interactive platform	3			

Source: Author

4.3. FINDINGS OF STATISTICAL ANALYSIS

In this part of the study, the findings of the statistical data are given. In this sense, firstly, normality test, descriptive statistic is explained. Then, regression analysis, independent t-test and paired sample t-test findings are explained.

4.3.1. Descriptive Statistics of Participants

All 208 participants thoroughly filled out and forwarded the surveys provided to them at the end of each week. Tables reflecting the demographic status of the participants are described in depth. According to Table 25, 208 individuals (63.5%) of the sample are women and 122 participants (36.5%) are men. Therefore, it is shown that female participants are more than man participants.

Table 25: Gender Frequency Distribution

	Gender			
	Frequency	Percent	Valid Percent	Cumulative Percent
Woman	132	63.5	63.5	63.5
Man	76	36.5	36.5	100.0
Total	208	100.0	100.0	

Source: Author

Table 26, The majority of the participants are between the ages of 18-24 (30.8%). The age range with the second highest rate was determined as 25-34 (25%). Then, it is seen that the participants have the age ranges of 35-44 (17.3%), 45-54 (17.3%), 55-65 (9.6%) respectively. Accordingly, we see that the majority of the sample of the study consists of the young population.

Table 26: Age Range Frequency Distribution

	Age			
Age Range	Frequency	Percent	Valid Percent	Cumulative Percent
18-24	64	30.8	30.8	30.8
25-34	52	25.0	25.0	55.8
35-44	36	17.3	17.3	73.1
45-54	36	17.3	17.3	90.4
55-65	20	9.6	9.6	100.0
Total	208	100.0	100.0	

Source: Author

Table 27 shows that the educational information of participants. It is seen that 41.3% of the respondents have a bachelor's degree and this is the highest rate. 20.2 % are associate degree, 19.7 % of the participants are master graduates, 11.5% are high school graduates and 7.2% of the respondents are doctorate graduates.

Table 27: Education Level Frequency Distribution

Education	Frequency	Percent	Valid Percent	Cumulative percent
Education Level				
High school	24	11.5	11.5	11.5
Associate degree	42	20.2	20.2	31.7
Bachelor	86	41.3	41.3	73.1
Master's degree	41	19.7	19.7	92.8
Doctorate degree	15	7.2	7.2	100.0
Total	208	100.0	100.0	

Source: Author

While choosing the participants, it was given importance to select equal numbers of those who are interested in meditation and those who are not. Accordingly, 104 participants are interested in meditation, 104 participants are not interested in meditation. This is shown in Table 28.

Table 28: Interest to Mindfulness Frequency Distribution

	Frequency	Percent	Valid Percent	Cumulative Percent
Interest to Mindfulness				
Yes	104	50.0	50.0	50.0
No	104	50.0	50.0	100.0
Total	208	100.0	100.0	

Source: Author

Information on the salary ranges of the participants is explained in Table 29. Accordingly, salary ranges of participants are 16001 TL and above (28.8%), 4500 TL

and below (18.3%), 4501 TL-8000 TL (17.8%), 8001 TL-12000 TL (17.8%), and 12.001-16000 TL (17.3%) respectively.

Table 29: Monthly Salary of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Income				
4500 TL and below	38	18.3	18.3	18.3
4501 TL-8000 TL	37	17.8	17.8	36.1
8001 TL-12000 TL	37	17.8	17.8	53.8
12001 TL- 16000 TL	36	17.3	17.3	71.2
16001 TL and above	60	28.8	28.8	100.0
Total	208	100.0	100.0	

Source: Author

4.3.2. Descriptive Statistics of Variables

The mean values of each item belonging to the dependent and independent variables are given in Table 30. In the second week, the results of the descriptive analysis calculated on the answers of the experimental group are explained. Accordingly, it is seen that the highest mean values belong to tangible rewards and the highest value is 4.346. The item with the lowest mean is found as 3.683 and that is related to the effect of tangible rewards on social interaction.

Table 30: Descriptive Scores of Week 2 Experimental Group

Descriptive Scores of Week 2 Experimental Group

Items	N	Mean	Std. Deviation	Item Number
The mindfulness application provides tangible rewards, such as discount, online meditation education.	104	4.346	0.833	TAN1
The mindfulness application provides tangible rewards according to task behaviors (e.g., friends invitation, sharing)	104	4.327	0.769	TAN2
Tangible reward is a popular incentive mechanism to encourage consumers' participation in mindfulness application.	104	4.279	0.818	TAN3
The mindfulness application provides intangible rewards, such as "soul power".	104	4.173	0.853	INTAN1

Statement	N	Mean	SD	Code
The mindfulness application can precisely evaluate my task behaviors and increase my "soul power".	104	4.087	0.893	INTAN2
"Soul power" is a critical measurement for my performance or engagement in mindfulness application.	104	4.115	0.816	INTAN3
I find using the tangible rewards to be enjoyable.	104	4.173	0.743	TANENJ1
The actual process of using the tangible rewards is pleasant.	104	4.144	0.769	TANENJ2
I have fun using the tangible rewards.	104	4.077	0.746	TANENJ3
I find using the intangible rewards to be enjoyable.	104	4.067	0.862	INTANENJ1
The actual process of using the intangible rewards is pleasant.	104	4.077	0.867	INTANENJ2
I have fun using the intangible rewards.	104	4.010	0.853	INTANENJ3
The tangible rewards offer me the possibility to facilitate my interaction with me and my friend when use it	104	3.683	0.714	TANSOC1
The tangible rewards offer me the possibility to give me the opportunity to interact with others.	104	3.856	0.793	TANSOC2
The tangible rewards offer me the possibility to facilitate the dialog with me and friends when playing it.	104	3.721	0.782	TANSOC3
The intangible rewards offer me the possibility to facilitate my interaction with me and my friend when use it	104	3.885	0.906	INTANSOC1
The intangible rewards offer me the possibility to give me the opportunity to interact with others.	104	3.885	0.938	INTANSOC2
The intangible rewards offer me the possibility to facilitate the dialog with me and friends when playing it.	104	3.856	0.949	INTANSOC3
My tangible rewards processed very quickly.	104	3.856	0.743	TANHCI1
Getting information from the tangible reward system was very fast.	104	3.913	0.860	TANHCI2
I was able to obtain the tangible reward information I wanted without any delay.	104	3.817	0.798	TANHCI3
My intangible rewards processed very quickly.	104	3.865	0.871	INTANHCI1
Getting information from the intangible reward system was very fast.	104	3.894	0.835	INTANHCI2
I was able to obtain the intangible reward information I wanted without any delay.	104	3.817	0.833	INTANHCI3
Given the chance, I would consider mindfulness application in the future.	104	3.760	0.853	PUR1
It is likely that I will actually purchase mindfulness application in the near future.	104	3.933	0.873	PUR2
Given the opportunity, I intend to purchase mindfulness application.	104	3.846	0.868	PUR3

Source: Author

The mean values of each item belonging to the dependent and independent variables are given for the non-gamification platform in Table 31. Accordingly, it is seen that the highest average values in all weeks belong to the enjoyment factor. The values with the lowest mean are found in the social interaction factor.

Table 31: Descriptive Scores of Weeks 1-3 and Week 2 Control Group

Descriptive Scores of week 1-2-3

Items	Week 1 Control N	Week 1 Control Mean	Week 1 Control Std. Dev.	Week 2 Control N	Week 2 Control Mean	Week 2 Control Std. Dev.	Week 3 Control N	Week 3 Control Mean	Week 3 Control Std. Dev.	Abbreviations Item Number
I find using the application to be enjoyable.	208	3.063	0.811	104	3.038	0.835	208	3.159	0.862	ENJ1
The actual process of using application are pleasant.	208	3.058	0.849	104	3.000	0.870	208	2.981	0.884	ENJ2
I have fun using the application.	208	2.913	0.969	104	3.067	0.862	208	2.962	0.862	ENJ3
The application offers me the possibility to facilitate my interaction with me and my friend when use it	208	2.361	0.780	104	2.404	0.819	208	2.673	0.873	SOC1
The application offers me the possibility to give me the opportunity to interact with others.	208	2.404	0.823	104	2.596	0.782	208	2.663	0.812	SOC2
The application offers me the possibility to facilitate the dialog with me and friends when playing it.	208	2.346	0.796	104	2.317	0.804	208	2.620	0.825	SOC3
My input processed very quickly.	208	2.673	0.828	104	2.702	0.846	208	2.856	0.856	HCI1
Getting information from the application was very fast.	208	2.865	0.912	104	2.731	0.927	208	2.731	0.813	HCI2
I was able to obtain the information I wanted without any delay.	208	2.841	0.833	104	2.798	0.874	208	2.745	0.883	HCI3
Given the chance, I would consider mindfulness application in the future.	208	2.563	0.849	104	2.567	0.845	208	2.668	0.817	PUR1
It is likely that I will actually purchase mindfulness application in the near future.	208	2.563	0.888	104	2.577	0.878	208	2.692	0.817	PUR2
Given the opportunity, I intend to purchase mindfulness application.	208	2.577	0.914	104	2.606	0.908	208	2.707	0.866	PUR3

Source: Author

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4.4. DATA PREPARATION

4.4.1. Multivariate Normality

In this section, normality tests were conducted to determine existing hypothesis testing techniques. The skewness and kurtosis of the research's scale values are evaluated to achieve this. These values should be between -1.0 and +1.0 for a normal distribution, at that point parametric tests can be performed for testing hypotheses (Hair et al., 2014). Table 32 presented the skewness and kurtosis values for each scale question. These values of all items are between -1.5 and +1.5. This indicates that the data are normally distributed for week one.

Table 32: Normality Test for Week 1

Normality Test for week 1

		ENJ_Mean Statistic	SOC_Mean Statistic	HCI_Mean Statistic	PUR_Mean Statistic
N		208	208	208	208
Mean		3.0112	2.3702	2.7933	2.5673
95% Confidence Interval for Mean	Lower Bound	2.9046	2.2744	2.6907	2.4567
	Upper Bound	3.1178	2.4660	2.8958	2.6779
5% Trimmed Mean		3.0203	2.3679	2.7842	2.5712
Median		3.0000	2.3333	2.6667	2.6667
Variance		.608	.491	.563	.655
Std. Deviation		.77976	.70061	.75038	.80907
Skewness		-.199	-.103	.139	-.151
Kurtosis		-.289	.136	.588	-.508

Source: Author

Table 33 presented the skewness and kurtosis values for each scale question. These values of all items are between -1.0 and +1.0 for week two of control group. This indicates that the data are normally distributed.

Table 33: Normality Test for Week 2-Control Group

Normality Test for week 2-Control Group

		ENJ_Mean Statistic	SOC_Mean Statistic	HCI_Mean Statistic	PUR_Mean Statistic
N		104	104	104	104
Mean		3.0353	2.4391	2.7436	2.5833
95% Confidence Interval for Mean	Lower Bound	2.8874	2.3038	2.5916	2.7382
	Upper Bound	3.1831	2.5744	2.8956	2.6779
5% Trimmed Mean		3.0427	2.4366	2.7236	2.5812
Median		3.0000	2.3333	2.6667	2.6667
Variance		.578	.484	.611	.634
Std. Deviation		.76028	.69559	.78171	.79609
Skewness		-.098	.031	.237	-.003
Kurtosis		-.475	.216	.103	-.520

Source: Author

Table 34 presented the skewness and kurtosis values for each scale question for week two of experimental group. These values of all items are between -1.5 and +1.5 This indicates that the data are normally distributed (Tabachnick & Fidell, 2018).

Table 34: Normality Test for Week 2- Experimental Group

Normality Test for week 2-Experimental Group

		TAN MEAN Statistic	INTAN MEAN Statistic	TANENJ MEAN Statistic	INTANENJ MEAN Statistic	TANSOC MEAN Statistic	INTANSOC MEAN Statistic	TANHCI MEAN Statistic	INTANHCI MEAN Statistic	PUR MEAN Statistic
N		104	104	104	104	104	104	104	104	104
Mean		4.3173	4.1250	4.1314	4.0513	3.7532	3.8750	3.8622	3.8590	3.8462
95% Confidence Interval for Mean	Lower Bound	4.1738	3.9722	4.0051	3.8957	3.6277	3.7081	3.7271	3.7047	3.6986
	Upper Bound	4.4608	4.2778	4.2577	4.2069	3.8787	4.0419	3.9973	4.0133	3.9937
5% Trimmed Mean		4.3668	4.1752	4.1531	4.0969	3.7664	3.9088	3.8796	3.8725	3.8618
Median		4.6667	4.0000	4.3333	4.0000	3.6667	4.0000	3.8333	4.0000	4.0000
Variance		.545	.617	.422	.640	.416	.736	.482	.629	.576
Std. Deviation		.73791	.78578	.64932	.80017	.64528	.85797	.69458	.79330	.75887
Skewness		-.765	-.525	-.420	-.404	-.286	-.229	-.194	.019	-.323
Kurtosis		-.667	-.485	-.915	-.633	.066	-.814	-.431	-1.009	-.971

Source: Author

Table 35 presented the skewness and kurtosis values for each scale question for week three. These values of all items are between in -1.0 and +1.0. This indicates that the data are normally distributed.

Table 35: Normality Test for Week 3

Normality Test for week 3

		ENJ Mean Statistic	SOC Mean Statistic	HCI Mean Statistic	PUR Mean Statistic
N		208	208	208	208
Mean		3.0337	2.6522	2.7772	2.6891
95% Confidence Interval for Mean	Lower Bound	2.9299	2.5538	2.6761	2.5879
	Upper Bound	3.1374	2.7507	2.8784	2.7903
5% Trimmed Mean		3.0463	2.6585	2.7746	2.6976
Median		3.0000	2.6667	2.6667	2.6667
Variance		.576	.519	.548	.548
Std. Deviation		.75887	.72031	.73998	.74032
Interquartile Range		1.33	1.00	1.00	1.33
Skewness		-.220	-.164	-.027	-.192
Kurtosis		-.698	-.398	-.355	-.708

Source: Author

4.4.2. Reliability Analysis

Before proceeding to the hypothesis testing, the survey's Likert-scaled questions are reviewed to determine the scales' reliability scores. The reliability analysis is performed using Cronbach's Alpha test technique. According to this test technique, a number between 0 and 1 shows the statistical reliability of the scale; a value more than 0.7 is considered reliable, and a score closer to 1 indicates greater reliability. Results are given in Table 36.

Table 36: Reliability Analysis Results

Reliability Statistics

Item	Cronbach's Alpha	N of Items
Enjoyment (ENJ)	.864	3
Social Interaction (SOC)	.849	3
Human-Computer Interaction (HCI)	.845	3
Purchase Intention (PUR)	.903	3
Tangible Rewards (TAN)	.902	3
Intangible Rewards (INTAN)	.908	3
Tangible Based Enjoyment (TANENJ)	.828	3
Intangible Based Enjoyment (INTANENJ)	.922	3
Tangible Based Social Interaction (TANSOC)	.799	3
Intangible Based Social Interaction (INTANSOC)	.911	3
Tangible Based Human-Computer Interaction (TANHCI)	.834	3
Intangible Based Human-Computer Interaction (INTANHCI)	.931	3

Source: Author

4.5. REGRESSION ANALYSIS

The statistical approach that investigates the connection among a dependent variable and independent variables is called regression analysis. Its primary use is to examine the existence of a causal association among two variables and characterize any linear relationship. Testing a hypothesis and predicting the consequences of an intervention on the dependent variable are types of possible uses for regression analysis. To conduct the regression analysis, the average expressions comprising each factor were collected.

4.5.1. Enjoyment Meditative Impact of Tangible Rewards on Purchase Intention

Table 37 shows the summary of the total effect model of tangible rewards on purchase intention. According to the findings, R square is found as 0.375.

Table 37: Total Effect Model Summary of Tangible Rewards on Purchase Intention

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.612ᵃ	.375	.368	.60309

a. Predictors: (Constant), TANMEAN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 61.083 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 38.

Table 38: Anova Analysis for Tangible Rewards on Purchase Intention

		ANOVAᵃ				
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	22.217	1	22.217	61.083	.000b
1	Residual	37.099	102	.364		
	Total	59.316	103			

a. Dependent Variable: PURMEAN

b. Predictors: (Constant), TANMEAN

Source: Author

In order to determine whether enjoyment has a mediating effect on the relationship between tangible rewards and purchase intention, firstly, the effect of tangible rewards on purchase intention was examined before the enjoyment variable was included in the model. The reason for this is that in order to be able to discuss about the mediating effect, first of all, tangible rewards must have a significant effect on purchase intention (Baron, Kenny, 1986). The findings are given in Table 39 and Table 40. The effect of tangible rewards on purchase intention was found to be significant before the enjoyment variable was included in the model (p=0.000). At the same time, the regression equation between the variables was determined as y=1.129+0.629x. A one-point increase in tangible rewards provides a 0.629 point increase in purchase intention and this increase is seen to be significant. The beta coefficient (β) was found to be 0.612 and based on this finding, we can state that there

is a positive relationship between tangible rewards and purchase intention. At the same time, it was shown that tangible rewards explained 37.4% (β^2=0.374) of the change in purchase intention. According to these findings, it is seen that one of the prerequisites for the mediation analysis, the necessity of having a significant effect on the purchase intention of tangible rewards, is provided.

Table 39: Total Effect Model Coefficients of Tangible Rewards on Purchase Intention

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.129	.353		3.201	.002
	TANMEAN	.629	.081	.612	7.816	.000

a. Dependent Variable: PURMEAN

Source: Author

Table 40: Indirect Effect Model Summary of Tangible Rewards on Enjoyment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.808a	.653	.650	.38426

a. Predictors: (Constant), TANMEAN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 192.109 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 41.

Table 41: Anova Analysis for Tangible Rewards on Enjoyment

		ANOVA^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	28.366	1	28.366	192.109	.000^b
2	Residual	15.061	102	.148		
	Total	43.426	103			

a. Dependent Variable: TANENJMN

b. Predictors: (Constant), TANMEAN

Source: Author

Effects of tangible rewards on purchase intention was examined by including the enjoyment variable in the model. The reason for this is that in order to discuss about the mediating effect, the independent variable must have a significant effect on the mediating variable when the mediating variable is included in the model (Baron, Kenny, 1986). According to the findings in Table 42, it is seen that the effect of tangible rewards on enjoyment is significant (p=0.000) and the regression equation between the variable was determined as m=1.061+0.711x. An increase of one point in tangible rewards causes an increase in enjoyment by 0.711 points, and this increase is seen to be significant. At the same time, the Beta coefficient (β) was found to be 0.808. This showed that there was a positive relationship between tangible rewards and enjoyment, and tangible rewards explained 65.2% (β^2=0.652) of the change in enjoyment.

Table 42: Indirect Effect Model Coefficients of Tangible Rewards on Enjoyment

		Coefficients^a				
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	1.061	.225		4.722	.000
	TANMEAN	.711	.051	.808	13.860	.000

a. Dependent Variable: TANENJMN

Source: Author

Table 43 shows the summary of the indirect effect model of tangible rewards and enjoyment on purchase intention. According to the finding's R square is found 0.454.

Table 43: Indirect Effect Model Summary of Tangible Rewards and Enjoyment on Purchase Intention

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.674[a]	.454	.444	.56609

a. Predictors: (Constant), TANENJMN, TANMEAN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 42.050 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 44.

Table 44: Anova Analysis for Tangible Rewards and Enjoyment on Purchase Intention

		ANOVA[a]				
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	26.950	2	13.475	42.050	.000[b]
3	Residual	32.366	101	.320		
	Total	59.316	103			

a. Dependent Variable: PURMEAN

b. Predictors: (Constant), TANENJMN, TANMEAN

Source: Author

In the last step, the combined effect of tangible rewards and enjoyment on purchase intention is analysed. At this point, in order for the model to have a mediating effect, enjoyment must first have a significant effect on purchase intention (Baron, Kenny, 1986). The findings obtained in Table 45 are explained in detail. The effect of enjoyment on purchase intention was significant (p=0.000) and the regression equation between the variables was found to be y=0.534+0.561m. An increase in enjoyment by 1 point causes an increase in purchase intention by 0.561 points, and this increase is significant. At the same time, the beta coefficient (β) was found to be 0.480. This

finding showed that there was a positive relationship between enjoyment and purchase intention, and enjoyment explained 23.0% (β^2=0.230) of the change in purchase intention. When the findings in Model 3 are evaluated together with the significant relationship between tangible rewards and enjoyment in Model 2, the relationship that starts with tangible rewards and continues through enjoyment and reaches the purchase intention is significant (p<0.05). However, in order for enjoyment to be considered as a variable, the direct effect of tangible rewards specified in Model 1 on purchase intention should turn into meaningless when enjoyment is included in the relationship (p<0.05) (Baron, Kenny, 1986). In other words, the effect of tangible rewards on purchase intention should be based solely on enjoyment. It is seen that the effect of tangible rewards on purchase intention is insignificant (p=0.075). Therefore, it has been determined that enjoyment is a full mediating variable.

Table 45: Indirect Effect Model Coefficients of Tangible Rewards and Enjoyment on Purchase Intention

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	.534	.365		1.461	.147
	TANMEAN	.231	.128	.224	1.797	.075
	TANENJMN	.561	.146	.480	3.843	.000

a. Dependent Variable: PURMEAN

Source: Author

As a result of these findings, the H1 hypothesis was supported.

4.5.2. Enjoyment Meditative Impact of Intangible Rewards on Purchase Intention

Table 46 shows the summary of the total effect model of intangible rewards on purchase intention. According to the findings, R square is found as 0.495.

Table 46: Total Effect Model Summary of Intangible Rewards on Purchase Intention

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.704[a]	.495	.490	.54180

a. Predictors: (Constant), INTANMN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 100.070 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 47.

Table 47: Anova Analysis for Intangible Rewards on Purchase Intention

		ANOVA[a]				
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	29.375	1	29.375	100.070	.000[b]
1	Residual	29.941	102	.294		
	Total	59.316	103			

a. Dependent Variable: PURMEAN

b. Predictors: (Constant), INTANMN

Source: Author

In order to determine whether enjoyment has a mediating effect on the relationship between intangible rewards and purchase intention, firstly, the effect of intangible rewards on purchase intention was examined before the enjoyment variable was included in the model. The reason for this is that in order to be able to discuss about the mediating effect, first of all, intangible rewards must have a significant effect on purchase intention (Baron, Kenny, 1986). The findings are given in Table 48. The effect of intangible rewards on purchase intention was found to be significant before the enjoyment variable was included in the model (p=0.000). At the same time, the regression equation between the variables was determined as y=1.043+0.680x. A one-point increase in intangible rewards provides a 0.680 point increase in purchase intention and this increase is seen to be significant. The beta coefficient (β) was found to be 0.704, and based on this finding, we can state that there is a positive relationship

between intangible rewards and purchase intention. At the same time, it was shown that intangible rewards explained 49.5% (β^2=0.495) of the change in purchase intention. According to these findings, it is seen that one of the prerequisites for the mediation analysis, the necessity of having a significant effect on the purchase intention of intangible rewards, is provided.

Table 48: Total Effect Model Coefficients of Intangible Rewards on Purchase Intention

<div align="center">Coefficients^a</div>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.043	.285		3.656	.000
	INTANMEAN	.680	.068	.704	10.004	.000

a. Dependent Variable: PURMEAN

Source: Author

Table 49 shows the summary of the indirect effect model of Intangible rewards on purchase intention. According to the finding's R square is found 0.766.

Table 49: Indirect Effect Model Summary of Intangible Rewards on Enjoyment

<div align="center">Model Summary</div>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.875^a	.766	.763	.38928

a. Predictors: (Constant), INTANMN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 333.183 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 50.

Table 50: Anova Analysis for Intangible Rewards on Enjoyment

		Sum of Squares	df	Mean Square	F	Sig.
Model						
2	Regression	50.491	1	50.491	333.183	.000[b]
	Residual	15.457	102	.152		
	Total	65.949	103			

ANOVA[a]

a. Dependent Variable: INTANENJMN

b. Predictors: (Constant), INTANMN

Source: Author

Then, the effect of intangible rewards on purchase intention was examined by including the enjoyment variable in the model. The reason for this is that in order to discuss about the mediating effect, the independent variable must have a significant effect on the mediating variable when the mediating variable is included in the model (Baron, Kenny, 1986). Accordingly, the obtained findings are given in Table 51. It is seen that the effect of intangible rewards on enjoyment is significant (p=0.000) and the regression equation between the variable was determined as m=0.376+0.891x. An increase of one point in intangible rewards causes an increase in enjoyment by 0.891 points, and this increase is seen to be significant. At the same time, the Beta coefficient (β) was found to be 0.875. This showed that there was a positive relationship between intangible rewards and enjoyment, and intangible rewards explained 76.5% (β^2=0.765) of the change in enjoyment.

Table 51: Indirect Effect Model Coefficients of Intangible Rewards on Enjoyment

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	.376	.205		1.834	.070
	INTANMN	.891	.049	.875	18.253	.000

a. Dependent Variable: INTANENJMN

Source: Author

Table 52 shows the summary of the indirect effect model of intangible rewards and enjoyment on purchase intention. According to the finding's R square is found 0.519.

Table 52: Indirect Effect Model Summary of Intangible Rewards and Enjoyment on Purchase Intention

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.720[a]	.519	.509	.53165

a. Predictors: (Constant), INTANENJMN, INTANMN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 54.430 and 0.000 respectively. The result mentions that the regression model is significant. This is shown in Table 53.

Table 53: Anova Analysis for Intangible Rewards and Enjoyment on Purchase Intention

		ANOVA[a]				
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	30.769	2	15.384	54.430	.000[b]
3	Residual	28.547	101	.283		
	Total	59.316	103			

a. Dependent Variable: PURMEAN

b. Predictors: (Constant), INTANENJMN, INTANMN

Source: Author

In the last step, the combined effect of intangible rewards and enjoyment on purchase intention is analyzed. At this point, in order for the model to have a mediating effect, enjoyment must first have a significant effect on purchase intention (Baron, Kenny, 1986). The findings obtained in Table 54 are explained in detail. The effect of enjoyment on purchase intention was significant (p=0.029) and the regression equation between the variables was found to be y=0.930+0.300m. An increase in enjoyment by one point causes an increase in purchase intention by 0.300 points, and this increase is significant. At the same time, the beta coefficient (β) was found to be 0.317. This

finding showed that there was a positive relationship between enjoyment and purchase intention, and enjoyment explained 10.0% (β^2=0.100) of the change in purchase intention. When the findings in Model 3 are evaluated together with the significant relationship between intangible rewards and enjoyment in Model 2, the relationship that starts with intangible rewards and continues through enjoyment and reaches the purchase intention is significant. ($p<0.05$). However, in order for enjoyment to be considered as a variable, the direct effect of intangible rewards specified in Model 1 on purchase intention should turn into meaningless when enjoyment is included in the relationship ($p<0.05$). (Baron, Kenny, 1986). In other words, the effect of intangible rewards on purchase intention should only be through enjoyment. When this situation is examined in Table 54, it is seen that the effect of intangible rewards on purchase intention is still significant ($p=0.003$). Therefore, it has been determined that intangible rewards are not a full mediating variable. However, if the enjoyment variable weakens the strength of the direct relationship between the intangible rewards and the purchase intention, the enjoyment variable is accepted as the partial mediating variable (Baron, Kenny, 1986). According to our findings, enjoyment is seen as a partial mediating variable. Because, while the direct relationship between intangible rewards and purchase intention was $\beta=0.704$ it was found to be $\beta=0.427$ when enjoyment was included in the relationship. Enjoyment has weakened the relationship between intangible rewards and purchase intention. In addition, while the direct relationship between intangible rewards and purchase intention was b=0.680, it was found to be b=0.412 when enjoyment was included in the relationship. This finding confirmed that enjoyment weakens the relationship between intangible rewards and purchase intention. Therefore, enjoyment has a partial mediating variable role in the relationship between intangible rewards and purchase intention.

Table 54: Indirect Effect Model Coefficients of Intangible Rewards and Enjoyment on Purchase Intention

<div align="center">Coefficients^a</div>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	.930	.284		3.269	.001
	INTANMN	.412	.138	.427	2.992	.003
	INTANENJMN	.300	.135	.317	2.221	.029

a. Dependent Variable: PURMEAN

Source: Author

As a result of these findings, the H_2 hypothesis was supported.

4.5.3. Social Interaction Meditative Impact of Tangible Rewards on Purchase Intention

Table 55 shows the summary of the indirect effect model of tangible rewards on social interaction. According to the findings, R square is found as 0.268.

Table 55: Indirect Effect Model Summary of Tangible Rewards on Social Interaction

<div align="center">Model Summary</div>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.517^a	.268	.260	.55497

a. Predictors: (Constant), TANMEAN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 37.251 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 56.

Table 56: Anova Analysis for Tangible Rewards on Social Interaction

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	11.473	1	11.473	37.251	.000[b]
2	Residual	31.415	102	.308		
	Total	42.888	103			

a. Dependent Variable: TANSOCMN

b. Predictors: (Constant), TANMEAN

Source: Author

The effect of tangible rewards on purchase intention was examined by including the social interaction variable in the model. The reason for this is that in order to discuss about the mediating effect, the independent variable must have a significant effect on the mediating variable when the mediating variable is included in the model (Baron, Kenny, 1986). Accordingly, the obtained findings are given in Table 57. It is seen that the effect of tangible rewards on social interaction is significant (p=0.000) and the regression equation between the variable was determined as m=1.801+0.452x. An increase of one point in tangible rewards causes an increase in social interaction by 0.452 points, and this increase is seen to be significant. At the same time, the Beta coefficient (β) was found to be 0.517. This showed that there was a positive relationship between tangible rewards and social interaction, and tangible rewards explained 26.7% (β^2=0.267) of the change in social interaction.

Table 57: Indirect Effect Model Coefficients of Tangible Rewards on Social Interaction

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	1.801	.325		5.548	.000
	TANMEAN	.452	.074	.517	6.103	.000

a. Dependent Variable: TANSOCMN

Source: Author

Table 58 shows the summary of the indirect effect model of tangible rewards and social interaction on purchase intention. According to the finding's R square is found 0.417.

Table 58: Indirect Effect Model Summary of Tangible Rewards and Social Interaction on Purchase Intention

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.646[a]	.417	.405	.58528

a. Predictors: (Constant), TANSOCMN, TANMEAN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 36.078 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 59.

Table 59: Anova Analysis for Tangible Rewards and Social Interaction on Purchase Intention

						ANOVA[a]
Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	24.718	2	12.359	36.078	.000[b]
	Residual	34.598	101	.343		
	Total	59.316	103			

a. Dependent Variable: PURMEAN

b. Predictors: (Constant), TANSOCMN, TANMEAN

Source: Author

In the last step, the combined effect of tangible rewards and social interaction on purchase intention is analyzed. At this point, in order for the model to have a mediating effect, social interaction must first have a significant effect on purchase intention (Baron, Kenny, 1986). The findings obtained in Table 60 are explained in detail. Effect of social interaction on purchase intention was significant (p=0.008) and the regression equation between the variables was found to be y=0.621+0.282m. An increase in social interaction by one point causes an increase in purchase intention by 0,282 points, and this increase is significant. At the same time, the beta coefficient (β)

was found to be 0.240. This finding showed that there was a positive relationship between social interaction and purchase intention, and social interaction explained 5.76% (β^2=0.057) of the change in purchase intention. When the findings in Model 3 are evaluated together with the significant relationship between tangible rewards and social interaction in Model 2, the relationship that starts with tangible rewards and continues through social interaction and reaches the purchase intention is significant (p<0.05). However, in order for social interaction to be considered as a variable, the direct effect of tangible rewards specified in Model 1 on purchase intention should turn into meaningless when social interaction is included in the relationship (p<0.05) (Baron, Kenny, 1986). In other words, the effect of tangible rewards on purchase intention should only be through social interaction. When this situation is examined in Table 60, it is seen that the effect of tangible rewards on purchase intention is still significant (p=0.000). Therefore, it has been determined that tangible rewards are not a full mediating variable. However, if the social interaction variable weakens the strength of the direct relationship between the tangible rewards and the purchase intention, the social interaction variable is accepted as the partial mediating variable. (Baron, Kenny, 1986). According to our findings, social interaction is seen as a partial mediating variable. Because, while the direct relationship between tangible rewards and purchase intention was β=0.612 it was found to be β=0.488 when social interaction was included in the relationship. Social interaction has weakened the relationship between tangible rewards and purchase intention. In addition, while the direct relationship between tangible rewards and purchase intention was b=0.629 it was found to be b=0.502 when social interaction was included in the relationship. This finding confirmed that social interaction weakens the relationship between tangible rewards and purchase intention. Therefore, social interaction has a partial mediating variable role in the relationship between tangible rewards and purchase intention.

Table 60: Indirect Effect Model Coefficients of Tangible Rewards and Social Interaction on Purchase Intention

		Coefficients[a]				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
3	(Constant)	.621	.391		1.590	.115
	TANMEAN	.502	.091	.488	5.495	.000
	TANSOCMN	.282	.104	.240	2.702	.008

a. Dependent Variable: PURMEAN

Source: Author

As a result of these findings, the H_3 hypothesis was supported.

4.5.4. Social Interaction Meditative Impact of Intangible Rewards on Purchase Intention

Table 61 shows the summary of the indirect effect model of intangible rewards on purchase intention. According to the findings, R square is found as 0.522.

Table 61: Indirect Effect Model Summary of Intangible Rewards on Social Interaction

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.723[a]	.522	.518	.59594

a. Predictors: (Constant), INTANMN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 111.487 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 62.

Table 62: Anova Analysis for Intangible Rewards on Social Interaction

ANOVA[a]

	Model	Sum of Squares	df	Mean Square	F	Sig.
2	Regression	39.594	1	39.594	111.487	.000[b]
	Residual	36.225	102	.355		
	Total	75.819	103			

a. Dependent Variable: INTNSOCMN

b. Predictors: (Constant), INTANMN

Source: Author

The effect of intangible rewards on purchase intention was examined by including the social interaction variable in the model. The reason for this is that in order to discuss about the mediating effect, the independent variable must have a significant effect on the mediating variable when the mediating variable is included in the model (Baron, Kenny, 1986). Accordingly, the obtained findings are given in Table 63. It is seen that the effect of intangible rewards on social interaction is significant (p=0.000) and the regression equation between the variable was determined as m=0.620+0.78x. An increase of 1 point in intangible rewards causes an increase in social interaction by 0.789 points, and this increase is seen to be significant. At the same time, the Beta coefficient (β) was found to be 0.723. This showed that there was a positive relationship between intangible rewards and social interaction, and intangible rewards explained 52.2% (β^2=0.522) of the change in social interaction.

Table 63: Indirect Effect Model Coefficients of Intangible Rewards on Social Interaction

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	.620	.314		1.977	.051
	INTANMEAN	.789	.075	.723	10.559	.000

a. Dependent Variable: INTANSOCMN

Source: Author

Table 64 shows the summary of the indirect effect model of intangible rewards and social interaction on purchase intention. According to the findings R square is found as 0.594.

Table 64: Indirect Effect Model Summary of Intangible Rewards and Social Interaction on Purchase Intention

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.771[a]	.594	.586	.48835

a. Predictors: (Constant), INTANSOCMN, INTANMN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 73.860 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 65.

Table 65: Anova Analysis for Intangible Rewards and Social Interaction on Purchase Intention

		ANOVA[a]				
	Model	Sum of Squares	df	Mean Square	F	Sig.
	Regression	35.229	2	17.615	73.860	.000[b]
3	Residual	24.087	101	.238		
	Total	59.316	103			

a. Dependent Variable: PURMEAN

b. Predictors: (Constant), INTANSOCMN, INTANMN

Source: Author

In the last step, the combined effect of intangible rewards and social interaction on purchase intention is analyzed. At this point, in order for the model to have a mediating effect, social interaction must first have a significant effect on purchase intention (Baron, Kenny, 1986). The findings obtained in Table 66 are explained in detail. Effect of social interaction on purchase intention was significant (p=0.000) and the regression equation between the variables was found to be y=0.793+0.402m. An increase in social interaction by one point causes an increase in purchase intention by 0.402 points, and this increase is significant. At the same time, the beta coefficient (β)

was found to be 0.455. This finding showed that there was a positive relationship between social interaction and purchase intention, and social interaction explained 20.7% ($\beta^2=0.207$) of the change in purchase intention. When the findings in Model 3 are evaluated together with the significant relationship between intangible rewards and social interaction in Model 2, the relationship that starts with intangible rewards and continues through social interaction and reaches the purchase intention is significant. ($p<0.05$). However, in order for social interaction to be considered as a variable, the direct effect of intangible rewards specified in Model 1 on purchase intention should turn into meaningless when social interaction is included in the relationship ($p<0.05$). (Baron, Kenny, 1986). In other words, the effect of intangible rewards on purchase intention should only be through social interaction. When this situation is examined in Table 66, it is seen that the effect of intangible rewards on purchase intention is still significant ($p=0.000$). Therefore, it has been determined that intangible rewards are not a full mediating variable. However, if the social interaction variable weakens the strength of the direct relationship between the intangible rewards and the purchase intention, the social interaction variable is accepted as the partial mediating variable (Baron, Kenny, 1986). According to our findings, social interaction is seen as a partial mediating variable. Because, while the direct relationship between intangible rewards and purchase intention was $\beta=0.704$, it was found to be $\beta=0.375$ when social interaction was included in the relationship. Social interaction has weakened the relationship between intangible rewards and purchase intention. In addition, while the direct relationship between intangible rewards and purchase intention was b=0.680, it was found to be b=0.362 when social interaction was included in the relationship. This finding confirmed that social interaction weakens the relationship between intangible rewards and purchase intention. Therefore, social interaction has a partial mediating variable role in the relationship between intangible rewards and purchase intention.

Table 66: Indirect Effect Model Coefficients of Intangible Rewards and Social Interaction on Purchase Intention

		Coefficients^a				
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	.793	.262		3.028	.003
	INTANMN	.362	.089	.375	4.091	.000
	INTANSOCMN	.402	.081	.455	4.955	.000

a. Dependent Variable: PURMEAN

Source: Author

As a result of these findings, the H$_4$ hypothesis was supported.

4.5.5. Human-Computer Interaction Meditative Impact of Tangible Rewards on Purchase Intention

Table 67 shows the summary of the indirect effect model of tangible rewards on human-computer interaction. According to the findings, R square is found as 0.268.

Table 67: Indirect Effect Model Summary of Tangible Rewards on Human-Computer Interaction

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.518^a	.268	.261	.59719

a. Predictors: (Constant), TANMEAN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 37.331 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 68.

Table 68: Anova Analysis for Tangible Rewards on Human-Computer Interaction

		Sum of Squares	df	Mean Square	F	Sig.
ANOVA^a						
Model						
2	Regression	13.314	1	13.314	37.331	.000^b
	Residual	36.377	102	.357		
	Total	49.691	103			

a. Dependent Variable: TANHCIMN

b. Predictors: (Constant), TANMEAN

Source: Author

The effect of tangible rewards on purchase intention was examined by including the human-computer interaction variable in the model. The reason for this is that in order to discuss about the mediating effect, the independent variable must have a significant effect on the mediating variable when the mediating variable is included in the model (Baron, Kenny, 1986). Accordingly, the obtained findings are given in Table 69. It is seen that the effect of tangible rewards on human-computer interaction is significant (p=0.000) and the regression equation between the variable was determined as m=1.759+0.487x. An increase of one point in tangible rewards causes an increase in human-computer interaction by 0.487 points, and this increase is seen to be significant. At the same time, the Beta coefficient (β) was found to be 0.518. This showed that there was a positive relationship between tangible rewards and human-computer interaction, and tangible rewards explained 26.8% ($β^2$=0.268) of the change in human-computer interaction.

Table 69: Indirect Effect Model Coefficients of Tangible Rewards on Human-Computer Interaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Coefficients^a						
		B	Std. Error	Beta		
2	(Constant)	1.759	.349		5.036	.000
	TANMEAN	.487	.080	.518	6.110	.000

a. Dependent Variable: TANHCIMN

Source: Author

Table 70 shows the summary of the indirect effect model of tangible rewards and human-computer interaction on purchase intention. According to the findings R square is found as 0.595.

Table 70: Indirect Effect Model Summary of Tangible Rewards and Human-Computer Interaction on Purchase Intention

		Model Summary		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.771[a]	.595	.587	.48760

a. Predictors: (Constant), TANHCIMN, TANMEAN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 74.244 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 71.

Table 71: Anova Analysis for Tangible Rewards and Human-Computer Interaction on Purchase Intention

			ANOVA[a]			
	Model	Sum of Squares	df	Mean Square	F	Sig.
	Regression	35.303	2	17.652	74.244	.000[b]
3	Residual	24.013	101	.238		
	Total	59.316	103			

a. Dependent Variable: PURMEAN

b. Predictors: (Constant), TANHCIMN, TANMEAN

Source: Author

In the last step, the combined effect of tangible rewards and human-computer interaction on purchase intention is analysed. At this point, in order for the model to have a mediating effect, human-computer interaction must first have a significant effect on purchase intention (Baron, Kenny, 1986). The findings obtained in Table 72 are explained in detail. Effect of human-computer interaction on purchase intention was significant (p=0.000) and the regression equation between the variables was found to be y=0.074+0.600m. An increase in human-computer interaction by one point causes an increase in purchase intention by 0.600 points, and this increase is

significant. At the same time, the beta coefficient (β) was found to be 0.549. This finding showed that there was a positive relationship between human-computer interaction and purchase intention, and human-computer interaction explained 30.1% ($\beta^2=0.301$) of the change in purchase intention. When the findings in Model 3 are evaluated together with the significant relationship between tangible rewards and human-computer interaction in Model 2, the relationship that starts with tangible rewards and continues through human-computer interaction and reaches the purchase intention is significant ($p<0.05$). However, in order for human-computer interaction to be considered as a variable, the direct effect of tangible rewards specified in Model 1 on purchase intention should turn into meaningless when human-computer interaction is included in the relationship ($p<0.05$) (Baron, Kenny, 1986). In other words, the effect of tangible rewards on purchase intention should only be through human-computer interaction. When this situation is examined in Table 72, it is seen that the effect of tangible rewards on purchase intention is still significant ($p=0.000$). Therefore, it has been determined that tangible rewards are not a full mediating variable. However, if the human-computer interaction variable weakens the strength of the direct relationship between the tangible rewards and the purchase intention, the human-computer interaction variable is accepted as the partial mediating variable. (Baron, Kenny, 1986). According to our findings, human-computer interaction is seen as a partial mediating variable. Because, while the direct relationship between tangible rewards and purchase intention was $\beta=0.612$ it was found to be $\beta=0.328$ when human-computer interaction was included in the relationship. Human-computer interaction has weakened the relationship between tangible rewards and purchase intention. In addition, while the direct relationship between tangible rewards and purchase intention was b=0.629 it was found to be b=0.337 when human-computer interaction was included in the relationship. This finding confirmed that human-computer interaction weakens the relationship between tangible rewards and purchase intention. Therefore, human-computer interaction has a partial mediating variable role in the relationship between tangible rewards and purchase intention.

Table 72: Indirect Effect Model Coefficients of Tangible Rewards and Human-Computer Interaction on Purchase Intention

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	.074	.319		.232	.817
	TANMEAN	.337	.076	.328	4.431	.000
	TANHCIMN	.600	.081	.549	7.419	.000

a. Dependent Variable: PURMEAN

Source: Author

As a result of these findings, the H_5 hypothesis was supported.

4.5.6. Human-Computer Interaction Meditative Impact of Intangible Rewards on Purchase Intention

Table 73 shows the summary of the indirect effect model of intangible rewards on human-computer interaction. According to the findings, R square is found as 0.495.

Table 73: Indirect Effect Model Summary of Intangible Rewards on Human-Computer Interaction

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.639^a	.409	.403	.61291

a. Predictors: (Constant), INTANMN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 70.553 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 74.

Table 74: Anova Analysis for Intangible Rewards on Human-Computer Interaction

				ANOVA^a		
Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	26.504	1	26.504	70.553	.000^b
	Residual	38.317	102	.376		
	Total	64.821	103			

a. Dependent Variable: INTANHCIMN

b. Predictors: (Constant), INTANMN

Source: Author

The effect of intangible rewards on purchase intention was examined by including the human-computer interaction variable in the model. The reason for this is that in order to discuss about the mediating effect, the independent variable must have a significant effect on the mediating variable when the mediating variable is included in the model (Baron, Kenny, 1986). Accordingly, the obtained findings are given in Table 75. It is seen that the effect of intangible rewards on human-computer interaction is significant (p=0.000) and the regression equation between the variable was determined as m=1.196+0.646x. An increase of 1 point in intangible rewards causes an increase in human-computer interaction by 0.646 points, and this increase is seen to be significant. At the same time, the Beta coefficient (β) was found to be 0.639. This showed that there was a positive relationship between intangible rewards and human-computer interaction, and intangible rewards explained 40.8% (β^2=0.408) of the change in human-computer interaction.

Table 75: Indirect Effect Model Coefficients of Intangible Rewards on Human-Computer Interaction

				Coefficients^a		
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	1.196	.323		3.707	.000
	INTANMN	.646	.077	.639	8.400	.000

a. Dependent Variable: INTANHCIMN

Source: Author

Table 76 shows the summary of the indirect effect model of intangible rewards and human-computer interaction on purchase intention. According to the findings R square is found as 0.558.

Table 76: Indirect Effect Model Summary of Intangible Rewards and Human-Computer Interaction on Purchase Intention

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
3	.747[a]	.558	.549	.50945

a. Predictors: (Constant), INTANHCIMN, INTANMN

Source: Author

When the Anova table is inspected, the F value and significance value are found as 63.774 and 0 respectively. The result mentions that the regression model is significant. This is shown in Table 77.

Table 77: Anova Analysis for Intangible Rewards and Human-Computer Interaction on Purchase Intention

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	33.103	2	16.552	63.774	.000[b]
	Residual	26.213	101	.260		
	Total	59.316	103			

a. Dependent Variable: PURMEAN

b. Predictors: (Constant), INTANHCIMN, INTANMN

Source: Author

In the last step, the combined effect of intangible rewards and human-computer interaction on purchase intention is analyzed. At this point, in order for the model to have a mediating effect, human-computer interaction must first have a significant effect on purchase intention (Baron, Kenny, 1986). The findings obtained in Table 78 are explained in detail. Effect of human-computer interaction on purchase intention was significant (p=0.000) and the regression equation between the variables was found to be y=0.670+0.312m. An increase in human-computer interaction by one point causes an increase in purchase intention by 0.312 points, and this increase is

significant. At the same time, the beta coefficient (β) was found to be 0.326. This finding showed that there was a positive relationship between human-computer interaction and purchase intention, and human-computer interaction explained 10.6% (β^2=0.106) of the change in purchase intention. When the findings in Model 3 are evaluated together with the significant relationship between intangible rewards and human-computer interaction in Model 2, the relationship that starts with intangible rewards and continues through human-computer interaction and reaches the purchase intention is significant. (p<0.05). However, in order for human-computer interaction to be considered as a variable, the direct effect of intangible rewards specified in Model 1 on purchase intention should turn into meaningless when human-computer interaction is included in the relationship (p<0.05) (Baron, Kenny, 1986). In other words, the effect of intangible rewards on purchase intention should only be through human-computer interaction. When this situation is examined in Table 78, it is seen that the effect of intangible rewards on purchase intention is still significant (p=0.000). Therefore, it has been determined that intangible rewards are not a full mediating variable. However, if the human-computer interaction variable weakens the strength of the direct relationship between the intangible rewards and the purchase intention, the human-computer interaction variable is accepted as the partial mediating variable (Baron, Kenny, 1986). According to our findings, human-computer interaction is seen as a partial mediating variable. Because, while the direct relationship between intangible rewards and purchase intention was β=0.704, it was found to be β=0.495 when human-computer interaction was included in the relationship. Human-computer interaction has weakened the relationship between intangible rewards and purchase intention. In addition, while the direct relationship between intangible rewards and purchase intention was b=0.680, it was found to be b=0.478 when human-computer interaction was included in the relationship. This finding confirmed that human-computer interaction weakens the relationship between intangible rewards and purchase intention. Therefore, human-computer interaction has a partial mediating variable role in the relationship between intangible rewards and purchase intention.

Table 78: Indirect Effect Model Coefficients of Intangible Rewards and Human-Computer Interaction on Purchase Intention

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	.670	.286		2.344	.021
	INTANMN	.478	.083	.495	5.756	.000
	INTANHCIMN	.312	.082	.326	3.790	.000

Coefficients^a is the table sub-heading.

a. Dependent Variable: PURMEAN

Source: Author

As a result of these findings, the H_6 hypothesis was supported.

Besides, all hypotheses are supported based on regression analysis and these results are given in 79.

Table 79: Results of Hypothesis Testing

Research Hypothesis	Result
H1: Enjoyment mediates the effects of tangible rewards on purchase intention.	Supported
H2: Enjoyment mediates the effects of intangible rewards on purchase intention.	Supported
H3: Social interaction mediates the effects of tangible rewards on purchase intention.	Supported
H4: Social interaction mediates the effects of intangible rewards on purchase intention.	Supported
H5: Human-computer interaction mediates the effects of tangible rewards on purchase intention.	Supported
H6: Human-computer interaction mediates the effects of intangible rewards on purchase intention.	Supported

Source: Author

4.6. INDEPENDENT SAMPLE T-TEST

This section's objective is to determine whether there are significant differences between the mean values of experimental and control groups. Accordingly, the results of the independent t-tests for three weeks are given in line with the surveys conducted at the end of each week.

4.6.1. Independent Sample T-Test of Week 1

Pre-test scores of the groups were compared before gamification based experimental design in order to compare means of two group for the factors of enjoyment, social interaction, human-computer interaction, and purchase intention. In this sense, survey questions related to these factors were asked to the control group and experimental group at the end of the first week. In both groups, 104 participants submitted their answers. When the results are examined, the mean values of the control group and experimental group of enjoyment, social interaction, human-computer interaction, and purchase intention are found respectively as; $enjmean_{control}=2.9776$, $enjmean_{experimental}=3.0449$, $socmeancontrol=2.3237$, $socmean_{experimental}=2.4167$, $hcimean_{control}=2.8077$, $hcimean_{experimental}=2.7788$, $purmean_{control}=2.5417$, $purmean_{experimental} =2.5929$. That is shown in Table 80.

Table 80: Group Statistics for Week 1

Group Statistics

Variables	Group	N	Mean	Std. Deviation	Std. Error Mean
ENJmean	Control	104	2.9776	.80353	.07879
	Experiment	104	3.0449	.75764	.07429
SOCmean	Control	104	2.3237	.74239	.07280
	Experiment	104	2.4167	.65648	.06437
HCImean	Control	104	2.8077	.79466	.07792
	Experiment	104	2.7788	.70689	.06932
PURmean	Control	104	2.5417	.84147	.08251
	Experiment	104	2.5929	.77856	.07634

Source: Author

As a result of the independent sample t-test, the significance values for the factors of enjoyment, social interaction, human-computer interaction, and purchase intention are found as 0.535, 0.340, 0.782 and 0.649, respectively. It is seen that all values are greater than 0.05, which indicates that there is no significant difference between the two groups regarding these factors. This is shown in Table 81.

Table 81: Independent Sample Tests for Variables of Week 1

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
ENJmean	Equal variances assumed	.353	.553	-.622	206	.535	-.06731	.10829	-.28082	.14620
	Equal variances not assumed			-.622	205.292	.535	-.06731	.10829	-.28082	.14620
SOCmean	Equal variances assumed	1.550	.215	-.956	206	.340	-.09295	.09718	-.28454	.09864
	Equal variances not assumed			-.956	202.960	.340	-.09295	.09718	-.28455	.09866
HCImean	Equal variances assumed	1.637	.202	.277	206	.782	.02885	.10429	-.17677	.23446
	Equal variances not assumed			.277	203.242	.782	.02885	.10429	-.17679	.23448
PURmean	Equal variances assumed	.880	.349	-.456	206	.649	-.05128	.11241	-.27291	.17035
	Equal variances not assumed			-.456	204.769	.649	-.05128	.11241	-.27292	.17035

Source: Author

4.6.2. Independent Sample T-Test of Week 2

In order to compare gamification-based experiment method enjoyment, social interaction, human-computer interaction and purchase intention, the measurement was carried out after manipulation for experimental group. Furthermore, data were obtained from control group to compare results. At the end of the second week, the mean values of enjoyment, social interaction, human-computer interaction, and purchase intention of control group were 3.0353, 2.4391, 2.7436, respectively. When the questions about the enjoyment of the experimental group from tangible and intangible rewards were asked, the mean values were 4.1314 and 4.0513, respectively.

The social interaction of the experimental group from tangible and intangible rewards mean values were 3.7532 and 3.8750. Besides, human-computer interaction of the experimental group from tangible and intangible rewards mean values were 3.8622 and 3.8590. This is given in Table 82.

Table 82: Group Statistics for Week 2

Group Statistics

Variables	Group	N	Mean	Std. Deviation	Std. Error Mean
TANENJmean	Control	104	3.0353	.76028	.07455
	Experiment	104	4.1314	.64932	.06367
INTANENJmean	Control	104	3.0353	.76028	.07455
	Experiment	104	4.0513	.80017	.07846
TANSOCmean	Control	104	2.4391	.69559	.06821
	Experiment	104	3.7532	.64528	.06327
INTANSOCmean	Control	104	2.4391	.69559	.06821
	Experiment	104	3.8750	.85797	.08413
TANHCImean	Control	104	2.7436	.78171	.07665
	Experiment	104	3.8622	.69458	.06811
INTANHCImean	Control	104	2.7436	.78171	.07665
	Experiment	104	3.8590	.79330	.07779
PURmean	Control	104	2.5833	.79609	.07806
	Experiment	104	3.8462	.75887	.07441

At the end of the second week, as a result of the independent sample t-test, the significance values of all factors are 0.000 and this value is less than 0.05. Accordingly, there is a significant difference in all factors between two groups. The mean difference regarding the factors is given as -1.09615, -1.01603, -1.31410, -1.43590, -1.11859, -1.11538 and -1.26282, respectively. This is shown in Table 83.

Table 83: Independent Sample Tests for Variables of Week 2

Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
									Lower	Upper
TANENJ mean	Equal variances assumed	1.481	.225	-11.181	206	.000	-1.09615	.09804	-1.28945	-.90286
	Equal variances not assumed			-11.181	201.077	.000	-1.09615	.09804	-1.28947	-.90283
INTANENJ mean	Equal variances assumed	.278	.599	-9.387	206	.000	-1.01603	.10823	-1.22941	-.80264
	Equal variances not assumed			-9.387	205.464	.000	-1.01603	.10823	-1.22942	-.80263
TANSOC mean	Equal variances assumed	.249	.619	-14.124	206	.000	-1.31410	.09304	-1.49753	-1.13067
	Equal variances not assumed			-14.124	204.850	.000	-1.31410	.09304	-1.49754	-1.13067
INTANSOC mean	Equal variances assumed	7.925	.005	-13.258	206	.000	-1.43590	.10831	-1.64943	-1.22237
	Equal variances not assumed			-13.258	197.553	.000	-1.43590	.10831	-1.64948	-1.22231
TANHCI mean	Equal variances assumed	.447	.505	-10.909	206	.000	-1.11859	.10254	-1.32075	-.91643
	Equal variances not assumed			-10.909	203.188	.000	-1.11859	.10254	-1.32077	-.91641
INTANHCI mean	Equal variances assumed	.782	.378	-10.213	206	.000	-1.11538	.10921	-1.33070	-.90007
	Equal variances not assumed			-10.213	205.955	.000	-1.11538	.10921	-1.33070	-.90007
PUR mean	Equal variances assumed	.025	.874	-11.709	206	.000	-1.26282	.10785	-1.47545	-1.05019
	Equal variances not assumed			-11.709	205.529	.000	-1.26282	.10785	-1.47545	-1.05019

Source: Author

4.6.3. Independent Sample T-Test of Week 3

The post-test was conducted in the third week when gamification was removed. In this sense, questionnaire questions related to the enjoyment, social interaction, human-computer interaction, and purchase intention were asked to the control group and the experimental group at the end of the third week. When the results are considered, the mean values of enjoyment, social interaction, human-computer interaction and purchase intention in the control group and experimental group are respectively: $enjmean_{control}$=2.9295, $enjmean_{experimental}$=3.1378, $socmean_{control}$=2.5000, $socmean_{experimental}$=2.8045, $hcimean_{control}$=2.6763, $hcimean_{experimental}$=2.8782, $purmean_{control}$=2.6186 and $purmean_{experimental}$=2.7596. That is shown in Table 84.

Table 84: Group Statistics for Week 3

Group Statistics

Variables	Group	N	Mean	Std. Deviation	Std. Error Mean
ENJMEAN	Control	104	2.9295	.73687	.07226
	Experiment	104	3.1378	.76972	.07548
SOCMEAN	Control	104	2.5000	.65194	.06393
	Experiment	104	2.8045	.75558	.07409
HCIMEAN	Control	104	2.6763	.72623	.07121
	Experiment	104	2.8782	.74327	.07288
PURMEAN	Control	104	2.6186	.73942	.07251
	Experiment	104	2.7596	.73802	.07237

Source: Author

According to the independent sample t-test result, the significance values are 0.047, 0.002, 0.049 for enjoyment, social interaction, and human-computer interaction respectively. These values are less than 0.05 and there is a significant difference in the mean values for these dimensions between two groups. Besides, significance value of purchase intention is given as 0.170 and this is not significant. That is given in Table 85.

Table 85: Independent Sample Tests for Variables of Week 3

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
ENJMEAN	Equal variances assumed	.323	.570	-1.994	206	.047	-.20833	.10449	-.41434	-.00233
	Equal variances not assumed			-1.994	205.609	.047	-.20833	.10449	-.41434	-.00233
SOCMEAN	Equal variances assumed	2.987	.085	-3.112	206	.002	-.30449	.09786	-.49742	-.11156
	Equal variances not assumed			-3.112	201.674	.002	-.30449	.09786	-.49744	-.11153
HCIMEAN	Equal variances assumed	.674	.413	-1.982	206	.049	-.20192	.10190	-.40282	-.00103
	Equal variances not assumed			-1.982	205.889	.049	-.20192	.10190	-.40282	-.00103
PURMEAN	Equal variances assumed	.266	.607	-1.377	206	.170	-.14103	-.10244	-.34300	-.06094
	Equal variances not assumed			-1.377	205.999	.170	-.14103	-.10244	-.34300	-.06094

Source: Author

4.6.4. Independent Sample T-Test Based on State of Interest in Meditation of Participants

The mean purchase intention values of participants who are interested in meditation or not are 3.1154 and 2.0705 for the first week. The significance value is 0.000 for both results, which is significant because it is less than 0.05. Therefore, there is a difference between the purchase intentions of the two groups. The mean purchase intention values of respondents who are interested in meditation and not are 3.8397 and 3.8526 for the second week. The significance value was found as 0.932 for both results, which is not significant because it is more than 0.05. It is not significant, and no significant difference was found regarding the purchase intention of the two groups.

The mean purchase intention values of people interested in meditation and not are 2.7436 and 2.7756 in the third week. The significance value is 0.826 and this is more than 0.05. Thus, this value is not significant. Independent sample t-test based on state of interest in meditation of participants are given in Table 86.

Table 86: Independent Sample T-Test Based on State of Interest in Meditation of Participants

Group Statistics

Variables	Mediation Interest	N	Mean	Std. Deviation	Std. Error Mean
PURWEEK1	Yes	52	3.1154	.55576	.07707
	No	52	2.0705	.59897	.08306
PURWEEK2	Yes	52	3.8397	.82576	.11451
	No	52	3.8526	.69362	.09619
PURWEEK3	Yes	52	2.7436	.80741	.11197
	No	52	2.7756	.66902	.09278

Source: Author

4.7. PAIRED SAMPLE T-TEST

Paired t-test was applied to the experimental group and the control group. Accordingly, the mean value of the control group's first-week purchase intention was 2.5417. The mean values in the second and third weeks were 2.5833 and 2.6186, respectively. On the other hand, the mean value of the experimental group's first-week purchase intention was 2.5929. The purchase intention mean values of experimental group in the second and third weeks were 3.8462 and 2.7596 respectively. This is shown in Table 87.

Table 87: Paired Samples Statistics and Correlations

Paired Samples Statistics and Correlations

			Mean	N	Std. Deviation	Std. Error Mean
Control	Pair 1	PurmeanWeek1	2.5417	104	.84147	.08251
		PurmeanWeek2	2.5833	104	.79609	.07806
	Pair 2	PurmeanWeek2	2.5833	104	.79609	.07806
		PurmeanWeek3	2.6186	104	.73942	.07251
	Pair 3	PurmeanWeek1	2.5417	104	.84147	.08251

			2.6186	104	.73942	.07251
		PurmeanWeek3				
	Pair 1	PurmeanWeek1	2.5929	104	.77856	.07634
		PurmeanWeek2	3.8462	104	.75887	.07441
Experimental	Pair 2	PurmeanWeek2	3.8462	104	.75887	.07441
		PurmeanWeek3	2.7596	104	.73802	.07237
	Pair 3	PurmeanWeek1	2.5929	104	.77856	.07634
		PurmeanWeek3	2.7596	104	.73802	.07237

Source: Author

Accordingly, focusing on the week-based differences in the individuals in the control group, the difference between the first week and the second week is -.04167. Furthermore, significance value is found as 0.023 and this is significant because this value is less than 0.05. The difference in the second and third weeks is calculated as -.03526. This value is not significant because the significance value is found as 0.187 and this value is greater than 0.05. Besides, the difference between the first and the third is calculated -.7692. This value is significant because the significance value is 0.023 and this is less than 0.05. Based on the week-based differences in the respondents in the experimental group are considered, the difference between the first week and the second week is -1.2532. Furthermore, this value is significant because the significance value is 0.000 and this is less than 0.05. Also, the difference in the second and third weeks is found as 1.08654. This value is significant because its significance value is 0.000 and this is less than 0.05. Besides, the difference between the first and the third is calculated as -.16667. This value is not significant because its significance value is 0.136, that is greater than 0.05. This is given in Table 88.

Table 88: Paired Samples Test

Paired Samples Test

					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Control	Purmean Week1-Week2	-.04167	.18397	.01804	-.07744	-.00589	-2.310	103	.023
Control	Purmean Week2-Week3	-.03526	.27052	.02653	-.08786	.01735	-1.329	103	.187
Control	Purmean Week1-Week3	-.07692	.33889	.03323	-.14283	-.01102	-2.315	103	.023
Experimental	Purmean Week1-Week2	-1.25321	1.12680	.11049	-1.47234	-1.03407	-11.342	103	.000
Experimental	Purmean Week2-Week3	1.08654	.55931	.05484	.97777	1.19531	19.811	103	.000
Experimental	Purmean Week1-Week3	-.16667	1.13015	.11082	-.38645	.05312	-1.504	103	.136

Source: Author

4.8. DISCUSSION

Today, numerous transactions are conducted via online platforms, allowing individuals to appease their socialization requirements online. Consequently, it is vital to analyze the effect of social interaction on purchase intention. On the other hand, the astounding advancement of technology has made human-computer interaction possible. Enjoyment is one of the most significant aspects of this research. Enjoyment, which is one of the primary reasons people play games, is crucial to gamification.

Emotion and social interaction factors came to the fore in the analysis conducted to understand the participants' interpretations of tangible and intangible rewards. It is seen that the participants mostly focused on the dimension of emotion. In this sense, based on the results of the analysis, it can be stated that tangible and intangible rewards activate emotions. In addition, there is no negative comment in any of the statements regarding both types of rewards. Only one person reported that intangible rewards did not affect him much. In the analysis of tangible rewards, it was

revealed that these types of rewards may increase usage. In this sense, it is thought that it will be important to use tangible rewards in order to increase the usage in the mobile application.

Regarding the enjoyment factor, some differences were observed in the control and experimental groups. The control group found the platform without rewards boring, monotonous, and a little enjoyable. The expression of pleasure was expressed just two times by the control group respondents. The person who stated that he found it enjoyable also expressed his feelings by expressing that she found it monotonous even if she found it enjoyable. On the other hand, the experimental group stated that the application was pleasurable, exciting, motivated, and made them happy. Only one person stated that they found it less amusing. He also conveyed that tangible rewards are more fun. At the same time, he stated that he is not very involved with technology.

A number of questions were asked of the participants in order to understand whether the manipulations in the study had the intended effects. In this sense, manipulation check has been carried out in the research. It has been stated that tangible and intangible rewards affect enjoyment. It has been said once that it is not very fun with regard to intangible rewards. It seems that this overlaps with the "it does not affect me too much" part, and the person who conveyed this emphasized that tangible rewards are important to him.

Concurrently, the manipulation check question was posed to confirm the impact of enjoyment on purchase intention. The responses indicate that enjoyment influences purchase intention.

Regarding social interaction, emotions and socialization factors came to the fore in both groups. While the control group stated that the social interaction was boring, inefficient, and normal, the experimental group stated that was pleasant, good, exiting and benefiting. In addition, other important statements that emerged in the experimental group are related to the fact that people feel happy, valuable, and popular. In the control group, there are some expressions regarding the social interaction dimension of the application that it is pleasant and happy. These people reported that they meditated constantly and invite to their friends. They stated that the application created such effects on them in the first place, but they still felt that social interaction was inefficient.

Regarding socialization, the individuality of the practice, the absence of sociability in the practice and the absence of a common activity come to the fore, while the opposite is the case in the experimental group. Expressions such as spending time with friends, meeting new people, evaluating app with friends, competition, joint activity, communication with different people and being active have emerged. In this sense, the effect of rewards contributed to the socialization of people. Particularly, spending time with friends and doing a common activity has been the most important thing for participants under the socialization dimension.

Manipulation check has been occurred to understand the impacts of tangible and intangible rewards on social interaction. It has been revealed that tangible and intangible rewards affect social interaction.

Two participants identified intangible rewards impact on social interaction as "not too much". As an explanation for this, individuals have stated that tangible rewards are more valuable for them.

Besides, it has been stated that social interaction has an effect on purchase intention. However, two participants used the expressions "not too much". As an explanation for this, users have stated that enjoyment and human-computer interaction are more important to them.

In terms of human-computer interaction, the emotional factor dominated for both groups. The control group expressed their feelings about human-computer interaction as boring, monotonous, not enjoyable and inefficiency of app. On the other hand, experimental group participants gave positive feedback about their interaction with the application. They reported that they felt valued, motivated, loyalty, positive and enjoyable. In this sense, it is seen that human-computer interaction can affect users' emotions positively.

On the other hand, experimental group users associated human-computer interaction with technology. Technology second-order theme includes two first-order themes that are technological benefit and digitalization. Especially young people stated that they attach importance to digitalization.

Another benefit provided by the human-computer interaction is related to the getting information, and this interaction provided benefits such as personalized information, tracking status of reward, detailed information, and current information.

In order to understand whether tangible and intangible rewards affect human-computer interaction, a manipulation check was performed. It has been stated that tangible and intangible rewards affect human and computer. However, one participant stated that intangible rewards would not increase human-computer interaction much. This person conveyed that tangible rewards are more important. At the same time, he stated that he is not very experienced in technology.

Besides, manipulation check question was asked to confirm the effect of human-computer interaction on purchase intention. The answers reveal that human-computer interaction has an effect on purchase intention. However, it was stated that it is not important once, and this person conveyed that social interaction is the most important thing.

Participants were asked whether they had any suggestions for the purchase of the application. Related to this, emotions, diversity, and personalization factors were expressed in both groups. Apart from this, control group participants emphasized three more factors. These factors are tangible rewards, social interaction, and human-computer interaction.

The control group stated that the application should provide the emotions such as enjoyment, energy, peace and relax suggested that development should be made to increase these emotions. Experimental group participants, on the other hand, made statements about developing the relaxation and peace dimension of the application. According to the results of the interviews, it is considered that both the control and experimental groups place value on emotions. However, the majority of the experimental group's proposals for the development of emotions were related to peace, and no comments were made regarding enjoy. This demonstrates that individuals enjoy the gamified platform. Moreover, participants of the control group and experimental group focused on the diversity factor. Participants requested that the dimensions of music variety, content variety and visual variety be increased. The personalization factor was also requested by both groups. Personalized element, playlist and personalized music have been suggested to purchase intention. Control group users made requests for more communication, talking with friends, more participation, joint activity, sharing, meeting new people regarding the social interaction factor. Participants of control group requested discounts, promotions, and reasonable prices

regarding tangible rewards. In addition, statements about human-computer interaction emerged in the control group. These are specified as communication with the application, informative information, access to information, guidance, tracking progress and interactive platform.

Participants in the control group have requests to communicate with the application and people. In addition, they need tangible rewards. This situation also reveals the effect of the factors that are thought to be important and investigated in the study.

One of the most important contributions of the research is that the tangible reward earned by individuals has a social dimension. In this sense, a donation is made to the Aegean Contemporary Education Foundation on behalf of the first 5 winner who fulfilled the necessary duties for earning a tangible reward. Based on this, winners stated that they felt very useful because they added value to the other person's life.

Based on the interview findings, differences were found between the control group and the experimental group. As a result of the one-to-one interviews with both groups, it is understood that the control group stated that the factors of enjoyment, social interaction and human-computer interaction in practice were lacking.

One of the most important findings of the research is that the enjoyment factor acts as a full mediator variable between tangible rewards and purchase intention. Accordingly, although the application provides a tangible reward, the lack of the enjoyment factor may negatively affect the purchasing intentions of the users. During this juncture, the importance of enjoyment factor on the purchase intention emerges to a great extent.

On the other hand, social interaction, and human-computer interaction act as partial mediating variables between both types of rewards and purchase intention. Likewise, it is seen that the enjoyment dimension acts as a partial mediator variable in the relationship between intangible rewards and purchase intention. Starting from here, it is understood that intangible rewards have a direct effect on purchase intention. At the same time, there is a partial intermediary variability relationship with tangible rewards, factors other than enjoyment, and purchase intention. According to the conclusion that can be drawn from here, tangible rewards can also directly affect the

purchase intention. However, if there is no enjoyment, there is no positive effect of tangible rewards on purchase intention.

As a result of the independent t-test conducted in the first week, it was revealed that there was no significant difference between the control group and the experimental group in terms of enjoyment, social interaction, human-computer interaction, and purchase intention. This situation is important for the experimental design because it is important for the reliability of the study to have similar results between the groups before being exposed to manipulation. In the second week, a significant difference is observed in the mean values of enjoyment, social interaction, human-computer interaction, and purchase intention based on the independent t-test results of the control and experimental group. There was a significant increase in the mean values of the experimental group. The highest mean value is seen in the effect of tangible rewards on enjoyment. In addition to this, the mean of enjoyment arising from intangible rewards has increased significantly. Social interaction based on intangible rewards has a higher mean value than social interaction based on tangible rewards, and both variables have a much higher mean value than the control group mean value. In addition, the mean value of human-computer interaction based on tangible and intangible rewards obtained from the experimental group is considerably higher than the control group. At the same time, the mean values of social interaction and human-computer interaction, based on the data of the experimental group, are very close to each other. There is a significant difference between the control group and the experimental group for the third week when gamification was removed. In this sense, the mean values of the experimental group for all variables are higher than the mean values of the control group. The mean values of the experimental group in the second week had the highest values. On the other hand, the higher means of variables of the experimental group were more than the control group at the end of the third week. Paired sample t-test was conducted to evaluate the three-week process of the experimental group. Accordingly, it is seen that the mean value of the second week's purchase intention is higher than the first and third weeks. At the same time, the third week's purchasing mean value is higher than the first week's purchasing intention mean value. In this sense, even if gamification was removed, participants gave more positive responses after being exposed to gamification. When the means of purchase intention

of the participants in the control group are examined, it is seen that the week with the highest average is the third week, although there is no big difference for three weeks.

An independent t-test was conducted regarding the mean purchase intention of individuals in the experimental group who are interested and not interested in meditation. Accordingly, according to the results of the first week, it is seen that the mean purchase intention of individuals who are interested and not interested in meditation is higher than those who are interested in meditation. At the end of the second week, the average purchase intention of both groups increased. People who are not interested in meditation have a higher average than those who are interested in meditation. In the third week, the purchase intention of both groups decreased. No significant difference was found between the purchase intention of the two groups. Accordingly, it can be said that gamification has a significant effect on the purchase intention of both groups, as well as a more positive effect on the purchase intention of those who are not interested in meditation.

4.8.1. Practical Implications

It is pivotal for businesses to be able to analyze in depth the factors that influence purchase intention. This study is believed to contribute to the economies of businesses. It is thought that one of the contributions of the study to mindfulness-based mobile applications is to enable them to develop in line with the ideas of different groups; the reason for this is that while selecting the participants, attention was paid to including people with different demographic characteristics. Businesses can add the necessary components in their applications if they comprehend the requirements of gamification and expectations of their intended target customers. Simultaneously, opinions of those interested in meditation and those not interested in meditation were collected.

4.8.2. Theoretical Implications

Academically, the research contributes in a number of ways. Although the effect of social interaction and enjoyment factors on purchase intention has been explored, the effect of human-computer interaction on purchase intention in the context of gamification has not been investigated before. Another important

contribution of the research is that it tries to analyze the effect of tangible and intangible rewards on human-computer interaction. It has been determined that this effect has not been examined in the literature. It is thought that this situation is valuable in terms of originality of this study. On the other hand, it is seen that studies in the literature are mostly focused on intangible rewards. This is valuable in understanding purchase intention of tangible rewards through enjoyment, social interaction, and human-computer interaction. This effect was investigated for the first time with this study. On the other hand, the majority of studies on gamification and mindfulness-based mobile applications are grounded in psychology. In this regard, it is anticipated that it will make a significant contribution to marketing literature.

4.8.3. Limitations of The Study

Experimental design of this study is constrained by the hardware requirements of the application. Therefore, only people with the newest version of the operating systems were able to participate in the experimental study. For android user's minimum requirement is Android 8.0 and above and for IOS, version 11.0 and above is the main requirement for installing the application.

There were also other obstacles which participants faced during installation of the beta version of the software. Participants followed a 4-step process to download the application to their phone. These difficulties were mainly caused due to the beta version installation requirements of the operating systems. Due to operating system requirements 2 participants who were unable to download could not participate in the research study.

The phase of sample selection was recognized as a significant constraint during the investigation. In accordance with the research methodology, it was necessary to achieve demographic and interest equality between the control group and the experimental group. It was more challenging to get a representative sample of men interested in meditation. The number of men in the study is lower than the number of women. However, because the literature indicates that more women than men are interested in meditation, the study was continued with a larger female group.

Due to the app's primary offering of the English language, the sample base selection was made of English-speaking users. A further limitation of the study is that

almost ninety percent of the participants are Turkish. Despite the fact that there are participants from nations such as Germany, the Netherlands, and the United States, the majority of participants are from Turkey. Due to the necessity of first selecting persons with the purposeful sampling method, however, the ease of easy sampling was required. Therefore, it was determined that more individuals from Turkey are reachable with these restrictions.

Since a mindfulness-based mobile application was used in the research, a reward-oriented gamification mechanism was designed due to the importance of motivating people in a positive way. However, punishment, intense competition and levels in game designs are not included.

4.8.4. Future Research Suggestions

As a result of the studies, it is apparent that very little research has been carried out regarding gamification and purchase intention. In the context of marketing, it is thought that gamification has several components that require development and investigation. In the research, the experimental approach was utilized, and the interview and questionnaire methods were favored for analysis. However, analyses can be conducted through focus group research. Due to the fact that the language of the mobile application is English, it is possible to conduct an experiment in most countries. For this reason, studies in different countries can be continued in line with the aims of the research. At the same time, the fact that the study can be carried out with mobile telephones can allow a large number of users to participate in the experiment and analyzes can be made with more participants. Although the study focuses on a particular application, additional research can be conducted on other mindfulness-based applications.

On the other hand, the experiment designed for gamification can be easily adapted to other applications, so mobile applications in different sectors can also contribute to themselves. In addition, the expressions related to the themes of personalization and diversity in both groups show that these dimensions of the application can be improved. In future analyzes, research on these factors can be done. At the same time, integrating personalization and diversity themes into the mobile application can contribute to companies.

Since a mindfulness-based mobile application was used in the research, a reward-oriented gamification mechanism was designed due to the importance of motivating people in a positive way. However, punishment, intense competition and levels in game designs are not included. By adding different elements, the gamification design can be done again, and the results can be analyzed. At the same time, the effects of the rewards on three variables were investigated, but studies can be carried out with different variables. In addition, experiments with different rewards can be carried out and more effective tangible rewards can be included. This study can also be essential for social marketing that mindfulness-based practices are intertwined with the society, and research on these issues can also be carried out. As a result, it is thought that this study will contribute to both users, businesses, and academic world.

CONCLUSION

In the digital world, the increasing importance of mindfulness-based mobile applications has increased undeniably. Individuals prefer to use such applications for a variety of purposes, including sleeping, reducing stress, and enhancing concentration. Today, these types of mobile applications are readily accessible to individuals. These applications' contributions to businesses and the economy are undeniably significant. Simultaneously, it is seen that gamification is used in many different fields and the interest in gamification is increasing day by day. However, both theoretical and experimental investigations on how these rewards stimulate purchase behaviour are still in their infancy and need to be expanded. This study aimed to determine the factors affecting the purchase intention of the rewards used in gamification and to test these factors in order to fill this void in the literature. As a result of the analysis methods carried out in this direction, the effects of enjoyment, social interaction and human-computer interaction on purchase intention were demonstrated with an experimental method. In conclusion, introducing gamification into mindfulness-based mobile applications can increase users' motivation to utilize the app, thereby maximizing the benefits of mindfulness practices.

This research consists of four parts. In the first part of the study, gamification literature is explained in detail. Explanations were made on the concept of mindfulness and mindfulness-based mobile applications. Then, the relationship between gamification and awareness has been revealed. At the same time, the literature on the relationship between gamification and mindfulness-based mobile applications is explained. Detailed literature was prepared to explain the purchase intention. In this context, the factors related to purchase intention and the relationship between gamification and purchase intention are revealed. In the third part of the research, detailed information about the two studies carried out in line with the purpose of the research is given. In this context, purpose, methodology, research model development, conceptual model hypotheses, the mobile application for experimental design, design of experiment, measurement scales, sampling of studies, data collection, data analysis and limitations of the study are explained were identified. In the last part of the study, qualitative and quantitative research findings are explained.

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APPENDICES

APPENDIX 1. Interview and Focus Group Questions of Study 1

Interview and Focus Group Questions of Study 1

1. What do you think about getting rewards?
2. What do you think about sharing rewards?
3. What do you think about the visibility of the rewards?
4. What else influences your purchase intention?

APPENDIX 2. Survey Questions (English)

This questionnaire was created to be used in the thesis study at Dokuz Eylül University, Graduate School of Social Sciences, Department of Business Administration, Business Administration Doctorate Program. The information you share will be kept confidential within the framework of academic ethics and will only be used for academic research. It will take you approximately 3 minutes to fill out this form. Your participation in the survey is very valuable to us. Thank you very much for your contribution to our scientific study.

Please answer the following questions.

1- Strongly disagree, 2- Disagree, 3- Neither agree nor disagree, 4- Agree, 5- Strongly agree

Survey Questions for Non-Gamified Platform

	1	2	3	4	5
Enjoyment					
I find using the application to be enjoyable.					
The actual process of using application is pleasant.					
I have fun using the application.					
Social Interaction					
The application offers me the possibility to facilitate my interaction with me and my friend when use it					
The application offers me the possibility to give me the opportunity to interact with others.					
The application offers me the possibility to facilitate the dialog with me and friends when playing it.					
Human-Computer Interaction					
My input processed very quickly.					
Getting information from the application was very fast.					

	1	2	3	4	5
I was able to obtain the information I wanted without any delay.					
Purchase Intention					
Given the chance, I would consider mindfulness application in the future.					
It is likely that I will actually purchase mindfulness application in the near future.					
Given the opportunity, I intend to purchase mindfulness application.					

Demographic Questions

Gender	( ) Female			( ) Male	
Age	18-24	25-34	35-44	45-54	55-64
Educational status	High school graduate	Associate Degree (graduate)	Bachelor (graduate)	Master (graduate)	Doctorate (graduate)
Interested in meditation?				Yes	No
Personal Monthly Income	4500 TL and below	4501 TL-8000 TL	8001 TL-12000 TL	12001 TL-16000 TL	16001 TL and above

Survey Questions for Gamified Platform

	1	2	3	4	5
Tangible Rewards					
The mindfulness application provides tangible rewards (such as discounts, online meditation education)					
The mindfulness application provides tangible rewards according to task behaviors (e.g., friends invitation, sharing)					
Tangible reward is a popular incentive mechanism to encourage consumers' participation in mindfulness application.					
Intangible Rewards					
The mindfulness application provides intangible rewards, such as "soul power".					

The mindfulness application can precisely evaluate my task behaviors and increase my "soul power".					
Intangible rewards are a critical measurement for my performance or engagement in mindfulness application.					
Enjoyment (Tangible Rewards)					
I find using the tangible rewards to be enjoyable.					
The actual process of using the tangible rewards is pleasant.					
I have fun using the tangible rewards.					
Enjoyment (Intangible Rewards)					
I find using the intangible rewards to be enjoyable.					
The actual process of using the intangible rewards is pleasant.					
I have fun using the intangible rewards.					
Human-Computer Interaction (Tangible Rewards)					
My tangible rewards processed very quickly.					
Getting information from the tangible reward system was very fast.					
I was able to obtain the tangible reward information I wanted without any delay.					
Human-Computer Interaction (Intangible Rewards)					
My intangible rewards processed very quickly.					
Getting information from the intangible reward system was very fast.					
I was able to obtain the intangible reward information I wanted without any delay.					
Social Interaction (Tangible Rewards)					
The tangible rewards offer me the possibility to facilitate my interaction with me and my friend when use it.					
The tangible rewards offer me the possibility to give me the opportunity to interact with others.					
The tangible rewards offer me the possibility to facilitate the dialog with me and friends when playing it.					
Social Interaction (Intangible Rewards)					
The intangible rewards offer me the possibility to facilitate my interaction with me and my friend when use it.					

The intangible rewards offer me the possibility to give me the opportunity to interact with others.					
The intangible rewards offer me the possibility to facilitate the dialog with me and friends when playing it.					
Purchase Intention					
Given the chance, I would consider mindfulness application in the future.					
It is likely that I will actually purchase mindfulness application in the near future.					
Given the opportunity, I intend to purchase mindfulness application.					

Demographic Questions

Gender		( ) Female		( ) Male	
Age	18-24	25-34	35-44	45-54	55-64
Educational status	High school graduate	Associate Degree (graduate)	Bachelor (graduate)	Master (graduate)	Doctorate (graduate)
Interested in meditation?				Yes	No
Personal Monthly Income	4500 TL and below	4501 TL-8000 TL	8001 TL-12000 TL	12001 TL-16000 TL	16001 TL and above

APPENDIX 3. Survey Questions (Turkish)

Bu anket formu Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü İşletme Anabilim Dalı İngilizce İşletme Yönetimi Doktora Programı'nda tez çalışmasında kullanılmak üzere oluşturulmuştur. Paylaşacağınız bilgiler, akademik etik çerçevesinde gizli tutulacak olup sadece akademik araştırma için kullanılacaktır. Söz konusu formu doldurmak yaklaşık 3 dakikanızı alacaktır. Ankete katılımınız bizim için çok değerlidir. Bilimsel çalışmamıza sağladığınız katkı için çok teşekkür ediyoruz.

Lütfen aşağıdaki soruları cevaplayınız.

1- Kesinlikle katılmıyorum, 2- Katılmıyorum, 3- Ne katılıyorum ne katılmıyorum, 4- Katılıyorum, 5- Kesinlikle katılıyorum

Oyunlaştırma Dahil Edilmeyen Platforma İlişkin Türkçe Anket Soruları

	1	2	3	4	5
Eğlence					
Uygulamayı kullanmayı eğlenceli buluyorum.					
Uygulamayı kullanmak zevkli bir süreçtir.					
Uygulamayı kullanmaktan keyif alıyorum.					
Sosyal Etkileşim					
Uygulama, arkadaşlarımla etkileşimimi kolaylaştırma imkânı sunmaktadır.					
Uygulamayı kullanan diğer kişilerle etkileşim kurma fırsatım vardır.					
Uygulama, arkadaşlarımla diyaloğumu kolaylaştırma imkânı sunmaktadır.					
İnsan-Bilgisayar Etkileşimi					
Uygulama tarafından verilerim hızlıca işlenmektedir.					
Uygulama ile ilgili bilgilere çok hızlı ulaşırım.					
Uygulama ile ilgili bilgiyi gecikmeden elde edebildim.					
Satın Alma Niyeti					

İleride bu uygulamayı düşünebilirim.					
Muhtemelen yakın gelecekte uygulamayı satın alacağım.					
Fırsatım olduğunda, uygulamayı satın almak niyetindeyim.					

Demografik Sorular

Cinsiyet		( ) Kadın		( ) Erkek	
Yaşınız	18-24	25-34	35-44	45-54	55-64
Eğitim durumu	Lise mezunu	Ön Lisans (mezun)	Lisans (mezun)	Yüksek Lisans (mezun)	Doktora (mezun)
Meditasyon ile ilgileniyor musunuz?				Evet	Hayır
Kişisel Aylık Geliriniz	4500 TL and below	4501 TL-8000 TL	8001 TL-12000 TL	12001 TL-16000 TL	16001 TL and above

Oyunlaştırma Dahil Edilen Platforma İlişkin Türkçe Anket Soruları

	1	2	3	4	5
Maddi Ödüller					
Uygulama maddi ödüller sağlamaktadır. (Örnek, indirim, online meditasyon eğitimi)					
Uygulama, verilen görevlere göre (örneğin, arkadaş daveti, paylaşım) maddi ödüller sağlamaktadır.					
Maddi ödül, uygulamaya katılımı teşvik eder.					
Sanal Ödüller					
Uygulama, "ruh gücü" gibi sanal ödüller sağlamaktadır.					
Uygulama, yaptığım görevleri tam olarak değerlendirerek "sanal ödüllerimi" arttırmaktadır.					
Aldığım "sanal ödüller", performansım veya uygulamaya katılımım için önemli bir göstergedir.					
Eğlence (Maddi Ödüller)					
Maddi ödülleri kullanmayı eğlenceli buluyorum.					
Maddi ödülleri kullanmak zevkli bir süreçtir.					
Maddi ödülleri kullanmaktan keyif alıyorum.					
Eğlence (Sanal Ödüller)					
Sanal ödülleri kullanmayı eğlenceli buluyorum.					
Sanal ödülleri kullanmak zevkli bir süreçtir.					
Sanal ödülleri kullanmaktan keyif alıyorum.					

İnsan-Bilgisayar Etkileşimi (Maddi Ödüller)					
Uygulamada kazandığım maddi ödüller sistem tarafından hızlıca işlenmektedir.					
Uygulamada kazandığım maddi ödüllerim ile ilgili bilgiye çok hızlı ulaşırım.					
Maddi ödüllerim ile ilgili bilgiyi gecikmeden elde edebildim.					
İnsan-Bilgisayar Etkileşimi (Sanal Ödüller)					
Uygulamada kazandığım sanal ödüller sistem tarafından hızlıca işlenmektedir.					
Uygulamada kazandığım sanal ödüllerim ile ilgili bilgiye çok hızlı ulaşırım.					
Sanal ödüller ile ilgili bilgiyi gecikmeden elde edebildim.					
Sosyal Etkileşim (Maddi Ödüller)					
Maddi ödüller arkadaşlarımla etkileşimimi kolaylaştırma imkânı sunmaktadır.					
Maddi ödüller uygulamayı kullanan kişilerle etkileşim kurma fırsatı vermektedir.					
Maddi ödüller arkadaşlarımla diyaloğumu kolaylaştırma imkânı sunmaktadır.					
Sosyal Etkileşim (Sanal Ödüller)					
Sanal ödüller arkadaşlarımla etkileşimimi kolaylaştırma imkânı sunmaktadır.					
Sanal ödüller uygulamayı kullanan kişilerle etkileşim kurma fırsatı vermektedir.					
Sanal ödüller arkadaşlarımla diyaloğumu kolaylaştırma imkânı sunmaktadır.					
Satın Alma Niyeti					
İleride bu uygulamayı düşünebilirim.					
Muhtemelen yakın gelecekte uygulamayı satın alacağım.					
Fırsatım olduğunda, uygulamayı satın almak niyetindeyim.					

Demografik Sorular

Cinsiyet		( ) Kadın		( ) Erkek	
Yaşınız	18-24	25-34	35-44	45-54	55-64
Eğitim durumu	Lise mezunu	Ön Lisans (mezun)	Lisans (mezun)	Yüksek Lisans (mezun)	Doktora (mezun)
Meditasyon ile ilgileniyor musunuz?				Evet	Hayır
Kişisel Aylık Geliriniz	4500 TL and below	4501 TL-8000 TL	8001 TL-12000 TL	12001 TL-16000 TL	16001 TL and above

APPENDIX 4. Interview Questions of Study 2

Interview Questions for Gamified Platform

Questions to be sent to the group in which the reward is included.

What are your thoughts on intangible rewards such as earning soul power and badges?

What are your thoughts on tangible rewards like discounts?

How did social activities such as the sharing of rewards affect you?

Will this affect your purchasing intention?

Were you able to get immediate information about the rewards from the system?

Will this affect your purchasing intention?

Did you find rewards enjoyable?

Will this affect your purchasing intention?

What is your suggestion to purchase this application?

Have you purchased this type of application before?

Interested in meditation?

Was it enjoyable to collect points and earn badges in the Visutask section of the app?

Were the discount and mindfulness education you got due to the Visutask part of the app enjoyable?

Did the group activities you engage in owing to the rewards you have earned (tangible and intangible) positively affect your social interaction?

Did the group activities you engage in owing to the tangible rewards you have earned positively affect your social interaction?

Did the group activities you engage in owing to the intangible rewards you have earned positively affect your social interaction?

Did seeing the tangible rewards you won in the system and the feedback you received from the application positively influence you?

Did seeing the intangible rewards you won in the system and the feedback you received from the application positively influence you?

Interview Questions for Non-Gamified Platform

Did you find the application fun?

Will this affect your purchasing intention?

Do in-group activities affect your application purchase request?

Will this affect your purchasing decision?

Were you able to get information from the system about the information you wanted immediately?

Will this affect your purchasing intention?

What is your suggestion to purchase this application?

Have you purchased this type of application before?

Interested in meditation?