Lisbon School of Economics & Management
Universidade de Lisboa

MASTERS IN MANAGEMENT (MIM)

MASTERS FINAL WORK

INTERNSHIP REPORT

MONETIZING PLAYER ENGAGEMENT: PLAYERS' ATTITUDES AND IN-GAME PURCHASES IN FREE-TO-PLAY GAMES

IVO MIGUEL BALTAR MONTEIRO VALENTIM

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MAY – 2024

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ABSTRACT

The gaming industry is steadily evolving and intersecting innovation and excitement. With the growing popularity of free-to-play F2P) games, Roblox and Fortnite have emerged as cultural sensations, captivating the minds of millions. This worldwide phenomenon reflects the industry's unwavering commitment to achieving expansion and engaging in discovery. During the COVID-19 epidemic, gaming became a source of connection and amusement for individuals around the world, despite the unique hurdles presented by the situation. The gaming business has exceeded expectations and achieved new levels of success, demonstrating its cultural influence and durability. For this reason, this study aims to determine the factors that lead to players' spending behavior within the free-to-play game genre and examine how it impacts their playing habits.

This study intends to examine the user motivations to engage in gaming, specifically in the free-to-play category. Additionally, this study intends to evaluate the player's propensity to spend money on a game that was initially free. For this purpose, a quantitative methodology was employed, using a questionnaire that targeted video game players with prior experience purchasing in-app items. The survey was built on the Qualtrics platform and distributed online. The questionnaire generated 79 valid responses. To analyze the results this study applies the partial least squares structural equation modeling method (PLS-SEM), which revealed relationships between perceived usefulness and player attitudes as it comes to free-to-play games. Those results provide useful insights into player interactions in this dynamic gaming environment. At the business level, this study provides strategic guidance for PlayStation Portugal that can influence player engagement.

Keywords: Free-to-Play, Frequency of Use, Perceived Usefulness, Perceived Easiness, Attitude towards Using, Spending Behavior

RESUMO

A indústria dos videojogos está a evoluir constantemente, intersectando inovação e emoção. Com a crescente popularidade dos jogos gratuitos (*Free-to-Play* - F2P), Roblox e Fortnite emergiram como sensações culturais, cativando as mentes de milhões. Este fenómeno global reflete o compromisso inabalável da indústria em alcançar expansão e envolver-se na descoberta. Durante a epidemia de COVID-19, os videojogos tornaram-se uma fonte de ligação e entretenimento para indivíduos em todo o mundo, apesar dos desafios únicos apresentados pela situação. O negócio dos videojogos superou as expectativas e atingiu novos níveis de sucesso, demonstrando a sua influência cultural e durabilidade. Por esta razão, este estudo tem como objetivo determinar os fatores que levam ao comportamento de gastos dos jogadores no género de jogos gratuitos e examinar como isso afeta os seus hábitos de jogo.

Este estudo pretende examinar as motivações dos utilizadores para se envolverem em videojogos, especificamente na categoria de *free-to-play*. Além disso, visa avaliar a propensão do jogador para gastar dinheiro num jogo que era inicialmente gratuito para jogar. Para este efeito, foi utilizada uma metodologia quantitativa, através de um questionário direcionado a jogadores de videojogos com experiência prévia em compras de itens in-app. A pesquisa foi desenvolvida na plataforma Qualtrics e distribuída online, tendo gerado 79 respostas válidas. Para analisar os resultados, este estudo aplica o método de modelação estrutural de equações parciais mínimas (PLS-SEM), que revelou relações entre a utilidade percebida e as atitudes dos jogadores em relação aos jogos *free-to-play*. Estes resultados fornecem informações úteis sobre as interações dos jogadores neste ambiente dinâmico de videojogos. Ao nível empresarial, este estudo oferece orientação estratégica para a PlayStation Portugal, que pode influenciar o envolvimento dos jogadores.

Palavras-chave: *Free-to-Play*, Frequência de Utilização, Utilidade Percebida, Facilidade Percebida, Atitude em relação à Utilização, Comportamento de Gastos

ABBREVIATIONS

ATL: Above-the-Line

AVE: Average Variation Extracted

BTL: Below-the-Line

CD-ROM: Compact Disc Read-Only Memory

CEO: Chief Executive Officer

CR: Composite Reliability

D&D: Dungeons & Dragons

DLC: Downloadable Content

F2P: Free-to-Play

HTMT: Heterotrait-Monotrait

ICT: Information and Communication Technology

ID: Identification

ISFE: Interactive Software Federation of Europe

MMO: Massively Multiplayer Online

MMORPG: Massively Multi-User Online Graphical Environments

MUD: Multi-User Dungeons / Multi-User Domains

NPC: Non-Player Characters

OSRS: Old School RuneScape

PC: Personal Computer

PLS: Partial Least Squares

PS: PlayStation

PSN: PlayStation Network

RPG: Role-Playing Game

SDG: Sustainable Development Goals

SDT: Self-Determination Theory

SIE: Sony Interactive Entertainment

SRMSR: Standardized Root Mean Square Residual

TAM: Technology Acceptance Model

TPB: Theory of Planned Behavior

USD: United States Dollar

VIF: Variance Inflation Factor

WoW: World of Warcraft

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CHAPTER 1 – INTRODUCTION

This internship report details the experience gained at Sony Interactive Entertainment Portugal - PlayStation Portugal. The internship holds significance for academic advancement as it provides practical exposure to the professional field, fulfilling the criteria for the Internship Report as part of the Master's Final Work (MFW). The primary responsibility during this period involved overseeing the strategic management of hardware and software products, encompassing tasks such as developing media campaigns, managing communication materials, coordinating with agencies, and preparing reports. This diverse experience contributed to a broader understanding of the sector and the improvement of professional skills. The internship's objective is to enhance readiness to address challenges in the professional domain, aligning with academic goals, and providing comprehensive insights into the interactive entertainment and gaming sector.

The gaming business has seen a significant transformation with the rise of Free-to-Play (F2P) games, altering user engagement and revenue generation dynamics. Statista (2023) reported that the worldwide free-to-play (F2P) gaming market generated approximately $111.37 billion in 2023 and is expected to increase to $117.7 billion by 2024. Around 85% of total gaming revenue comes from free-to-play games, making up a significant portion of the industry's earnings (TrueList, 2024). Free-to-play games are unique in that they can be downloaded and played at no cost, but players are prompted to make purchases of virtual items during gameplay (Alha et al., 2014). These transactions, known as microtransactions, provide gamers with in-game perks or cosmetic improvements.

Roblox and Fortnite are two popular free-to-play games. Roblox, a “block-like” video game, was established in 2006 and has seen a revival in the past several years. Fortnite, a battle royale game, became famous in 2017 due to its fort-building and survival features. Both games have gained immense popularity due to their free-to-play model and the endorsement of major content creators and streamers, solidifying their position as one of the largest gaming platforms globally (Mieczkowski, 2023). Fortnite generated $4.4 billion in sales in 2022 and $5.4 billion in 2018. Roblox's revenue in 2022 was $2.225 billion, showing a 15.94% increase from 2021 (Iqbal, 2024). Fortnite generates much of its revenue through in-app purchases made by users using V-Bucks, similar to Roblox, where players may also make in-game purchases using the local currency, Robux (Huemer, 2023). Given that both currencies may be bought with real

money and used to purchase cosmetic items, it is clear how crucial cosmetics are to promoting in-game purchases.

This internship report regarding the experience at Sony Interactive Entertainment Portugal - PlayStation Portugal aligns with Goal 9 of sustainable development goals (SDGs) by stressing industry, innovation, and infrastructure. The internship provided valuable hands-on experience, especially in strategic management of hardware and software products, which enhances technological innovation in the gaming industry. The report examines how changes in the gaming industry, such as the popularity of free-to-play games, could relate to Goal 8, which emphasizes decent work and economic growth. It highlights the evolving economic trends and job prospects in the gaming sector.

The study's main objective is to uncover the complex reasons influencing consumer spending in virtual worlds, particularly in free-to-play games, to better adjust to the ever-changing gaming market. The report aims to achieve two sub-objectives: analyze consumer behavior in the gaming industry and provide insights to PlayStation Portugal for strategic decision-making regarding the free-to-play games market and in-game content spending behavior of their audience.

The report consists of six chapters, with this first chapter providing background information to give context to the research, outlining the major topic and research questions, and highlighting the study's importance in a wider context. Chapter 2 of the study delves into the Literature Review, examining several aspects of the gaming business such as its economic influence, player classifications, Massively Multi-User Online Graphical Environments, the definition of free-to-play games, reasons for gaming, and the mechanics of in-game transactions. Chapter 3, the Conceptual Framework/Frame of Reference, provides a theoretical basis for the study, enhancing comprehension of the research setting. Chapter 4 delves into the organization and Internship Overview, offering an in-depth analysis of the organization, its industry, rivals, offerings, services, and the internship's extent. Chapter 5 delves into the study Methodology and Data Analysis, outlining the methodology, techniques, and findings analysis, and closing with recommendations based on the study insights. Chapter 6, the final portion, concludes the report with Conclusions. The study's primary contributions are outlined, along with any limitations faced during the investigation. The chapter proposes prospective directions for future research, offering a thorough comprehension of the complex dynamics of the gaming industry.

CHAPTER 2 – LITERATURE REVIEW

Several studies have been carried out on the free-to-play gaming industry (e.g., Alha et al., 2018; Yee, 2006). This study aims to analyze the attitudes and behaviors of free-to-play gamers, focusing on the motivations for their engagement in virtual worlds and subsequent investments.

2.1 Gaming Industry and its Impact on the Economy

The economic landscape of the video game business has seen a significant transformation, evolving from a niche sector to a formidable blockbuster company. Marchand and Hennig-Thurau (2013) illustrated the growing economic significance of video games in comparison to other forms of entertainment in their study on value creation in the video game industry. Notably, a larger proportion of Americans engage in video gaming compared to attending movies, suggesting a shift in consumer preferences (NPD Group, 2009). In 2011, their revenues were almost five times larger than worldwide music revenues and on par with movie revenues (Marchand & Hennig-Thurau, 2013). Furthermore, the video game industry is one of the fastest-growing sectors when compared to other types of entertainment and media. The entire revenue from video games in 2021 was approximately 214.2 billion USD, and it is projected to increase by over 100 billion USD by 2026 (Ihalainen, 2023). The development of video games has grown like the production of Hollywood movies, as it has gotten increasingly complex and the cost for a single video game project can reach tens or even hundreds of millions of dollars (Pashkov, 2021). The video game market has shown substantial expansion in recent years, mostly attributed to a diverse range of game genres and the emergence of novel gaming platforms. The emergence of digital game distribution, mobile gaming, free-to-play models, and cross-platform gaming has brought in new participants and raised the status of the business (Pashkov, 2021). The rise of the sector has been significantly influenced by mobile gaming, which has made it easily accessible and accounts for 54% of the annual earnings. The introduction of microtransactions and freemium gaming formats has had a significant influence on the industry (Wijman, 2019). The surge is driven by a significant increase in investment in in-app advertising and a growing interest in social/casual gaming (Ballhaus, Chow & Rivet 2022). The video game industry has had a substantial impact on shaping the cultural and economic environment of the 21st century, as demonstrated by its notable economic growth.

The gaming business has experienced a heightened influence in the present context due to extraordinary global occurrences, particularly the COVID-19 pandemic. López-Cabarcos et al. (2020) offered a valuable understanding of the remarkable growth of the gaming and eSports business during challenging circumstances. Various social and recreational establishments, including theaters, sports arenas, and cinemas, saw temporary closures due to the implementation of social distancing measures by governments worldwide to contain the spread of the virus (Abel & McQueen, 2020). Individuals found comfort in digital platforms due to their confinement and isolation, leading to an increase in the use of ICTs (information and communication technologies) such as video games, television, and online gambling. Verizon, a telecommunications firm headquartered in the United States, observed a notable increase of 75% in online gaming activity coinciding with the enforcement of stay-at-home orders (Shanley, 2020). The number of viewers on platforms such as Twitch and YouTube Gaming increased by 10%, suggesting a broader pattern of increased digital involvement (López-Cabarcos et al., 2020). Amidst the worldwide crisis, Steam, a renowned game distributor, achieved a noteworthy accomplishment by surpassing 20 million active gamers (Stephen, 2020). This achievement highlights the gaming industry's ability to adapt and endure challenging times (Stephen, 2020). The surge in gaming activity amid the epidemic underscores the gaming industry's ability to withstand challenging circumstances and functions as a coping mechanism for individuals grappling with stress and worry.

The gaming industry has achieved a remarkable value of more than 257 billion US dollars as of 2024 (TrueList, 2024). This indicates its potential to become a significant economic powerhouse, showcasing its ongoing success and impact in the entertainment sector. Post-pandemic, increased rivalry among gaming platforms has led to a plethora of games that currently reign supreme in the entertainment industry. Statista's most recent data (2024) reveals that the dominant forces in the video gaming business are Nintendo, Microsoft, and Sony, commonly referred to as the Big 3. These three firms are prominent manufacturers of video gaming hardware and presently hold a dominant position in the console gaming business. Thanks to their superior infrastructure, the Big 3 hold the top position as the largest video game publishers globally, generating billions of US. dollars in annual revenue from video games. Based on the latest data, the three largest video gaming firms collectively contribute approximately 29 percent of the overall income in the gaming business, with Sony retaining the most market share among these top corporations. The global video gaming business boasts a staggering 3.26 billion players, with an estimated 3 billion participants worldwide,

underscoring its great popularity, with digital platforms continuing to dominate the online video game market with an impressive 89.5% share of purchases (TrueList, 2024). Video game enthusiasts in the United States alone expended a staggering $55.5 billion on video games in 2022 (Caporal, 2023). Surprisingly, games that are available to play for free makeup approximately 85% of the total revenue generated by the gaming business, representing a significant portion of its earnings (Katatikarn, 2024). By 2025, the mobile gaming sector is projected to produce sales of 138 billion US dollars, reflecting its ongoing exponential growth (Partleton, 2021).

In comparison, the PC gaming sector is projected to achieve a revenue of 46.7 billion US dollars by the same year (TrueList, 2024). With 38% of players falling within the 18 to 34 age brackets, the gaming business continues to attract a diverse and extensive audience (Koss, 2023). Collectively, these statistics underscore the robust growth, technological progress, and pivotal impact of the sector on the future of entertainment (Gaming Statistics 2024 - TrueList, 2023).

2.2 Bartle's Taxonomy of Players

The book authored by Richard Bartle (1996) serves as the main reference for understanding the motivations and behaviors of players in virtual environments. Bartle's Taxonomy categorizes players into four distinct groups based on Bartle's classification system: achievers, explorers, socializers, and killers (Bartle, 1996). The basis of this study is Bartle's taxonomy (1996), a classification system that categorizes various player types in Multi-User Dungeons (MUDs) and has had a significant impact on the field of game studies. MUD worlds consist of several checkerboard-like squares, each containing textual descriptions of the environment, characters, and objects. Players who utilize their identifications (IDs) as avatars are required to adhere to textual instructions to navigate, act, and interact with other players or the system (Lin & Sun, 2015). Bartle’s (1996) taxonomy categorizes players into four distinct kinds based on their objectives and actions within the virtual realm (table I).

Table I - Bartle's Four Different Player Types

Achievers	Point accumulation and level advancement are the main driving forces for this sort of player (Bartle, 1996). Their main objectives are to complete in-game tasks, accumulate wealth, and advance in rank. It is possible to discover new treasure spots through exploration and learn how to succeed in the game by interacting with other players. Killing is only required to get points or get rid of opponents.

Explorers	According to Bartle (1996), explorers derive pleasure from comprehending the virtual world and the underlying workings of the game. Their excitement for exploration and experimenting is what drives them. Although it may be required, assigning points is viewed as tedious. Even though it happens faster, killing is avoided since it might lead to conflict. While socializing is helpful, the excitement of discovery is more fulfilling.
Socializers	Socializers are those who are interested in other people and appreciate interpersonal interactions (Bartle, 1996). The game is merely a backdrop for their fulfillment, which comes from empathizing, sympathizing, joking, entertaining, and observing other players. Exploration and point-scoring are important for conversational spells and status, but they come second to creating genuine relationships.
Killers	According to Bartle (1996), killers get pleasure from forcing themselves on other people, frequently by upsetting other players. Gaining power requires collecting points, and the goal of exploration is to find new ways to wreak havoc. Making friends could be helpful when discussing strategies with other murderers. For Killers, the greatest satisfaction comes from knowing that their actions have offended a real person.

Source: Bartle (1996).

Understanding the different categories of players, such as Achievers, Explorers, Socializers, and Killers, is essential for game developers as it provides valuable information about the many motivations of players. Developers can use this feature to design and personalize gaming experiences that cater to a wide range of preferences, ultimately enhancing user engagement and satisfaction.

2.3 Massively Multi-User Online Graphical Environments (MMORPGs)

The transition from text-based multi-user dungeons (MUDs) to Massively Multi-User Online Role-Playing Games (MMORPGs) signifies a shift in the virtual world and interactive opportunities for players, marking a change in the gaming environment from primarily text-focused to visually immersive and extensive online experiences. This path explores the progression of virtual environments beyond basic gaming sessions, drawing inspiration from the influential contributions of Trubshaw and Bartle (1979), among others.

2.3.1 Historical Overview

The initial iterations of multi-user role-playing games, commonly referred to as MUDs, were adventure games that relied on text-based interfaces and were introduced in 1979 within permanent worlds. Contrary to common belief, MUDs did not have their origins in tabletop role-playing games (RPGs) like Dungeons & Dragons (D&D) (Yee, 2006). However, it is possible to establish a connection between all MUDs, RPGs, MMORPGs, and D&D (Achterbosch et al., 2008). MUDs and RPGs emerged concurrently in the early 1970s and

gained great popularity in the 1980s (Yee, 2006). During the initial game, participants constructed characters by utilizing numerical qualities and predetermined roles. They subsequently integrated interactive storytelling with operational effectiveness to progress through the stages and gain further abilities. The advent of personal computers' enhanced graphics and processing capabilities in the early 1990s, along with the broad accessibility of the Internet, ushered in a new era. Yee (2006) claimed that Ultima Online, which was launched in 1997, holds the distinction of being the inaugural MMORPG. It introduced visually immersive virtual realms capable of accommodating a multitude of people concurrently. This was a significant departure from the graphical MUDs that were presently being utilized, distinguishing MMORPGs by their substantial number of users. However, according to Achterbosch et al. (2008), Meridian 59 was recognized as the first MMORPG since it possessed many of the defining characteristics that gamers typically connect with MMORPGs, though in an early form. The game, released in 1996 by “The 3DO Company”, underwent an extensive beta stage with the participation of numerous people, a quantity that can be described as "massive". This significant player base is sometimes cited as the reason why the game is regarded as the first MMORPG (Achterbosch et al., 2008). The writers, instead attribute the title of the first commercially successful MMORPG to Ultima Online. Released in 1999, EverQuest solidified the genre's allure, drawing in a substantial number of players and laying the foundation for the subsequent proliferation of MMORPGs (Yee, 2006). Typically, initial MMORPGs were exploratory, forging novel genres from preexisting ones. The second iteration is now launching refined games that build upon the concepts of the original generation, incorporating significant advancements in visual aesthetics. To produce a third generation, game creators must persist in advancing the mechanics of MMORPGs, which includes enhancing the graphical aspects (Achterbosch et al., 2008).

2.3.2 Distinctive Features

MMORPGs provide expansive environments featuring narratives centered around science fiction, fantasy, martial arts, or conflicts between kingdoms (Lin & Sun, 2015). They embody a fundamental change in the gaming business. Users are required to purchase or download MMORPG clients and pay a recurring monthly fee to gain access to central servers. MMORPGs promote a feeling of individuality and deep involvement by offering numerous options for customizing characters, as seen in games like Star Wars Galaxies (Yee, 2006). According to Lin and Sun (2015), these narratives frequently originate from novels, films, and

comics, with players traversing and engaging with intricate gaming maps encompassing continents, countries, districts, towns, streets, and buildings. Most games include "magic portals" that lead to dungeons, providing players with immersive and concentrated gaming experiences. MMORPGs include a diverse range of roles and professions that promote player collaboration to achieve in-game goals. MMORPGs employ a random-ratio reinforcement schedule based on operant conditioning, where early achievements are quickly obtained, and further progress relies on increased collaboration and dependence on other players, goals, and prizes (Yee, 2006). The economic systems of MMORPGs contribute to the games' complexity. A sophisticated player-controlled economy is nurtured through activities such as resource gathering, trading, and crafting. Individual users have the freedom to pursue their paths without any overarching goals or planned storylines. This results in a wide range of adventures, stories, and meaningful interactions among players (Yee, 2006). Nonplayer characters (NPCs) are commonly employed in most games, particularly in quests, to offer instruction, facilitate trade, and engage in combat. Game updates frequently incorporate enhanced scenarios, non-player characters (NPCs), and items, resulting in a more diverse and adaptable terrain and visual experiences (Lin & Sun, 2015).

Functional social networks such as guilds, fighting groups, and ideological affiliations are prominent in the intricate and diverse environment of MMORPGs. These designs facilitate agreements among ethnic or guild groups, as well as long-term user-generated membership organizations and temporary collaborations. The MMORPG experience is enriched by the organic formation of social interactions and connections, showcasing the genre's capacity to surpass conventional gaming (Yee, 2006). MMORPGs provide abundant virtual social interaction, hence diminishing the need for real-life social engagement during gameplay, in contrast to specific popular games (Cole & Griffiths, 2007).

Currently, MMORPGs remain highly popular. MMO Populations (2024) reports that popular MMORPGs such as WoW continue to thrive in 2024, boasting an average of over 1.29 million concurrent players. Another notable game is Old School RuneScape (OSRS), known for its nostalgic appeal by offering the classic 2007 version of RuneScape (Moses, 2023). The MMORPG released in 2013 remains highly popular in 2024, boasting an average of 1.75 million concurrent players according to MMO Populations, 2024.

2.4 Defining free-to-play games

The video game industry has seen a significant shift in its dynamics with the introduction of the Free-to-Play (F2P) business model (Luton, 2013), which was first introduced in Asian massively multiplayer online (MMO) games in the late 1990s and early 2000s. Those games are made profitable by selling additional virtual items (Alha et al., 2014). With the introduction of social media platforms like Facebook and the success of free-to-play games like Candy Crush Saga and FarmVille (Zynga, 2009), this paradigm shift got a lot of traction (King, 2012).

In addition to changing revenue streams, the F2P model has given publishers and developers access to previously unheard-of possibilities. F2P games lower the bar for game creation and publication by reducing the risk involved with early game sales. This allowed for more experimentation in the game development process. According to Pavilainen et al. (2013), this strategy is designed to accommodate a wide range of players, each with a different level of desire to spend money on microtransactions.

As Sormunen (2019) pointed out, it is essential to understand the basic principles of free-to-play game monetization, which makes studying microtransactions necessary. Bringing attention to player behavior, income creation, and the effect on game development provides information about the psychological and economic ramifications. Analyzing fairness and transparency and spotting market trends for innovation highlights how important it is to investigate microtransactions to comprehend how the free-to-play game market is changing. Table II dissects these microtransactions, explaining their various forms and the subtleties of how these games utilize them.

Table II - Microtransactions

Virtual Currency	Free-to-play games often employ the "double currency model," in which players can earn soft currency by participating in in-game activities and obtain premium currency—like gold or gems—mostly through real money transactions (Alha et al., 2014). According to Sormunen (2019), virtual currency can be used to unlock exclusive in-game products, cosmetic upgrades, and faster game progress. Pricing strategies frequently entail enticing bundles that provide gamers with huge discounts and may even stimulate increased spending (Sormunen, 2019).
Cosmetic Upgrades or 'Skins'	Provide a cosmetic makeover for in-game items without affecting gameplay functionality (King & Delfabbro, 2019). Despite being largely viewed as less harmful because they are cosmetic, there have been disputes, especially when these products are traded for real money aftermarket (Chalk, 2018). Developers intervened because of these business practices, which gave rise to third-party betting and gaming websites and raised ethical questions (Sormunen, 2019).
Loot Boxes	According to King and Delfabbro (2018), loot boxes are a chance-based reward system that allows users to either earn real money through games or get a randomly selected assortment of virtual goods through purchases. These goods might be anything from visual enhancements to major in-game advantages (Sormunen, 2019). Loot boxes are common; however, they have drawn a lot of criticism and attention from the political and media worlds (Webb, 2018; Sormunen, 2019).
Battle Pass	A more recent addition to in-game payments, the battle pass monetization system gives players fixed rewards after completing tasks and offers extra material through tier-based advancement (Sormunen, 2019). Although this kind of commercialization is frequently seen as transparent and less forceful, worries regarding psychological impacts including urgency and loss aversion have been voiced (Jordan, 2018).

Downloadable Content (DLC) & Season Pass	Originally intended to be extra material available for a price, DLC has developed into "first-day DLC," which essentially places some game content behind a paywall from the moment the game launches (Heimo et al., 2018; Sormunen, 2019). Season passes, which are closely related to DLC, let users pre-purchase material at a reduced price, which helps create a recurring business model (Sormunen, 2019).

Source: Sormunen (2019).

2.5 The Dynamics of In-Game Purchases

Within the ever-changing video game business, the practice of in-game purchases, particularly in free-to-play games, has become increasingly popular and has garnered significant academic interest (Hamari et al., 2017; Alha et al., 2014). In addition to the financial aspect, investing actual currency in virtual content is often seen as more than just a financial transaction. It is considered a strategic investment to increase overall happiness and enjoyment obtained from the gaming experience (Hamari et al., 2017). This approach presents a new aspect to traditional views of gaming, including a financial component that has the potential to enhance the virtual realm.

2.5.1 Underlying Theories

Several influential ideas provide insight into the aspects that affect the intention to acquire things in digital environments (Guo & Barnes 2007; Bleize & Antheunis, 2017). The Theory of Planned Behavior (TPB; Ajzen 1991) highlights three essential elements - attitude towards the behavior, subjective standards, and perceived behavioral control - that collectively impact consumers' intention to engage in the behavior (Ajzen, 1991). According to Bleize and Antheunis (2017), TPB suggests that pre-existing favorable or negative attitudes towards buying virtual things, cultural norms, and the perceived ease of shopping in virtual worlds all play a role in determining the intention to make a purchase.

The Technology Acceptance Model (TAM; Davis 1989) posits that perceived usefulness and perceived ease of use are key elements that influence behavioral intention (Davis 1989). Perceived usefulness measures the extent to which virtual purchases improve performance within the game, whereas perceived ease of use evaluates the perceived level of effort needed to obtain virtual products (Davis, 1989). Within the realm of virtual worlds, these aspects influence users' choices when it comes to obtaining virtual products (Bleize & Antheunis, 2017).

The Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003) agrees with both the Theory of Planned Behavior (TPB) and the Technology Acceptance Model

(TAM), emphasizing three key factors: performance expectancy, effort expectancy, and social influence. Performance expectancy reflects the perception of how buying virtual things can improve game performance. Effort expectation refers to the level of ease associated with the act of purchase, like the perceived ease of usage. Social influence measures the extent to which others impact users' purchasing decisions for virtual items (Bleize & Antheunis, 2017).

2.5.2 Motivations and Industry Dynamics

Going beyond these theoretical frameworks, let's explore a more practical comprehension of how these notions appear in virtual worlds and impact consumers' real behavior. Upon examining the nature of in-game purchases, a paradox emerges. Hamari et al. (2017) argued that there is an advantage in spending money to expedite progress in a game, especially for beginners. Gamers demonstrate a proclivity for investing money to optimize their exploration of the virtual realm, either by skipping tedious content or acquiring advanced capabilities available at the end of the game. The recognition of in-game subscriptions as a legitimate means to expedite progress indicates a demand for tangible benefits linked to monetary investments (Alha et al., 2018). Conversely, problems arise when in-game transactions create a noticeable inequality between players who make purchases and those who do not, potentially transforming a game into a pay-to-win business (Alha et al., 2018; Hamari et al., 2017). This creates complexity, dividing the community and making things tense. The social ramifications of financial transactions in the gaming community are brought to light by instances of paying players bragging about their superiority and non-paying players complaining about their seeming advantages.

Player behavior is significantly influenced by in-game purchases, especially cosmetic products. These goods, which can vary in appearance and impact the characteristics of a person, are influential instruments for expressing oneself and enhancing a feeling of ownership and status (Hamari et al., 2017). They frequently adhere to social norms and strive to prevent confrontations. Nevertheless, it can be difficult to inspire players to allocate resources towards acquiring cosmetic things (Alha et al., 2018). Fortnite, an online video game created by Epic Games, serves as a prime example of the mechanics behind in-game transactions. Players are allocated avatars with randomly selected skins that offer crucial in-game features, including pickaxes, backpacks, emotes, and gliders. These cosmetic items augment the player's virtual encounter and exhibit distinctiveness (Li et al., 2020). The remarkable achievement of Fortnite, which amassed $4.4 billion in income in 2022 and $5.4 billion in 2018 (Fortnite Usage and

Income Statistics (2024) - Business of Apps, 2024), underscores the significance of cosmetic items in stimulating in-game transactions.

Prior research indicates that participating in gaming and making in-game purchases can function as a compensation mechanism or strategy in consumer behavior. Compensatory consumption, as defined by Lisjak et al. (2015), refers to the phenomenon where consumers, unable to satisfy their wants directly, turn to alternate and symbolic means to fulfill them. This symbolic fulfillment may serve as an indication to others of their expertise or achievement in particular domains that are at risk (Lisjak et al., 2015; Koles et al., 2018; Syahrivar and Pratiwi, 2018; Syahrivar, 2021). As an example, someone who feels intellectually challenged may buy a simple board game as a way to indicate their intelligence (Lisjak et al., 2015). Rucker and Cannon (2019) posited that individuals who see academic pursuits as inconsequential to achieving success may resort to gaming as a means of seeking refuge or relief. In addition, symbolic gaming can validate and indicate an individual's identity and social inclusion (Van Houtum & Van Dam, 2002).

Studies examining psychological factors that influence the acquisition of premium content in free-to-play games have identified multiple motivations (Guo & Barnes, 2012; Hsiao &Chen, 2016; Gainsbury et al., 2016; Kim et al., 2017; Hamari et al., 2017; Wang et al., 2020). Typical motivations include the wish to have uninterrupted gameplay (such as the absence of in-game currency and obtrusive advertisements), acquire new things, or expedite game advancement (Guo and Barnes, 2012; Hamari et al., 2017). The utility of premium content lies in its potential to enhance gaming progress, allow uninterrupted gameplay without invasive advertisements, and unlock extra features. These factors serve as the primary motives for making such purchases (Hsiao & Chen, 2016; Hamari et al., 2017). This supports the notion that gamers, motivated by their enthusiasm for gaming, make varied choices when it comes to their spending habits, rationalizing their expenses based on the amount of time they have engaged in the game (Alha et al., 2018). Widespread expenditure is not universally perceived as negative, as gamers often consider it a sensible investment to improve their gaming experience. This enables them to bypass in-game tasks or obtain desired items through both intentional and impulsive spending patterns (Syahrivar et al., 2021).

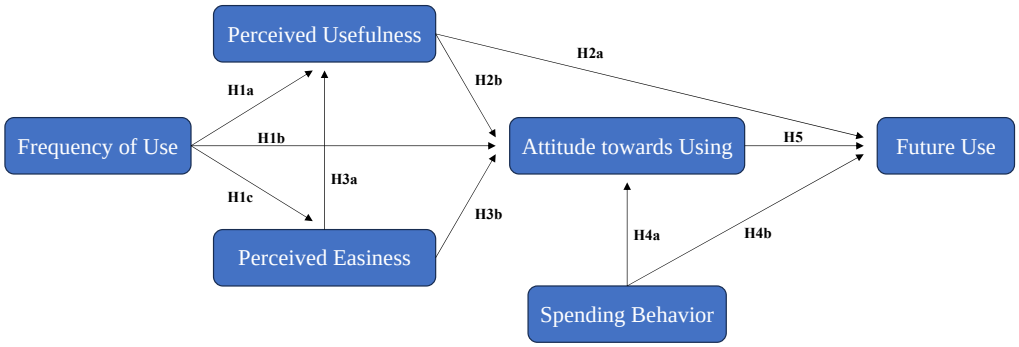
The mechanics of in-game purchases in free-to-play games show an intricate interplay among player motivations, game design, and the broader social dynamics within gaming communities. The financial landscape of mobile free-to-play games is greatly influenced by a tiny group of paying users, as indicated by an industry study (Swrve, 2016), which reveals that

only 0.19% of players generate 48% of the game's revenue. Conversely, the proportion of players who pay for mobile free-to-play games is as meager as 1.5% (Bishop, 2011; Martin, 2012; Swrve, 2014). Developers must carefully balance the promotion of spending with the preservation of an equal and enjoyable game experience as they navigate these dynamics. The continuous discourse surrounding the ethical concerns of pay-to-win scenarios (Alha et al., 2018) underscored the need for a cautious approach to the integration of real money transactions within the gaming ecosystem.

CHAPTER 3 – CONCEPTUAL FRAMEWORK

The conceptual framework used in this study was based on The Technology Assessment Model (TAM), which was introduced by Davis in 1989 and aims to precisely describe the usage behavior of Information Systems (IS) with an emphasis on computer usage. The two main pillars of this model are Perceived Usefulness, which measures people's confidence in a system's ability to improve performance, and Perceived Easiness, which measures people's belief that using a system of this kind won't require a lot of work. Furthermore, the Attitude towards Using, which is a crucial element in the TAM, evaluates individuals' general attitude and predisposition toward embracing new technology (Parreira et al., 2018). This model works extremely well for the gaming industry because it is frequently used to understand people's attitudes and opinions toward new technology. The conceptual framework that was adopted for the current investigation is shown in Figure 1 below.

Figure I - Conceptual Framework



Source: Own Elaboration based on TAM by Davis (1989)

The model's independent variables originated from many sources. Two social media studies were used and adapted to address the Frequency of Use and Future Use. The insights regarding Frequency of Use were taken from the study on fake news detection and trust in social media by Dabbous et al. (2022). Using this methodology, the frequency of player interaction in free-to-play games was examined. The privacy calculus model developed by McKnight et al. (2011) for Facebook users provided the basis for Future Use. This model was adapted to investigate users' intentions to interact with in-game material in free-to-play games.

To enhance the financial viewpoint, of this work a scale was adapted from the study of Hamari et al. (2017). This additional measurement helps us comprehend the intricate dynamics behind players' motivations for purchasing in-game content (Hamari et al., 2017). By emphasizing the connection between players' financial incentives and in-game purchases, this financial lens broadens the scope of the study.

To develop the hypothesis for this study, additional research was conducted. Larsen et al. (1999) conducted a study on the standard of IT usage among individuals who are frequent users of IT and those who are not. The study employed an actual focus group. He claimed that individuals who frequently utilize information technology tend to have a more elevated level of proficiency in its usage. Hypotheses H1a and H1c were formulated based on the assumption that the frequency of free-to-play game usage has an impact on the perceived ease of use and perceived usefulness. Noraddin and Kian (2014) demonstrated a statistically significant relationship between the frequency of digital game usage and the constructs that determine positive attitudes toward digital games. This was appropriately utilized to formulate hypothesis H1b. Accordingly, the following hypotheses are proposed:

H1a: Frequency of use is positively related to perceived usefulness
H1b: Frequency of use is positively related to attitude toward playing free-to-play games
H1c: Frequency of use is positively related to perceived easiness

Since the research model utilized the belief-attitude-intention-behavior interaction of the TAM, the following hypothesized correlations of TAM were postulated within the context of free-to-play games:

H2a: Perceived usefulness is positively related to future use of free-to-play games
H2b: Perceived usefulness is positively related to attitude toward playing free-to-play games

H3a: Perceived easiness is positively related to perceived usefulness
H3b: Perceived easiness is positively related to attitude toward playing free-to-play games
H5: Attitude is positively related to the future use of free-to-play games

The inclusion of monetary transactions in games, such as the sale of virtual goods, has the potential to disrupt the immersive and enjoyable nature of gaming, which can negatively affect attitudes toward gaming (Alha et al., 2014; Bartle, 2004; Hamari & Lehdonvirta, 2010; Lin & Sun, 2007, 2011; Paavilainen et al., 2013). For clients to acquire augmenting items, they must first have previously adopted the core service and secondly, have evaluated the duration of their future use of the service (Venkatesh & Agarwal, 2006). Hypotheses H4a and H4b were formulated based on the previously described ideas. Hypothesis H4a aims to seek evidence that contradicts the aforementioned insights:

H4a: Spending Behavior is positively related to attitude toward playing a free-to-play game
H4b: Spending Behavior is positively related to the future use of free-to-play games

CHAPTER 4 – COMPANY AND INTERNSHIP OVERVIEW

4.1 Presentation of the Company

Sony Interactive Entertainment (SIE) became a dominant force in the game business starting in the early 1990s when Sony Corporation encountered a crucial time in its history. Nintendo's collapse resulted in the emergence of the PlayStation in 1994, marking SIE's debut in the gaming industry (Burak, 2021). Sony decided to diversify and take advantage of the expanding opportunities in the video game sector.

Ken Kutaragi led Sony in a hazardous undertaking utilizing the company's resources and expertise for the PlayStation project. The PlayStation was more than a gaming system; it symbolized the integration of technologies, leveraging Sony's current resources and hardware to reduce production expenses through economies of scope (Emba, 2021). Sony utilized this strategy to combine many items into a single entertainment system, enabling users to enjoy music and video games in their homes.

Several major aspects have contributed to the success of the PlayStation. Sony's dedication to technological advancement, demonstrated through the implementation of CD-ROM technology, gave them a competitive edge over rivals like as Nintendo and Sega (Emba,

2021). The CD-ROM facilitated quicker distribution of video games and granted game producers complete autonomy over content, distinguishing Sony in the industry.

Sony’s timing when entering the gaming sector was key. Sony took advantage of the industry’s move from 2D to 3D graphics and cartridge to CD by launching the PlayStation as an innovative console. Sony’s move to engage third-party game creators aided in broadening its audience and diversifying the gamer demographics (Emba, 2021).

Sony's CEO, Norio Ohga, made a decisive choice to continue manufacturing the PlayStation while facing obstacles and disagreements with Nintendo (Emba, 2021). This decision was visionary, leading to the PlayStation's immense success and eventual dominance in the game sector.

Sony Interactive Entertainment experienced substantial changes after the launch of the PlayStation, joining Sony Network Entertainment International in 2016 to enhance its market position (Burak, 2021). Sony Interactive Entertainment relocated its headquarters to San Mateo, California, demonstrating its ongoing dedication to innovation (*Our Company*, 2024).

Currently, PlayStation is a dominant force in the gaming industry, frequently being synonymous with gaming consoles, regardless of the specific brand. The company's success is credited to exclusive game titles, great graphic and performance capabilities, a loyal user base, and successful marketing techniques customized to regional preferences (Momin, 2023). PlayStation, with a solid foundation and a track record of success, is well-positioned to take advantage of the continuous growth of the gaming industry as a top gaming platform.

PlayStation in Portugal collaborates closely with its Spanish counterpart to establish a strong Iberian partnership for the brand, enabling specialized marketing approaches that suit the specific requirements and preferences of each country.

4.2 Business Sector and Main Competitors

The video gaming industry has emerged as a dominant force in the entertainment sector, exceeding the total revenues of the music and movie industries. The global gaming market was valued at $159.3 billion in 2020, including console games, PC games, mobile games, and esports, as reported by SuperData Research. The music sector had a value of $19.1 billion, while the cinema industry reached $41.7 billion in the same year (Divers, 2023). This significant expansion underscores the substantial financial prosperity of the gaming industry, with PlayStation playing a crucial role.

Sony's PlayStation holds a major position within the video game industry. Sony has shown its market domination with two of its devices being in the top five of all-time console sales. Competitors in this field include Microsoft's Xbox console line, which has consistently been a strong player in the sector. Sony has sold more than double the number of PlayStation 4 consoles compared to Microsoft's Xbox One (Sherif, 2024).

Nintendo, a prominent figure in the gaming sector, has established a specialized market with products like DS, Switch, and Game Boy. The Nintendo Switch has shown to be a strong competitor, outperforming the PlayStation 5 and Xbox Series X/S in revenue since its launch in 2020 (Sherif, 2024). This achievement highlights the ever-changing gaming sector, where innovation and adaptation are key factors in deciding market dominance.

The gaming sector is flourishing, leading to increased competition among large companies. Sony's PlayStation is a significant influence in the video game industry due to its strong sales and market position, defining the industry's future. Consumer preferences and technical improvements will impact the strategy of PlayStation and its competitors, making the business an interesting sector to observe in the future.

4.3 The Company's Financial Situation

Sony Interactive Entertainment's fiscal year commences and concludes in April. Sony's most recent financial data was released for the third quarter of fiscal year 2023. The PlayStation brand generated strong sales of $9.6 billion, representing a notable 16% growth compared to the previous year (Batchelor, 2024). The operational profit decreased by 26% to $572 million. Sony stated that the decline was due to reduced sales of games created by its studios and increased marketing costs for the platform (Shchur, 2024). The revenue breakdown shows $4.87 billion from games and game content sales, $3.15 billion from console income, and $912 million from gaming services revenue. Sony achieved a record-breaking sale of 8.2 million PlayStation 5 consoles during the quarter but slightly missed its estimated sales objective. The business sold 54.8 million PlayStation 5 consoles by December 31. The whole fiscal year sales forecast was lowered to 21 million units, down from the previous projection of 25 million. Sony confirmed that the PlayStation 5 is in the final phase of its life cycle, and sales are decreasing progressively (Shchur, 2024). Significant accomplishments include selling 89.7 million game copies in the quarter, with 16.2 million copies coming from games created by Sony Studios 66% of the total sales were from digital sources. The monthly active PlayStation user base grew to 123 million individuals, a significant rise from the 107 million reported in

the preceding quarter. Marvel's Spider-Man 2 has sold 10 million copies by February 4, adding to the total series sales of 50 million copies. Sony announced that it will not launch any new games in its main existing series from April 1, 2024, to March 31, 2025, including titles like God of War and Marvel's Spider-Man (Shchur, 2024).

A Financial Times analysis indicates that PlayStation is currently leading the game console industry in performance compared to its primary competitors (Bradshaw, 2023). The sales of PS5 increased by 65% to 22.5 million units this year, while Xbox sales decreased by 15% to 7.6 million units. The PS5 significantly outperforms the Xbox Series X and S, selling almost three times as many units. The aged Nintendo Switch experienced an 18% decrease in sales, selling 16.4 million copies in 2023. Nintendo's excitement for the upcoming launch of its next-generation console next year brings an interesting aspect to the competitive environment in the gaming console business (Bradshaw, 2023).

4.4 Products and Services

PlayStation is a gaming industry titan, offering a comprehensive suite of products and services integral to its success (Cuofano, 2023). Table III shows PlayStation's primary products and services.

Table III - PlayStation's Products and Services

Gaming Console	PlayStation's primary products are its game consoles, such as the popular PlayStation 4 (PS4) and the newest PlayStation 5 (PS5). These consoles are the main hardware platforms for gaming fans, offering advanced technology and immersive gaming experiences.
Games	PlayStation has a wide variety of video games, including unique titles created by the company and a diversified selection of third-party games. This diverse collection appeals to a wide range of people, providing gamers with several genres and gaming experiences.
PlayStation Network	The PlayStation Network (PSN) is an essential online platform that enables multiplayer gameplay, digital game distribution, and community interaction. Players can use PSN to socialize with friends, buy and download games online, and keep up to date with current gaming trends.
PlayStation Plus	PlayStation Plus is a premium subscription service that improves the gaming experience by offering users complimentary monthly games, unique discounts on digital goods, and access to online multiplayer features. This program has become an essential and customary choice for PlayStation players looking for further advantages and privileges.
Exclusive Titles	PlayStation distinguishes itself in the business by creating and releasing exclusive gaming titles and franchises. Exclusive titles like "God of War" and "Uncharted" play a crucial role in attracting fans and building brand loyalty.
Entertainment Services	PlayStation expands beyond gaming by providing streaming services and access to movies and TV shows in the larger entertainment industry. PlayStation's eclectic strategy promotes it as a versatile entertainment platform that caters to the diverse interests of its user base.

Source: Cuofano (2023)

4.5 Internship Scope and Main Activities

During the internship at PlayStation, a great deal of support was given in a variety of marketing areas, with an emphasis on the creation of software and hardware and the implementation of marketing plans. The role in the product management and marketing campaigns team involved tasks like budget management, market analysis, and competitor assessment.

Active participation was sustained in developing and executing plans for different channels, which included working closely with the trade marketing department. Furthermore, contributions were given to coordinating activities associated with product promotion. The activities and focal areas were identified between September 2023 and March 2024 (table IV).

Table IV - Plan of activities and areas of activation

Priorities	**Product Management - Hardware**	• Collaborating on the strategic planning of media campaigns for hardware launches, including both above-the-line (ATL) and below-the-line (BTL) activities. • Overseeing communication materials by handling briefing, evaluation, and coordinating with media agencies. • Regularly communicate with media agencies and collaborate with internal departments. • Preparation and presentation of plans
	Product Management - Software	• Collaborating on the strategic planning of media campaigns for software launches, including both above-the-line (ATL) and below-the-line (BTL) activities. • Overseeing communication materials by handling briefing, evaluation, and coordinating with media agencies. • Regularly communicate with media agencies and collaborate with internal departments. • Preparation and presentation of plans
	Relation with 3rd Parties	• Overseeing daily interactions with publishers and distributors creating PlayStation content. • Collaborating with internal divisions and developing plans and reports
	Reporting	• Examining, organizing, and disseminating weekly and monthly market data reports on sales and consumption.
Proximity with Other Departments	**Public Relations and Events**	• Collaborating on the strategic planning of events, influencer campaigns, and media relations. • Offering assistance for on-site event execution at every phase. • Regular engagement with public relations companies and the creation of strategies and documentation
	Own Channels	• Collaborating on developing strategies and content for PlayStation platforms. • Offering assistance in developing and modifying content for local company platforms.

		• Regular engagement with communication agencies and the creation of plans and reports
	Trade Marketing	• Collaborating on the strategic planning of trade marketing initiatives and enhancing point-of-sale presence. • Overseeing communication materials and continuous engagement with communication agencies. • Preparation and presentation of plans.

Source: Own Elaboration

This internship offers practical experience in numerous marketing areas, improving my skills in strategic planning, working with different departments, and successfully executing marketing strategies.

CHAPTER 5 – RESEARCH METHOD AND DATA ANALYSIS

5.1 Methodological Approach

This chapter provides an overview of the research design, including details on the target population and sample selection, as well as the tools and techniques used for data collection.

5.2 Type of Study

The current study, utilizing a quantitative methodology, seeks to explore the relationships among the studied variables (Saunders et al., 2019). To accomplish this goal, a survey was conducted using a structured questionnaire as the main tool for collecting data. The questionnaire was carefully crafted and executed using the Qualtrics platform to ensure an organized and uniform method of collecting quantitative data. The chosen method was selected based on its favorable attributes such as ease of control, coding, analysis, and interpretation of results, in addition to being cost-effective for obtaining a large number of responses (Nunan et al., 2020). The poll was deliberately distributed through internet applications and social media platforms including LinkedIn and WhatsApp to access a wide range of participants. The research had to be conducted within a certain timeframe due to practical constraints, resulting in a cross-sectional temporal horizon for the study (Saunders et al., 2019). The quantitative research design, along with the survey methodology, allows for a comprehensive examination of hypotheses and offers empirical insights into the relationships among the variables.

5.3 Population and Sample

This study's research sample comprises persons who actively participate in playing video games, specifically focusing on those involved in free-to-play games and who have made or are currently making monetary transactions within these games. A sample, which is a representative subset, was used due to the practical difficulties of collecting data from the total gaming population (Saunders et al., 2019).

Respondents were not pre-selected; they were gathered by publishing the survey on several social media platforms. Filler questions were carefully included in the survey to identify and select the research population of interest. The questions were created to differentiate those who met the particular requirements established for the study from those who did not.

A non-probability convenience sampling strategy was used in the study. The method was selected for its accessibility and the respondents' willingness to participate, as well as its effectiveness in resolving time and expense limitations (Nunan et al., 2020). It is important to acknowledge the constraints of non-probability sampling since it prevents making statistical forecasts and generalizations about the wider gaming population (Nunan et al., 2020; Saunders et al., 2019). The probability of a convenience sample accurately reflecting the whole gaming population is significantly low.

5.4 Data Collection Methods and Research Instrument

The study utilizes secondary data from bibliographic databases and primary data from a quantitative research approach. The data was mostly gathered using a survey designed and carried out on the Qualtrics platform. The survey was distributed using internet platforms and social media, particularly WhatsApp and LinkedIn. There were a total of 79 valid responses.

The questionnaire consists of three components. The first part included filter questions aimed at evaluating the respondents' level of support for the proposed issue. The following portion emphasized the fundamental principles of the study. Finally, the last section discussed the demographic data of the participants.

The questionnaire items utilized in our model were mainly adapted from previous research to ensure the legitimacy and consistency of the scales employed (Table V). The items underwent a thorough examination and modification procedure to guarantee content authenticity and linguistic clarity before being distributed. The survey underwent a pre-test for

functionality before being launched on February 7th. The questionnaire items were created in English and then translated into Portuguese to improve the understanding of the participants.

The questionnaire items were assessed on a 7-point Likert-type scale ranging from "strongly disagree" (1) to "strongly agree" (7). This research paper presents eight variables: types of players, motivations for playing video games, spending behavior on F2P games, frequency of use of F2P games, future use of F2P games, perceived usefulness of F2P games, perceived easiness of F2P games, and attitude towards playing F2P games. The definitions and measures of these notions were derived by reviewing previous work in the field.

Table V - Variables used in the survey

Variables	Reference
Types of Players	Yee, 2007
Motivations for Playing Video Games	Croes & Bartels, 2021; Yee, 2007
Spending Behavior on F2P Games	Hamari et al., 2017
Frequency of Use of F2P Games	Dabbous et al., 2021
Future Use of F2P Games	McKnight et al., 2011
Perceived Usefulness	Kawakami & Parry, 2013
Perceived Easiness of F2P Games	Abou-Shouk et al., 2021
Attitude Towards Playing F2P Games	Abou-Shouk et al., 2021

Source: Own Elaboration

5.5 Data Analysis

5.5.1 Characterization of the Sample

The research sample consists of 79 active participants in playing video games, with a specific emphasis on those who play free-to-play games and have engaged in monetary transactions inside these games. Among them, about 65% represent the male population, while 35% correspond to the male population. The age group of 20 to 29 represents the highest proportion of participants, accounting for 73% of the total respondents. This is followed by the age group of 40 to 49, which contains 9% of the respondents, and both, the age groups of less than 19 and 30 to 39, which account for 6% of the respondents. In terms of educational background, it is seen that about 44% of the participants own a bachelor's degree, 25% have completed their secondary education up to the 12th grade and 22% have a master's degree. Most participants in the sample are students and full-time employees, making up 48% and 41% of the total,

respectively. 32% of participants report earning a reasonable income, while another 32% state they maintain financial security, and 29% indicate they are not well-paid.

A question was added to ascertain the average monthly expenditure on free-to-play games to provide a more thorough characterization of the sample. 68% of people spend less than 10€ each month, while 13% spend between 10€ and 20€.

Finally, to have a deeper comprehension of the motivations behind the expenditures in the realm of free-to-play gaming, a question was posed that encompassed several validating factors. Initially, a notable proportion of participants demonstrated a great aspiration to continue the game, whilst a considerable percentage sought to support a good free-to-play game. Furthermore, a significant proportion have expressed a strong inclination for customizing characters and creations to suit their unique preferences and wanted to open new playable content. Furthermore, social interaction is of utmost importance, as a good percentage of individuals desire to engage in recreational activities with their companions.

5.5.2 Analysis and Results

The present investigation used the partial least squares structural equation modeling (PLS-SEM) technique, using the SmartPLS 4 software. PLS-SEM is a statistical technique that employs a causality approach. Its primary objective is to optimize the explained variance of the dependent constructs (Hair et al., 2011). Partial Least Squares (PLS) analysis does not just depend on predetermined associations between constructs but also considers the associations between constructs and their corresponding measurement items (Hair et al., 2021). This approach enables researchers to gather crucial insights into the magnitude and statistical significance of the relationships within the proposed model (Sarstedt et al., 2021). One of the notable benefits of this approach, which has seen a growing use in the realms of marketing and other business-related fields (Hair et al., 2011), is its applicability to intricate models including several constructs and indicators, even in cases when the sample size is limited (Sarstedt et al., 2021).

5.5.3 Evaluation of the Measurement Model

When using a reflective model, it is important to evaluate the reliability of the indicators, including internal consistency reliability, as well as convergent and discriminant validity (Sarstedt et al., 2021).

To provide good reliability of the indicators, the constructs must account for more than 50% of the variance of the indicator. Consequently, the loading indicator must exceed a value of 0.708, as stated by Sarstedt et al. (2021). Nevertheless, it is often seen in practical applications that indicators may possess loadings that fall below the acceptable value of 0.7. In such cases, it is recommended to exclude indicators with values below 0.4 or 0.5 (Hulland, 1999). As a result, the research model excluded components Spend4 and Spend5 due to their respective loadings of 0.490 and 0.448. Table VI displays the loadings of the objects that have been retained and are included in the structural model.

Cronbach's alpha is used to evaluate the internal consistency reliability, on the assumption that all indicators possess equal reliability (Henseler et al., 2009). Nevertheless, within the framework of Partial Least Squares (PLS), the indicators are given priority based on their reliability. Therefore, it could be more suitable to use Composite Reliability (CR) as a means to evaluate the internal consistency reliability, as suggested by Henseler et al. (2009). Still, it is important to note that the Composite Reliability (CR) measure may overstate the true value of reliability. Consequently, researchers have introduced the Rho_A reliability coefficient as an alternative method for assessing reliability (Dijkstra & Henseler, 2015). Despite the method used to evaluate the reliability of the analyzed data, it is considered acceptable if the values exceed 0.7 during the initial phases of the research and exceed 0.8 or 0.9 during the later stages (Nunnally & Bernstein, 1994; as cited by Henseler et al., 2009).

Convergent validity, as assessed by the average variance extracted (AVE), is used to determine whether a group of indicators accurately represents a common underlying concept (Henseler et al., 2009). Based on the structural model of the research, all the constructs have values over 0.5, except for "Spending Behavior" which has a value of 0.442 (as shown in Table VI). This value falls below the acceptable threshold for Average Variation Extracted (AVE). According to Sarstedt et al. (2021), each construct, except for "Spending Behavior", explains more than 50% of the variation in its respective items, on average.

Table VI - Measurement Model

Constructs	Items	Loadings	AVE	CR	Rho_A	Cronbach's alpha
Attitude towards Using	Atitude1	0.735	0.566	0.838	0.750	0.743
	Atitude2	0.832				
	Atitude3	0.772				
	Atitude4	0.662				
Frequency of Use	Freq1	0.847	0.761	0.905	0.888	0.848
	Freq2	0.883				
	Freq3	0.887				
Future Use	Future1	0.955	0.937	0.978	0.967	0.966
	Future2	0.983				
	Future3	0.965				
Perceived Easiness	Easy1	0.925	0.776	0.912	0.874	0.855
	Easy2	0.904				
	Easy3	0.809				
Perceived Usefulness	Util1	0.874	0.761	0.905	0.851	0.844
	Util2	0.899				
	Util3	0.845				
Spending Behavior	Spend1	0.772	0.442	0.925	0.928	0.923
	Spend2	0.724				
	Spend3	0.606				
	Spend6	0.581				
	Spend7	0.727				
	Spend8	0.768				
	Spend9	0.648				
	Spend10	0.590				
	Spend11	0.518				
	Spend12	0.712				
	Spend13	0.791				
	Spend14	0.770				
	Spend15	0.619				
	Spend16	0.741				

Source: SmartPLS

Regarding discriminatory validity, according to Henseler et al. (2009), this can be examined through the Fornell-Larcker criterion and cross-loadings. However, Henseler et al. (2015) subsequently pointed out that this validity can also be assessed through the Heterotrait-Monotrait (HTMT) ratio of the correlations and that this criterion may present a superior performance. In the Fornell-Larcker criterion (Appendix B) it is found that the square root of the AVE of all constructs is greater than the correlation of this with any other constructs (Henseler et al., 2015). Through cross-loading (Appendix C) it is observed that all indicators

have a greater correlation with their structure than with the other constructs (Henseler et al., 2009). By the HTMT criterion (Appendix D), all the values obtained are below 0.85 (Henseler et al., 2015). Thus, all assessment methods confirm the existence of discriminatory validity.

It is still noticeable (see Table VII), that there are no problems of colinearity once that the internal variance inflation factor (VIF) values are less than 5 (Hair et al., 2021).

Table VII - Collinearity Statistics (Inner VIF)

	Attitude towards Using	Future Use	Perceived Easiness	Perceived Usefulness
Attitude towards Using		1.445		
Frequency of Use	1.278		1.000	1.070
Perceived Easiness	1.426			1.070
Perceived Usefulness	1.604	1.492		
Spending Behavior	1.179	1.110		

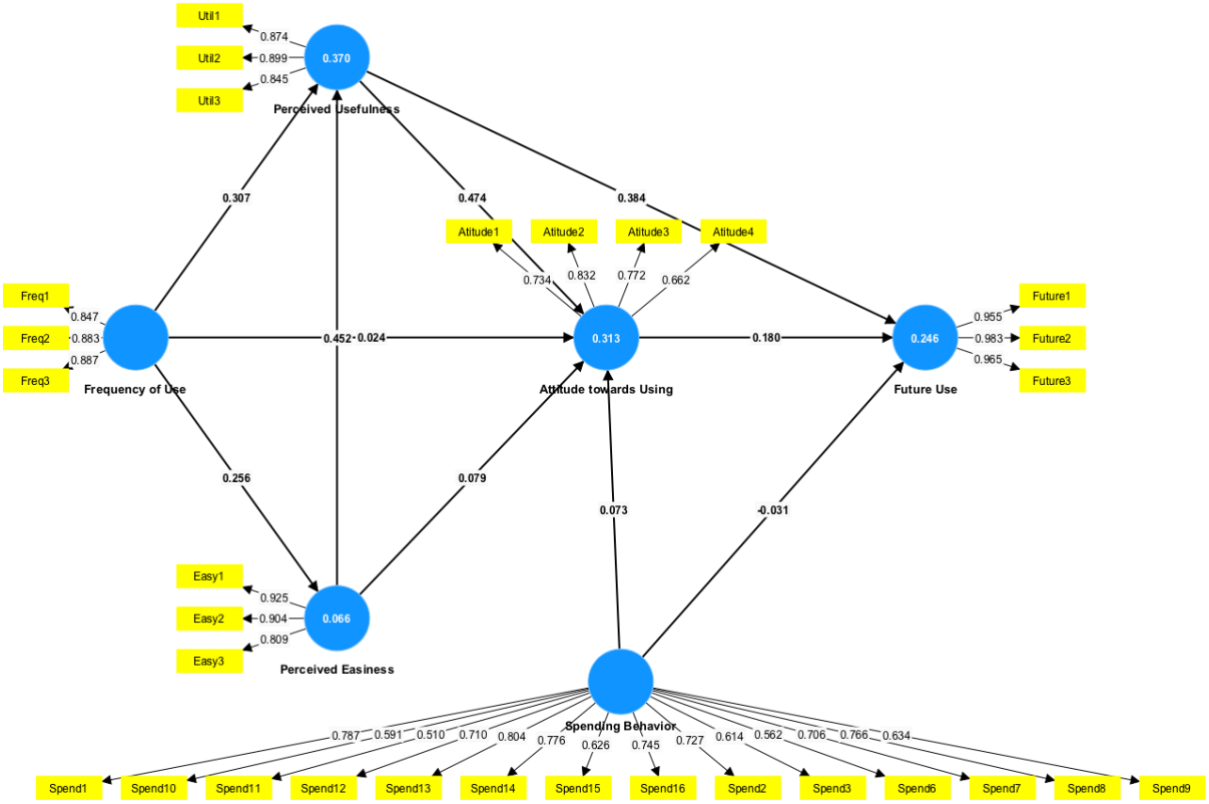
Source: SmartPLS

5.5.4 Assessment of the Structural Model

To assess the structural model, it is essential to examine the coefficient of determination (R2) as well as the magnitude and statistical significance of the path coefficients (Hair et al., 2011), as seen in Figure II. Subsequently, Table VIII presents an assessment of the model's appropriateness.

According to Chin (2010), the R2 coefficient quantifies the proportion of variation in a certain construct that is accounted for by the model. Typically, constructs are considered significant, moderate, or weak when their values are 0.75, 0.50, or 0.25, respectively. However, it is important to note that these values may differ across different study domains (Hair et al., 2011). Furthermore, Hair et al. (2021) suggest that the coefficient of determination (R2) is reliant upon the number of predictors associated with the construct, in which an increase in the number of predictors leads to a corresponding increase in the R2 value. The assessment of the significance of the path coefficients may be conducted by the use of a bootstrapping approach, as outlined by Hair et al. (2011) and elaborated upon in section 5.3.5.

Figure II - Structural Model



Source: SmartPLS

The appropriateness of the model may be assessed by using the SRMR (standardized root mean square residual), a measure that quantifies the Euclidean distance between the model's implicit matrices and the empirical correlation matrices (Henseler et al., 2016). According to Schermelleh-Engel et al. (2003), when the standardized root mean square residual (SRMR) is below 0.10, as shown in Table VIII, the model is deemed satisfactory.

Table VIII - Model Fit

	R-square	R-square adjusted
Attitude towards Using	0.313	0.275
Future Use	0.246	0.216
Perceived Easiness	0.066	0.053
Perceived Usefulness	0.370	0.353
SRMR	**0.100**	**0.113**
d_ULS	4.646	5.957
d_G	2.547	2.608

	Chi-square	870.669	887.868
	NFI	0.589	0.581

Source: SmartPLS

5.5.5 Hypotheses testing – Bootstrapping

The utilization of the non-parametric bootstrapping procedure enables the evaluation of the statistical significance of individual path coefficients (Hair et al., 2011). In cases where the path coefficients are found to be insignificant or exhibit a direction contrary to the proposed hypotheses, it indicates a lack of support for the hypotheses. On the other hand, if the path coefficients are found to be significant and align with the proposed direction, it provides empirical support for the hypotheses (Hair et al., 2011). The process of bootstrapping involves treating the sample as a representative portion of the population, as discussed by Henseler et al. (2009). This research used a bootstrapping approach, with a resampling of 5000 interactions, to get t-values for evaluating the impact of the correlations proposed in the hypotheses. Based on the assumption of a significance level of 5%, the t-value must exceed 1.96, as stated by Hair et al. (2021). Therefore, if the t-value > 1.96 and the p-value < 0.5, the hypothesis is deemed to possess appropriate statistical significance.

Table IX presents a brief description of the hypothesis test. The presented table displays the path coefficients, t-values, and p-values, which have facilitated the validation of 3 out of the 10 hypotheses presented. Additionally, a column is included in the data presentation that indicates the determination of whether the hypotheses were verified or not.

Table IX - Hypothesis Test Summary

Hypothesis	Relation	path coefficient	t-value	p-value	Decision
H1a	Frequency of Use -> Perceived Usefulness	0.307	3.805	0.000	Supported
H1b	Frequency of Use -> Attitude towards Using	0.024	0.243	0.808	Not supported
H1c	Frequency of Use -> Perceived Easiness	0.256	2.416	0.016	Supported
H2a	Perceived Usefulness -> Future Use	0.384	2.836	0.005	Supported
H2b	Perceived Usefulness -> Attitude towards Using	0.474	3.507	0.000	Supported

H3a	Perceived Easiness -> Perceived Usefulness	0.452	5.165	0.000	Supported
H3b	Perceived Easiness -> Attitude towards Using	0.079	0.683	0.495	Not supported
H4a	Spending Behavior -> Attitude towards Using	0.073	0.421	0.674	Not supported
H4b	Spending Behavior -> Future Use	-0.031	0.202	0.840	Not supported
H5	Attitude towards Using -> Future Use	0.180	1.296	0.195	Not supported

Source: SmartPLS

5.6 Discussion of the Main Results

Concerning the frequency of use of free-to-play games, there is a correlation with both perceived usefulness (H1a) and perceived easiness (H1c), with the respective values being: path coefficient = 0.307, t-value > 1.96, p-value < 0.5; path coefficient = 0.256, t-value > 1.96, p-value < 0.5. Therefore, the findings of this study align with the research conducted by Larsen et al., 1999. Contrary to the findings of Noraddin & Kian's 2014 study, hypothesis H1b (path coefficient = 0.024, t-value < 1.96, p-value > 0.5) was not confirmed. Therefore, there is no significant correlation between the frequency of use and the attitude toward playing free-to-play games.

The only hypotheses that were not supported concerning the TAM variables were H3b (path coefficient = 0.079, t-value < 1.96, p-value < 0.5) and H5 (path coefficient = 0.180, t-value < 1.96, p-value < 0.5). This indicates that there is no significant relationship between perceived easiness and attitude towards playing free-to-play games, as well as attitude towards using and future use, respectively. The results of the study support hypotheses H2a, H2b, and H3a, indicating that the relationships between perceived usefulness and future use of free-to-play games, perceived usefulness, and attitude toward playing a free-to-play game, and perceived easiness and perceived usefulness, are all statistically significant. The path coefficients for H2a, H2b, and H3a are 0.384, 0.474, and 0.452, respectively. The t-values for these path coefficients are all greater than 1.96, and the p-values are all less than 0.5.

Regarding the hypotheses tested on the potential correlation between spending behavior and attitude towards using (H4a) and future use (H4b), neither were supported, showing values of path coefficient = -0.031, t-value < 1.96, p-value > 0.5 and path coefficient = 0.180, t-value

< 1.96, p-value < 0.5, respectively. Hypothesis H4a failed to refute previous studies that indicated a negative correlation between spending behavior and attitude toward playing video games (Alha et al., 2014; Bartle, 2004; Hamari & Lehdonvirta, 2010; Lin & Sun, 2007, 2011; Paavilainen et al., 2013).

CHAPTER 6 – CONCLUSIONS, LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

6.1 Conclusions

The primary aim of this study was to explore the intricate factors that impact consumer spending in the virtual world, specifically in free-to-play games, to better adapt to the dynamic gaming market. The participants' responses revealed their desire to pay to be able to continue the game, while a sizable portion aimed at supporting a quality free-to-play game. The customization of characters emerged as a vital element, along with a significant emphasis on social interaction, including engaging in recreational activities with companions and participating in exclusive in-game events and gatherings. These insights provide a comprehensive understanding of the diverse aspects that influence consumer spending in the free-to-play gaming domain. However, the data collected did not reveal any statistically significant correlation between the player's spending behavior and their attitude towards playing free-to-play games, as well as their future intention to play them. While spending behavior may influence these factors, the study conducted was unable to establish sufficient evidence of this relationship due to the limitations of the sample collected. Prior research has indicated a negative relationship between spending behaviors and overall attitude toward video games, as supported by several studies (Alha et al., 2014; Bartle, 2004; Hamari & Lehdonvirta, 2010; Lin & Sun, 2007, 2011; Paavilainen et al., 2013), and this link could not be refuted.

Nevertheless, this research has highlighted important aspects of consumer behavior in the gaming business, specifically for free-to-play games. While the study found that there was no significant correlation between the perceived easiness and the attitude towards playing free-to-play games, as well as the attitude towards using and future use, it did establish significant connections between the perceived usefulness and both the attitude towards playing free-to-play games and the intention for their future use. Additionally, the study provides insight into the frequency of use of free-to-play games, demonstrating a positive relationship with both perceived usefulness and perceived ease, which is consistent with studies by Larsen et al. (1999).

These outcomes offer significant implications for PlayStation Portugal, as they align with the study's sub-objective. Understanding the intricate factors that influence player attitudes and intentions in the free-to-play gaming industry can aid strategic decision-making for the company. This can enable them to personalize their offerings, improve user experiences, and optimize their approach to in-game content spending behavior, thereby enhancing their ability to adapt to the dynamic gaming market.

6.1.2 Theoretical Implications

This study presents an additional empirical test of the Technology Acceptance Model (TAM) developed by Davis, with a focus on its application to the gaming industry. By examining the intricate interactions among key elements within the free-to-play gaming realm, this research significantly contributes to the theoretical understanding of the subject matter. It is worth mentioning that, while there is no statistically significant relationship between spending behavior and attitude toward playing free-to-play games and their future use, previous studies have not investigated the combined impact of these factors. The established connections between perceived usefulness and both attitude and future use highlight the crucial significance of this aspect in influencing player preferences and promoting sustained involvement. The existence of a direct correlation between how often a player uses a free-to-play game and their perception of its usefulness and ease contributes to a more detailed and sophisticated theoretical comprehension of player interactions with such games. In summary, this research offers significant knowledge, enhancing the understanding of the elements that impact player behavior in the ever-changing world of free-to-play gaming.

6.1.3 Managerial Implications

This research provides useful management insights, specifically in guiding strategic decision-making for PlayStation Portugal concerning the free-to-play gaming market and the spending behavior of their audience on in-game content. This research offers valuable insights for marketers and developers by revealing the complex connections between important factors including perceived usefulness, attitudes towards playing, and future use. Recognizing the crucial impact of perceived usefulness on player preferences and engagement helps inform the creation of in-game content and features that strongly appeal to players, thereby improving their gaming experience and boosting player retention. Moreover, acknowledging the favorable connections between the frequency of utilization and the perceived usefulness and easiness

implies the significance of promoting interfaces that are easy for users to use and incorporating captivating gameplay mechanisms. These management implications provide useful assistance to PlayStation Portugal in refining its strategies and services in the competitive landscape of free-to-play gaming. This will ultimately help the company build stronger connections with its audience and achieve sustainable growth.

6.2 Limitations of the Study

Although this research made valuable contributions, it was subject to numerous constraints. The primary constraint of this study is the very feeble gaming culture in Portugal, which has a substantial impact on the rate of response and the comprehensiveness of the data. Out of the roughly 300 responses received, only 79 were deemed thorough and valuable. This limitation is due to the infrequent habit of spending money on gaming or participating in gaming activities among the examined population, emphasizing a cultural obstacle. This limitation may limit the applicability of the results and emphasizes the importance of being cautious when extrapolating the study's findings to areas with stronger gaming cultures. Furthermore, it is important to recognize that the study's findings may be affected by response bias, the cross-sectional design, potential cultural biases, and the range of variables considered. These factors should be noted as limitations that could impact the overall reliability and applicability of the study.

6.3 Suggestions for Future Research

Future research efforts could enhance the comprehension of free-to-play gaming by integrating empirical data collected during real in-game purchasing transactions. For example, research might investigate the potential to gather data directly from players at the moment of purchase, either within the gaming platform or at physical retail stores. This method would offer more unbiased observations, enabling the measurement of financial outlays on in-game objects and a more detailed analysis of the number and categories of virtual goods obtained by players. In addition, although this study mainly concentrated on particular characteristics associated with spending behavior, attitudes, and intentions in free-to-play games, future research could expand its range by incorporating various cultural contexts. By considering other variables, such as cultural nuances or special game design characteristics, we may enhance our understanding and get practical insights for developers and marketers seeking to optimize strategies in the ever-changing gaming industry.

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APPENDIX

Appendix A – Constructs used in the survey

Variables	Scale	Adapted Scale in English	Reference
Types of Players	• Leveling up your character as fast as possible • Acquiring rare items that most players will never have • Becoming powerful • Accumulating resources, items, or money • How important it is to you to be well-known in the game? • Competing with other players • How often do you purposefully try to provoke or irritate other players? • Dominating/killing other players • Doing things that annoy other players • Getting to know other players • Helping other players • Chatting with other players • Being part of a friendly, casual guild • How much do you enjoy exploring the world just for the sake of exploring it? • How much do you enjoy finding quests, NPCs, or locations that most people do not know about? • How much do you enjoy collecting distinctive objects or clothing that have functional value in the game? • Exploring every map or zone in the world.	• I try to level up my character as fast as possible • I try to acquire rare items that most players will never have • I try to become powerful • I try to accumulate resources, items, or money • It is important to me to be well-known in the game • I try to compete with other players • I purposefully try to provoke or irritate other players • I try to dominate/kill other players • I try to do things that annoy other players • I try to get to know other players • I try to help other players • I try to chat with other players • I try to be part of friendly, casual guilds • I enjoy exploring the world just for the sake of exploring it • I enjoy finding quests, NPCs, or locations that most people do not know about • I enjoy collecting distinctive objects or clothing that have functional value in the game • I try to explore every map or zone in the world	Yee, 2007

Motivations for Playing Video Games	• Because everyone does it • Because it's cool • To join a group • Because I enjoy it • Because it helps me relax • So that I can forget about school, work, or other things • So that I can disconnect from my environment for a moment • So that I don't have to be alone • Because sometimes there is no one else to talk to • Because it makes me feel less lonely • Pass time • Out of habit • Because sometimes I have nothing better to do • For passing time, especially when I'm bored • How often do you play so you can avoid thinking about some of your real-life problems or worries? • How often do you play to relax from the day's work? • Escaping from the real world.	• I play video games because everyone does it • I play video games because it's cool • I play video games to join a group • I play video games because I enjoy it • I play video games because it helps me relax • I play video games to forget about school, work, or other things • I play video games to I disconnect from my environment for a moment • I play video games, so I don't have to be alone • I play video games because sometimes there is no one else to talk to • I play video games because it makes me feel less lonely • I play video games to pass time • I play video games out of habit • I play video games because sometimes I have nothing better to do • I play video games for passing time, especially when I'm bored • I play video games to avoid thinking about some of your real-life problems or worries • I play video games to relax from the day's work • I play video games to escape from the real world	Croes & Bartels, 2021; Yee, 2007
Spending Behavior on F2P Games	• I wanted to be the best in the game. • I wanted to continue the game. • I wanted to invest in my gaming hobby. • I wanted to make my kids happy. • I wanted to personalize my characters, the things I build etc. • I wanted to play with my friends. • I wanted to protect stuff I had already earned in the game • I wanted to complete a level/building etc. • I didn't want to spend time repeating same tasks over and over again. • I wanted to show off my achievements in the game • I wanted to show off to my friends. • I wanted to participate in special events • I wanted to buy special offers that give me more value. • I wanted to speed up timers.	• I want to be the best in the game. • I want to continue the game. • I want to invest in my gaming hobby. • I want to make my kids happy. • I want to personalize my characters, the things I build etc. • I want to play with my friends. • I want to protect stuff I had already earned in the game • I want to complete a level/building etc. • I don't want to spend time repeating same tasks over and over again. • I want to show off my achievements in the game • I want to show off to my friends. • I want to participate in special events • I want to buy special offers that give me more value. • I want to speed up timers.	Hamari et al., 2017

	• I wanted to support a free-to-play game that is good. • I wanted to open new playable content (e.g. levels, characters, cards …).	• I want to support a free-to-play game that is good. • I want to open new playable content (e.g. levels, characters, cards …).	
Frequency of Use of F2P Games	• I spend several hours a week on social media. • Compared to most Lebanese / Spanish, I think I spend a lot of time on social media. • Outside of the time I spend on the internet, I consider myself to be a 'heavy user' on social media.	• I spend several hours a week on free-to-play games. • Compared to most Portuguese, I spend a significant amount of time on free-to-play games. • Outside of the time I spend playing games, I consider myself a 'heavy player' of free-to-play games.	Dabbous et al., 2021
Future Use of F2P Games	• In the near future, I intend to continue using MySNW.com. • I intend to continue using MySNW.com. • I predict that I would continue using MySNW.com.	• In the near future, I intend to continue playing free-to-play games. • I intend to continue using free-to-play games in the future. • I predict that I would continue playing free-to-play games.	McKnight et al., 2011
Perceived Usefulness	• I would find (an e-reader/a smartphone) to be useful in my life. • Using (an e-reader/a smartphone) phone would enhance my effectiveness in my life. • Using (an e-reader/a smartphone) would improve my enjoyment at home.	• I would find playing free-to-play games to be useful in my life. • Playing free-to-play games would positively contribute to my overall well-being. • Playing free-to-play games would improve my enjoyment	Kawakami & Parry, 2013
Perceived Easiness of F2P Games	• I would find it easy to learn using robots in tourism industry • I would find it easy to interact with robots in tourism • It is easy to learn robots' usage in tourism and hospitality	• I would find it easy to learn playing free-to-play games. • I would find it easy to interact with free-to-play game features. • It is easy to learn the mechanics of free-to-play games.	Abou-Shouk et al., 2021
Attitude Towards Playing F2P Games	• I have positive feeling towards using robots • It is good to use robots in tourism industry • I find it appealing to use robots in tourism • It is worth to use robots in tourism	• I have a positive attitude towards playing free-to-play games • It is beneficial to play free-to-play games: • I find it enjoyable to play free-to-play games • It is worthwhile to invest time in free-to-play games	Abou-Shouk et al., 2021

Appendix B – Fornell-Larcker Criterion

	Attitude towards Using	Frequency of Use	Future Use	Perceived Easiness	Perceived Usefulness	Spending Behavior
Attitude towards Using	**0.753**					
Frequency of Use	0.268	**0.873**				
Future Use	0.383	0.472	**0.968**			
Perceived Easiness	0.357	0.256	0.355	**0.881**		
Perceived Usefulness	0.548	0.423	0.473	0.531	**0.873**	

Spending Behavior	0.245	0.315	0.128	0.284	0.300	**0.689**

Appendix C – Cross-loading

	Attitude towards Using	Perceived Easiness	Frequency of Use	Future Use	Spending Behavior	Perceived Usefulness
Atitude1	**0.734**	0.219	0.135	0.213	0.193	0.312
Atitude2	**0.832**	0.331	0.263	0.257	0.293	0.489
Atitude3	**0.772**	0.279	0.134	0.342	0.124	0.401
Atitude4	**0.662**	0.229	0.253	0.324	0.120	0.416
Easy1	0.306	**0.925**	0.265	0.389	0.294	0.522
Easy2	0.323	**0.904**	0.215	0.397	0.214	0.513
Easy3	0.321	**0.809**	0.192	0.111	0.242	0.347
Freq1	0.192	0.022	**0.847**	0.303	0.173	0.282
Freq2	0.232	0.307	**0.883**	0.366	0.364	0.408
Freq3	0.263	0.258	**0.887**	0.529	0.244	0.384
Future1	0.400	0.320	0.483	**0.955**	0.161	0.455
Future2	0.385	0.374	0.438	**0.983**	0.110	0.456
Future3	0.325	0.335	0.449	**0.965**	0.100	0.463
Spend1	0.193	0.285	0.312	0.103	**0.787**	0.088
Spend10	-0.053	0.160	0.221	0.042	**0.591**	0.074
Spend11	0.062	0.193	0.209	-0.018	**0.510**	0.220
Spend12	0.184	0.176	0.172	-0.059	**0.710**	0.177
Spend13	0.153	0.276	0.191	0.173	**0.804**	0.314
Spend14	0.079	0.283	0.223	0.115	**0.776**	0.241
Spend15	0.211	0.108	0.123	0.119	**0.626**	0.255
Spend16	0.139	0.190	0.084	0.054	**0.745**	0.231
Spend2	0.141	0.152	-0.007	0.017	**0.727**	0.187
Spend3	0.271	0.149	0.503	0.169	**0.614**	0.233
Spend6	0.062	0.178	0.055	0.011	**0.562**	0.105
Spend7	0.001	0.222	0.144	0.082	**0.706**	0.116
Spend8	0.074	0.211	0.090	-0.033	**0.766**	0.090
Spend9	0.076	0.227	0.175	-0.019	**0.634**	0.192
Util1	0.486	0.512	0.430	0.482	0.242	**0.874**
Util2	0.552	0.451	0.262	0.380	0.309	**0.899**
Util3	0.389	0.418	0.413	0.364	0.233	**0.845**

Appendix D – HTMT Criterion

	Attitude towards Using	Frequency of Use	Future Use	Perceived Easiness	Perceived Usefulness	Spending Behavior
Attitude towards Using						
Frequency of Use	0.322					
Future Use	0.445	0.504				
Perceived Easiness	0.445	0.263	0.374			
Perceived Usefulness	0.677	0.482	0.519	0.612		
Spending Behavior	0.254	0.281	0.112	0.316	0.290	