Exploring What Affects Mobile Game Loyalty & In-app Purchase Intention

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ABSTRACT

The purpose of this Master's thesis is to examine the subjects of mobile game loyalty and in-app purchase intention in Denmark. The goal is to explore how specific constructs might affect the loyalty and purchase intention of users when it comes to mobile games. Over the last few years, apps and mobile games have become increasingly popular. Consequently, a broader understanding of consumer behaviour in this environment is needed. While much similar research has been done previously, this thesis strives to add a new perspective by mixing the theories of two studies (Hsiao & Chen, 2016; Hsu & Lin, 2016) on mobile game consumer behaviour. Also, no previous research has been conducted in Denmark, and this study aims to fill this void in the literature as well. The case used to measure mobile game loyalty and in-app purchase intention in this thesis is the mobile game Pokémon GO.

The constructs applied in this thesis are *hedonic outcome expectations, utilitarian outcome expectations, access flexibility, connectedness* and *good price*. *Hedonic* and *utilitarian outcomes expectations* deal with the enjoyment- or goal-orientated aspects of the app. *Access flexibility* deals with whether the user can control the time they spend playing the mobile game. In contrast, *connectedness* is about how the user feels connected to other users through the mobile game. *Good price* is whether the user perceives the prices of the in-app purchases to be equal to the value of it. It is proposed that all these constructs would have a positive effect on mobile game loyalty and in-app purchase intention. It is also proposed that mobile game loyalty will have a positive effect on in-app purchase intention as well. In order to examine whether the relationships between these constructs could be influenced by other variables, moderating hypotheses of habit and gender are included in the research model.

The positivistic research philosophy is used in this study. Hence, the empirical data is collected through a survey distributed in two different groups of people in Denmark, one dedicated group and one with more general users. The research model is empirically assessed based on 388 validated responses from users with experience of Pokémon GO. A reliability test shows all constructs to be reliable for further testing. Statistical analysis is then done in order to test the proposed hypotheses and the research model.

The findings of this study show that hedonic outcome expectations, utilitarian outcome expectations and connectedness positively influence mobile game loyalty. Good price and mobile game loyalty positively influence in-app purchase intention. Only one moderator, habit, affects one of the

relationships. Habit negatively influences the relationship between the construct of good price and in-app purchase intention. The more time a user spends on the app, the less the user's perception of good price influences their in-app purchase intention. Other relationships are disproven by the analysis.

In the discussion, the implications of the findings are examined, and it is recommended that app companies should instead focus their energy and resources on increasing the number of loyal users and retaining them instead of trying to make already loyal users more loyal. Methodological reflections, such as considerations of additional empirical data, are also included in the discussion.

Differences between Hsiao and Chen's study and this one is also explored in the discussion, which highlights the continued need for research in the field of mobile game loyalty and in-app purchase intention across different cultures. Thus, this thesis provides an understanding of consumer behaviour, and the effect culture might have on it in the context of mobile game loyalty and in-app purchase intention.

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1 INTRODUCTION

First, they were called 'bricks' due their large size and chunkiness, then they got considerably smaller and lighter, and then they got bigger again. The mobile phone was invented in 1973 and commercially available to the public in 1983 for a whopping 22,550 DKK (Goodwin, 2020). At the beginning of mobile phones, the devices were hefty and unpractical as well as expensive, but people could now call each other from anywhere. However, it was not until in the late 1990s that mobile phones became a norm. Before 1992, when Nokia released the Nokia 1011, the first SMS-capable phone, the only function of a mobile phone was to place calls (Goodwin, 2020). Thus, in the first 20 years of mobile phones, the devices only served a functional purpose – to call and text other people. Mobile phones allowed people to stay connected in a more flexible manner than previously. Then, in 1994, the first mobile game appeared aboard the Hagenuk MT-2000. It is a broad misconception that Snake, a popular old-school mobile game was the first of its kind, but in reality, Tetris beat Snake by three years (Wang, n.d.; Wright, 2008). The mobile game Snake was introduced as a pre-installed game on all Nokia devices from 1997 (Wang, n.d.; Wright, 2008). As such, the late 1990s was when mobile games took off. The first generation of mobile games came embedded on the phone, and the user was limited to those.

***Figure 1.1** - Three different mobiles phones over the years*

The second generation was the WAP (Wireless Application Protocol) games. Through WAP, developers could make games and sell them over-the-air to willing mobile players (Wright, 2008). Fast forward a few years, where technological advancements had improved the mobile phone drastically and made it possible for the devices to access the internet and connect to Wi-Fi. In 2007, Apple announced the launch of the touchscreen iPhone and then went on to revolutionise the world of mobile gaming by launching the App Store in 2008. The App Store gave consumers a platform that enabled them to download games as easily as they had previously downloaded MP3's via iTunes, another innovation of Apple's. Developers could now also publish their games on this platform, without having to deal with any middle-distributors (Wright, 2008).

Consequently, Apple's launch of the iPhone and the App Store popularised applications and smartphones with millions of consumers. Smartphones are mobile phones that are able to perform many of the same functions as a computer. They typically have a touchscreen, internet access, and an operating system capable of running downloaded applications (Goodwin, 2020). The penetration of global mobile devices has continued to increase as well as the use of them, and they now dominate the digital landscape with 60% of online activity originating from mobile phones or tablets (Furner, Racherla, & Babb, 2015; Hsu & Lin, 2016). In Denmark, 84.65% of individuals of any age owned at least one smartphone in 2018, and this number is projected to reach 89.64% by 2024 (Statista, 2019). What drives this growth in mobile platforms is primarily the application usage (Furner et al., 2015). Applications, or apps, are software that runs on smartphones, tablets or other mobile devices and can exploit functionalities unique to the mobile environment when compared to the desktop environments (Furner et al., 2015). The two most prominent platforms for downloading apps are the aforementioned Apple's App Store and the Google Play store for people with respectively iOS and Android devices. At of the end of 2019, the App Store had 1,840,000 apps available, whereas the Google Play store had 2,570,000 apps available (VentureBeat & Appfigures, 2020). On both app stores, the most prevalent category is that of 'Games', making up 22,37% of the App Store's apps and 13,35% of Google Play's (Appfigures, 2020; PocketGamer.biz, 2019). That is more than 410,000 and 340,000 mobile games on each app store. While mobiles devices might not be the ideal gaming platform compared to computers and game consoles due to the smaller size and more limited visual effects, the convenience, portability and cost aspects of mobile games have made them a popular leisure activity choice. Mobiles games usually employ asynchronous gameplay, where users can play without the need for other players to play simultaneously (Hsiao & Chen, 2016).

Today, 41% use their smartphone for playing games, 47% use it to listen to music, 54% uses it for taking pictures, 59% for watching YouTube videos and 65% uses it for social media. As such, mobile phones are no longer purely functional; they also serve as a great source of entertainment for many (Davies, 2017). The human population has over the last few years grown richer, smarter and older. On paper, most people seem to have at least their physiological, safety, love and esteem needs somewhat fulfilled (Goldin & Kutarna, 2016; Maslow, 1943). Therefore, it is only natural that people now seek experiences that can improve their satisfaction and happiness further, for example, through entertainment via mobile games.

Since the original mobile games in 1994, consumers have been used to games being embedded in their phones or in some other way easily accessible. While computer and console games need to be

purchased in addition to the machine, most mobile games are free to download (Hsiao & Chen, 2016). While the number of paid apps and in-app purchases are numerous and only increasing, only 5% of consumers actually spend money on apps (Asper, 2017), whether that being purchasing an app in itself or in-app purchases.

In-app purchases are objects or features that can be bought inside the app for real money. Examples of in-app purchases could be the premium subscription offered by the fitness app Endomondo, which removes advertisements in the app as well as gives the users access to new and more advanced features. The subscription costs the users 49 DKK a month ("Endomondo Sports Tracker," n.d.). Another example of in-app purchases is extra life or boosts in games such a Candy Crush Saga. This app has more different choices than Endomondo, and the purchases range from 9 DKK to 339 DKK ("Candy Crush Saga," n.d.). Many games also have an in-game currency, which can usually also be earned through gameplay, but also bought with real money. In-game currency is usually used to purchase upgrades and unique virtual goods. Some mobile games will also have a premium in-game currency, which is mostly only attainable through in-app purchases (Hsiao & Chen, 2016). However, due to predetermined price tiers from Apple and Google, these kinds of purchases cost the same all over the world, regardless of the local economy ("Google Play Billing Overview," 2020; Spencer, 2015). Thus, the value of purchases, e.g. in-game currency, differs significantly across the world depending on the economic situation in that country. See Table 1.1 for an overview of some of the price tiers set by Apple. The prices can vary from the price tiers, but the price remains the same across countries.

	USA	**Canada**	**Australia**	**UK**	**Denmark**
	Prices in $USD	Prices in $CAD	Prices in $AUD	Prices in £GBP	Prices in DKK
Tier 1	$0.99	$1.19	$1.29	£0.79	7 DKK
Tier 2	$1.99	$2.29	$2.29	£1.49	14 DKK
Tier 3	$2.99	$3.49	$3.49	£2.29	21 DKK
Tier 10	$9.99	$11.99	$12.99	£7.99	70 DKK

***Table 1.1** - Comparison of app and in-app price tiers in the Apple App Store (Spencer, 2015)*

Many free mobile games are playable without the user having to make any purchases at all. The fact that only 5% of app users spend money on apps raises the question of what influences people to keep playing a mobile game, and what influences them to want to make a purchase? Are loyal mobile game users more likely to be inclined to make in-app purchases? This thesis will try to answer these questions by examining the literature on mobile games, purchase intention and mobile game loyalty

and then propose a research model for measuring the constructs that appear to be able to answer these questions.

However, in order to achieve results from the real world and real consumers, a case to use a reference point has to be chosen. Thus, this thesis will take its point of departure in the popular mobile game Pokémon GO.

1.1 POKÉMON GO

This thesis will analyse the effect different constructs have on in-app purchase intention and mobile game loyalty on the basis of the mobile game called Pokémon GO.

The game is based on the Pokémon franchise, which was created in Japan in 1995 by Satoshi Tajiri. The franchise is centred around fictional creatures called "Pokémon" (short for Pocket Monsters), which humans, known as Pokémon Trainers, catch and train to battle each other for sport ("Pokémon," n.d.). In 1996, the franchise was published for the first time by Nintendo as Pokémon Red and Green (Pokémon Red and Blue outside of Japan), which were a pair of video games for the original Game Boy handheld system ("Pokémon," n.d.). The games were followed by a hit TV show with over 1,000 episodes. Today, Pokémon is the highest-grossing media franchise of all time with $90 billion in total franchise revenue and consists of a mix of games, shows, toys, etc. The franchise is managed by The Pokémon Company, which is founded by Nintendo, Game Freak and Creatures. However, outside of Japan, only Nintendo owns the trademark ("Pokémon," n.d.)

In July 2016, Nintendo launched the augmented reality game Pokémon GO, developed and published in collaboration with Niantics on their "Real World Gaming"-platform ("Pokémon Go," n.d.; "Pokémon GO," 2016). Augmented reality is an interactive experience of a real-world environment where objects that reside in the real world are enhanced by computer-generated perceptual information. It is a combination of the real world and a virtual one ("Augmented reality," n.d.). See Figure 1.2 for an illustration of the augmented reality in Pokémon GO.

Figure 1.2 *- Pokémon GO augmented reality. Image: Niantic Labs*

In the game, the players take the role of a Pokémon trainer and using their mobile devices' GPS, they locate, capture, battle and train the Pokémon creatures. The player will also choose to join one of three teams, Team Instinct, Team Mystic or Team Valor.

The game is available for both iOS and Android users via the App Store and Google Play and has been wildly popular ("Pokémon Go," n.d.; "Pokémon GO," 2016). In its year of release, it became one of the most used and profitable mobile apps having been downloaded more than 500 million times worldwide in just six months ("Pokémon Go," n.d.). However, the release of the mobile game was not just positive, as many controversies surrounded the game in the beginning. The controversies were due to the fact that some people were playing the game while driving, some became so distracted by the game that they walked straight into traffic or into lakes, or trespassed ("Pokémon Go," n.d.; Robaton, 2016).

Today, the app is still the number one most-played game by player count. In 2019, the game had over a billion global downloads, grossing at over 3 billion dollars in revenue ("List of most-played mobile games by player count," n.d.; "Pokémon Go," n.d.). It is estimated that the app made 894 million dollars just on gross user spending in 2019, making 2019 their best year since the app's launch in 2016 (Chapple, 2020). See Figure 1.3 for an overview of user spending.

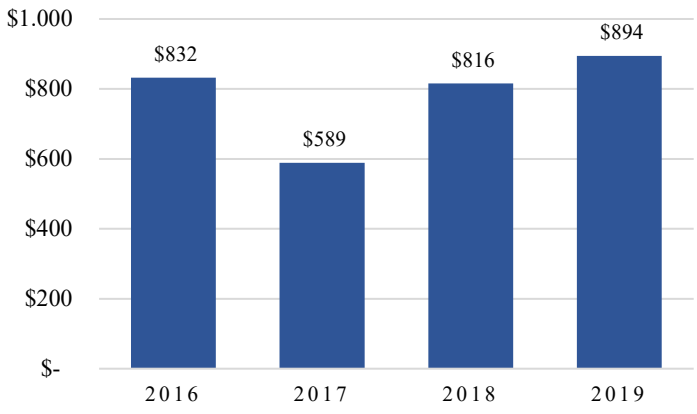

***Figure 1.3** - Pokémon GO user spending in million $ (Chapple, 2020)*

The way Pokémon GO acquires revenue is through in-app purchases as the app itself is free to download and has no in-app advertisements. While other apps have many different types of in-app purchases, Pokémon only has two. The first being a starter box, which includes some basic items that can give new players an easier start and advance quicker in the game. The starter box costs 25 DKK. The other type of purchase is Pokécoins. Pokécoins are the in-game currency, and they are used to buy all of the different items in the game that can help the player catch more Pokémon, win battles easier, level up Pokémons, etc.

The Pokécoins can be earned through gameplay but can also be bought in different pack sizes. On average, 100 Pokécoins costs 6.68 DKK. See Table 1.2 for an overview of the packs and prices. For reference, 20 Pokéballs (Pokéballs are used to catch Pokémon in the mobile game), costs 100 Pokécoins ("Pokémon GO," n.d.).

Pack size	Price	Price/100 Pokécoins
100 Pokécoins	5 DKK	5
550 Pokécoins	45 DKK	8.18
1,200 Pokécoins	89 DKK	7.42
2,500 Pokécoins	169 DKK	6.76
5,200 Pokécoins	339 DKK	6.52
14,500 Pokécoins	899 DKK	6.20
Average price for 100 Pokécoins		6.68 DKK

***Table 1.2** - Pokémon GO Pokécoin prices*

1.2 DISPOSITION

The disposition of this thesis is as follows: First, chapter 2 will give a review of the literature on the relevant subjects in order to gain the appropriate background knowledge to pursue a new understanding of the subject matter. In chapter 3, the proposed research model will be explained along with the hypotheses, which the rest of the thesis will work towards testing and analysing. The following chapter, chapter 4, will lay out the method chosen for the analysis as well as the research philosophy and scope considerations of this thesis. The results of the hypotheses testing will be revealed in chapter 5, followed by a discussion of these in chapter 6. The thesis will be concluded in chapter 7, and lastly, possible further research in this area will be commented on in chapter 8.

2 LITERATURE REVIEW

In the following, relevant literature relating to this study will be reviewed. The review will explain existing findings on application revenue models and in-app purchase intention, consumer loyalty, as well as the hedonic and utilitarian aspects of needs. This review is necessary in order to gain the appropriate background knowledge for the study.

2.1 APP REVENUE MODELS AND IN-APP PURCHASE INTENTION

As presented in the introduction, apps are popular as ever. Even though the majority of apps are free, companies still need to profit from them in some way or another. Thus, it is interesting to see which strategy companies use in order to make money from apps. Multiple revenue models exist in order to reap the profits of the growing market (Tang, 2016).

Tang (2016) lists four different business models for mobile app revenue: freemium, in-app advertising, paid, and paidmium. Some apps utilise one model, and some might apply several. The term 'Freemium' is comprised of the words 'Free' and 'Premium' and is a business model that collects revenue only from in-app purchases. The app itself is free to download, but the user can then purchase extra benefits, functions, upgrades, etc. Such an upgrade could be removing advertisements that pop-up in the free version. If that is the case, the app is also utilising the in-app advertising model. In this model, advertisements will sometimes pop up when using the app, and the profit is then earned form impressions and conversions. In some instances, mostly gaming apps, the user can choose to watch an advertisement in return for extra benefits, such as in-game currency. Most apps using in-app advertising will offer an ad-free version for money, and therefore often overlap with the freemium model (Tang, 2016). An example of a freemium app is Sleep Cycle, which is free to download but offers an in-app purchase to access to the entirety of the app for 249 DKK a year ("Sleep Cycle - Sleep tracker," n.d.). Another example is Coin Master, another free-to-download app, where users can purchase bundles of coins ranging from 9 DKK to 449 DKK. Coin Master is also an example of the in-app advertisement model, as the app will show the user advertisements throughout the gameplay. The app also offers the user to voluntarily watch an advertisement in exchange for a reward ("Coin Master," n.d.).

The paid model consists of apps that earn a profit from the up-front purchase of the app. These apps will have no in-app purchases and give the user the full experience after a one-off payment. An

example of a paid app is Partners, which costs 39 DKK to download but then has no in-app purchases ("Partners," n.d.).

The paidmium model (comprised of the words 'paid' and 'premium'), on the other hand, entails apps that are bought for a price in the app stores and also have in-app purchases similar to those of the freemium model (Tang, 2016). Examples of paidmium apps are Forest – Stay Focused, an app that costs 17 DKK to download and then also offers in-app purchases ranging from 9 DKK to 169 DKK ("Forest - Stay focused," n.d.), and Plague Inc., which costs 5 DKK to download and then offers in-app purchases ranging from 9 DKK to 89 DKK ("Plague Inc.," n.d.).

However, there is also a darker side to in-app purchases. The concept of pay-to-win has grown infamous over the last couple of years, which allows players with deep pockets to gain an advantage over the other players (Darakjian, 2016). Once, online games were only a matter of luck, skill and patience, but after purchases in-game has become available, some companies cannot control it. Darakjian describes it as games "being destroyed by the exploitation of commercial opportunities and the black market sale of in-game assets. It is turning into a business, pure and simple, and is depriving dedicated, skillful, and patient players of their expected in-game experience." (2016). Thus, there is a fine line between in-app purchases as part of a revenue model and pay-to-win, the difference being whether or not non-paying users can still advance in the game and have fun.

Which revenue model to choose is an important consideration for app developers, as in-app purchases accounted for more than 70% of US iPhone app revenue and as much as 90% of revenues in Asian markets in 2013, and is expected to grow steadily (Hsu & Lin, 2016). However, with only 5% of users spending money on apps, there is a lot of missed potential in the market (Asper, 2017). It is, therefore, important for companies to understand what effects the in-app purchase intention of their consumers. Thus, it is relevant to dive into the field of purchase intention in order to gain an understanding of in-app purchase intention.

Purchase intention is formed under the assumption of a pending transaction. It is considered to be an important indicator of whether or not the consumer will make the actual purchase (T. Z. Chang & Wildt, 1994). Value perceptions are formed independently of a transaction participation, as the consumer can have a perception of the value of a product without actually entering the buying process. However, it is also stressed, that value perceptions and purchase intentions are positively related in most instances (T. Z. Chang & Wildt, 1994). Chang and Wildt's study also showed that perceived price and quality also affect purchase intention (1994). Many areas have captivated the field of

purchase intention, one of them being luxury brands and what drives people to spend an excessive amount of money on a piece of clothing, a bag, a car, etc. It has been argued that especially self-identity, vanity as well as functionality have positive effects on purchase intention when it comes to luxury goods (Hung et al., 2011; Yang, Ma, Arnold, & Nuttavuthisit, 2018).

Additionally, purchase intention has also been studied with regards to organic food (Paul & Rana, 2012). Paul and Rana's finding were that health, availability and education affected the consumers' intention to purchase towards organic food (2012). Their paper shows us that what affects consumers' purchase intention can vary greatly depending on the subject of the study. Due to this, purchase intention studies can be argued to be relevant for all product categories, as the results of a purchase intention study on one product category cannot necessarily be correctly transferred to another. It can be assumed that the same is true for online purchase-intention.

As mentioned, a lot of technological advancements has been made over the last few decades, and this has affected how we use the internet. It created a new form of retail, web-shopping, and consequently, the consumers' involvement in online purchases became an important subject of research (Ling, Chai, & Piew, 2010). Studies have shown that constructs such as quality orientation, brand orientation, online trust, and prior online purchase experience could positively influence a consumer's online purchase intention (Ling et al., 2010). It has also been suggested that consumers who "enjoy their existence in the virtual environment are likely to be more inclined to invest time and money in the purchase of virtual goods" (Huang, 2012). Consequently, consumer behaviour and loyalty become interesting in terms of in-app purchase intention. Huang also explains that the feeling of involvement can have an effect on purchase intention, which refers to a consumer's overall subjective feelings (2012). Other studies in consumption theories (such as Batra & Ahtola, 1991; Childers, Carr, Peck, & Carson, 2001) suggest that consumption is motivated by experiential outcomes, including hedonic and utilitarian outcomes. The concepts of hedonism and utilitarianism in consumer behaviour will be further reviewed in section 2.3. In brief, hedonism deals with feelings of enjoyment and pleasure, whereas utilitarianism deals with feelings of functionality, usability and accomplishment (Kahn, Dahr, & Wertenbroch, 2004). If playing mobile games can be viewed as a form of "consumption," both utilitarian and hedonic expectations are possible factors that motivate continued gaming playing. For example, gamers throw in their time, energy and possibly money in exchange for a gaming experience, such as enjoyment and pleasure and/or external rewards (e.g. money, grades or prizes)(I. C. Chang, Liu, & Chen, 2014).

2.2 CONSUMER LOYALTY

According to Richard L. Oliver, consumer loyalty first became a thing of research in the 1990s, when customer satisfaction was no longer sufficient enough (1999). In 1996, companies who commissioned satisfaction studies increased by 19% in the United States and 25% in Europe. However, there was a rising demand for a paradigm shift to the pursuit of loyalty as strategic business goals became prominent (Oliver, 1999). This shift was due to the fact that business owners were beginning to feel like it was no longer sufficient to have customers who were merely satisfied, as that will not necessarily keep them loyal. In general, satisfied customers was just not enough anymore, as satisfaction and loyalty were not the same (Oliver, 1999). This statement is supported by the fact that between 65% and 85% of customers who claim they are satisfied will still defect. Oliver states that while loyal consumers are usually satisfied, the same is not always true the other way around (1999). Satisfaction is defined as a pleasurable fulfilment, such as when a sort of consumption fulfils some kind of need, desire or goal. Loyalty, on the other hand, has been defined quite differently: "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, *despite* situational influences and marketing efforts having the potential to cause switching behavior" (Oliver, 1999). Oliver also has another definition of loyalty which he describes as *ultimate loyalty*. Ultimate loyalty is when a consumer "fervently desires to rebuy a product or service and will have no other" (Oliver, 1999). Therefore, it is not wise to suppose some kind of loyalty or disloyalty on only the basis of only a repetitive purchase pattern without further analysis, as there can be more underlying factors.

Consumers are theorised to become loyal first in a cognitive sense, then in an affective sense, then in a conative manner, and lastly, in a behavioural manner (Oliver, 1999). The cognitive stage is when the consumer has a loyalty to information, such as price, features, etc. This stage is focused on the brand's performance aspects. The affective stage is about loyalty to liking and is when a consumer buys something simply because they like it and, therefore, this stage is about the brand's likeableness. The conative stage is a loyalty to intention, meaning that the consumer will think they are committed to the brand/product/service. The consumer *wants* to repurchase the brand but has not come further than that in the process. The last stage, the action stage, is a loyalty to action. In this stage, the consumer is ready to act and willing to overcome obstacles to obtain the object of their loyalty. These two aspects of the action stage correspond to the previously stated definition. Readiness to act is equivalent to the "deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future," and the willingness to overcome obstacles is equivalent to repurchasing

"despite situational influences and marketing efforts having the potential to cause switching behavior" (Oliver, 1999). However, the four stages still fail to live up to Oliver's definition of ultimate loyalty, as all of these stages still has weaknesses that can force the consumer to buy another brand. For the cognitive stage, especially the price is a weak point, as the consumer is not very invested in the brand yet and might choose a similar product if the price is better than the price of the product in question. In the affective stage, another brand might suddenly seem more attractive. In these two stages, the loyalty of the consumer is hard to maintain, whereas the other two have more circumstantial weaknesses compared to the two first stages. Consumers in the conative stage can be affected by poor experiences with the brand or by induced trials from other brands. Consumers in the action stage can be affected by shortages of products or some other kind of unavailability.

All of this shows us what has also previously been suggested, that true loyalty can be irrational and, in some sense, unattainable. Oliver concludes that, in the end, loyalty will be unavailable to many, and companies who spend a lot of time, effort and resources on loyalty programs are essentially doomed to fail. Some companies should be content with only pursuing mere satisfaction (Oliver, 1999). The position that true, absolute loyalty is unattainable is shared by Sharp (2013). Sharp defines loyalty as a consumer restricting buying to a personal repertoire of brands, essentially buying some brands more often than others (2013, p. 36). Thereby implying that a consumer can be loyal to a brand while still purchasing other brands from time to time. Sharp explains that loyalty is a strong natural tendency, as loyalty is very prevalent. Consumers seldom buy randomly and are biased when it comes to purchasing as they favour some brands over others (Sharp, 2013, p. 38). Loyalty is rarely exclusive as consumers usually buy more than one brand from a product category, and the more the consumer buys from a product category, the more different brands the consumer will buy. This kind of loyalty is defined as polygamous loyalty and is the norm when it comes to loyalty. It should, therefore, not be expected that consumers will give one brand 100% of their loyalty (Sharp, 2013, p. 41). Polygamous loyalty is about the consumer, not about the brand. Consumers adopt a brand loyalty in order to simplify their own lives, and not because they have decided that a particular brand is the perfect one for them, better than the alternatives, or that they have a great emotional bond with the brand. By being loyal, to a degree, the consumer can repurchase what they need without having to go through a lengthy decision-making process every time. The real question for the consumer is not whether to choose Nike or Adidas, but rather *do I need new running shoes?* By already having mentally committed their loyalty to a brand, e.g. Nike, the consumer saves time, effort and risk without even realising they are doing it. Not to say that the consumer will never choose Adidas,

should there be a great discount or just a nicer pair of shoes available. A 100% loyal consumer will often be a light buyer, that have only bought from the product category very few times (Sharp, 2013, p. 43). Sharp, similarly to Oliver, concludes that a company's money is better spent on growing penetration, as far more value comes from heavy category buyers, who buy from several brands, rather than focusing on the 100% loyal light buyers. Heavy buyers might buy from a lot of other brands as well, but they might buy a lot from each brand every month, compared to the light buyer, that might exclusively buy that one brand, but only twice year. Companies should, therefore, strive for polygamous loyalty instead of 100% loyalty (Sharp, 2013, p. 99). Consequently, Sharp advocates against the so-called 'loyalty ladders', arguing that they are a waste of money and merely an "entertaining, expensive way of presenting, and obscuring, loyalty metrics". A loyalty ladder divides the brand's consumers into groups based on their behaviour and relationship with the brand (see Figure 2.1). Researchers who advocate *for* the ladder are Hooley, Piercy, Nicoulaud and Rudd (2017, pp. 342–344), who calls it a relationship marketing ladder. As seen in the figure, there are six stages in the relationship-building process with the consumer: Prospect, customer, client, supporter, advocate and lastly partner. The focus of this theory is to move customers up the ladder, as partners and advocates are supposedly more loyal consumers (Hooley et al., 2017, p. 343)

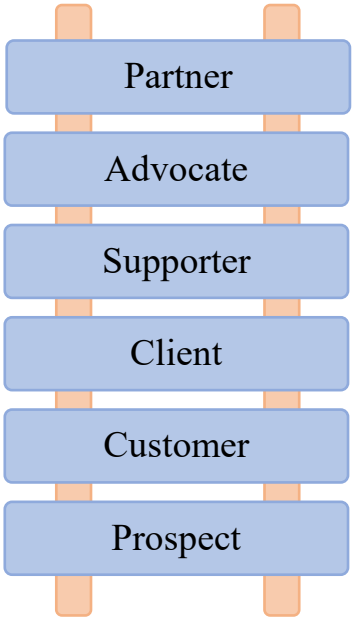

***Figure 2.1** – The relationship marketing ladder (Hooley et al., 2017, fig. 13.4)*

In the world of mobile games, the term 'stickiness' has emerged as something that leads to long-term loyalty, positive word-of-mouth, and greater revenues (Furner et al., 2015). Data shows that building a relationship with the consumer is hard, retention is challenging, and the time available to achieve both of these are infinitesimal in the mobile world. It has been suggested that only 36% of all downloaded apps are used frequently, and 62% of consumers usually delete apps within two weeks of download. Therefore, stickiness is considered one of the most desirable tasks to achieve in the mobile market, even though it is very challenging to achieve (Furner et al., 2015). Hence, companies should put their focus on what can keep their consumers interested in their app and ensure continued usage. It has been suggested that something that might influence a consumer's continued intention to play a mobile game is hedonic and utilitarian motivations (I. C. Chang et al., 2014; Lepper, Greene, & Nisbett, 1973). Due to this, these elements will now be further reviewed.

2.3 THE HEDONIC AND UTILITARIAN DIMENSIONS

A bi-dimensional approach to understanding consumer behaviour and attitudes is a reasonably new area of academia (Crowley, Spangenberg, & Hughes, 1992). It has previously been suggested that "consumer attitudes have distinct hedonic and utilitarian components" (Batra & Ahtola, 1991), and Batra and Ahtola validated that the two dimensions, *hedonic* and *utilitarian*, did exist in terms of consumer attitudes (1991).

While there are many different definitions for the hedonic and utilitarian dimensions, they all point in the same general direction. Hedonic goods are multisensory and provide for experiential consumption, fun, pleasure, and excitement. Examples of hedonic goods could be designer clothes, sports cars, luxury watches, or chocolate. On the other hand, utilitarian goods are primarily instrumental, and it is usually a functional product aspect that motivates a purchase. Examples are detergents, minivans, everyday food, or personal computers (Kahn et al., 2004). According to Lu, Liu, and Fang, hedonic consumption is often linked to luxuries, whereas utilitarian consumption is often linked to necessities (2016). Another article describes the hedonic dimension as a result of sensations derived from the *experience* of using products, and the utilitarian dimension is derived from *functions* performed by the products (Voss, Spangenberg, & Grohmann, 2003). Voss et al. also state ten semantic differential response items, five for both dimensions in order to better understand the diversity of them (2003). The five hedonic items are: *Not fun/fun, dull/exciting, not delightful/delightful, not thrilling/thrilling, unenjoyable/enjoyable*. The five utilitarian items are: *Effective/ineffective, helpful/unhelpful, functional/not functional, necessary/unnecessary, practical/impractical, beneficial/harmful* (Voss et al., 2003).

Due to the unnecessary and necessary nature of respectively hedonic and utilitarian goods, they are to be found in different aspects of Maslow's hierarchy of needs. Hedonic goods are to be found in the esteem and self-actualisation needs, whereas utilitarian goods are to be found in the physiological and safety needs (Kahn et al., 2004; Maslow, 1943). This supports the theory that utilitarian needs should be fulfilled before considering hedonic goods, which is why luxury items are mostly seen in the developed countries compared to more impoverished regions of the world (Kahn et al., 2004; Palazon & Delgado-Ballester, 2013).

Palazon and Delgado-Ballester, who have examined whether hedonic or utilitarian premiums are preferred, argues that the primary consumption-motivation for hedonic products is the seeking of pleasure and emotions. Therefore, the products are not viewed as objective entities but rather as

subjective symbols (Palazon & Delgado-Ballester, 2013). Similar to other authors, Palazon and Delgado-Ballester also go on to explain that hedonic premiums may provide more experiential consumption, fun, enjoyment, pleasure and excitement. In contrast, utilitarian premiums are primarily instrumental and functional (2013).

The two dimensions have also been described as pure enjoyment and fun (hedonic) vs goal-oriented (utilitarian)(Childers et al., 2001). These authors also bring up the subject of subjective hedonic and utilitarian attributes. Their article focuses on the hedonic and utilitarian attributes in an online shopping situation, and they argue that the two dimensions are not black and white. In a regular shopping situation, the consumer can have many different goals. Whether or not the shopping trip was a success can depend on what intentions the consumer had, as some might shop because they enjoy the actual act of shopping and find it relaxing, whereas other people might find it dreadful and want to get it over with. In order for the latter to feel accomplished after a shopping trip, they will have to acquire the object they were looking for, as that would have been the reason for the shopping trip in the first place (Childers et al., 2001). Kahn et al. also explain how both dimensions can affect the decision-making process, as products can have both hedonic and utilitarian attributes at the same time (2004). For example, if a consumer is looking for a new winter jacket, they might want it to be warm and durable (utilitarian) as well as being stylish or a specific colour that the consumer might prefer (hedonic). Consequently, an object can be both hedonic and utilitarian, and to which degree can depend on the consumer. Some might value the hedonic aspect higher than the utilitarian and vice versa.

Something that also significantly affects the decision-making process when it comes to the hedonic and utilitarian dimensions is what Kahn et al. refer to as the *Reference dependence* (2004). The purchase decision is here affected by what the consumer owns in the first place. For example, if the consumer already owns a car that is both stylish (hedonic) and has high mileage (utilitarian) and needs to make a forfeiture decision when purchasing a new car, he will be most likely to give up the utilitarian feature rather than the hedonic one. However, if the consumer has no previous car, he will go for the utilitarian feature instead of the hedonic one (Kahn et al., 2004). These kinds of choices can also be greatly affected by guilt and justification. This is due to the fact that purchasing hedonic luxuries can be more challenging to justify and can be associated with guilt compared to a utilitarian purchase (Kahn et al., 2004; Lu et al., 2016). Therefore, hedonic goods are more popular as prizes rather than as purchases and vice versa with utilitarian goods. For example, people are more likely to go for the hedonic option if the purchase is tied with a charity donation – this way the hedonic

purchase can be justified more easily (Kahn et al., 2004). When making a purchase decision for others (e.g. for a gift) a consumer is more likely to choose the hedonic options over utilitarian ones than when making a purchase decision for themselves. Once again, the reason for this is associated with buying an unnecessary luxury for oneself, and if one is making the decision for someone else that feeling of guilt lessens (Lu et al., 2016).

A similar distinction to that of hedonic and utilitarian can be made between the terms affect-rich and affect-poor. Affect-rich goods stimulate associative imagery while affect-poor goods evoke little or no such imagery. An affect-rich good could be a 100€ coupon to go to a fancy restaurant, whereas an affect-poor good could be a 100€ coupon towards the electricity bill (Kahn et al., 2004). Therefore, affect-rich relates closely to hedonic goods and affect-poor with utilitarian. Other concepts that are comparable to that of hedonic and utilitarian is *heart versus mind*, *should versus wants*, *affective versus cognitive preferences*, *vices versus virtues*, etc. (Kahn et al., 2004).

In relation to the topic of this paper, mobile games, Chang et al. has studied how the hedonic and utilitarian expectations can affect intention to play games (2014). While hedonic, enjoyment-oriented motivations can influence the gamers' intention to keep playing, the gamers might also experience utilitarian motivation in the form of earning money, prizes, rewards, etc. (I. C. Chang et al., 2014; Lepper et al., 1973). These motivations can lead to utilitarian goals that enhances a gamer's intention to continue playing the game, as mentioned earlier. Reaching those goals can be part of the motivation, as they are a way to express self-identity in a group or community (I. C. Chang et al., 2014).

2.4 CONTRIBUTION OF THIS STUDY

This section will illuminate where the literature is limited and why further research on this area is needed.

While many studies have been conducted on purchase intention and loyalty in mobile games, most of these have been conducted in Asia (countries such as Taiwan and Malaysia are especially predominant). The cultural differences between Asia and Europe are significant and can affect how consumers act, which is why much more research in the Western world is needed. Cultural and economic factors can vary greatly across the world, which is why loyalty and purchase intention can differ significantly from country to country. The following will briefly explain the difference between

Taiwan, the geographic focus of Hsiao and Chen's study from 2016, and Denmark, the geographic focus of this thesis.

If we take a look at a cultural comparison between Taiwan and Denmark, the differences become apparent. See Figure 2.2 for a visual representation. The comparison is from Hofstede Insights, which is based on Prof. Geert Hofstede's research. Hofstede was a social psychologist who did a pioneering study of cultures across modern nations ("Country Comparison - Taiwan & Denmark," n.d.).

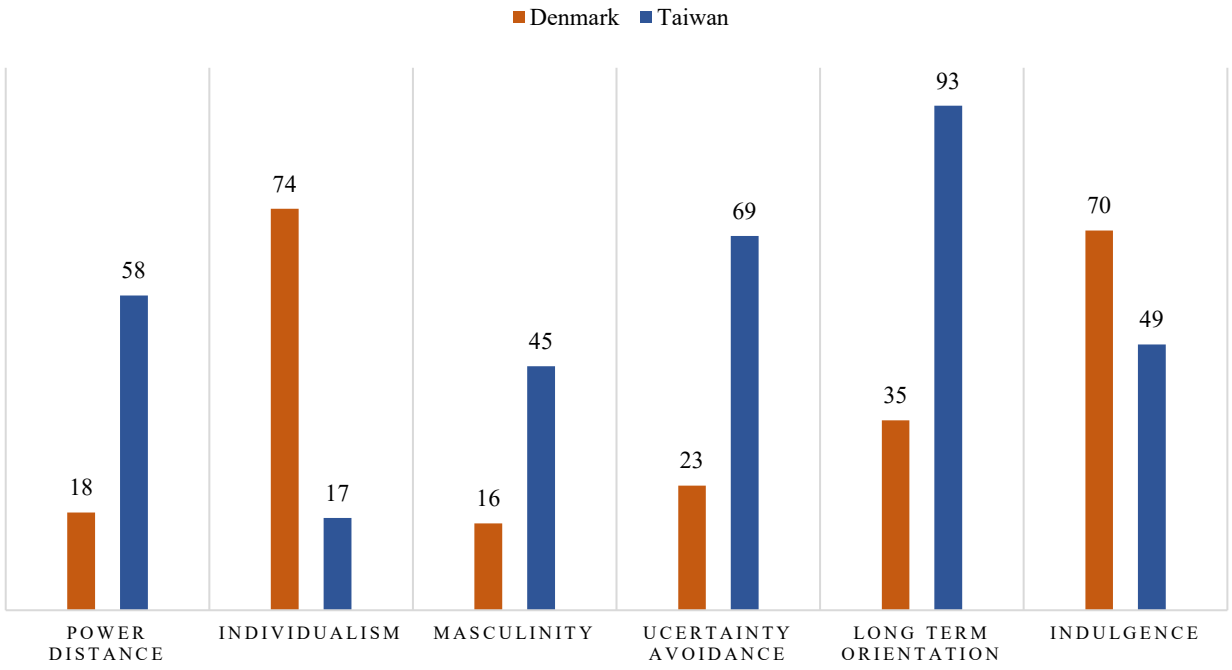

***Figure 2.2** - Cultural comparison of Denmark and Taiwan.* ("Country Comparison - Taiwan & Denmark," n.d.)

The two countries are very different in all dimension, and one that might particularly affect this type of study is the Indulgence dimension, even though it is the one with the least variance between the countries. The dimension of indulgence is defined as "the extent to which people try to control their desires and impulses." All of the dimensions range from 0 to 100, where 0 is, in the indulgence dimension, completely restrained, and 100 is completely indulgent in relation to this dimension. With a score of 70, Denmark is an indulgent country, which means the people are, in general, more willing to realise their impulses and desires with regard to enjoying life and having fun. They also place a higher degree of importance on leisure time and spend their money as they wish ("Country Comparison - Taiwan & Denmark," n.d.). While Taiwan is almost in the centre of this dimension with a score of 49, it is still more restrained than Denmark. A restrained country will have the perception that their actions are inhibited or restricted by social norms and feel that indulging

themselves is somewhat wrong. Examples of restrained countries are China (indulgence = 24) and Hong Kong (indulgence = 17) ("Country Comparison - China, Hong Kong & Taiwan," n.d.). See Figure 2.3.

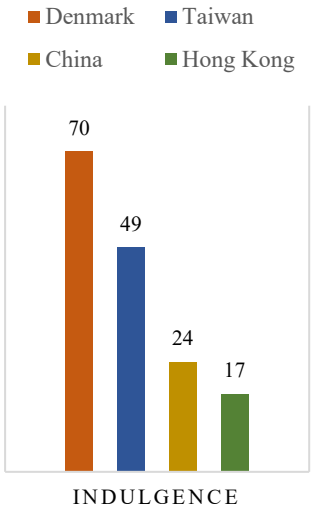

***Figure 2.3** - The Indulgence dimension. ("Country Comparison - China, Hong Kong & Taiwan," n.d.)*

Besides the cultural differences between Denmark and Taiwan, a considerable economic difference is also existent. The average annual income per household per capita is respectively 98,026 DKK [1] and 292,494 DKK[1] in Taiwan and Denmark ("Denmark Household Income per Capita," 2020; "Taiwan Household Income per Capita," 2020). This difference in the countries' economy can influence the purchase intention greatly, especially because apps are usually sold for the same price worldwide, disregarding the economy in each country. The same is true for in-app purchases and is due to the price tiers set by Apple and Google ("Google Play Billing Overview," 2020; Spencer, 2015). Thus, a 0.99 USD app costs 30 NTD and 7 DKK, corresponding to 0.09% of an average Taiwanese monthly income and 0.03 % of an average Danish monthly income.

This cultural difference is, among others, a reason why this thesis will contribute with new knowledge on the subject matter. As also mentioned in the introduction, we live in a technological world that keeps advancing. Thus, a constant need for new knowledge and data is needed in order to understand the trends and changes in consumer behaviour. The world of apps is moving fast, and what worked two years ago might not work today. Therefore, there is always a need for new studies in this field.

[1] Converted into DKK from USD

3 MODEL AND HYPOTHESES

This chapter will outline the research model this thesis will be based upon, how it came to be and how it has been adapted from other studies. The constructs and moderators presented by the model will then be described and defined, followed by the associated proposed hypotheses.

3.1 THE IN-APP PURCHASE INTENTION MODEL

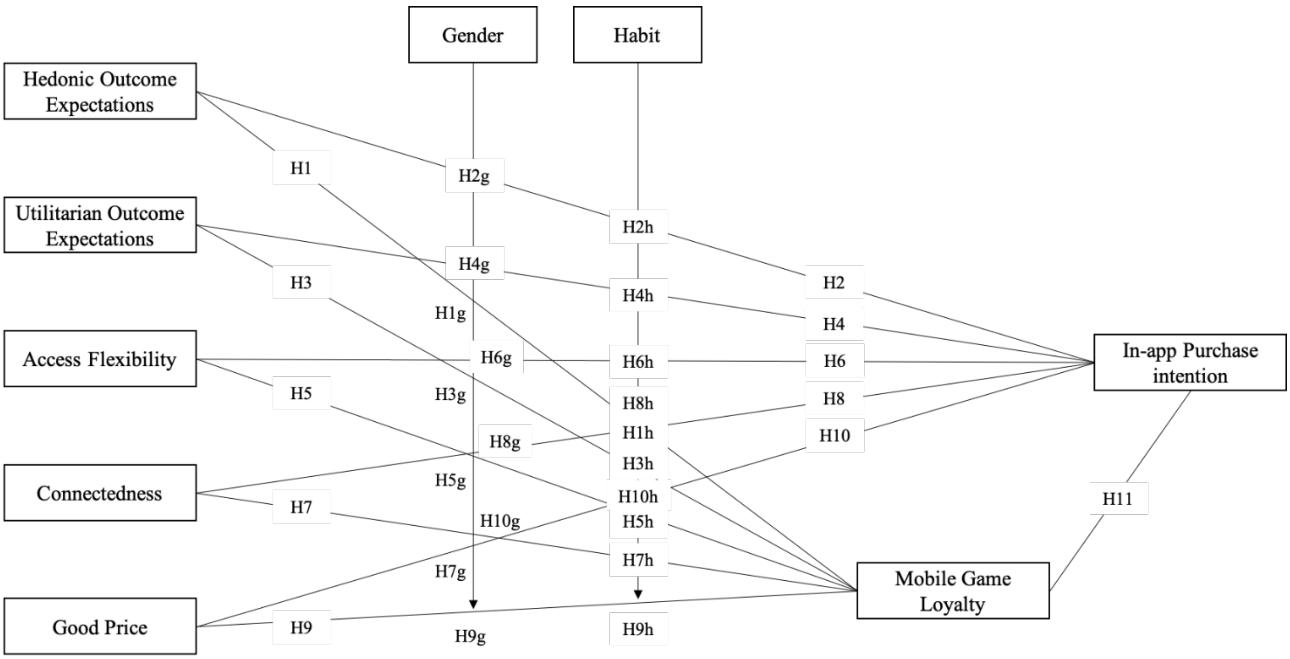

Figure 3.1 *- In-app Purchase Intention model*

Inspired by the studies and models of Hsiao and Chen (2016) on in-app purchase intention in mobile games and of Chang et al. (2014) on the hedonic and utilitarian outcome expectations for online games, a research model has been designed (Figure 3.1) which this thesis will work towards proving. Hsiao and Chen's model includes the constructs playfulness, access flexibility, connectedness, good price, reward, mobile game loyalty and in-app purchase intention, as well as a few control variables: Habit, platform, age, gender and income. The model was then adapted using Chang et al. constructs of hedonic outcome expectations and utilitarian outcome expectations (2014) in order to gain a new perspective. The construct of playfulness was removed from the model, as it was very similar to that of hedonic outcome expectations. The construct of reward was removed because the construct of good price was already included, and the focus of this study is not on the economic aspects of purchase intention, but rather the more emotional and cognitive aspects. Also, rewards are closely linked with the utilitarian motivations for continued intention to play (I. C. Chang et al., 2014; Lepper et al., 1973). The control variables from Hsiao and Chen's model were divided into two categories

for this study. Gender and habit were chosen as moderators, and platform, age and income were only to be included in the data collection and not further analysed unless something unexpected is to appear from the data.

A more in-depth definition of the constructs and moderators, as well as the proposed hypotheses, is described in the sections below.

3.2 MODERATORS

In order to examine how the constructs in the model might be affected by other factors, two moderators were incorporated into the model: gender and habit.

The moderating factor gender is in this paper defined as either 'Female' or 'Male'. The moderating factors habit is how much time the consumer spends on mobile games per day. Gender was chosen because it was found interesting to examine whether there was a differentiation between men and women's in-app purchase intention as well as mobile game loyalty. Habit was chosen as a moderator, as there might be a connection to how much time one spends on a mobile game and one's purchase intentions as well as how loyal one is to that game. A brief review of both gender and habit has been carried out below.

3.2.1 Gender

Previous studies on gender differences have found males to be more assertive and dominant as well as less anxious than females. Females have a higher score when it comes to developing their ego. However, this advantage diminishes with age, which can be a result of earlier maturation in females compared to males (Feingold, 1994). In high school seniors, male students score higher on mechanical reasoning and spatial visualisation, whereas female students score higher on spelling, language use and perceptual speed. No difference was found in verbal reasoning, figural reasoning or arithmetic (Feingold, 1994). When it comes to decoding non-verbal cues, such a body language, females are substantially better when compared to males (Feingold, 1994).

A study on the gender differences in personality across the ten aspects of the 'Big Five', showed that females reported higher on the aspects of extraversion, agreeableness and neuroticism than males (Weisberg, De Young, & Hirsh, 2011). No significant gender difference was present in the aspect of conscientiousness. However, when measuring the aspect of orderliness, females scored higher than men. No significant difference was found when measuring openness and intellect. (Weisberg et al., 2011).

Stereotypically, people who play games are usually perceived as being male or as an "isolated, pale-skinned teenage boy", however, studies show that men and women play games approximately the same, even though video gaming is still strongly associated with men (Paaßen, Morgenroth, & Stratemeyer, 2017).

On the basis of this brief review, it can be concluded that there are some differences between the genders, although they are also similar in some aspects. It can be assumed that gender might play a role in how other constructs affect mobile game loyalty and in-app purchase intention.

3.2.2 Habit

According to Mazzariello (2014), habit and automaticity can sometimes be used interchangeably, but the two are not synonymous. Rather, habits are better understood as learned automatic responses, as they are formed as people pursue goals by repeating the same responses in a given context. Habits and deliberate goal pursuit guide actions in a cooperative manner, although habits are the efficient and default mode of response. In general, people tend to infer from the frequency of habit performance that the behaviour must have been intentional (Mazzariello, 2014).

Habit dictates many behavioural intentions; once a behaviour becomes a habit, it becomes automatic and is carried out without conscious decision. For example, 40-60% of customers purchase from the same store through sheer force of habit (Lin & Wang, 2006). According to Lin and Wang's study, habit appeared to be a significant determinant of customer loyalty (2006).

This review has shown that habit can presumably have an effect on other constructs when it comes to mobile game loyalty as well as in-app purchase intention.

The moderating hypotheses for both gender and habit will be included in the respective construct's section in order to maintain an overview of the various hypotheses proposed in this thesis.

3.3 HEDONIC OUTCOME EXPECTATIONS

Previous studies in consumption theories suggest that consumption is motivated by experiential outcomes (Batra & Ahtola, 1991; I. C. Chang et al., 2014; Childers et al., 2001). Both utilitarian and hedonic expectations can possibly affect the consumers' motivation for continuing to play a game if playing a game can be regarded as a form of consumption. The consumers, or players, spend time, energy and sometimes money in exchange for a gaming experience that gives enjoyment, pleasure

and/or rewards (I. C. Chang et al., 2014). The ambiguity of the two dimensions can make it difficult to determine which actions and objects are of hedonic or utilitarian nature.

Chang et al. describe outcome expectations as expected consequences of one's own behaviour and thus, hedonic outcome expectations as "expectations associated with online game playing that may result in different forms of enjoyment (such as playfulness, fun and pleasure)" (2014). A favourable experience of utilitarian and/or hedonic values results in consumers staying longer on websites as well as more frequent online usage (I. C. Chang et al., 2014). It can be assumed that this will hold true for online mobile games as well. The following hypotheses are proposed in order to measure the effect hedonic outcome expectations have on loyalty as well as in-app purchase intention:

H1. Hedonic outcome expectations positively influence loyalty to the mobile game.

H2. Hedonic outcome expectations positively influence in-app purchase intention.

With the moderating hypotheses:

H1g. The relationship between hedonic outcome expectations and mobile game loyalty will become stronger if the respondent is male.

H1h. The relationship between hedonic outcome expectations and mobile game loyalty will become stronger with increasing habit.

H2g. The relationship between hedonic outcome expectations and in-app purchase intention will become stronger if the respondent is male.

H2h. The relationship between hedonic outcome expectations and in-app purchase intention will become stronger with increasing habit.

These hypotheses will be tested by measuring how much enjoyment the users are experiencing as well as how much pleasure they feel and how much fun they have when playing the game (I. C. Chang et al., 2014).

3.4 UTILITARIAN OUTCOME EXPECTATIONS

Chang et al. describes utilitarian outcome expectations as "goal-oriented outcome expectations, including expectations of gaining recognition of others, and receiving extrinsic rewards (e.g. upgrade,

prize, experience point and money, etc.)" (2014). As mentioned in the literature review, utilitarian motivations can enhance a consumer's intention to continue using the app (I. C. Chang et al., 2014; Lepper et al., 1973). Based on this and the information stated in the above section on hedonic outcome expectations, the following hypotheses are proposed in order to measure the effect utilitarian outcome expectations have on loyalty as well as in-app purchase intention:

H3. Utilitarian outcome expectations positively influence loyalty to the mobile game.

H4. Utilitarian outcome expectations positively influence in-app purchase intention.

With the moderating hypotheses:

H3g. The relationship between utilitarian outcome expectations and mobile game loyalty will become stronger if the respondent is male.

H3h. The relationship between utilitarian outcome expectations and mobile game loyalty will become stronger with increasing habit.

H4g. The relationship between utilitarian outcome expectations and in-app purchase intention will become stronger if the respondent is male.

H4h. The relationship between utilitarian outcome expectations and in-app purchase intention will become stronger with increasing habit.

These hypotheses will be tested by measuring the users' sense of accomplishment, their chances of acquiring rewards and upgrades, as well as whether or not they believe they are perceived as achieving a higher status or being more competent by their friends when playing the game (I. C. Chang et al., 2014).

3.5 ACCESS FLEXIBILITY

As mentioned, mobile games are played on mobile devices such as phones or tablets. These devices are hand-held and therefore also more accessible, portable and convenient than other gaming platforms such as computers and gaming consoles (Wei & Lu, 2014). Thus, access flexibility refers to the degree to which a user can play a mobile game at any time and control which period of time to play (Hsiao & Chen, 2016; Wei & Lu, 2014).

According to Hsiao and Chen, accessibility and flexibility are essential for the performance, and quality value in a mobile game service. Past research has shown that availability and flexibility are important service quality factors for application service providers (Hsiao & Chen, 2016). Access flexibility revolves around the possibility to enjoy a game without any constraints of time and space and is therefore also referred to as time flexibility. Due to the increase in more and more advanced hand-held devices, this factor has become increasingly important to the consumers, who are now used to a high level of access flexibility all around them (Wei & Lu, 2014).

The increasing demand for access flexibility and the consumers' increasing need for instant consumption and entertainment has been a game-changer for many in the entertainment industry. Netflix is a good example of a company who embraced (or arguably created) the need for instant access to TV-shows and movies. It can be assumed that mobiles game providers must also enhance the accessibility and flexibility of its platform in order to allow the player to keep enjoying the game whenever they want to. A user's loyalty and purchase intention can, therefore, ideally be improved by increasing access flexibility (Hsiao & Chen, 2016). Thus, the following hypotheses are proposed for access flexibility:

H5. Access flexibility positively influences loyalty to the mobile game.

H6. Access flexibility positively influences in-app purchase intention.

With the moderating hypotheses:

H5g. The relationship between access flexibility and mobile game loyalty will become stronger if the respondent is male.

H5h. The relationship between access flexibility and mobile game loyalty will become stronger with increasing habit.

H6g. The relationship between access flexibility and in-app purchase intention will become stronger if the respondent is male.

H6h. The relationship between access flexibility and in-app purchase intention will become stronger with increasing habit.

These hypotheses will be tested by measuring whether or not the user can start and stop playing the game whenever they want, as well as being able to control the amount of time they spend on playing the game (Hsiao & Chen, 2016).

3.6 CONNECTEDNESS

To feel connected to others is a basic human need. This need is the *love* need, which is the third need of the five basic human needs. Once the first two needs have been fulfilled, the physiological need and the safety need, a person will long for affection and belongingness (Maslow, 1943). Consequently, it is only natural that a feeling of connectedness will affect how the consumer will act.

Connectedness refers to an individual's feeling of being connected to others through the sharing of experiences and feelings. Hence, it is the feeling of fulfilment of social interaction needs and the feeling of being close or connected to others, for example from the use of a given technology (Zhao & Lu, 2012). This technology could be, for example, a chatroom, an online forum or a mobile game.

Hsiao and Chen (2016) describe the construct of connectedness as being a social value for the consumer, and the social value that consumers find in a mobile game can help enhance the social self-concept of themselves (Zhao & Lu, 2012). Perceived connectedness has also been described as a "sense of being connected to others through playing a mobile game" (Hsiao & Chen, 2016; Zhao & Lu, 2012). Wei and Lu (2014) found questionnaire respondents saying that they played mobile games because their friends played the game, or that they played it in order to improve their friendships, proving that a feeling of connectedness can improve the intention to play a mobile game (Wei & Lu, 2014). Hence, it can be assumed that a feeling of connectedness will also improve mobile game loyalty as well as purchase intention. The following hypotheses are proposed to investigate this:

H7. Perceived connectedness positively influences loyalty to the mobile game.

H8. Perceived connectedness positively influences in-app purchase intention.

With the moderating hypotheses:

H7g. The relationship between perceived connectedness and mobile game loyalty will become stronger if the respondent is male.

H7h. The relationship between perceived connectedness and mobile game loyalty will become stronger with increasing habit.

H8g. The relationship between perceived connectedness and in-app purchase intention will become stronger if the respondent is male.

H8h. The relationship between perceived connectedness and in-app purchase intention will become stronger with increasing habit.

These hypotheses will be tested by measuring the users' beliefs of whether users of the game share a common bond or are able to share their experience and feelings through the game, as well as if they believe users can benefit from the user community when playing the game (Hsiao & Chen, 2016).

3.7 GOOD PRICE

Economically rational consumers will generally perceive the price as an important financial cost component when it comes to acquiring new things. If the price of an object increases, the perception of the value of that object will decline as the consumer now gets less for their money. If an object's price is perceived as unacceptable by a consumer, the object will be assessed with little or no net value (Chu & Lu, 2007). Thus, companies should strive to find the best price for the consumer, so as to give the consumer a perception of good price.

Good price refers to the consumer's perception of short-term and long-term costs. When consumers wish to acquire a product or service, the price of that product or service affects whether or not the consumer is willing to make that monetary sacrifice in order to obtain it (Hsiao & Chen, 2016). In this study, the product or service in question is in-app purchases in a mobile game, and hence this study uses the same definition of 'good price' as Hsiao and Chen: "the degree to which a consumer believes that the mobile game service received was worth the monetary cost." (2016). It is always subjective what amount of money a consumer perceives as fair in exchange for a product or service. The willingness to pay can differ a lot from person to person depending on their personal values and perceptions. Therefore, 'good' price is relative, as each individual will have to decide whether the product or service is worth the price they pay. If they do feel like the service received was worth the price they paid, the perception they have of the value received for that price will be high. In contrast to if the consumer does not believe the service to be worth the price, the perception of the value received will be low (Hsiao & Chen, 2016).

The following hypotheses are proposed in order to measure how the perception of price affects mobile game loyalty and purchase intention:

H9. Good price positively influences loyalty to the mobile game.

H10. Good price positively influences in-app purchase intention.

With the moderating hypotheses:

H9g. The relationship between good price and mobile game loyalty will become stronger if the respondent is male.

H9h. The relationship between good price and mobile game loyalty will become stronger with increasing habit.

H10g. The relationship between good price and in-app purchase intention will become stronger if the respondent is male.

H10h. The relationship between good price and in-app purchase intention will become stronger with increasing habit.

These hypotheses will be tested by measuring the users' economic perception of the mobile game, such as whether they believe the objects available for purchase to be reasonably priced and be worth the monetary sacrifice (Hsiao & Chen, 2016).

3.8 MOBILE GAME LOYALTY

Online loyalty has been defined as a consumer's intention to buy from a website or to visit it again. This can be translated to mobile games, where loyalty to the mobile game refers to a user's willingness to keep playing or recommend that mobile game to others (Hsiao & Chen, 2016). As also mentioned in the literature review, loyalty is a very central aspect of consumer behaviour to both customers and companies. The term stickiness was briefly introduced in the literature review, and while stickiness and loyalty to a mobile game are intertwined, stickiness is a much broader term covering much more than just loyalty (Furner et al., 2015). Therefore, this study will only put its focus on that of mobile game loyalty and will not dive into the otherwise interesting topic of stickiness.

A loyal consumer of a product or service may reduce their searching, evaluating and decision-making time, as they might not actively look for any other alternatives (Hsiao & Chen, 2016). The same can then be true for mobile games, where a loyal consumer will not look for alternatives. It can be

assumed that consumers will not have only one app installed on their devices but might have favourite apps. Therefore, the type of loyalty that deals with mobile games is that of polygamous loyalty. Thus, it should, not be expected that loyal mobile game users will spend 100% of their time on only one app (Sharp, 2013, p. 41). It can also be assumed that consumers who spend a lot of time using an app can be considered loyal users, who will be more likely to make in-app purchases. Therefore, the following hypothesis is proposed:

H11. Loyalty to the mobile game positively influences in-app purchase intention

This hypothesis will be tested by measuring the consumers' general perception of the game, such as the inclination to recommend the mobile game to others and if they would say positive things about it, as well as if they are going to continue playing the game (Hsiao & Chen, 2016).

4 METHOD

This chapter presents this thesis' methodological approach to research. The chapter will explain the chosen research philosophy, considerations and risks connected to the process of collecting the empirical data as well as the data collection method itself.

As this thesis draws a lot of inspiration from Hsiao and Chen's study *What drives in-app purchase intention for mobile games? An examination of perceived values and loyalty* from 2016, a very similar method has been used in order to mimic similar results.

4.1

4.2 RESEARCH PHILOSOPHY

No research philosophy is 'better' than another. Rather, it is a question of which might help to answer the proposed research questions or hypotheses (Saunders, Lewis, & Thornhill, 2009, p. 109). A selected research philosophy, a paradigm, consists of three levels: Ontology, epistemology and methodology. Ontology revolves around the study of the nature of reality, being, and existence, and is the *what* of research. Epistemology is the study of knowledge and how one has to reach it, and if it is even possible to reach it and is the *how* of research (Nygaard, 2012, p. 27; Saunders et al., 2009, p. 112). The third and last level, methodology, is derived from the two first aspects. Depending on the structure of the world (ontology) and whether or not the knowledge is obtainable in this world (epistemology), then what is the best way to examine the subject in question? Those are the three levels of a paradigm of research philosophy (Nygaard, 2012, p. 27). Different paradigms with different answers to the three levels exist, and the paradigm that will be used in this thesis is that of positivism.

Positivism has a realistic ontology, meaning that the world exists and that it is arranged in a certain way, despite what our conception of it is. The epistemology of positivism is objective, as it considers it possible to find the truth and exact knowledge on the reality we live in. The world is simply 'there' and can be mapped by exact scientific examination (Nygaard, 2012, p. 29). In positivism, the research must take its point of departure in the directly observable and must be free of all meta-physical, religious, emotional and political convictions. The methodological approach and scientific work consist of the disposition of hypotheses that can be either proven or disproven by collecting quantitative data under controlled conditions. The goal is to uncover the regularity and causations in

the world in order to better predict the future and effects of different phenomena (Nygaard, 2012, p. 30). By making the research as objective as possible, it makes it easier for other researchers to recreate the conditions, conduct the same study and generate the same results. Positivists believe they can continually approach true knowledge by accumulating data and by the repetition of studies. Repetition will intensify the validation of the results and thereby make the increasingly true.

The empirical data collected for this thesis is quantitative in the form of a survey. Hence, the epistemology of this thesis is objective, as the data cannot be analysed subjectively. The objectivity of the data helps to gain an understanding of which of the hypotheses are true or false, thereby gaining true knowledge on the subjects of this thesis. The positivistic aspects are also present in the fact that the methods of this thesis are based on previous positivistic studies in order to further validate or challenge their findings, as well as how this study will open up for and encourage other researchers to do the same with the findings of this thesis.

4.3 SCOPE CONSIDERATIONS

As mentioned in the literature review, the majority of previous studies in this field has been conducted in Asia. This is why this study has tested the model only in Denmark in order to give a more specific and usable result in this geographic area. Denmark was chosen to be the geographic focus of this study for mainly two reasons: 1) there seems to be no similar research on this area in this country and 2) being a resident in Denmark myself made the collection of data more accessible than it would have been in other countries, e.g. Germany or Sweden.

Pokémon GO was briefly introduced as the app that this study will build upon. As mentioned, the app is still the number 1 most played mobile game by player count with 1 billion players ("List of most-played mobile games by player count," n.d.), and the app had its best year in terms of revenue in 2019 with approximately 894 million dollars in user spending (Chapple, 2020). These factors make the app very relevant to use as a case study, as it can be assumed that it will have many players and therefore many potential people to gather empirical data from, and that many of the players might previously have had experience with purchases in the app. Other apps that were considered are Candy Crush Saga and Subway Surfers, both of which are also very popular and has many active players. Ultimately, Pokémon GO seemed more interesting due to the innovativeness of its GPS-tracking and augmented reality features, as well as the bigger user baser. These were some of the considerations that were made in order to choose an app for this study.

Saunders, Lewis, and Thornhill (2009, p. 152) argue that a mixed method approach using both qualitative and quantitative data can give a broader understanding of the study and more confidence in the data collected. However, the authors also note that researches should be explicit about their reason for conducting multiple methods research and not just do it to 'gather more data'. While this study could arguably benefit from additional data gathering, for example, in the form of qualitative interviews, this study will be limited to only one method of data collection. This limitation is due to both the time and the length scope of this thesis. As mentioned earlier, this is also why other researchers are highly encouraged to make further explorations on this subject.

4.4 DATA COLLECTION

The data used in this thesis is a qualitative survey. A survey was chosen because of its possibility to gather a lot of quantitative data quickly and how the results remain objective. A survey also allows the respondents to be anonymous, which can result in more truthful answers and, consequently, more reliable results.

The survey was self-administrated, meaning that the participants filled out the questionnaire independently (Saunders et al., 2009, p. 362). This type of questionnaire gives the respondents more freedom, which can be both positive and negative. They might answer more truthfully than they would have done in an interviewer-administered survey as to appear more successful or likeable. However, as the researcher has no active role during the survey, there is no way to control whether or not the questions are understood correctly. These are just some of the implications of self-administered surveys (Saunders et al., 2009, p. 364).

In order to combat the risk of the respondents misunderstanding the questions, pre-tested and proven questions and constructs were used. The constructs of hedonic outcome expectations, utilitarian outcome expectations, access flexibility, connectedness, good price, mobile game loyalty and in-app purchase intention could be directly measured through existing scales. These will be further explained later in this chapter.

In order the reach as many potential respondents as possible, the internet-mediated approach was chosen. The ideal type of population to use this approach on is "Computer-literal individuals, who can be contacted by […] internet" (Saunders et al., 2009, p. 364). In 2018, 93% of Danish households had internet access (Eurostat, 2018) which makes them contactable via the internet. It can also be assumed that if the respondents are active or previously active users of Pokémon GO, they can also

be considered 'computer-literal'. The platform used for the self-administered internet-mediated survey was Qualtrics.

Other studies in this area, such as Hsiao & Chen (2016), distributed their questionnaire to only virtual communities of the particular app they were examining. App-users who are engaged in an online community specifically focused on the app in question can be assumed to be more loyal to the app than the average user. As a more diverse base of respondents was desired, it was chosen to distribute the questionnaire in an online community as well as in a more casual user group. The online community which was chosen for distribution of the questionnaire was a Danish Facebook group called 'Pokémon GO: Denmark' with 17,200 members. The group is a social community where users of the app can connect with each other, share tips and tricks and sometimes host events where the community can come together. From this group, loyal and involved answers in the questionnaire were expected. In order to reach more casual users of the app, the questionnaire was shared in a post on a personal Facebook profile as well as shared by several other personal profiles with different types of networks. From this distribution, more casual answers and less involvement was expected. With these two distributions combined, the survey results will arguably be more varied as well as be a better representation of reality than if only one of the two had been approached. No form of compensation was offered in return for participating in the questionnaire. The questionnaire was targeted at current or previous users of the app, and non-users were removed from the final, useable responses. After any incomplete or otherwise invalid responses were removed from the sample, 388 usable responses remained.

Analysis of the sample shows that 63.1% of respondents were female, most respondents were between 23 and 27 years of age or 48+ years of age, and most respondents played mobile games for 1-3 hours a day. 100% of respondents in the final questionnaire sample were currently playing or had previously played Pokémon GO. See Table 4.1 for a summary of the demographic profile of respondents.

Table 4.1
Demographic profile of respondents

Measure	Items	Frequency	%
Gender	Female	245	63.1
	Male	141	36.3
	Prefer not to say	2	.5
Age	18-22	33	8.5
	23-27	88	22.7
	28-33	56	14.4
	34-37	38	9.8
	38-43	49	12.6
	44-47	40	10.3
	> 48	84	21.6
Income (DKK)	<175,000	125	32.2
	175,000–300,000	101	26.0
	300,000–600,000	138	35.6
	600,000–1,000,000	20	5.2
	>1,000,000	4	1.0
Play time per day (all apps)	<1 hour	132	34.0
	1–3 hours	185	47.7
	3–5 hours	54	13.9
	5–7 hours	11	2.8
	>7 hours	6	1.5
Mobile game platform	iOS	176	45.4
	Android	211	54.4
	Other	1	.3
Experience with Pokémon GO	Yes	388	100
	No	0	.0

4.5 MEASUREMENTS

The questionnaire contained two sections: The demographic profile, as seen in Table 4.1, and the measurement of the construct items. All the items that are used to operationalise the constructs included in the research model presented in Figure 3.1 has been adapted from relevant prior studies and has been slightly modified to fit the target context of this study. Appendix A lists the questions used to measure the constructs of the survey. Additionally, they can also be seen in Table 4.2.

While the questions stated in Appendix A and in the table are in English, the questionnaire itself was translated into Danish before distribution (See the translated questions in Appendix B). The translation was done to ensure that every relevant respondent could participate and not be limited by poor English skills. While Denmark's English proficiency is very high (English First, 2019), releasing a questionnaire in another language than Danish might result in misunderstandings and uncertainty and thereby cause invalid responses, that would have been extremely difficult to sort out from the sample.

Items for measuring access flexibility, connectedness, good price, in-app purchase intention and mobile game loyalty were all adapted from Hsiao and Chen (2016). Items for measuring hedonic outcome expectations and utilitarian outcome expectations were adapted from Chang, Liu and Chen (2014). The adaptions mostly consisted of replacing 'mobile game' or 'Tower of Saviours' with 'Pokémon GO' in order to make the questions more relevant and specific for this study.

A 5-point Likert scale was used to measure all the items. This method was chosen as to not limit the respondent's with 'yes' or 'no' answers, but also to avoid asking too interpretative open-ended questions. A Likert scale provides the respondents with the possibility of giving nuanced, yet generic, answers that can express their opinion. The scale used in this thesis ranged from ''strongly disagree" (1) to ''strongly agree" (5). A test of the questionnaire was conducted with three respondents familiar with this area of study before distributing it in order to ensure clarity and understandability.

To make sure the constructs measured by means of the questionnaire are trustworthy, the reliability of the items was tested using Cronbach's Alpha. In order for the constructs to be reliable, the Cronbach's Alpha (α) has to be between 0.5 and 1.0. There are 6 commonly accepted levels of reliability: $\alpha < 0.5$ (Not acceptable), $0.5 \leq \alpha < 0.6$ (Poor), $0.6 \leq \alpha < 0.7$ (Questionable), $0.7 \leq \alpha < 0.8$ (Acceptable), $0.8 \leq \alpha < 0.9$ (Good), $0.9 \leq \alpha$ (Excellent). The reliability test in this study was calculated using a reliability analysis in the statistical program SPSS Statistics. Hedonic outcome expectations' reliability was calculated at 0.88, and Utilitarian outcomes expectations' reliability was 0.70. Access

flexibility was at 0.71, connectedness at 0.68, good price at 0.81, mobile game loyalty at 0.87 and in-app purchase intention was at 0.95. Thus, the reliability test shows that the measured constructs are reliable and can be used for further analysis. A summary of the reliability test using Cronbach's α as well as the items used to measure the constructs can be seen in Table 4.2.

Table 4.2
Reliability test - Cronbach's Alpha

Construct	Cronbach's α	Reliability level
Hedonic outcome expectations (HED)	.88	Good
1. If I play Pokémon GO, I will experience enjoyment.		
2. If I play Pokémon GO, I will feel pleasure.		
3. If I play Pokémon GO, I will have fun.		
Utilitarian outcome expectations (UTI)	.70	Acceptable
1. If I play Pokémon GO, my peers will perceive me as competent.		
2. If I play Pokémon GO, I will increase my sense of accomplishment.		
3. If I play Pokémon GO, I will increase my chances of obtaining an upgrade.		
4. If I play Pokémon GO, I will be seen as having higher status by my peers.		
5. If I play Pokémon GO, I will increase my chances of getting a reward (e.g. Pokécoins and experience points).		
Access flexibility (ACC)	.71	Acceptable
1. I can control the time playing Pokémon GO by myself.		
2. I can play Pokémon GO anytime.		
3. I can begin and stop playing Pokémon GO at any time.		
Connectedness (CON)	.68	Questionable
1. Players of Pokémon GO share their experience and feelings with others through this mobile game.		
2. Players of Pokémon GO benefit from the user community using this mobile game.		
3. Players of Pokémon GO share a common bond with other players.		
Good price (PRI)	.81	Good
1. Pokécoins of Pokémon GO are reasonably priced.		

2. Pokécoins of Pokémon GO are good relative to the price.		
3. Pokécoins of Pokémon GO are economical.		
Mobile game loyalty (LOY)	.87	Good
1. Pokémon GO is my first choice of mobile game.		
2. I will continue to play Pokémon GO		
3. I am willing to say positive things about Pokémon GO to others.		
4. If others want to play a mobile game, I will recommend Pokémon GO.		
5. I will encourage friends and relatives to play Pokémon GO.		
In-app purchase intention (INT)	.95	Excellent
1. I intend to pay for the Pokécoins in Pokémon GO in future.		
2. I predict that I would pay for the Pokécoins in Pokémon GO in future.		

All of the alpha coefficients of the constructs ranged from 0.68-0.95, which is within the recommended reliability scale and can, therefore, be accepted for use in this thesis. It is noticed that the construct CON is in the lower end of the scale, Questionable, but nonetheless, it is still acceptable and sufficiently reliable to use.

5 RESULTS

This chapter will present the results of the statistical analysis performed in order to test the proposed research model. First, however, some descriptive statistics from the data will be presented in order to understand the results better.

5.1 DESCRIPTIVE STATISTICS

This section will briefly go over the means and standard deviation of the data set and will provide a better understanding of the relationships analysed afterwards.

To summarise, the Likert-scale used for the survey has a range from ‘‘strongly disagree” (1) to ‘‘strongly agree” (5), and the median thereof being 3. Thus, all means above 3 indicates a general agreement of the statement proposed in the questionnaire and, a mean below three indicates a general disagreement.

Access flexibility and hedonic outcome expectations have the highest means and standard deviations of the data set, while good price and in-app purchase intention has the lowest means. Mobile game loyalty has the highest standard deviation with a standard deviation of 1.55 compared to in-app purchase intention, which has the second highest standard deviation of 0.93. The standard deviation is important to consider, as it shows us how spread out the group is from the mean. A low standard deviation will indicate that most respondents are very close to that mean, whereas a high standard deviation will indicate a much larger dispersion of the respondents. Hence, the standard deviation tells us how unanimous the group is. A complete overview of the descriptive statistics of these and the rest of the constructs can be seen in Table 5.1. The data indicates an agreement that the game is hedonically satisfying due to the HED mean (4.12), while the respondents seem to disagree with the statements of the utilitarian aspects of the app more than they agree with it, the mean (2.92) is very close to 3, making it inconclusive. This shows that the players do not necessarily use the app for utilitarian reasons, but for some, it might still play a factor. The high mean of access flexibility (4.42) tells us that there is a consensus among the respondents of the app being accessible at all times. There also seems to be a slight agreement with a positive perception of connectedness with a mean of 3.61. The price mean (2.75) indicates that the prices in the app are not good compared to the perceived quality, which goes hand-in-hand with the in-app purchase intention mean (2.65). This suggests that people are not willing to make in-app purchases as the value for money is too low. The standard deviations of the mentioned constructs are very similar, ranging from 0.77-0.93, whereas the last

construct, mobile game loyalty, had a standard deviation of 1.55. While the mean is high with 3.82 (indicating a positive perception of the game and the gaming experience in general), the answers are more spread out across the Likert-scale of this construct, meaning that the respondents have had more dissimilar answers than in the other constructs with lower standard deviations. This makes sense when considering the questionnaire being shared with both very engaged users in a designated community and more casual users. It can be assumed that the more engaged users will have given higher responses and the casual users giving lower responses in terms of loyalty towards the app, which can explain the greater standard deviation.

Table 5.1
Descriptive statistics

Construct	Mean	S.D.
Hedonic outcome expectations (HED)	4.12	0.71
Utilitarian outcome expectations (UTI)	2.92	0.70
Access flexibility (ACC)	4.43	0.77
Connectedness (CON)	3.62	0.89
Good price (PRI)	2.75	0.93
Mobile game loyalty (LOY)	3.82	1.55
In-app purchase intention (INT)	2.65	0.94

5.2 HYPOTHESIS TESTING

This section will present the findings that will either prove or disprove the hypotheses proposed in chapter 3 and thereby test the research model. The statistical program SPSS Statistics was utilised to perform linear regression in order so as to find out whether there is a significant relationship between some of the constructs. As seen in the previous chapter, the constructs are all reliable and can be further tested and analysed. For this thesis, the generally accepted significance levels will be used: † indicates a p-value of less than 1.0, * indicates less than 0.5, ** indicates less than 0.01 and *** indicates less than 0.001. All p-values above 1.0 are non-significant (n.s.). The lower the p-value, the more significant the relationship is between the constructs. See Figure 5.1 for a summary of the tested research model.

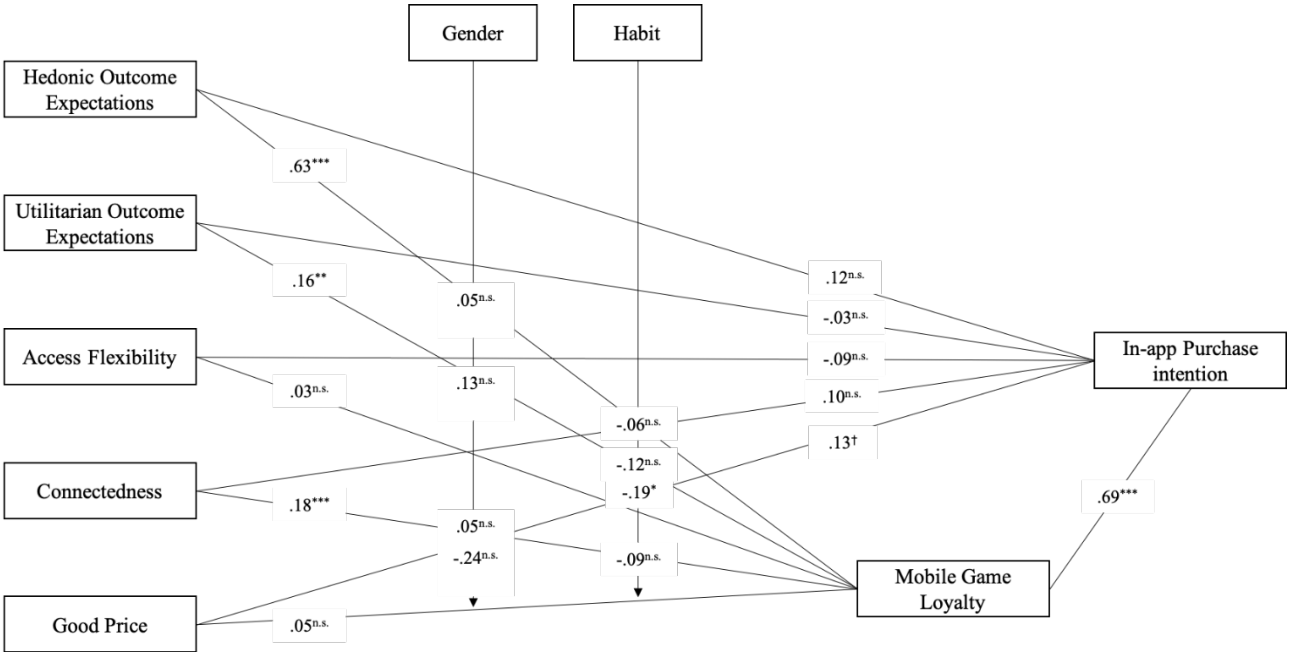

Figure 5.1 *- Analysis of the In-app purchase intention model.*
*Notes: Significant at † <1.0, * < 0.05; ** < 0.01; *** < 0.001.*

After having tested all the hypothesis, it became clear that not all of them can be supported as they do not all significantly influence either mobile game loyalty or in-app purchase intention. For the mobile game loyalty construct, the construct of hedonic outcome expectations has a positive and significant effect. This supports H1 (b = 0.63, p = < 0.001). The construct of utilitarian outcome expectations has a positive and significant effect, which supports H3 (b = 0.16, p = < 0.01). Access flexibility has a positive but non-significant effect, thus H5 cannot be supported (b = 0.03, p = > 1.0). Connectedness has a positive and significant effect on mobile game loyalty, thus supporting H7 (b = 0.18, p = < 0.001). The last construct tested with regards to mobile game loyalty is good price, which has a positive but non-significant effect (b = 0.05, p = > 1.0). H9 is, therefore, not supported.

When testing the constructs relationship with in-app purchase intention, hedonic outcome expectations had a positive effect, however it was not significant (b = 0.12, p = > 1.0), meaning that H2 is not supported. The construct of utilitarian outcome expectations has a negative but also non-significant effect (b = -0.03, p = > 1.0), which is unsupportive of H4. Access flexibility also has negative and non-significant effect (b = -0.09, p = > 1.0), and H6 is, therefore, also not supported. Connectedness has a positive and non-significant effect (b = 0.10, p = > 1.0) and H8 is not supported. Good price has a positive effect and seems to be significant, however, not by a lot (b = 0.13, p = < 1.0). Thus, H10 is supported. As expected, mobile game loyalty has a positive as well as significant effect on the in-app purchase intention (b = 0.69, p = < 0.001), and H11 is therefore supported.

An overview of the hypothesis testing can be seen in Table 5.2.

***Table 5.2** - Results of hypothesis testing*
*Notes: Significant at † <1.0, * < 0.05; ** < 0.01; *** < 0.001.*

Hypothesis	Path	Unstandardized *b*	Conclusion
H1	HED → LOY	.63***	Supported
H2	HED → INT	.12n.s.	Unsupported
H3	UTI → LOY	.16**	Supported
H4	UTI → INT	-.03n.s.	Unsupported
H5	ACC → LOY	.03n.s.	Unsupported
H6	ACC → INT	-.09n.s.	Unsupported
H7	CON → LOY	.18***	Supported
H8	CON → INT	.10n.s.	Unsupported
H9	PRI → LOY	.05n.s.	Unsupported
H10	PRI → INT	.13†	Supported
H11	LOY → INT	.69***	Supported

For the moderating hypotheses, only the ones that moderates a significant relationship will be tested. That includes H1g, H1h, H3g, H3h, H7g, H7h, H8g and H8h. Hence, H2g, H2h, H4g, H4h, H5g, H5h, H6g, H6h, H9g, H9h, H10g and H10h are all automatically disproven and will not be further tested. Of all the tested moderators, only one turned out to be significant: H8h. Thus, habit has a significant negative effect on the relationship between good price and in-app purchase intention (b = -0.194, p = < 0.05) and the hypothesis can be supported. H1g, H1h, H3g, H3h, H7g, H7h and H8g all had a p-value of more than 1.0, and thus the tested moderating hypotheses cannot be supported. Of the unsupported moderating hypotheses H1g, H3g and H7g had positive yet insignificant effects, whereas H1h, H3h, H7h and H8g had a negative, insignificant effect. An overview of the moderating hypotheses testing can be seen in Table 5.3.

***Table 5.3** - Results of moderating hypothesis testing.*
*Notes: Significant at † <1.0, * < 0.05; ** < 0.01; *** < 0.001.*

Moderating hypothesis*	Moderator	Moderated path	Unstandardized b	Conclusion
H1g	Gender	HED → LOY	$.05^{n.s.}$	Unsupported
H1h	Habit	HED → LOY	$-.06^{n.s.}$	Unsupported
H3g	Gender	UTI → LOY	$.13^{n.s.}$	Unsupported
H3h	Habit	UTI → LOY	$-.12^{n.s.}$	Unsupported
H7g	Gender	CON → LOY	$.05^{n.s.}$	Unsupported
H7h	Habit	CON → LOY	$-.09^{n.s.}$	Unsupported
H8g	Gender	PRI → INT	$-0.24^{n.s.}$	Unsupported
H8h	Habit	PRI → INT	$-.19^{*}$	Supported

**Only the significant paths' moderators have been tested.*

Now that we have a clear idea of which constructs are significant, we can have a look at *how* they affect mobile game loyalty and in-app purchase intention.

As HED → LOY had a positive Beta (*b*) of 0.63, there is a positive relationship between HED and LOY, meaning that a larger perception of hedonic outcome expectations will result in a higher mobile game loyalty. HED therefore has a positive influence on LOY, proving H1 to true. The same is true for UTI → LOY (*b* = 0.16) and CON → LOY (*b* = 0.18), as their *b*'s are also positive, proving H3 and H7 to be true as well. The model testing mobile game loyalty has an R-square of 0.397, meaning that 39,7% of mobile game loyalty can be explained by this model. The last 60,3% can be explained by other factors.

Unsurprisingly, LOY → INT was significant and had a positive *b* of 0.69. A greater loyalty to the app therefore results in a greater purchase intention and thus, loyalty has a positive influence on in-app purchase intention. H11 is therefore proven true. PRI → INT had a positive *b* of 0.13, thus the relationship between PRI and INT is positive as well. A better perception of the prices in the app will result in a greater purchase intention. However, it is important to note that this construct was close to being insignificant even though the hypothesis has been proven true. The model testing in-app purchase intention has an R-square of 0.234, meaning that 23,4% of in-app purchase intention can be explained by this model. The last 76,6% can be explained by other factors.

In the moderating factors, the only significant one was that of habit influencing the relationship between PRI and INT. The moderator had a negative *b* of -0.19, meaning that an increase in playtime will weaken the relationship between the two constructs. The more time a user spends on apps, the less likely they are of having their perception of price influence their purchase intention. This supports the conclusion that increased loyalty will positively influence purchase intention, as it can be assumed that loyal mobile app users will spend more time on an app. H8h is therefore disproven, as the relationship between good price and in-app purchase intention did not become stronger with increasing habit.

It can be concluded that habit did not play a large role in the perception of the tested constructs. Gender also seemed to have no significant effect on any of the five tested constructs.

6 DISCUSSION

This chapter will discuss the results and findings from the previous chapter in four sections. The meaning, importance and relevance of the results will be investigated as well as the implications of this study will be explained. Limitations and what this study cannot tell us will be discussed along with what might have been done differently in the process of this study. This chapter will be followed by a conclusion and recommendations for further research.

6.1 RESULTS

The first section of the discussion will elaborate on the results and try to reach a conclusion of what might be the reasons of the outcomes of the analysis and the implications thereof.

In the results, five hypotheses could be proven true and six was disproven. The first proven hypotheses that will be discussed is H1 and H3, which hypothesised that hedonic and utilitarian outcome expectations would positively influence mobile game loyalty. This thesis has tested the model using a gaming app, which will naturally be an app of hedonic nature, as hedonic values are tied with pleasure, fun and enjoyment. These elements are what one will generally expect from a game. It was, therefore, expected that consumers would rate this construct highly. The average response in the survey was 4.12 for this construct, meaning that the respondents found Pokémon GO to be very hedonic. When downloading an app from the game category, such as Pokémon GO, it can be assumed that the consumer has an expectation for the downloaded mobile game to be entertaining. It therefore makes sense that the *b* value was 0.63, which is quite high compared to the rest of the results, as the consumer will want to keep playing a game if it lives up to the hedonic outcome expectations they had for the app when initially downloading it. Thus, the relationship between hedonic outcome expectations and mobile loyalty can be explained by the general expectations the consumer has for the app. What was more surprising was the significant relationship between the utilitarian outcome expectations and mobile game loyalty. While the type of utilitarian values measured in this thesis was tailored to mobile games and not the typical functionalities that one would usually connect with utilitarianism, it was still surprising that the construct had a significant, positive effect. It was surprising due to the fact that the descriptive statistics showed the average response on this construct to be 2.92, just below the median. While the effect is a lot smaller than that of the hedonic counterpart with only 0.16, it was still proven to be positive, meaning that an increased

perception of utilitarian outcome expectations will result in an increase in loyalty. See Figure 6.1 for a visual representation of the two relationships.

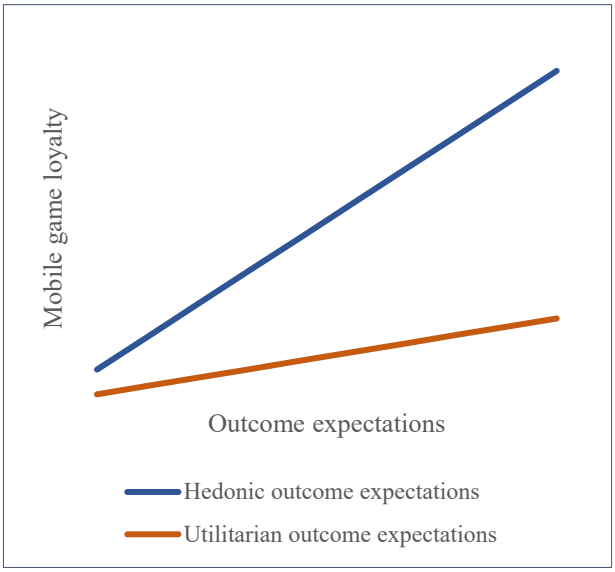

Figure 6.1 *- Visual representation of the relationship between outcome expectations and mobile game loyalty.*

Some of the questions regarding utilitarian outcome expectation was about how the respondents was perceived by their peers. Arguably, the answers to these questions are largely affected by whether or not the respondents' peers are active users of the app as well. This correlates with the findings of I. C. Chang et al. (2014). If you are part of a gaming community, doing well in a particular game might bring you recognition and some kind of increased status in said community, whereas if none of your peers play the game, they will most likely not recognise the accomplishments. They might have no way of knowing about the achievements of the user, thus it can be argued that utilitarian outcome expectations are linked to a high level of connectedness. This is supported by the results of this thesis regarding perceived connectedness. The analysis proved that there is a positive relationship of b = 0.18 between perceived connectedness and mobile game loyalty. Hence, users of Pokémon GO are much more likely to stay loyal to the app if they feel connected to people through the app. Pokémon GO allows the player to join one of three teams, strengthening the sense of connectedness for the player through creating a community of fellow team members. Most players who know each other in real life will often join the same team and work against another group of friends, who might have joined another team, creating a sense of togetherness. The game has also been known to foster new friendships when people meet up because of the game, for example if a rare Pokémon shows up at a specific location, or for a battle at a Pokémon Gym (Francisco, 2016). During the popularity peak in 2016 in Denmark, groups of friends would go on 'Pokémon hunts' together as a way of spending time together (Klausen, 2016). Thus, it was expected that connectedness would have a positive effect on mobile game loyalty, as a player would most likely keep playing the game as long as their friends are playing as well. Due to the fact that groups of players would walk around the city on 'Pokémon hunts', it was also expected that access flexibility would have a positive effect on mobile game loyalty, but this was disproven. Even though the answers in the survey had a mean of 4.43, the highest mean of all the constructs, it did not correlate with the mobile game loyalty. An explanation for this

can be the fact that people usually grow accustomed to technological advancements, and while a GPS-tracking game was a new concept four years ago, today it has become more of a normality. Pokémon GO was one of the first apps utilising GPS-tracking as part of the gameplay, but now similar games such as Harry Potter – Wizards Unite (also developed by Niantic Labs) also exist. Due to the constant advancements in the technological world, being able to use your phone and access the internet anywhere, anytime, is no longer a 'feature' but rather something that is expected and a permanent part of our mobile devices. The corresponds with the findings of Wei and Lu's study from 2014. Being able to play Pokémon GO whenever you want is just something that goes without saying, and therefore, does not significantly affect one's loyalty to the game. Presumably, mobile game loyalty might decrease, if Pokémon GO was *not* accessible as all times, however this is not something this study can conclude on.

Price had a positive effect on in-app purchase intention, which seems obvious. If the user believes the price of an object to be good, the user will be more likely to want to purchase that item, which corresponds with the research from Chu and Lu (2007). However, the survey indicated a mean of 2.75 for good price, which is below the median. As the standard deviation was 0.93, the general opinion of the respondents was not very positive when it came to the prices in Pokémon GO. This might originate from the fact that the bigger bundles of Pokécoins, the in-game currency in Pokémon GO, are not cheaper to buy than the small one. It is a common belief that if you buy a larger pack of something, you will get more for your money than had you bought the same amount in smaller packs, also known as bulk buying discounts. We are used to it from the supermarkets, e.g. when a beer is cheaper when buying a pack of 18 instead of a six-pack (Bray, Loomis, & Engelen, 2009). Thus, it is only logical that one would think the same would apply to the purchase of Pokécoins. However, as seen in Table 1.2, it is cheaper to purchase the smallest Pokécoin bundle of 100 Pokécoins for 5 DKK, as 100 Pokécoins would cost 8.18 DKK when buying 550 Pokécoins, being the most expensive bundle when it comes to value. This might affect the perception of the prices in the game, as some players might feel deceived in some way, believing they would get a greater value if they bought a bigger bundle. The reason for the lower score of good price in the survey might also be because the players believe the Pokécoins to be of too little value in the game compared to what the in-game currency costs in real money.

The only significant moderating hypothesis was that of habit having a negative influence on whether a good price would make a user more likely to make a purchase. This is no surprise, as people who

use more time on a game will most likely think less about the monetary sacrifice and more about the potential advancements they could make in the game if they made a purchase.

These were some of the considerations surrounding the proven hypotheses, but the reasons for the other hypotheses not being proven true will now also be discussed. How access flexibility did not significantly affect mobile game loyalty was touched upon above, and the only other hypotheses concerning mobile loyalty that could not be proven was that of good price. Whether users perceived Pokémon GO to have good prices or not, it would not influence how loyal they are to the game. This makes sense, as the price of in-app purchases are not relevant to the gameplay itself. The gameplay, such as the hedonic and utilitarian outcome expectations and connectedness, were proven to have a positive effect on mobile game loyalty. As a regular player who does not currently have any purchase intentions, the area of in-app purchases might be completely out of mind, as he or she can continue playing the game without ever having to make a purchase. This is consistent with the fact that only 5% of app users spend money on apps (Asper, 2017) and might also explain why it is so few who make in-app purchases. It also excludes Pokémon GO from the pay-to-win category, as players are able to advance in the game without purchases, even though they might advance faster by spending money in the game (Darakjian, 2016).

For the most part, the hypotheses that were disproven are the ones affecting in-app purchase intention. This might be explained by the fact that no matter how highly the users think of an app, how much they enjoy it and how cheap its offers are, users still prefer to go the freemium way. As previously touched upon, the vast majority of apps are free with adds, which might result in the consumer growing accustomed to the free app and not having to pay for anything in exchange of watching a few advertisements once in a while(Asper, 2017). As mentioned, Pokémon GO does not utilise the in-app advertisement model, and so they rely completely on their in-app purchases.

As seen from the results, the majority of the respondents are enjoying the game and like to play it. Hence, it can be argued, that if the user is happy and content with the gaming experience they currently have, then there is no incentive to pay money for extra things that they do not need in order to enjoy the game. The only hypothesis the analysis proved relating to purchase intention was that of good price and mobile game loyalty, which makes sense considering above reasoning. The tested model indicates, that Danish users of Pokémon GO are not very likely to be influenced to make in-app purchased by their user-experience in general, at least not the type of user experience tested in this study. This is not surprising, as a lack of in-app purchase intention seems to be the case worldwide

(Asper, 2017). This corresponds with previous research, as other studies have also concluded that value perceptions are formed independently of a purchase intention, even though they are often linked (T. Z. Chang & Wildt, 1994).

With regards to the rest of the moderating hypotheses, none other than H8h could be proven significant. Gender did not have a significant effect on any of the relationships, which corresponds with previous studies on gaming and gender differences (Paaßen et al., 2017). This can be due to the different apps that have been tested, as females and males might be more or less inclined to play different types of games. In this case, Pokémon GO seems to be gender neutral when it comes to both mobile game loyalty and purchase intention, even though the demographic profile of the survey was 63.1% female. More surprisingly, habit did not have any effects on any of the relationships other than good price and in-app purchase intention. It could otherwise be speculated, that an increase in hours used on apps might also make one more inclined to have a need to feel connected to others through the mobile game in order to be loyal to it. This, however, was not the case.

6.1.1 Sub-conclusion

To summarise what this part of the discussion has reached, this paragraph presents a brief sub-conclusion. We now know from the results of hedonic outcome expectations that Pokémon GO lives up to the expectations users have for a game and that this positively influences their willingness to continue playing, i.e. their loyalty. Utilitarian outcome expectations are assumed to be correlated with the users' perception of connectedness, as the user cannot be perceived as competent by their friends if none of them are familiar with the app. Thus, users are more likely to be loyal to the game if they feel connected and can play with their friends, relating to the positive relationship between connectedness and mobile game loyalty. Pokémon GO has also been known to create new friendships and bring people together, which can also strengthen the feeling of connectedness for players. Predictably, a good price will positively influence the users purchase intention, however the users do not seem impressed by the current value for money offered by Pokémon GO. Habit had a negative influence on the relationship between good price and purchase intention, as frequent users might be more concerned with the value than by the price of the in-app purchases. A construct that was thought to have a significant effect, access flexibility, did not, and it was speculated if that could be due to access flexibility having become a matter of course instead of a unique feature. Other hypotheses that could not be proven significant all related to in-app purchase intention. This included the constructs of hedonic outcome expectations, utilitarian outcome expectations, access flexibility and

connectedness. The reason for this was connected to the general opposition towards in-app purchases in consumers, as freemium apps have become the norm, and thus consumers are now used to apps being free of charge. This was also argued to be the reason for the non-significant relationship between good price and mobile game loyalty, as players of Pokémon GO can easily keep playing the game without thinking about purchases.

6.2 IMPROVING MOBILE GAME LOYALTY AND IN-APP PURCHASE INTENTION

This section of the discussion will dive into the two main constructs of this study, mobile game loyalty and in-app purchase intention, in order to try to understand how these can be enhanced and why such an improvement would be beneficial to companies. Thus, a few recommendations as how to increase mobile game loyalty and in-app purchase intention will be made.

Expectedly, mobile game loyalty had a significant and positive effect on in-app purchase intention. This is corresponding with similar studies (Furner et al., 2015; Hsiao & Chen, 2016). In Denmark, people are very indulgent and like to have fun and realise their impulses, which can explain why loyal players are more likely to also make purchases.

When it comes to companies' strategy on mobile game loyalty, Oliver (1999) and Sharp (2013) arguably have the right approach. App companies should stay focused on penetrating the market and get a larger user group instead of focusing on acquiring 100% loyal consumers, especially because most of the players will inevitably also use other apps and mobile games. This makes it difficult to measure true loyalty, as the world of apps is most likely affected greatly by polygamous loyalty. Just because consumers favour Pokémon GO, does not mean they do not also play other mobile games or use other apps. As Sharp states, polygamous loyalty is not for the brand, but rather to help the consumer maker easier decisions as to which option to choose (Sharp, 2013, p. 41). 2.8% of respondents said that they used mobile gaming apps 5 to 7 hours a day, and 1.5% said they played more than that. This is, of course, a very small part of this study's data set, but nonetheless, it is unlikely that all those hours are spend on only one mobile game. The same can be assumed for the rest of the respondents, who said they played less than 5 hours a day.

In the descriptive statistics, we saw that the mean of in-app purchase intention was 2.65 whereas the mean of mobile game loyalty was 3.82. This shows that users are more loyal to Pokémon GO than there the users have purchase intentions, which indicates that loyal mobile game users are not equal to users with in-app purchase intentions, even though loyal users are more likely to have purchase

intentions. Gaining a larger group of loyal consumers will, therefore, not necessarily result in more revenue for the company. Instead, Pokémon GO (and other apps) should focus on maintaining or building upon the aspects of their app that the consumers enjoy in order to keep them as users. It might be contradictory to recommend not focusing too much effort on acquiring loyal users and then also recommending increasing the aspects that seems to make the users more loyal. However, what makes the users more loyal is also what keeps them using the app, also known as stickiness, even though this term is not something this thesis has focused on (Furner et al., 2015). For Pokémon GO, this could mean improving the aspects of the app that keep the players playing, such as the hedonic and utilitarian aspects of the app, as well as the connectedness aspect. When it comes to the construct of hedonic outcome expectations, we deal with enjoyment, pleasure and fun. Thus, Pokémon GO should keep updating their app and adding new features in the game so the players will not grow bored but keep having fun. In order to improve their utilitarian outcome expectations, Pokémon GO might consider combining it with the connectedness factor the app has. The utilitarian outcome expectations construct was, among other things, about accomplishments and how one was viewed by one's peers. Consequently, the two can be combined with more challenges, competitions, events or the like, which could utilise the teams which Pokémon GO already has as well as bring the community closer together. While the game already hosts some similar events once in a while, these are global events. Hosting more local events might engage the local communities even more. However, it can be very resource heavy for The Pokémon Company and Niantic to facilitate this all over the world. A way to remove the workload from the companies could be for them to reach out and involve the already engaged communities. For example, the Facebook group "Pokémon GO: Denmark", in which this thesis' questionnaire was distributed, has taken it upon themselves to sometimes host and communicate events for the players in Denmark. A collaboration between the companies and the user community could make unofficial fan-events official and available in the app itself. This could also promote more players to join the Facebook group, thus growing the community even more. It could be assumed that a similar model could be used in other locations as well, as there are several Facebook groups dedicated to Pokémon GO players in different geographical locations.

While this section has discussed how loyalty is arguably more important than purchase intention itself, purchase intention is, of course, essential to the company's revenue and thus, survival. As Pokémon GO does not utilise advertisements, they rely solely on the in-app purchases they offer. This is the freemium business model, as defined by Tang (2016). The data shows that the only significant effects on in-app purchase intention were those of price and mobile game loyalty. Price is

probably not something the company can or will change and altering the value of the object might provoke a feeling of pay-to-win with the players. However, the app could have discounts periods or sales, but this is, of course, not a permanent solution. Thus, we are again back to the subject of loyalty. As mentioned, loyal players do not equal players with purchase intentions, yet loyal players are *more likely* to have purchase intentions. This is an important distinction. The above recommendations are therefore also applicable in regard to improving the in-app purchase intention, however the goal is to increase *the amount* of loyal users, not the loyalty with the current users.

As Pokémon GO had their best year in terms of revenue in 2019 and has one of the biggest userbases worldwide, there is no indication that this app needs any of the proposed recommendations. While many different types of mobile games exist, other mobile games might draw inspirations from this case of Pokémon GO on how to increase their user loyalty and thus also purchase intention. Especially because, as mentioned, only 5% of users actually spend money on apps, leaving a vast potential of 95% non-paying users (Asper, 2017). Companies could make huge profits if they could increase the numbers of paying users, however this issue does not seem to have been solved in any existing literature, though it has been studied. While this and previous studies have given an understanding of what might drive users to spend more money, the area of consumer behaviour in the mobile app world is even more unpredictable than consumers behaviour normally is. What consumers want and expect from technology and apps are constantly changing, and thus it is hard to keep track and stay on top of how to maintain and increase the number of users as well as paying users.

6.2.1 Sub-conclusion

This section has discussed how mobile game loyalty positively influences in-app purchase intention, but that this does not mean that loyalty is equal to purchase intention. Instead, loyal mobile game users are more likely to have purchase intentions. This was due to the fact the consumers will most likely also use other apps and mobile games than Pokémon GO, even though they prefer Pokémon GO. This is known as polygamous loyalty. Recommendation for mobile games similar to Pokémon GO was made, which was about how apps should try to increase the number of loyal users instead of trying to increase the loyalty of the already loyal users. This could be done be increasing the factors of the app that showed users to be more loyal, such as hedonic outcome expectations and connectedness. In general, increase penetration in the market and then retain the users by increasing their stickiness is a better and more beneficial approach than trying to achieve greater loyalty with existing users.

6.3 METHODOLOGICAL REFLECTION

This section of the discussion deals with afterthought and reflections made after having calculated the results, analysed them and evaluated them. Some shortcomings of the data collection have emerged, and while some are not imperative to the goal of this thesis, they might still have added a better understanding, while others could have affected the analysis on a deeper level. Other methodological reflections will also be discussed as well as prepare the ground for future research, which will be further touched upon in a later chapter.

A less imperative shortcoming is that of the question of age in the questionnaire. The scale was from 18 to > 48. In order to make this study as close to that of Hsiao and Chen (2016), their age scale was used as inspiration. However, their scale only went up to >33, and so a few more years were added to the scale. In Hsiao and Chen's demographic, most of their respondents were between 17-22 years of age, and only 4.8% were older than 33. Thus, there seemed to be no issue in using a similar scale, and I, the author, was perhaps also influenced by a conception that only young people play mobile games. However, in the dataset 21.6% said they were older than 48. It might seem superfluous to bring this up, but it would have been interesting to see a broader distribution of age in the data set, now that one in five respondents said they were older than the scale measured. It might not have affected the results as such, as age was not used as a moderator, yet it would have been interesting to see exactly which age groups Pokémon GO is popular in. In retrospect, a simple dropdown menu with separate ages available should have been used.

Another thing that cannot be measured from the data collected is the actual loyalty of the respondent. This could easily have been included in the questionnaire with a question similar to that of the habit question; "How many hours do you spend on mobile games a day?". By asking the respondents "How many hours do you spend on Pokémon GO a day?" as well, a percentage of Pokémon GO playtime could easily have been calculated. However, then comes the question of how loyalty is defined, whether loyalty is only in regard to other mobile games, or in regard to all other apps installed on one's phone. Then a question of "How much time do you spend on your phone a day?" could have been asked, but suddenly the respondents are dealing with three quite similar questions. And while some phones measure how much time you use on it, it is still difficult for an individual to correctly assess how much time was used on this and that app in a self-administered questionnaire, which could result in skewed and incorrect data. So, while it, objectively, would have been interesting to know how much time the respondents actually use on Pokémon GO compared to daily mobile game time,

loyalty is an abstract term. Due to the polygamous nature of loyalty that has been described previously, such a calculation could not have given an appropriate measurement of mobile game loyalty.

The questionnaire was distributed in two different groups of people in order to gain a more realistic world view. However, something that could have been interesting to examine as well could have been the difference between the two groups. Hsiao and Chen examined both paying and non-paying users and compared them, and a similar method could have been implemented here as well. Two identical questionnaires could have been distributed in the two groups in order to illuminate the difference of the two groups. The data from the two questionnaires could still have been combined to give the same results this thesis has acquired, as well as given a deeper understanding of more and less involved users of the app.

A comparative analysis could also have been made if a similar exploration has been made on another app. Pokémon GO is by definition a primarily hedonic app, and so it would have been interesting to compare loyalty and purchase intention with an app of more utilitarian nature, e.g. a fitness app or news app. However, this would have required an adapted set of constructs, as the ones used in this study was chosen for the investigation of a mobile game, and the questions are related to that area as well. Consequently, this added perspective would have been beyond the scope of this thesis, while still incredible interesting and relevant for further research.

This thesis used a positivist research philosophy, and thus collected data through a quantitative method. This method has given the results objectivity and thereby also reliability, which is why it was the most appropriate method to use in order to test the research model. It has built a strong foundation for further research, which is why it will now be discussed what a supplementary approach could have contributed to this thesis.

Had the time frame and scope of this thesis been different, a qualitative data collection would have added another layer to this study as well as answer some of the assumptions made in the previous section. A focus group interview or a semi-structured interview could have examined some of the questions that arise from the quantitative results, for example by having survey respondents elaborate on their answers, e.g. regarding good price and in-app purchase intention. The addition of qualitative data could also assist in understanding why access flexibility was not significant in relation to mobile game loyalty, or what other aspects might influence mobile game loyalty and in-app purchase intention.

Through the chosen method for this thesis, an objective and reliable understanding of what does and what does not influence mobile game loyalty and in-app purchase intention have been gained. However, it can be argued that the thesis then lacks subjectivity, which could have given another perspective on this subject.

6.3.1 Sub-conclusion

This section has discussed some of the methodological reflections that have been made after the initial considerations as well as after the finalisation of the results. These reflections were about possible changes that should or could have been made to the study, such as the questionnaire regarding the age of the respondents. There have also been some considerations regarding including entirely new questions and measurements of mobile game loyalty, but it was argued that the results of this would have been too unreliable due to the needed accuracy of the answers. In hindsight, a very workable change to the data collection could have given an additional depth to the study: When distributing the questionnaire, separate yet identical questionnaires should have been distributed in the two chosen groups in order to compare the difference, however still achieve the same results as this study currently has. It also came to light that a parallel study of another app of utilitarian nature would have made for an interesting comparative analysis. An inclusion of qualitative data such as focus group interviews or semi-structured interviews were also discussed, and both the additional app and data suggestions came down to the limited scope of this thesis. While this thesis has built a solid foundation for study in this area in Denmark, more research is definitely needed in order to gain a better understanding of this. Suggestions for further research and approaches will be made in chapter 8.

6.4 DIFFERENCES BETWEEN HSIAO & CHEN AND THIS STUDY

This study has drawn a lot of inspiration from Hsiao and Chens study *What drives in-app purchase intention for mobile games? An examination of perceived values and loyalty*. Thus, it seemed obvious to compare the findings of their study with those of this study. This can illuminate which hypotheses have been further strengthened, as well as how this study's addition to the literature has been valuable.

The results of this study showed that only 5 out the 11 proposed hypotheses could be proven true. However, the hypotheses this study has proven true, corresponds with the hypotheses Hsiao and Chen proved in their study from 2016. This study has built upon their study in order to strengthen the area and find possible difference in the cultural aspect. While Hsiao and Chen examined an app called

Tower of Saviours, this study has examined the app Pokémon GO. It is noted that these apps are not completely identical in all aspects; however, this part of the discussion will compare the results of the two studies assuming that the apps are identical in order to properly relate the two studies. Another difference between the studies are the geographical area of study. Hsiao and Chen conducted their study in Taiwan, whereas this study was conducted in Denmark. Hsiao and Chen's study is based on a survey with 3309 usable responses, whereas thus study had 388 usable responses.

This study proved that connectedness has a positive effect on mobile game loyalty, that good price had a positive effect on in-app purchase intention and that mobile game loyalty had a positive effect and in-app purchase intention. Hsiao and Chen could prove the same hypotheses. The researchers also proved playfulness to have a positive effect on mobile game loyalty, which can be compared to that of this study's hedonic outcome expectations hypothesis that was also proven true. What is more interesting that what is similar in the two studies is what is contradictory. Hsiao and Chen could prove access flexibility to have a significant positive effect on mobile game loyalty, which this study could not. There are arguably two possible explanations for this. The first being that Hsiao and Chen's study is from 2016 and whereas this study is from 2020. As mentioned, the technological advancements have moved incredibly fast over the last few years, and using an app whenever you want to, might just go without saying in any app today. This can explain why access flexibility used to have a significant effect on mobile game loyalty four years ago, and why it might not have a great effect today. The other possible explanation is the differences between the countries. The prices of mobile data can vary a lot, as the cost of mobile internet all over the world can range from 1.7 DKK to 137.37 DKK for 1 GB of data roaming (McCarthy, 2019). Data is a requirement in order to play most games on the go. The cultural difference between Taiwan and Denmark might explain the different results, as the two cultures are quite different from each other ("Country Comparison - Taiwan & Denmark," n.d.). Arguably, a combination of the two explanations is the case, as we are dealing with an everchanging technological world as well as that it would be naïve to think that culture does not affect consumer behaviour. Another difference in the two studies results is that of price affecting purchase intention. While both studies proved a positive relationship, Hsiao and Chen's *b* for this relationship was between 0.44 and 0.63 and had a p-value of less than 0.001, whereas the *b* in this study was only 0.13 (H10) and was close to not being supported at all. Again, the cultural difference plays a part in explaining these different results. A good price has a higher influence on purchase intention in Taiwan because their country is less indulgent than Denmark and therefore might have greater considerations on how they spend their money on something superfluous, whereas Denmark are more willing to

realise their impulses and desires when it comes to having fun ("Country Comparison - Taiwan & Denmark," n.d.). This is also backed up by the fact that the relative price of in-app purchases are much higher in Taiwan compared to the average household income ("Taiwan Household Income per Capita," 2020), which is why they might also appreciate a good price more than people would in Denmark. Consequently, Danish people might not deliberate the price of the purchase as much, but rather whether or not they want or need the object of purchase in the first place.

Another relationship that both studies proved to be true is that of mobile game loyalty affecting purchase intention. Hsiao and Chen had a *b* of 0.23-0.16 for this hypothesis, whereas this study had a *b* of 0.69 (H11). This tells us, that loyal users in Denmark are more likely to be inclined to in-app purchases than similarly loyal users in Taiwan. As briefly mentioned in section 6.2, Danish people might be more influenced by loyalty when it comes to purchase intention due to their indulgent nature. It can be argued, that an indulgent player who is having fun, and thus will want to purchase Pokécoins in order to have even more fun with the game. This would be a player realising their impulses. As Taiwan is a more restrained country, they might not feel the same need to realise their impulses and accordingly, mobile game loyalty does not affect purchase intention quite as much. Something that might also affect this as well as the influence of good price on purchase intention, is the income levels for both countries. As apps and in-app purchases cost the same all over the world, they will be, relatively, more expensive in countries with lower average incomes. The fact that purchases are relatively more expensive in Taiwan can, therefore, affect the purchase intention. Hsiao and Chen could prove four of their hypotheses dealing with in-app purchase intention, whereas this study only proved two regarding good price and mobile game loyalty. This might be due to Danish people being less effected by the user experience in general than Taiwanese people are, when it comes to their purchase intention.

6.4.1 Sub-conclusion

This section discussed how Hsiao and Chen's study correlated and did not correlate with this thesis' findings. Overall, the two studies achieved similar results, however there were some variations that came down to cultural and economic differences between Taiwan and Denmark, as well as technology. Access flexibility was proven significant in terms of mobile game loyalty in Hsiao and Chen's studies. The technological advancements over the last four years might have been the reason for this, as well as the cultural differences between the two countries. Good price also seems to be similar, however the construct had a more positive effect on purchase intention in Taiwan than in

Denmark. This was reasoned by the more restrained cultural nature of Taiwan in addition to the relative economic factors. The comparison of the studies also showed that loyal mobile users from Denmark were more inclines to have purchase intentions than similarly loyal users from Taiwan. Of course, all of the differences can also be credited to the difference in app choice.

7 CONCLUSION

Through a positivistic research method, this thesis has proven some of the constructs in the in-app purchase intention model to have significant effects on mobile game loyalty and in-app purchase intention. The empirical data used to analyse the model was gathered through a survey. In order to obtain true objectivity, the questions used to measure the constructs were adapted from previously tested studies. The data set was then tested for reliability, and all constructs were reliable and could be further tested. Descriptive statistics were presented to provide a deeper understanding of the data set, and through statistical analysis, five hypotheses could be proven true. The results were then discussed as to what could have caused the outcome in terms of consumer behavioural and cultural aspects. The discussion also included implications of the study, methodological reflections and a comparison of the article from which this thesis has drawn its primary inspiration.

This thesis demonstrated that Pokémon GO lives up to the hedonic expectations users have for a mobile game and that these hedonic outcome expectations positively influences their mobile game loyalty. Utilitarian outcome expectations also had a positive effect on mobile game loyalty and was assumed to be associated with the users' perception of connectedness. The construct of utilitarian outcome expectations was measured on, among other things, how users felt their advancements in Pokémon GO made their friends perceive them as more competent or as having a higher status. Thus, in order for friends to have this perception of the user, they would also need to be familiar with the game. Connectedness also proved to have a significant and positive relationship affecting mobile game loyalty. Thus, users are more likely to be loyal to the game if they feel connected and are able to play with their friends. This was backed up by the fact that Pokémon GO has also been known to create new friendships and bring people together. Good price proved to have a positive influence on users purchase intention; however, the users did not seem impressed by the current value for money offered by Pokémon GO. Habit weakened this relationship, as more frequent users are more concerned by the potential benefits purchases can give them than the price of it.

One of the hypotheses that got disproven by this thesis was access flexibility affecting mobile game loyalty. It was argued that access flexibility has become a matter of course and is no longer a unique feature. There also was a non-significant relationship between good price and mobile game loyalty, as players of Pokémon GO can easily keep playing the game without making in-app purchases. Thus, it does not affect their overall experience or loyalty towards the mobile game. The other hypotheses that could not be proven significant, all related to in-app purchase intention. The constructs were

hedonic outcome expectations, utilitarian outcome expectations, access flexibility and connectedness. It was proposed that consumers have a general opposition towards in-app purchases, stemming from the fact that freemium apps have become increasingly popular and that users are now used free mobile gaming experiences.

It was discussed how mobile game loyalty positively influences in-app purchase intention, but that this does not mean that loyalty is equal to purchase intention. Instead, loyal mobile game users are more likely to have purchase intentions. This was due to the fact the consumers will most likely use other apps and mobile games than Pokémon GO, even though they might prefer Pokémon GO. This is what is known as polygamous loyalty. Recommendation for mobile games similar to Pokémon GO was made, which was about how apps should try to increase the number of loyal users instead of trying to increase the loyalty of the already loyal users. It was recommended that companies should increase penetration in the market and then retain the users by increasing their stickiness.

The methodological reflections discussed surrounded considerations that had been made under or after the process of analysing the results. These reflections were about changes that could have been made regarding the distributed questionnaire. It was also contemplated if entirely new questions and measurements of mobile game loyalty should have been included, but it was argued that the results of these questions would have been too unreliable to use. Another approach to the data collection could have been utilised when distributing the questionnaire. Separate yet identical questionnaires could have been distributed in the two chosen groups in order to compare the difference, while still achieving the same results of this thesis. An additional study of a utilitarian app could have given an refreshing new perspective. It was also discussed whether the inclusion of qualitative data could have benefitted the study. The additional app and data suggestions would not have been possible in this thesis due to the limited scope.

Lastly, the findings of this thesis were compared to those of Hsiao and Chen. The two studies had both similarities and dissimilarities, which ultimately came down to technology, culture and economy. Hsiao and Chen proved access flexibility to have a significant effect on mobile game loyalty in Taiwan, where this study rejects that hypothesis. Good price was proven to have an effect on purchase intention in both studies; however, the effect was bigger in Taiwan than in Denmark. Loyal mobile users also seemed to be more likely to have purchase intentions in Denmark than users in Taiwan with similar loyalty. Taiwan and Denmark are vastly differenced both in regard to culture but also the economic situation. The differences in the two studies have proven that there is a need to

continue researching and testing these kinds of hypotheses across different cultures and countries in order to better understand how to run a successful app in different countries.

App companies can use this study as a way of inspiration and guidance for how to increase the loyalty and purchase intention of their users. However, it is important to note that this thesis only studied these areas using a mobile game. Thus, these findings might not be applicable to all apps. Nevertheless, this thesis has shown that having an app that lives up to the expectations of the user will increase loyalty – and loyalty might lead to purchase intentions. It is important for companies to identify the expectations of their target users and then improve those aspects of the app.

This thesis has built a solid foundation for study in the area of mobile game loyalty and in-ap purchase intention in Denmark and brought to light that even more research is needed. While there already has been plenty of studies on mobile game loyalty, stickiness and purchase intention, more in-depth studies are needed on a cultural basis. Suggestion for this further research will be presented in the next, final chapter of this thesis.

8 FURTHER RESEARCH

This thesis has discussed the need for further research that can be done in the area of mobile games regarding loyalty and purchase intention. This section will suggest some of the research other academics might want to consider pursuing and who might use this study as inspiration or as a point of departure.

Some of the discussion on methodological reflections were concerned with building upon this study with additional data, such as qualitative data. Other researchers are highly encouraged to use this study as a starting point and build upon it by collecting data through interviews or focus groups that might elaborate on some of the speculations made in this thesis. The findings in this thesis can function as a blueprint for an interview guide by illuminating which constructs to dive deeper into and what questions might be interesting to ask as well as what topics to bring for discussion in a focus group. Additional research supporting this thesis might help further support some of the hypotheses proposed in this study or might disprove one of its conclusions. Both scenarios would ultimately benefit this area of academia.

As previously touched upon, the area of culture can have an immense effect on how consumers act. As seen in the comparison between Hsiao and Chen's study and this thesis, it became apparent that culture could play a role in mobile game loyalty and in-app purchase intention. It is highly recommend to pursue further research in this area. This could be, for example, similar studies to this, but in other countries such as Sweden, Germany, Italy or Mexico. This can help app companies provide a more localised experience for its users, which might result in more stickiness. It can also help identify whether some countries are more likely to have in-app purchase intentions than others so that they might focus more of their marketing efforts in those countries. A sort of ideal consumer profile, but on country level. A way to achieve such an evaluation of many countries as once could be by launching a worldwide study similar to this one, but with the country as a moderator as well. This is, of course, very costly in terms of money, time and resources. Nonetheless, such an insight into consumer behaviour regarding mobile apps could benefit a lot of companies greatly and help them make better decisions when it comes to their user experience and in-app purchase development.

In addition to the cultural dimension of mobile game loyalty and in-app purchase intention, other apps are also interesting to study. For example, this study could be compared with another hedonic mobile game such as Candy Crush or Subway Surfer, which are similarly popular. A new study could measure whether the findings of this thesis are applicable to all mobile games, or if the measurements

vary from mobile game to mobile game. Similarly, and as touched upon in the discussion, a study of a utilitarian app could measure the differences between hedonic and utilitarian apps to further understand how these dimensions affect mobile consumer behaviour.

Studies on loyalty and purchase intention could also stretch further into gaming, such as desktop or console gaming. Game loyalty and in-game purchases are also interesting topics of research which could be studied similarly to mobile games. It would be interesting to see whether loyalty and purchase intention are affected by a change in gaming platform.

The area of app business models such as freemium, premium and paid apps has also inspired the idea of looking into consumers' tolerability of in-app advertisements. One could examine the limit of how many advertisements an app can have while still keeping their users happy and satisfied. Maximising revenue opportunities by finding the best relationship between advertisement frequency and user turn-over could be an interesting topic of research. In addition to this, the purchase intention of paid apps could also be further studied. On what basis do consumers get influenced to purchase paid apps when they have no way of trying the app before after the purchase. Factors could be word-of-mouth, advertisements, app ratings, etc. Of course, studies on this has been made already, but comparing app purchase intention and in-app purchase intention might reveal interesting new knowledge on mobile apps.

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10 APPENDICES

APPENDIX A

Connectedness (Hsiao & Chen, 2016)

1. Players of Pokémon GO share their experience and feelings with others through this mobile game.
2. Players of Pokémon GO benefit from the user community using this mobile game.
3. Players of Pokémon GO share a common bond with other players.

Access flexibility (Hsiao & Chen, 2016)

1. I can control the time playing Pokémon GO by myself.
2. I can play Pokémon GO anytime.
3. I can begin and stop playing Pokémon GO at any time.

Price for money (Hsiao & Chen, 2016)

1. Pokécoins of Pokémon GO are reasonably priced.
2. Pokécoins of Pokémon GO are good relative to the price.
3. Pokécoins of Pokémon GO are economical.

Hedonic outcome expectations (Chang, Liu & Chen, 2014)

1. If I play Pokémon GO, I will experience enjoyment.
2. If I play Pokémon GO, I will feel pleasure.
3. If I play Pokémon GO, I will have fun.

Utilitarian outcome expectations (Chang, Liu & Chen, 2014)

1. If I play Pokémon GO, my peers will perceive me as competent.
2. If I play Pokémon GO, I will increase my sense of accomplishment.
3. If I play Pokémon GO, I will increase my chances of obtaining an upgrade.
4. If I play Pokémon GO, I will be seen as having higher status by my peers.
5. If I play Pokémon GO, I will increase my chances of getting a reward (e.g. Pokécoins and experience points).

APPENDICES

In-app purchase intention (Hsiao & Chen, 2016)

1. I intend to pay for the Pokécoins in Pokémon GO in future.
2. I predict that I would pay for the Pokécoins in Pokémon GO in future.

Mobile game loyalty (Hsiao & Chen, 2016)

1. Pokémon GO is my first choice of mobile game.
2. I will continue to play Pokémon GO.
3. I am willing to say positive things about Pokémon GO to others.
4. If others want to play a mobile game, I will recommend Pokémon GO.
5. I will encourage friends and relatives to play Pokémon GO.

APPENDIX B

The questions used in the distributed questionnaire. Questions from Appendix B has been transalted from English to Danish.

Connectedness (Hsiao & Chen, 2016)

1. Spillere af Pokémon GO deler deres oplevelse og følelse med hinanden gennem appen.
2. Spillere af Pokémon GO har gavn af brugerfællesskabet der benytter appen.
3. Spillere af Pokémon GO deler et fælles bånd med andre spiller.

Access flexibility (Hsiao & Chen, 2016)

1. Jeg kan selv kontrollere den tid jeg bruger på at spille Pokémon GO.
2. Jeg kan spile Pokémon GO når jeg vil.
3. Jeg kan starte og stoppe med at spille Pokémon GO når jeg vil.

Price for money (Hsiao & Chen, 2016)

1. Pokémon GOs Pokécoins er rimeligt prissat.
2. Pokémon GOs Pokécoins er gode i forhold til prisen.
3. Pokémon GOs Pokécoins er økonomisk.

Hedonic outcome expectations (Chang, Liu & Chen, 2014)

1. Hvis jeg spiller Pokémon GO oplever jeg glæde.
2. Hvis jeg spiller Pokémon GO oplever jeg fornøjelse.
3. Hvis jeg spiller Pokémon GO har jeg det sjovt.

Utilitarian outcome expectations (Chang, Liu & Chen, 2014)

1. Hvis jeg spiller Pokémon GO opfatter mine venner mig som kompetent.
2. Hvis jeg spiller Pokémon GO øger jeg min følelse af præstation.
3. Hvis jeg spiller Pokémon GO øger jeg mine chancer for at få en opgradering.
4. Hvis jeg spiller Pokémon GO vil jeg få højere status hos mine venner.
5. Hvis jeg spiller Pokémon GO øger jeg mine chancer for at få en belønning (f.eks. Pokécoins og XP).

In-app purchase intention (Hsiao & Chen, 2016)

1. Jeg agter at betale for Pokécoins i Pokémon GO i fremtiden.
2. Jeg forudsiger, at jeg vil betale for Pokécoins i Pokémon GO i fremtiden.

Mobile game loyalty (Hsiao & Chen, 2016)

1. Pokémon GO er mit første valg af mobilspil.
2. Jeg vil fortsætte med at spille Pokémon GO.
3. Jeg er villig til at sige positive ting om Pokémon GO til andre.
4. Hvis andre vil spille et mobilspil, vil jeg anbefale Pokémon GO.
5. Jeg vil opfordre venner og familie til at spille Pokémon GO.