

# Acceptance of In-App and In-Game purchases

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## Abstract

The digital gaming business has changed in the last years. Digital games are games as a service. Some people see a connection between games as service or freemium as monetization method and gambling. This paper comes to the conclusion, that the public acceptance of In-App and In-Game purchases is actually very high. The acceptance in mobile digital games is higher compared to stationary digital games. The social connections to other people inside the game and the nudges of a digital game concerning In-App or In-Game purchases also have an impact on the acceptance of In-App or In-Game purchases.

**Keywords:** *Freemium; Digital Gaming; Survey; Acceptance; In-App purchases; In-Game purchases*

## INTRODUCTION

Subject of this paper is the statistical analysis of the acceptance of In-App or In-Game purchases in mobile digital games of people from Germany, Hungary, South Africa, Thailand, the United Kingdom and the United States of America. Digital games in general were often disputed in the last years [1] [2] [3] [4] [5] [6] [7] [8]. In the context of this paper digital games are treated as fully digital goods in the sense of Stelzer's definition. According to Stelzer, digital goods are „immaterial ways to satisfy needs that can be developed, distributed or applied through an information system. Digital goods are products or services that can be represented, transmitted and processed in the form of binary data“ [9].

The games industry - especially the field of mobile gaming - has changed significantly in recent years. Paid offers are becoming less common [10]. There is an increase in free mobile digital games. According to Spencer free games generate the highest revenue in respective online portals (App-Store, Play Store, etc.) [10]. These games can be categorized as freemium games. "Freemium" is a term composed of the words "Free" and "Premium". In a freemium business model companies provide a substantial portion of their offer for free. Revenue is made by in-app-purchases for additional services. Thus, freemium is a combination of free and paid offers. The freemium revenue model is a form of price differentiation. The game publishing companies no longer try to sell as many copies of the games as possible. Instead, these games maximize user numbers and try to get their users to make in-app purchases. These purchases give players an advantage within the game or are cosmetic changes to the game (skins).

Since 2019 the global mobile gaming market according to the global digital games analytics portal Newzoo is even bigger than the global gaming market for PC or console games (stationary digital games) [11]. The global mobile gaming market will have the volume of \$77.2 Bn in 2020 [12]. For example, according to Takahashi, the mobile games “Clash of Clans“ and

“Clash Royal“ from publisher Supercell together generated \$2.3 billion revenue in 2016 worldwide [13].

Newspaper articles have been piling up in recent years, reporting many in-app purchases by minors and adults in a short period of time [5] [7]. In individual cases, these in-app purchases have led to very high costs. Because of this, criticism of in-app purchases increased. In 2019 the World Health Organization (WHO) officially classified video game disorder as a mental health condition [14]. According to WHO the gaming disorder occurs, when there is a "pattern of persistent or recurrent gaming behaviour in which people lose control of their gaming behaviour, give priority to gaming over other interests and activities, and continue gaming despite negative consequences, such as impairments in their family relationships, social lives, work duties or other areas [14]”.

Many people see a connection between loot boxes and gambling because of the element of chance. Regulations for loot boxes are discussed by different institutions [2] and in many different parliaments [3] [15]. Some countries already have implemented regulations for loot boxes in their national law.

## **LITERATURE REVIEW**

Games are no longer just products. They changed to services. People use games over a longer period of time and the game publishers keep updating the game. In 2014 Oscar Clark has discussed this phenomenon in his book “Games as a service. How free to play can make better games“ [16]. In 2014 Dimitar Draganov has published his book “Freemium mobile games - Design & Monetization“ [17]. He discussed how game design can keep people interacting with a game over a longer period of time and how to convert players of a game into paying customers. Tim Fields published his book “Mobile & Social Game Design - Monetization, Methods and Mechanics“ in 2014 [18]. He also discussed effects of game design on converting players into customers. Field’s book focuses on key performance indicators. According to Fields, if there is a low ratio of daily active users relative to monthly active users then the game has a problem getting players back into the game. In 2015 Fowelin published a general article about how and why game publishing companies use freemium as a monetization for their games [19]. The research method was qualitative and quantitative. The author sees freemium as a competitive strategy or a marketing tool. Schwidessen has published a study in 2018 about the classification of loot boxes [20]. He discussed the element of chance from loot boxes and under which circumstances a loot box can be classified as gambling according to German law. Krainbring and Röhl also published a study about loot box classification in 2018 [21]. In their study the authors argue that a change in law and jurisdiction in many countries is very likely to happen in the near future. Laustetter published his study about the difference of gambling and skill-based games in 2012. In his study he discussed different ways to calculate the element of chance of a game [22].

There is a public discussion about excessive usage behaviour of mobile digital games [1] [2] [3] [5] [7]. This discussion is held in many different countries all over the world and is still going on. The central research question for this study is, what drives the acceptance of In-App and In-Game purchases. This study gives a descriptive overview of central characteristics and discusses relevant influences.

## **RESEARCH METHOD**

The research method of this study is empirical. In July 2019 an online survey in social media was done. The survey was promoted with ads in social media (Facebook and Instagram). The survey was done in Germany, Hungary, South Africa, Thailand, the United Kingdom and the United States of America. The presented data in this study are relevant for mobile and stationary digital games. 248 people from Germany, 302 people from Hungary, 168 people from South Africa, 238 people from Thailand, 229 people from the United Kingdom and 127 people from the United States participated in this survey. The survey was split into two groups for mobile and stationary digital gaming and asked its participants for their usage behaviour of in-app or in-game purchases. The presented data in this study show the responses concerning the acceptance of In-App and In-Game purchases.

For this study there were nine relevant questions and statements in the survey. The participants could respond to these questions with “Yes”, “No”, “Prefer not to say”. Participants could respond to statements with answers from one to seven. One stands for “Do not agree at all” and seven stands for “Completely agree”. A pre-test has been done in June 2019 with seven persons. During pre-test attention was paid to get a balanced gender ratio. Four men and three women participated in the pre-test. There is a possible bias for people who do not use social media in the presented data. Running ads inside games is not possible in many cases. The social media bias is a bias that couldn't be avoided. Running ads on social media randomly show ads to people who have an interest in gaming. Ads have been targeted specifically to each country or region.

## **FINDINGS AND DISCUSSION**

In-App and In-Game purchases are widely spread in digital games, but often questioned. This leads to the question of their general acceptance and reputation. The participants of the survey were asked about their opinion to the statement “In-App / In-Game purchases make sense to finance the costs of a game”. This statement gives information about the participant's attitude towards In-App or In-Game purchases. This statement is relevant to get information of survey participant's general acceptance of In-App or In-Game purchases. The figure 1 shows the responses of survey participants to the statement “In-App / In-Game purchases make sense to finance the costs of a game”.

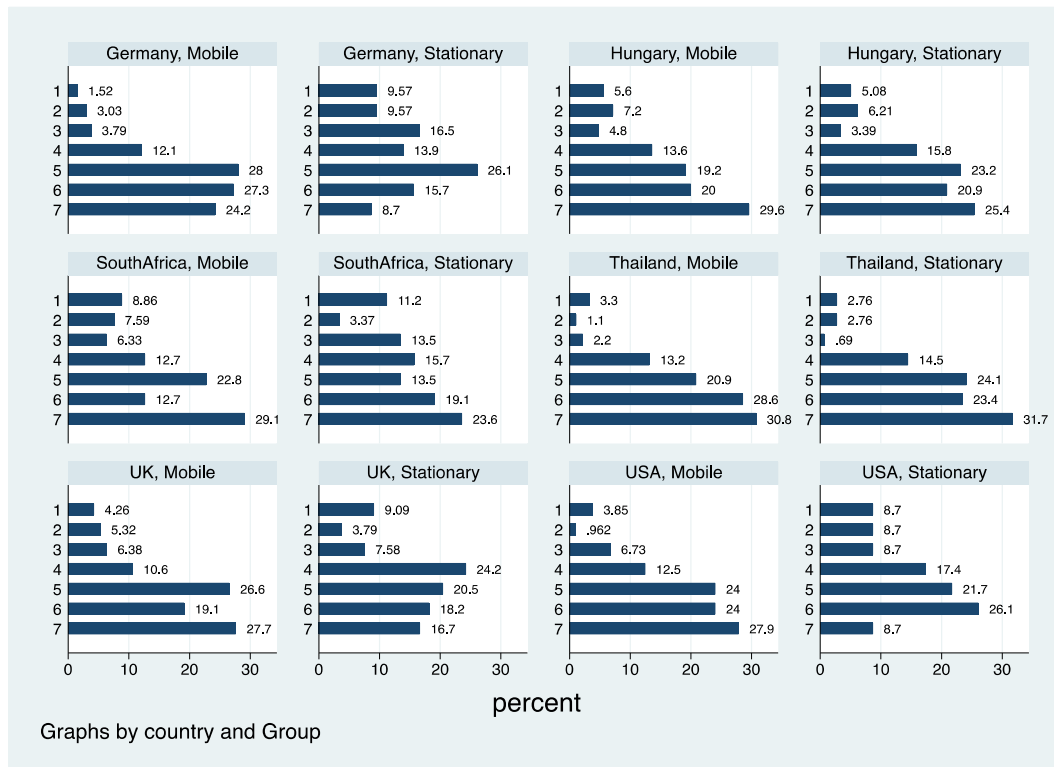


Figure 1: Survey responses in relative numbers to the statements “In-App / In-Game purchases make sense to finance the costs of a game” (own figure)

The majority of participants of both groups over all countries answered, to agree to the statement, that In-App or In-Game purchases make sense to finance the costs of a game. There are differences in the groups and different countries. These differences are not huge. People do not see a general problem with In-App or In-Game purchases as a revenue model.

To get further information about the variables that influence the acceptance of In-App or In-Game purchases a regression analysis has been done. The independent dummy variable “Mobile” is equal to one, if the survey participant plays mobile games and zero other ways. The survey participants have also been asked for their opinion towards several statements. Relevant statements for this regression were “In digital games, there are plenty of opportunities to earn virtual currency without spending real money”, “Once I felt like the game tried to push me to do an in-app purchase”, “A game has to enable me to make my own decisions”, “I have more friends inside than outside the game that I play”, “I have friends within the game, that I play”. If a survey participant responded to one of these statements with a five, six or seven the respective variable is equal to one and zero other ways. The independent variable “sex” is equal to 1 if the participant is male and 0, if the participant is female. Based on these statements the dummy variables “IAPuseful”, “VCwithoutrealmoney”, “Pushedbygame”, “OwnDecision”, “MoreFriendsInsid”, “FriendsinGame”, “Longtermsuccess” and “Sex” have been generated. “IAPuseful” is used as dependent variable and the other dummy variables are the independent variables in the following regression. The following table 1 shows the results for linear regressions for the six countries in this study and the overall average. A linear regression has been chosen, because it resulted in higher values of  $R^2$  compared to a Logit or Probit model.

**Table 1: Regression results**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	All	Germany	Hungary	South_Africa	Thailand	UK	USA
Mobile	0.125*** (0.026)	0.291*** (0.058)				0.162** (0.064)	
VCwithoutRealM	0.127*** (0.026)			0.127* (0.076)		0.201*** (0.065)	
Pushedbygame	-0.060** (0.027)			-0.154** (0.078)		-0.159** (0.075)	
OwnDecision	0.065** (0.033)		0.113** (0.055)		0.270*** (0.078)		-0.266** (0.131)
MoreFriendsInsid	0.113*** (0.029)		0.179*** (0.054)				
FriendsinGame	0.130*** (0.033)			0.285*** (0.096)			
Longtermsuccess					0.169*** (0.054)	0.394*** (0.122)	
Sex							0.267*** (0.098)
_cons	0.397*** (0.044)	0.504*** (0.042)	0.534*** (0.049)	0.412*** (0.101)	0.445*** (0.079)	0.185 (0.138)	0.755*** (0.153)
Obs.	1234	247	292	158	234	221	118
R-squared	0.078	0.094	0.053	0.098	0.095	0.138	0.100

Standard errors are in parenthesis

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Survey participants from Germany, UK and the overall average of the mobile gaming group are more likely to have a positive attitude towards In-App or In-Game purchases. People from South Africa, the United Kingdom and the average of all six countries who agree to the statement, that there are plenty of possibilities to earn virtual currencies inside a mobile digital game without spending real money, are more likely to agree to the statement that In-App purchases or In-Game purchases make sense to finance the cost of a game. People from South Africa, the United Kingdom and the overall average of the six countries who once felt pushed by the respective game do make In-App or In-Game purchases are less likely to agree, that In-App or In-Game purchases make sense to finance the cost of a game. The survey also asked for game design preferences. The statement that a game should enable people to make their own decisions inside a digital game is statistically significant for people from Hungary, Thailand, the USA and the average of all six countries. It has a negative impact for people from the USA and a positive for people from the other three areas. People from Hungary and the average of all six countries, who agree to the statement, that they have more friends inside a game then outside are more likely to think, that In-App or In-Game purchases make sense to finance the cost of a game. People with friends inside the game from South Africa and the average of all six countries also are more likely to have a positive attitude towards In-App or In-Game purchases. Social connections increase the acceptance of In-App or In-Game purchases. Male people from the USA are more likely than women from the USA to have a positive attitude towards In-App or In-Game purchases. Statistical significance for sex couldn't be found in other areas.

## CONCLUSION AND FURTHER RESEARCH APPROACH

This study shows that there is no general disagreement to the existence of In-App or In-Game purchases (see figure 1). People think, that In-App or In-Game purchases make sense to finance the cost of a game. Freemium or Paidmium are publicly accepted revenue models of the digital gaming industry. This acceptance is higher in mobile digital games, since players of mobile digital games are more used to micro transactions, than players of stationary digital games. The social connections inside the game also have an impact on the acceptance of In-App or In-Game transactions. If a game nudges their players too much to make In-App or In-Game purchases, this can lead to a lower acceptance.

Freemium or games as a service in general can and most likely will be monetization methods of the future and are widely accepted. Excessive use of loot boxes [23] or other ways to take advantage of gamers [8] on the other hand lead to public discussions. These are two things, that need to be separated in public discussions and by political decisions.

The presented data only applies for the Germany, Hungary, South Africa, Thailand, UK and USA in July 2019. Findings from this study cannot be transferred to other countries. Future studies can fill this research gap. Until today it is unknown what consumer preferences of people from other countries are. Researching consumer preferences for possible loot box regulation of other countries is a further research approach. Exploring consumer preferences for possible regulations can help to find useful regulations for digital games with loot boxes.

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