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Analysis of factors that affect purchase intention on mobile Games as a Service (GaaS)

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ABSTRACT

Games as a Service (GaaS), also known as live service games, which is a type of cloud computing that is becoming increasingly popular in mobile marketplaces. The research investigates how factors such as Accessibility, Perceived Value, Perceived Credibility, and Intent to Use may influence Purchase Intention in GaaS within the mobile games market, where in-app purchases are rising to generate revenue, and how consumer behaviors correspond to practice and correlates with purchase intention, the urgency to investigate the factors stem from declining revenue for company and lack of customer engagement hence resulting in reduced customer retention and interest. The study's findings indicate that while value, perceived credibility, and accessibility all favorably influence intent to use, intent to use also positively influences intent to buy which helps in quantifying behavioral traits in a a statistical manner and helps understand emotional and other motivators based on the psychological and environmental influence on the customer.

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1. INTRODUCTION

A game based on the Merriam-Webster dictionary can be defined as a systematic kind of play that is generally done for pleasure or fun but may also be utilized for educational purposes. Games are distinct from work or a job, which is typically done for a monetary reward, and art, which is more commonly an expression of aesthetic or ideological values. (Wills, 2002).

Following the trend of more developed video games, nowadays video games developer for the mobile market are publishing new games with the Games as a Service (GaaS) business model to monetize their products. In recent years there is a rise in demand for more accessible games for people of all ages, and for companies the ways to profit from surge of demand. The game's perceived values have a direct influence on all players' loyalty but appear to have minimal impact on nonpaying players' purchase intentions. The question of how a company's marketing plan works to effectively attract customers and persuade them to purchase their products is always a struggle (Alalwan, 2018; Hsiao & Chen, 2016). The example of the monetization being live service models, in-app

purchasing within the platform, and subscription models for a limited time, which can be studied and further analysed to understand potential customer intention and behaviour(Browne, 2023; Cramer, 2023; Naab et al., 2020; SensorTower, 2022).

Rapid development of the gaming industry and the increase of demand within the GaaS are bound to cause issues, such as defects within the system that can be exploitative to both users and the company, which can strain the relationship between both, and the lack of customer retention is due to an oversaturated market. Now based on the previous statement of issues and the current trends of the game Industry, these are the research questions that will be analyzed which are what factors do mobile GaaS have that affect the customer's willingness to play the game and what factors do mobile GaaS have that affect the customer's willingness to pay for the services in the game ?

Cloud computing technologies are frequently used in modern games. The gaming industry has embraced cloud computing due to its lower operational costs, flexibility, scalability, quick deployment, remote access and mobility, access to innovation, effective use of computer resources, and green computing. Cloud computing offers three service models: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) (SaaS). While most video games are now intangible and can be downloaded, only those with a long-term iteration plan of periodic content additions qualify as service games. GaaS represents a shift away from the studio-centric "Game as a Product" (GaaP) model, which focuses on the production of new games, and toward a player-centric approach centered on updates, recurring income, and user retention (Vegni et al., 2019; Von Der Heiden et al., 2019)

The intent to use in the context of games which is to play such games may come from a few motivational factors such as social, political, or in some cases purely aesthetical (Coursaris et al., n.d.; Franque et al., 2021; Hsiao & Chen, 2016; Jang et al., 2021; Yu & Huang, 2022).. When talking about GaaS in the mobile market there is more effort put into advertisements in social media be it for in game events, news, community rewards or a "call to action" so to speak to provide incentives for players to play their games which may or may not provide intent to use. In the call to action, it might affect the user based on how the game can be played, if the company developing the game is credible or reputable, and if playing such a game will provide tangible benefit towards the would-be player(Jang et al., 2021; Kerr, 2017; Oyibo et al., 2018). Because F2P games are free, income is based on in-game sales, which are dependent on user retention (Atmoko & Ellyawati, 2021; Hsiao & Chen, 2016; Nikou & Economides, 2017; Revels et al., 2010). Some preliminary evidence exists in games to imply similar processes, where perceived enjoyment promotes not only ongoing usage but also potentially rising use(Coursaris et al., n.d. 2016). Purchase Intention is the possibility that a buyer will buy a product or service is defined as purchase intention. Marketers use predictive modeling to assess the probability of future outcomes based on previous data to analyze purchase intent. Intent data analysis may also disclose when a consumer is strongly inclined to purchase from a certain vendor, with practical applications ranging from prospect scoring and nurturing programs to programmatic advertising and account-based marketing (ABM). When used correctly, purchase intent may increase conversion rates, accelerate transaction velocity, and foster better synergies between marketing and sales (Kazancoglu & Aydin, 2018; McClure & Seock, 2020; L. Zhu et al., 2020; W. Zhu et al., 2019)

From a marketing standpoint, games and their psychological motivation may result in such results as attitudes, purchase/repurchase behavior, and engagement with the brand experience. Customers with gaming experience were more inclined to buy game items, and researchers looked at how the intrinsic and extrinsic incentives of game design affected consumers' purchase intentions. Companies incorporate various game mechanics into their products to achieve marketing outcomes such as brand experience or purchase behavior. The stronger the flow of experience generated using mobile

advertising games, the higher the brand awareness among players and the stronger the purchase intention. As a result, online mobile game addiction was positively associated with the purchase of in-game mobile applications (Atmoko & Ellyawati, 2021; Balakrishnan & Griffiths, 2018; Dubois & Weststar, 2021; Yu & Huang, 2022). In several areas of the service business, the link between a customer's sense of value and both customer happiness and customer loyalty has long been examined. The findings revealed that all perceived values had a favorable influence on the intention to continue, and game quality and monetary worth encouraged players to pay for in-game things (El-Adly, 2019; Hsiao & Chen, 2016; Ravoniarison & Benito, 2019). Although usage persistence is the first step toward gamer loyalty and, consequently, in-game payments, the aim for F2P game producers is buy intention (Warouw, 2014). We depend on effectance theory to explore the relationship between gaming motives and purchase intention, which emphasizes that not only material considerations, such as price, are essential predictors of PI, but psychological components, particularly pleasure or enjoyment, are as crucial (Coursaris, Osch, & Sese, 2016). Another thing to consider is that if the player discovers information that is of good quality (informative and convincing), the player is likely to acquire the product (Filieri, Tsui, & Lin, 2018). As stated previously games can affect a person psychologically, and pair that with the accessibility of GaaS as an F2P platform in the mobile market it can result in the lack of self-control when buying in game products or services such as currency or a seasonal pass, the buying of in game currency may also be triggered from an addiction to the lootbox or gacha mechanic within the game which is a randomized chance to obtain an in game item.

The research is done with Partial Least Square due to multiple academics are interested in the PLS-SEM approach because it allows them to estimate large models with many constructs, indicator variables, and structural routes without putting distributional assumptions on the data. PLS-SEM is a predictive causal method to SEM that stresses prediction in estimating statistical models whose structure is intended to give causal explanations. Latent variable models are structural equation models that attempt to explain unobserved factors in terms of latent variables (Cepeda-Carrion et al., 2019; Hair et al., 2019; Helland, 1988, 2001; Purwanto & Sudargini, 2014).

The estimate of significance weights that apply to distinct attribute levels is employed in commonly used discrete choice model analysis. However, assessing the relevance weights of the attribute, rather than of individual attribute levels, is difficult. the use of partial least squares structural equation modeling (PLS-SEM) in discrete choice modeling for the study of stated preference data obtained by choice experiments. (Hair et al., 2019; Helland, 1988; Purwanto & Sudargini, 2014)

The objective of this research is to better understand the limits of how far GaaS could work within the mobile market, and the factors that affect its customer’s purchase intention regarding in app purchases and buying in game currency, while the results of the research is to determine what the factors which affect mobile GaaS effectivity, what other variables within other mobile GaaS that can be implemented and refined by a new developer to gain more interest be it from stockholders, crowdfunding and potential customers and clients alike. Which is the basis of novelty of this research to better convey the relation between intent to use with purchase intention within the scopes of as a service business model.

2. RESEARCH METHOD

The theoretical framework is made based on a few models and from a review from the literature and references regarding Games perceived value, intention to purchase, and the intention to use applications. The model is loosely based upon the model of (Coursaris et al., 2016; Hsiao & Chen, 2016b; Ravoniarison & Benito, 2019b)

Table 1. Theoretical Model Description

Number	Variable	Dimension	Description	Indicator	Sources
1	Accessibility	Ease of use Availability System Flexibility	Accessibility is how accessible is the game in the market and is the using the app and making a purchase	Total amount of player by region, and Operating System	Hsiao & Chen, 2016. Coursaris et al, 2016. Ravoniarison & Benito, 2019. Hsiao & Chen, 2016. Coursaris et al, 2016.
2	Perceived Credibility	Reputation Reviews Presentation of Product	Perceived Credibility is how trustworthy looks based on the reputation, user reviews and how is the presentation of the game	Total amount of game reviews, and Past works of the Company	Ravoniarison & Benito, 2019. Hsiao & Chen, 2016. Hsiao & Chen, 2016.
3	Perceived Value	Emotional value Functional Value Social Value	The value that can affect someone psychologically be it in an emotional way, a functional way within context of the game or in a social way such as in a community sense	The Tangible benefits given by the costs paid from playing the game	Coursaris et al, 2016. Ravoniarison & Benito, 2019. Hsiao & Chen, 2016. Coursaris et al, 2016. Ravoniarison & Benito, 2019. Hsiao & Chen, 2016.
4	Intention to Use	Personal Interest Peer Pressure Compatibility	The Intent that someone would willingly use/play with the mobile GaaS or mobile games with IAP	Number of downloads	Coursaris et al, 2016. Hsiao & Chen, 2016. Ravoniarison & Benito, 2019. Hsiao & Chen, 2016. Coursaris et al, 2016. Ravoniarison & Benito, 2019.
5	Purchase Intention	Habit Income Return of Value	The possibility of someone performing a transaction regarding to buy a product or service	Conversion Rate, Purchase Receipt	Hsiao & Chen, 2016. Coursaris et al, 2016.

The reason those variables were chosen is based on the author's observations of the current state mobile Games as a Service currently and developing trends due to economic state of the world affecting a lot of sectors with one of them being entertainment and online purchasing.

Accessibility was chosen due to it being based on how it would be reached and understood and how it relates to the acquisition of potential customers.

Perceived Credibility was chosen due to the current state of the market where a company's reputation can mean the life and death of a product or service in its acquisition of potential customers, Perceived Value was chosen because it is a catch-all variable for all motivation in regard to intent to use and its continuance to intent to purchase.

Intention to Use was chosen as an intermediary variable for the previous three variables due to the majority of mobile games as a service being free to play and a direct impact model to Purchase Intention may not be logical if the potential user did not first use the product or in this case play the game, the author acknowledges that it might reduce the research's impact into intent to purchase however since the target demographic of mobile

games as a service are non-players of games the author sees the need to add the intermediary variable.

Lastly is Purchase Intention, which is the main objective of this research, it is only related to intent to use because, to grow intent to purchase a company's product or service must have acquisition of customer, followed by retention and finally provide engagement, said engagement being the intent to purchase from the company to obtain more value from it.

The difference of the previously referenced model with this research is that the model uses an intermediary variable(Intention to Use) to bridge the impact of variables such as Accessibility(Access Flexibility), Perceived Credibility, and Perceived Value towards Purchase Intention because most mobile games as a service as stated previously runs in a free to play format hence to perform a purchase, there needs to be a variable that makes the potential customer try to play the game, and provide incentives to continue playing and make a purchase. Also, the model that the 3 research referenced it dives into more understanding the acquisition and use continuance of potential customers who are familiar with the concept of games meanwhile this research focuses more on the concept of growing a potential customers intent to just play the game freely and evolve it into incentives to pay consistently for in-app purchasing.

Due to large scope of the research which is in Asia and the limitation of obtaining total user from the google app store,The sample size of this research (n) is calculated according to the formula:

$$n = [\frac{z^2 * p * (1-p)}{e^2}] \quad (1)$$

Sample size equation

Which is based upon the Cochran Formula(Bartlett et al., 2001)

Where:

z = 1.96 for a confidence level (α) of 95%,

p = estimated proportion of the population which has the attribute in question (Expressed as a decimal), in this case is 0.5 due to it being the largest possible standard deviation for one observation from the population

e = margin of error (5% based on the acceptable estimates of allowed errors)

z = 1.96, p = 0.5, e = 0.05

$$n = [\frac{1.96^2 * 0.5 * (1-0.5)}{0.05^2}] \quad \text{(2)Sample size equation}$$

$$n = 384.16$$

$$n \approx 385$$

The sample size is equal to 385, which means the minimum respondents are 385. For the data analysis method, it will be done in SMARTPLS 4.0 with outer model testing, inner model testing and regression equation.

3. RESULTS AND DISCUSSIONS

As stated within the previous chapter that the sample size (with finite population adjustment) that is needed is 385, implying that the minimal number of responders is 385. The sampling technique is random due to the nature of the data collection method, which is to conduct a survey on active users of games such as Fate Grand Order, Arknights, Mobile Legends, and Genshin Impact via social media because those four games are the ones with which the author has relationships among the active user base, and then ask active users to fill out a questionnaire using Google Forms. The community group for Fate Grand Order Asia has a total of 50.000 users with 220 responses of which 77 were female and 143 were male, Arknights SEA community group has a total of

21.000 users with 30 responses all of which were male, the Mobile Legends SEA community group has a total of 10.000 users with 50 responses of which 23 were female and 27 were male, and lastly the Genshin Impact Asia community group has 30.000 users with 100 respondents with 45 of which were female and 55 were male. The author in total collected 400 respondents from across the active user base via social media groups, which is then verified via manually checking comments upon the post of the survey questionnaire and validity check within data processing in Microsoft excel to evaluate the responses if there are any non-valid ones such as all the responses being the same in the Likert scale or has missing value.

The difference of the previously referenced researches with this research is that it uses an intermediary variable(Intention to Use) to bridge the impact of variables such as Accessibility(Access Flexibility), Perceived Credibility, and Perceived Value towards Purchase Intention because most mobile games as a service as stated previously runs in a free to play format hence to perform a purchase, there needs to be a variable that makes the potential customer try to play the game, and provide incentives to continue playing and make a purchase. Also, the 3 research referenced in the prior chapter within table.1 dives into more understanding the acquisition and use continuance of potential customers who are familiar with the concept of games meanwhile this research focuses more on the concept of growing a potential customers intent to just play the game freely and evolve it into incentives to pay consistently for in-app purchasing.

Based on Hair, Hult, Ringle, and Sarstedt (Hair et al., 2019) in regard to Outer Loading Value, an indicator needs to have between 0.60 to 0.70 to be accepted so the author has removed 1 from AC, 1 from PV, 1 from ITU, and 1 from PI. For AVE all indicators have a value above the needed 0.50 since it ranges from 0.552-0.699 it shows an acceptable degree of suitability, and Composite Reliability also show that all indicators are above the 0.60 since it ranges from 0.701-0.823 thus show a high deree of reliability,

Table 2. Results of internal consistency and convergent validity

Indicator	Outer Loading	Composite Reliability (CR)	Average Variance Extracted (AVE)
AC			
AC1	0.874		
AC2	0.704	0.771	0.629
PC			
PC1	0.678		
PC2	0.833		
PC3	0.698	0.782	0.547
PV			
PV1	0.889		
PV3	0.561	0.701	0.552
ITU			
ITU1	0.838		
ITU3	0.823	0.817	0.690
PI			
PI2	0.831		
PI3	0.842	0.823	0.699

The discriminant validity test attempts to quantify the degree of difference between the concept and other constructs to demonstrate that the construct is distinct and includes phenomena that do not occur in other constructs. To assess the discriminant validity, the author used the cross-loading approach.

Table 3. Cross Loading Value

	AC	PC	PV	ITU	PI
AC1	0.874	0.347	0.284	0.316	0.230
AC2	0.704	0.386	0.252	0.217	0.191
PC1	0.330	0.678	0.252	0.207	0.097
PC2	0.356	0.833	0.368	0.351	0.204
PC3	0.322	0.698	0.255	0.254	0.185
PV1	0.320	0.360	0.889	0.399	0.173
PV3	0.150	0.224	0.561	0.221	0.237
ITU1	0.275	0.327	0.405	0.838	0.197
ITU3	0.295	0.300	0.316	0.823	0.264
PI2	0.241	0.231	0.230	0.228	0.831
PI3	0.204	0.151	0.195	0.235	0.842

The value used as the foundation for analyzing whether a hypothesis is accepted or rejected is a path coefficient value larger than 0.1 and a p value lower than 0.05, which shows the degree of significance in hypothesis testing. The based below shows the results of the acceptance factor hypothesis test:

Table 4. Research hypothesis testing results

Hypothesis	Path	Original sample (O)	T statistics (|O/STDEV|)	P-Value	Description
H1	AC -> ITU	0.157	2.791	0.005	Significant
H2	PC -> ITU	0.182	3.387	0.001	Significant
H3	PV -> ITU	0.309	5.846	0.000	Significant
H4	ITU -> PI	0.277	5.315	0.000	Significant

*The P-Value of ITU>PI and PV>ITU is a decimal exceeding 0.000 however Smartpls 4 only shows results with a maximum of 3 number decimal

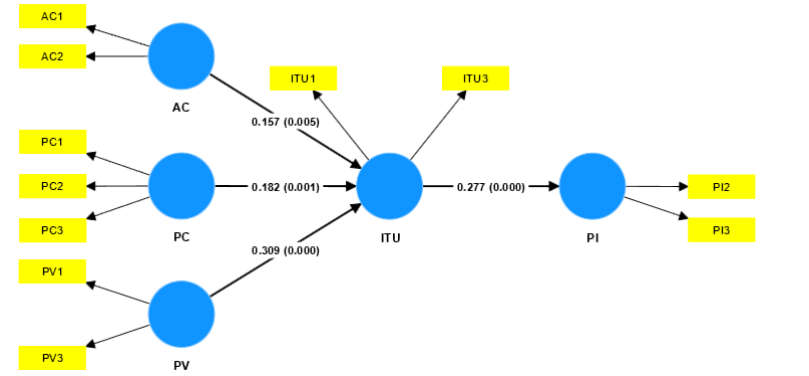

Figure 1. Path Diagram with Original Sample and P-Value

From the table and tests, we can conclude that: (a) The variable of Accessibility does positively affect Intention to use in a significant way due to its p-value being lower than the minimal of 0.05 which is 0.005. This would mean that we can reject H0 and accept H1. (b) The variable of Perceived Credibility does positively affect Intention to use in a significant way due to its p-value being lower than the minimal of 0.05 which is 0.001. This would mean that we can reject H0 and accept H1. (c) The variable of Perceived Value does positively affect Intention to use in a significant way due to its p-value being lower than the minimal of 0.05 which is 0.000. This would mean that we can reject H0 and accept H1. (d) The variable of Intention to use does positively affect Intention to use in a significant way due to its p-value being lower than the minimal of 0.05 which is 0.000. This would mean that we can reject H0 and accept H1.

The difference results of this research to the previously 3 referenced in the theoretical framework is this research uses PLS and Regression to prove the hypothesis' stated while Ravoniarison & Benito's research results focuses on behavioral analysis of

In-App purchasing and has the same usage of p-value to state if a path is significant, it uses SPSS to calculate Anova and Regression, Hsiao and Chen's uses Amos 21.0 to analyze its data, uses p-value and chi-square to state if the Hypothesis' within the research is accepted it also differs from this research as it differentiates non purchasing users and purchasing users, while this research only accounts for purchasing ones, and lastly Coursaris, Wietske and Florent's model has the same usage of p-value to state if a path is significant, it uses SPSS to calculate Anova and Regression and focuses more researching the link between player motivation, game features and consumer behaviour.

Thus, it produces a regression equation of:

$$ITU = \hat{\beta}_{1.0} + 0.157AC + 0.182PC + 0.309PV + \varepsilon_1 \quad (3)$$
$$PI = \hat{\beta}_{2.0} + 0.277ITU + \varepsilon_2$$

Based on the regression equation above, it is possible to deduce that all variables are included in the research model.

4. CONCLUSION

There are various things that the author may deduce based on the findings of research and data processing on the factors that influence customer purchase intention within the context of mobile games as a service and that is, the questionnaire which is the source of data for the study has been declared to meet the requirements of the validity test so that respondents who fill out the questionnaire have been confirmed to be valid responses., the findings of the research reveal that the results of the processed data satisfied the standards of the validity and reliability tests. The study's findings are based on Outer Loadings, AVE, Cross Loadings, and Composite Reliability values. which have met the requirements in accordance with the theory proposed by (Hair, Hult, Ringle, & & Sarstedt, 2017).

The limitation of this research is based upon acquisition of sample due to Google Play Store not showing an accurate number of downloads to player count, the model used for the framework is a workaround to that factor and is wholly based on statistically quantifieable factors , so the author's suggestion to future research is to perform the research by limiting the sample size to only 1 game or entity to better quantify intent and factors and or performing a qualitative based research to better understand the qualities of the factors that affect the customer and better elaborate it in the results.

The research contributes in confirming that Purchase Intent within Mobile Games as a Service can be quantified based on other factors such as Intent to Use, Accessibility, Perceived Value and Perceived Credibility, which can be correlated to other fields such as software usage and application usage for mobile purposes such as other as a service models that is currently on the rise within the mobile marker and by giving a better understanding to consumer behaviour in regards to purchasing a product within the mobile market.

Based on the research it implies that Purchase Intention is highly affected by Intent to Use so with that in mind, attracting users to the product of any kind should default to understanding Intent to Use and how to evolve it to Intent to Purchase. Therefore, the factors that affect Intent to Use such as Accessibility, Perceived Value and Perceived Credibility should be considered, for example in context of Accessibility it might be beneficial to consider system flexibility of an app so that it may run on older phones and having a simple UI that can be understood easily by users also adding features that make

it more convenient for the user such as voice recognition or activation may add accessibility, in context of Perceived Value adding annual events to commemorate a milestone that has been reached may improve user experience, merchandising of the product may also add value to potential customer as it adds engagement and produces attachment for the customer to the game and in conjunction provide a boost to Perceived Credibility due to the marketing done to spread the word, Increase the branding of the product by attending events with the target market and increase public relations such as doing marketing of the product by promoting it with well-known figures to increase its reach so to increase the company's reputation and credibility. In closing, the Intent to Purchase can be increased by creating an attachment for the intended target user so that the company may entice the user to try and purchase their product.

REFERENCES

Alalwan, A. A. (2018). Investigating the impact of social media advertising features on customer purchase intention. *International Journal of Information Management*, *42*, 65–77. https://doi.org/10.1016/j.ijinfomgt.2018.06.001

Atmoko, B., & Ellyawati, J. (2021, April 26). DETERMINANT OF IN-APP MOBILE GAME PURCHASE INTENTION: AN EMPIRICAL STUDY OF INDONESIAN MOBILE GAMER. *Proceedings of the First International Conference of Economics, Business & Entrepreneurship, ICEBE 2020, 1st October 2020, Tangerang, Indonesia*. https://doi.org/10.4108/eai.1-10-2020.2304925

Balakrishnan, J., & Griffiths, M. D. (2018). Loyalty towards online games, gaming addiction, and purchase intention towards online mobile in-game features. *Computers in Human Behavior*, *87*, 238–246. https://doi.org/10.1016/j.chb.2018.06.002

Bartlett, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational Research: Determining Organizational Research: Determining Appropriate Sample Size in Survey Research Appropriate Sample Size in Survey Research. In *Information Technology, Learning, and Performance Journal* (Vol. 19, Issue 1).

Browne, R. (2023, January 11). Global spending on mobile games falls 5% as high innation causes market to cool. *CNBC*.

Cepeda-Carrion, G., Cegarra-Navarro, J. G., & Cillo, V. (2019). Tips to use partial least squares structural equation modelling (PLS-SEM) in knowledge management. In *Journal of Knowledge Management* (Vol. 23, Issue 1, pp. 67–89). Emerald Group Holdings Ltd. https://doi.org/10.1108/JKM-05-2018-0322

Coursaris, C. K., Osch, W. Van, & Sese, F. (n.d.). *Association for Information Systems AIS Electronic Library (AISeL) Exploring the Empirical Link Between Game Features, Player Motivation, and Game Behavior*. http://aisel.aisnet.org/mcis2016/53

Coursaris, C. K., Osch, W. Van, & Sese, F. (2016). Association for Information Systems AIS Electronic Library (AISeL) Exploring the Empirical Link Between Game Features, Player Motivation, and Game Behavior. *MCIS 2016 PROCEEDINGS*, 1–9. http://aisel.aisnet.org/mcis2016/53

Cramer, T. (2023, January 16). *Mobile Gaming Revenue is Declining, Here's How to Fight Back*. Mobile Growth Association.

Dubois, L. E., & Weststar, J. (2021). Games-as-a-service: Conflicted identities on the new front-line of video game development. *New Media and Society*. https://doi.org/10.1177/1461444821995815

El-Adly, M. I. (2019). Modelling the relationship between hotel perceived value, customer satisfaction, and customer loyalty. *Journal of Retailing and Consumer Services*, *50*, 322–332. https://doi.org/10.1016/j.jretconser.2018.07.007

Franque, F. B., Oliveira, T., Tam, C., & Santini, F. de O. (2021). A meta-analysis of the quantitative studies in continuance intention to use an information system. In *Internet Research* (Vol. 31, Issue 1, pp. 123–158). Emerald Group Holdings Ltd. https://doi.org/10.1108/INTR-03-2019-0103

Hair, J. F., Ringle, C. M., Gudergan, S. P., Fischer, A., Nitzl, C., & Menictas, C. (2019). Partial least squares structural equation modeling-based discrete choice modeling: an illustration in modeling retailer choice. *Business Research*, *12*(1), 115–142. https://doi.org/10.1007/s40685-018-0072-4

Helland, I. S. (1988). On the structure of partial least squares regression. *Communications in Statistics - Simulation and Computation*, *17*(2), 581–607. https://doi.org/10.1080/03610918808812681

Helland, I. S. (2001). Some theoretical aspects of partial least squares regression q. In *Chemometrics and Intelligent Laboratory Systems* (Vol. 58). www.elsevier.comrlocaterchemometrics

Hsiao, K. L., & Chen, C. C. (2016). What drives in-app purchase intention for mobile games? An examination of perceived values and loyalty. *Electronic Commerce Research and Applications*, *16*, 18–29. https://doi.org/10.1016/j.elerap.2016.01.001

Jang, M., Lee, R., & Yoo, B. (2021). Does fun or freebie increase in-app purchase?: Analyzing effects of enjoyment and item experience intention to purchase mobile game contents. *Information Systems and E-Business Management*, *19*(2), 439–457. https://doi.org/10.1007/s10257-019-00420-z

Kazancoglu, I., & Aydin, H. (2018). An investigation of consumers' purchase intentions towards omni-channel shopping: A qualitative exploratory study. *International Journal of Retail and Distribution Management*, *46*(10), 959–976. https://doi.org/10.1108/IJRDM-04-2018-0074

Kerr, A. (2017). *Global Games*. Routledge. https://doi.org/10.4324/9780203704028

McClure, C., & Seock, Y. K. (2020). The role of involvement: Investigating the effect of brand's social media pages on consumer purchase intention. *Journal of Retailing and Consumer Services*, *53*. https://doi.org/10.1016/j.jretconser.2019.101975

Naab, T. K., Heinbach, D., Ziegele, M., & Grasberger, M. T. (2020). Comments and Credibility: How Critical User Comments Decrease Perceived News Article Credibility. *Journalism Studies*, *21*(6), 783–801. https://doi.org/10.1080/1461670X.2020.1724181

Nikou, S. A., & Economides, A. A. (2017). Mobile-based assessment: Investigating the factors that influence behavioral intention to use. *Computers and Education*, *109*, 56–73. https://doi.org/10.1016/j.compedu.2017.02.005

Oyibo, K., Adaji, I., Orji, R., & Vassileva, J. (2018). What drives the perceived credibility of mobile websites: classical or expressive aesthetics? *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, *10902 LNCS*, 576–594. https://doi.org/10.1007/978-3-319-91244-8_45

Purwanto, A., & Sudargini, Y. (2014). Partial Least Squares Structural Squation Modeling (PLS-SEM) Analysis for Social and Management Research : A Literature Review. *Journal of Industrial Engineering & Management Research*, *2*(4), 114–123. https://doi.org/10.7777/jiemar.v2i4.168

Ravoniarison, A., & Benito, C. (2019). Mobile games: players' experiences with in-app purchases. *Journal of Research in Interactive Marketing*, *13*(1), 62–78. https://doi.org/10.1108/JRIM-06-2016-0060

Revels, J., Tojib, D., & Tsarenko, Y. (2010). Understanding consumer intention to use mobile services. *Australasian Marketing Journal*, *18*(2), 74–80. https://doi.org/10.1016/j.ausmj.2010.02.002

SensorTower. (2022, August). *Most Mobile Game Genres See Revenue Declines in the U.S. During H1 2022 as Industry Headwinds Bite*. SensorTower. https://sensortower.com/blog/u-s-mobile-game-genres-analysis-h1-2022

Vegni, N., Melchiori, F. M., D'Ardia, C., Prestano, C., Canu, M., Piergiovanni, G., & Di Filippo, G. (2019). Gambling behavior and risk factors in preadolescent students: A cross sectional study. *Frontiers in Psychology*, *10*(JUN). https://doi.org/10.3389/fpsyg.2019.01287

Von Der Heiden, J. M., Braun, B., Müller, K. W., & Egloff, B. (2019). The association between video gaming and psychological functioning. *Frontiers in Psychology*, *10*(JULY). https://doi.org/10.3389/fpsyg.2019.01731

Wills, J. (2002). Digital Dinosaurs and Artificial Life: Exploring the Culture of Nature in Computer and Video Games. *Cultural Values*, *6*(4), 395–417. https://doi.org/10.1080/1362517022000047334

Yu, N., & Huang, Y. T. (2022). Why do people play games on mobile commerce platforms? An empirical study on the influence of gamification on purchase intention. *Computers in Human Behavior*, *126*. https://doi.org/10.1016/j.chb.2021.106991

Zhu, L., Li, H., Wang, F. K., He, W., & Tian, Z. (2020). How online reviews affect purchase intention: a new model based on the stimulus-organism-response (S-O-R) framework. *Aslib Journal of Information Management*, *72*(4), 463–488. https://doi.org/10.1108/AJIM-11-2019-0308

Zhu, W., Mou, J., & Benyoucef, M. (2019). Exploring purchase intention in cross-border E-commerce: A three stage model. *Journal of Retailing and Consumer Services*, *51*, 320–330. https://doi.org/10.1016/j.jretconser.2019.07.004