FACTORS AFFECTING TO VIRTUAL GOODS PURCHASE INTENTION: FREE TO PLAY GAMING CONTEXT.

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ABSTRACT

The core purpose of this research is to study the Factors Affecting to Virtual Goods Purchase Intention: Free to play Gaming Context by using Structural Equation Modeling (SEM). The sample population was chosen from audiences of eSport in Thailand and the questionnaires were distributed to 385 respondents. The Statistical treatment of this study is based upon the statistical techniques such as frequency and percentage, means, and standard deviation, and SEM. The results showed that the conceptual model aligns with the empirical data (CMIN/df = 2.792, GFI = 0.963, NFI = 0.964, RFI = 0.946, IFI = 0.977, TLI = 0.965, CFI = 0.977 and RMSEA = 0.068). The findings of this research indicated that all Hypotheses was accepted and all variables are influencing each other's by direct and indirect way at significance level 0.01.

Keywords: E-sports, Structural Equation Modeling, Virtual Goods

INTRODUCTION

E-sports or Computer Sports are video games competition, all competitive activities exist in virtual space or virtual world that has been created by computer systems (Natalia Lokhman, 2018). Competitive activities of E-sport be similar to "Traditional Sports" in many ways, there are individual competition, team competition, and professional players to play (Szablewicz, 2016; Karhulahti, 2017).

In recent years E-sports has become a popular activity. The number of E-sport audiences or E-sport fans are rapidly growing. This affects revenue gaining in E-sports business field and the trend was showed in illustration 1 (BBC, 2017). Many entrepreneurs have been used marketing strategies to run electronic online businesses by using popular trends to become social networking marketing (Warisara Watsing and Bundit Phrapratanporn, 2017)

Figure 1. Trend of E-sports growth
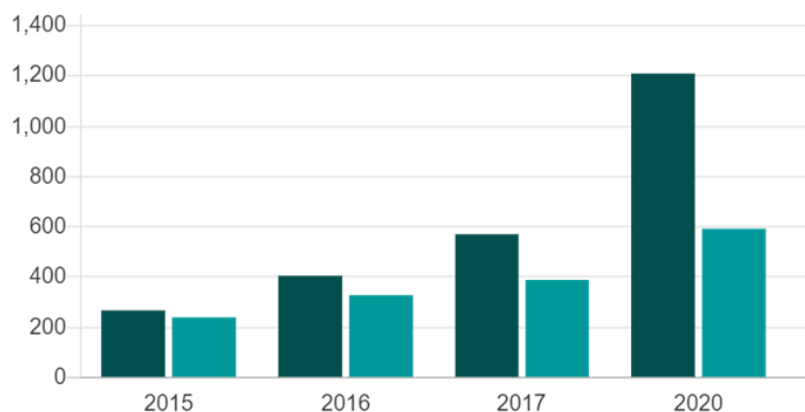
From the article of Michael Borowy (2013) which studies the E-sport's revenue gaining and found that E-sports can be a marketing tool. E-sport has been used to be a vehicle of brands to connect E-sport fans and products (Hutchin, 2008; Jin, 2010). Besides at academic field, notices that E-sport is something important to study or research about it. The article of Natalia Lokhman (2017) shows that there are many research articles about E-sport in recent years, 2001 – 2017 the data shows that there are rapidly higher trending of E-sport papers in SOPUS.

The evident difference between E-sport and Traditional Sport is definition, Juho Hamari & Max Sjoblom (2017) compared the definitions of these two words and found the conclusion to be separate them. (Table 1)

Table 1
Definition of Electronic Sports (Hamari & Sjoblom (2017)

Word	Activity
E-sports	Electronic Systems, Virtual Worlds
Sports	Real World

As we know, all activities of E-sport competition exists in virtual world and all players have to use avatar in virtual world (Bishop, 2009; Dan Ke at.el., 2012) which players are able to change all appearances of the avatar such as clothing or any items to make their displays look better as they like so virtual goods becoming one of important products to make revenue gaining in E-sport and games business (Cheng-Hsun Ho & Ting-Yun Wu, 2012). E-sport society has many platforms to help people sale their items each others such as "STEAM" of VALVE (Valve, 2019). There are a lot of revenue from selling virtual goods between E-sport audiences (Valve, 2019)

The unique thing of E-sports comparing with Traditional sports is "Role-Playing" which is beyond from "Position-Playing" in traditional sports. The study of Cheng-Hsun Ho & Ting-Yun Wu (2012) showed that "Identification with the Character" is the factor affecting purchase intention of gamers that play online games, The factor was developed by "Social Identification Theory" (Turner,1982).

By the unique of electronic virtual goods, E-sports context and the literature reviews the researcher this article has the objectives to find out "Factors Affecting to Virtual Goods Purchase Intention: Free to play Gaming Context " in the form of structural equation modeling (SEM) to provide how to use the virtual goods to developing and inventing E-sports and Game Business field.

OBJECTIVE

1. To study factors that affecting to virtual goods purchase intention of E-sport context in thailand.

2. To confirm factors factors that affecting to virtual goods purchase intention of E-sport structural equation model.

3. To study influencing of "E-sport Involvement", "E-sport Character Identification" to virtual goods purchase intention.

METHODOLOGY

This research article is studying about "Factors Affecting to Virtual Goods Purchase Intention: Free to play Gaming Context" and approaching in surveying research to analyzing causal relationship by structural equation modeling method to understanding influencing and relationship between factors in E-sport theme that affecting to intention to purchase virtual goods. The populations are fans of E-sports that should be an audience and player in the same person who living in Thailand. The sample was collected by mixing between stratified sampling and accident sampling method and took from all regions of the country. 400 people was collected and the data that can be used in the study was only 385 people.

The variables in this study are "E-sport Involvement", "E-sport Character Identification", "Purchase Intention on virtual goods" that are found by literature reviews.

1. E-sport Involvement is found form literature review of Hollebeek et. Al. (2007), Rodoula Tsiotsou (2007) and Kevin Gwinner (2013).

2. E-sport Characteristic Identification is found from literature review of Michael Chih-Hung Wang (2012), Makoto Nakazawa et. Al. (2016), Crosby & Taylor (1983), Chen-Hsun Ho & Ting-Yun Wu (2012), Michael Wang (2012), Mael & Ashford (1992) and Kevin Gwinner (2013).

3. Purchase Intention on Virtual Goods is found from literature review of Kevin Gwinner (2013), Michael Wand (2012), Cheng-Hsun Ho and Ting-Yun Wu (2012), Crosby & Taylor (1983), Xuehua Wang & Zhilin Yang (2010), Hollebeek et. Al. (2007) and Makoto Nakazawa et. Al. (2016).

The instrument that used in this study is Questionnaire that developed from the studies of Yukyoum Kim (2014), Kewin Gwinner (2013), Windy (2008), Chen-Hsun Ho & Ting-Yun Wu 2012), and The Anh Phan & Phuong Hoang Mai (2016)

The study is Quantitative Research that take primary data and secondary data. Using research literature review method to constructed variables. The statistical used in this study are descriptive statistic and inferential statistic such as mean and standard deviation analyze, structural equation modeling in confirmatory factor term and path analysis.

RESULTS

The factor analysis

The factor analysis of the study reveal that not all of observe variables could be in the model. The researcher cut off third question of E-sport characteristic identification group to make the regression weight of the model perfect of criteria (factor loading lower than 0.6; Chin; Gopal & Salisbury, 1997; Hair et al., 2006). All of factor loading are showed at table 2.

Table 2. Factors loading of the model

| Observed Variables	Standardized Factor Loading
E-sport Involvement 1	0.74
E-sport Involvement 2	0.87
E-sport Involvement 3	0.75
E-sport Characteristic Identification 1	0.75
E-sport Characteristic Identification 2	0.79
E-sport Characteristic Identification 3	0.40 (Cut off of the group)
E-sport Characteristic Identification 4	0.83
Purchase Intention 1	0.88
Purchase Intention 2	0.92
Purchase Intention 3	0.76

Confirmatory Factor Analysis Model

The confirmatory Factor Analysis Model was analyzed and showed the structural equation model that the researcher built is perfectly fit to the empirical data. The criteria that used in method are from many reference and showed in table 3 and the model showed at figure 2.

Table 3
Results of Confirmatory Factor Analysis

Fit Indices	Recommended Value	Results
CMIN/DF	<5 Loo & Thorpe (2000)	2.792
Goodness of Fit Index (GFI)	≥0.8 Cheng, Shih-I (2011)	0.963
Normalised Fit Index (NFI)	≥0.9 Bentler (1999)	0.964
Relative Fit Index (RFI)	≥0.9 Bentler (1999)	0.946
Incremental Fit Index (IFI)	≥0.9 Bentler (1999)	0.977
Tucker Lewis Index (TLI)	≥0.9 Bentler (1999)	0.965
Comparative Fit Index (CFI)	≥0.9 Bentler (1999)	0.977
Root mean square error of approximation (RMSEA)	<0.08 Hair et al (1998)	0.068

Figure 2
The Structural Equation Model of the study
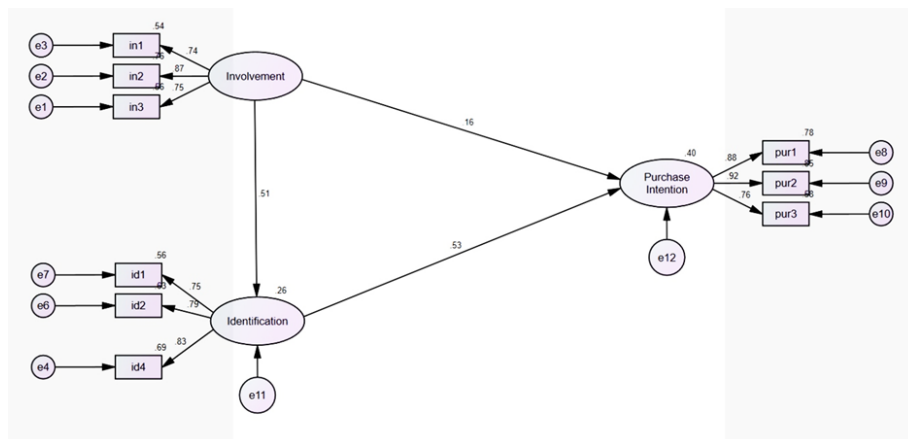
Hypothesis testing

The Hypothesis testing is show at table 4, all hypotheses are confirmed.

Table 4
Results of the hypothesis testing

Hypothesis	Factor Loading	P-value	Result
Involvement → Identification	0.160	0.000	Accepted
Involvement → Purchase Intention	0.510	0.007	Accepted
Identification → Purchase Intention	0.530	0.000	Accepted

Path analysis

The path analysis of the model was estimated and show at table 5.

Table 5
Path Analysis

Path Analysis	Direct Effect	Indirect Effect	Total Effect
Involvement → Identification	0.510	-	0.510
Involvement → Purchase Intention	0.163	0.272	0.435
Identification → Purchase Intention	0.533	-	0.533

CONCLUSION AND FUTURE WORK

From the results we knew that all Hypotheses are accepted. All of the results can be able to apply into academic practicing and business practicing.

In academic practicing field is for researchers or students who wanted to studying about virtual goods and E-sports, will have knowledge of these kind of variables to use in their study.

In business practicing field is for entrepreneurs or investors who wanted to invest or use virtual goods and E-sports in their business model or development their brand to become one of virtual goods branding and new future marketing.

ACKNOWLEDGEMENTS

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