



EE489 :Seminar in Industrial Economic

**Key factors that influence audience decision on watching live
game streaming platform**

By

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Abstracts

This study investigates the significant factors that affect frequency of watching live game streaming . The data was collected by distributing online surveys and conducted variable based on uses and gratification theory .The total of 184 respondents was analyzed using the multiple linear regression model and found effects of each independent variable on hour watched The results indicate that age of streamers , chatting features , types of contents and entertainment motivation is the significant factor affecting the number of hours per week of watching live game streaming.. However, it is quite surprising that the social trend that people need to interact with others and information motivation which mean people use this media to seek for skill to play video games are not significant factors. Moreover, demogrademographic and behavior factors played no role in watching other people play video games online

1. Introduction

Nowaday, there are many new types of social media that exist including live game streaming. This service can provide opportunities to produce and to broadcast game programs and interact with audiences in real time via chatting. Moreover, audiences can support their favourite streamers by purchasing the reward and sending it to them . From Mordor Intelligence (2019) ,the game streaming involves streaming video game content via the internet that includes live gameplay or pre-recorded gameplays though a variety of devices such as smartphone , game console ,PC and more.

Websites that provide live game streaming such as YouTube Gaming ,Twitch, Facebook gaming are called game streaming platforms that provide free view content and paid subscriptions to view premium content. The platforms provide convenience features to both streamers and audiences who broadcast their content and audiences who watch the streaming by chatting to make more engagement with their favourite streamers and more, Game streaming platform generates revenue primarily through merchandising, advertisements, and premium account subscriptions.

Platform of this types media need to focus more not only broadcaster but audience as well as since they're huge number that escalate traffic on the platform. If we know which are the key factors and user's behaviour that they concern then the platform can build better relationships with users as well. Hence, this paper will provide information to improve and develop this industry by finding key factors that influence audience decision making to watch live game streaming for the platform and streamers.

Acknowledging the factors that affect the audience of watching live game streaming is essential to streamers and platforms. They should realize the fact that they should provide different content to target dissimilar watchers to respond to the needs of watchers. This paper will include a background of live game streaming platforms , methods used to get data and result from analysis about factors that influence the audience to watch . This could be beneficial for video game broadcasters and platforms to get a suitable idea and incentive to create better content for their audiences.

1.4 Market situation

About market situation, the game streaming market is expected to register a compound annual growth rate of 9% during the forecast period 2021- 2026. Market is segmented into web-based and app-based solutions. The revenue generated from web-based was higher in 2019 and is mainly due to many streaming providers focusing on streaming via web browsers (Mordor Intelligence, 2019) . Eventually, mobile games gain huge popularity in gaming market in Thailand so streaming in which app- based is expected to gain more market share in the future.

Based on revenue model the market is segmented into 2 models including subscription supported and advertisement supported game streaming. On the other hand, game streaming that is supported by subscription fee is expected to account for a major share of the market in 2019.

1.3 Key players in Thailand

According to a new report from StreamElements, Twitch viewers live-streamed account for 72.2% of all live hours watched compared with 19.5% on YouTube Live and in Q2 of 2019.

In Thailand, key players of live game streaming platforms are Youtube gaming by google , Twitch by Amazon in 2014 .And the latest new one is Facebook gaming by Facebook in 2018 .

Picture 1 : Details of each platform in terms of audience perspective.

Feature				
● Viewing live game streaming		FREE		
● Chatting	Subscription fee	FREE		
● Rewarding		Additional purchase		
● Device accessibility		Smartphone , PC , Game Console and more		
● Contents	Esport tournament	Variety genre of games		
● Revenue		Advertising & Subscription fee		

Comparison of platform's features are shown in *Picture 1*. Those three platforms are quite similar with each other which is video-game broadcasting and viewing platform where viewers can "donate" to their favorite players . Those three platforms provide free service for the audiences to watch live game streaming including live streaming and recorded video gaming also give convenience to users by accessing many devices including PC ,Smartphone , Game console and more.. According to the chatting feature, this feature allows interaction between players and watchers to communicate immediately but this function has to be paid only on the Twitch platform only. Moreover, audience or fans can supported your favorite broadcasters as rewards or donations which are additional purchases that platform provides in many different formats on

different platforms such as sending stars to support streamers on Facebook gaming , send coin to you favourite streamers on Twitch and sending emoji to streamers on Youtube gaming. The price of additional rewards is quite similar between the three platforms. Furthermore, watchers can donate money by Paypal directly to players with no need to transact via platforms.

In contrast , there are special events or content like an esports tournament that are owned by Twitch only since they gain lots of partnership from game companies. It is undeniable that among those platforms, they tried to compete with the intelligence technology through the platforms for easy to use and attracting both streamers and audiences. Facebook gaming has filters that suit individual preference by AI .Youtube allows watchers to more easily find your favorite live video game streaming. As with standard YouTube, you can follow channels to stay on top of their content; unlike standard YouTube.

Regarding revenue stream ,the main revenue of those 3 platforms are advertising that pop-up in live video games or tie-in when they broadcast and subscription fee .Each platform took a different percentage from subscription fee. (50% on Twitch,30% on Youtube gaming and Facebook gaming)

Objective of research

This research aims to determine key factors that influence audience decision making process on watching live game streaming and to study the audience behaviour on using this type of media,as well as explore opportunities to develop feature or function on live game streaming platform based on user's preference.

Research question

The research questions for this study are

1. What factors can contribute to the audience spending time more on watching live game streaming and how ?
2. Does the subscription fee on some platform affect viewers ?
3. What is the impact of users' preference in game live streaming ?
4. Do people who ever or never play video games have an impact on the frequency of watching?

2. Literature review

This section introduces the related and relevant researches and theories used to identify the key factors affecting audiences' decision on watching live game streaming and to build the model for testing.

2.1 Motivation for the use of video game streaming platform

Luis Javier ,Sandra M. Fernando J. (2020) stated that three basic types of motivation from use and gratification theory (U&G theory) can be contributors to drive people to use video game streaming platforms more including social motivation ,tension release and especially information motivation which motivates people to seek more knowledge or skill on the platforms. In addition, this paper examine moderating effects between demographic variables and usage of video games platform based on Partial least square (PLS) model to analyse the results

Next, tension escape are factor that positively significant with how many hours users watched streams.It has a positive impact on not just the number of hours watched, but also on the

numbers of streamers watched and streamers followed by examining five distinct types of motivations from the uses and gratifications perspective which including cognitive, affective, personal integrative, social integrative and tension release. Information seeking is also indicated to be positively significant with the amount of hours that users chose to spend on the service.

(Max S.&Juho H.,2016)

The uses and gratification theory (U&G theory) is one of the most established theoretical approaches for understanding the motivations for and uses of media consumption is the U&G theory; this framework is particularly appropriate for interpreting the early stages of new forms of mass media (Ruggiero, T.E,2000).It's divided audience demands to watch live streaming into five categories: cognition, emotion, personal integration, social integration, and stress release (Sjöblom and Hamari,2007). Gros et al. (2007) found that the audience rewards intention was influenced by the number of viewers and watching duration. In addition, this paper shown that the surrounding environment plays an important role in the behavior of live streaming users.

2.2 Audiences behavior on live streaming platforms

Katrin S,Kaja J. Wolfgang G (2016) mentioned that the information on social live streaming services based on YouNow users , production and reception behaviour of YouNow users.By surveying and analyse as percentage to summary which element has the highest percentage.The result shows that users mostly watch streams and chat while watching and reward streamers by using emoticons and prefer a system that is easily utilized Moreover, In terms of audience, people prefer watch streamers of their friends and people aged between 13 and 20 years old and prefer watch platforms that link other platforms .

According to ‘ What motivates audience comments on live streaming platform from Mengdi Wang & Dong LiGharaibeh (2019),the paper observed audiences’ interaction and engagement with live streaming from a sociological perspective to investigate the different effects of information factors on audiences’ real-time interactions between two group including video game streaming and talent shows.The results show that audiences’ commenting was mostly affected by the number of viewers, the gender of streamers(female receive comments more than male), the number of likes, the number of gifts positively and the duration of the live stream only that have negative effect.

Furthermore, factors which consumers consider when choosing cable television and online streaming options are available option and social trend that had the strongest relationship consumers decision to select online streaming.Moreover,there is marginal correlation with media option variable in considering online streaming with using multiple linear regression mode as analysis.Lastly,demographics, gender played no clear role while age showed marginal impact in choosing online streaming over cable television.(Christopher L. & Pankaj N. & Sinead G & Hyoun Sook L,2018)

According to information from the literature review, there is much research about factors and watchers' behaviours.Therefore, this research aims to find the key factors that affect audiences' decisions in watching live game streaming.

Independent variables used in this research model are developed from Uses and gratification theory.Analyzing key determinants of uses of live game streaming platform by changing and adding some factors that were found from literature review. Since these models and theory are reliable and widely accepted, they are suitable to use as a basic model to develop

the framework for this study. About the dependent variable of this paper is hours watched per week of audiences that also adapted from related research which has already been mentioned.

3. Research Methodology

3.1 Research Methodology

To answer and achieve the objectives, this paper sets the dependent and independent variable based on the theoretical framework, followed by data collection that will discuss the questionnaire through google form which is a method to collect the result. When the data is collected then using a statistical tool to analyse .

3.2 Theoretical framework

Use and gratification theory (U&G theory)

This theory starts with the individual's need and focuses on audience activity and communication motives which are the key components of this theory to seek for gratification. Using this theory emphasizes the impact of media on the audience or usage perspective of what they do with that type of communication. From Blumler and Katz ,there are four basic dimension of gratification in the audience's media usage including information which is motive of finding knowledge, personal identify that is motive to define identity , Motive to escape from problems or entertainment and social interaction .On contrary, this research will adapt some types of motivation which are social trend ,entertainment and information motivation to generate the methodology further.

3.3 Variables

To focus on key factors that affect watching on live game streaming, the average number of hours that people spend time watching per week as continuous data is a key variable that can identify frequency audiences' behaviour on watching game streaming. Therefore, this paper generates this as a dependent variable (Y) that can figure out how long people watch game streaming as continuous data.

Referred from the literature review there are demographic factors, audiences' behavior including play or never play video game, hours watched, platforms that they use to watch, types of game, how they get to know the platform. We want to observe the percentage of those factors and indicate main personal behaviour of audiences. On the other hand, in watchers' behaviour, we use only ever playing game as a independent variables to see the relationship and effect between people who ever play game will watch live game streaming or not.

Along with the use and gratification theory and some literature reviews, we divide factors that might influence users as audience to use more into 5 categories in which are streamer characteristics, social trend, features of platforms, additional purchasing and motivation used as independent variables.

Streamer characteristics are the personality information of people who broadcast video games online including age, gender and style of playing game that refer to the behaviour of streamers when they play video games such as funny, intense and more.

Social trends are one element in theoretical framework that represent motivation to interact and engage with other people who are friends, family, celebrities, influencers and social

networks take into consideration this type of independent variable as well . Moreover , there are 2 motivations as variables: information seeking motivation that helps people to learn and find knowledge or skill about video games ,entertainment motivation that people use this type of social media to release tension or escape from problems.

In addition,chatting, types of content such as advertising add-on , review gaming commodities in lives streaming , variety game show and more ,types of game , rewarding or donation to streamers,accessing in variety devices that platform allow many devices including PC, Tablets , Smartphone and more and lastly special event such as E-sport tournament are also grouped as feature variables.Last independent variable, some platform have the additional payment for user to purchase and get more benefit such as chatting , subscribe .Hence, this paper determine price of subscription fee,price of rewarding and variety method to make transaction including PayPal, True money wallet ,Credit card and more tas additional purchasing variable.

The total independent variable is 3 categories and 28 independent variables ,9 variables from demographic, 1 variable from audience behaviour and 18 from 5 categories of other factors.*Table 1* describes the definition of all variables.

Table 1 : Variable definition.

Factors	Variable	Definition
Dependent variable		
Hours watched per week	Hrsperweek (Y)	The average number of hours per week that people spend time wat
Independent variable		
1.Demographic Factor	Gender	Dummy variable (female = 1 , male = 0)

	Age	Dummy variable (teen who age less than 22 years old = 0 , adults who age more than 23 years old = 1)
Occupation	Students	Dummy variable (Students =1 , if not = 0)
	Business owner	Dummy variable (Business owner =1 , if not = 0)
	Office worker	Dummy variable (Office worker =1 , if not = 0)
	Government worker / State enterpriser	Dummy variable (Government worker / State enterpriser = 1,if not = 0)
	Freelancer	Dummy variable (Freelancer =1 , if not = 0)
	Education	Dummy variable (Below than high school = 0, above than bachelor degree = 1)
	Monthly income	Dummy variable (Less than 30,000 baht =0 , more than 30,001 baht =1)
2. Audience Behaviour	Playgame	Dummy variable (ever play video game = 1,never play video game = 0)
3. Other Factors		
Steamer characteristic	Age of streamer (streamer_age)	Age of streamer influence to watch live game streaming (1= Strongly disagree, 2=Disagree ,3=Neutral, 4= Agree, 5 = Strongly Agree)
	Gender of streamer (streamer_gender)	Gender of streamer influence to watch live game streaming (1= Strongly disagree, 2=Disagree ,3=Neutral, 4= Agree, 5 = Strongly Agree)
	Style of playing game of streamer (streamer_sty)	Style of playing game of streamer influence to watch live game streaming (1= Strongly disagree, 2=Disagree ,3=Neutral, 4= Agree, 5 = Strongly Agree)
Social trend	Friend or family (sc_ff)	Friend or family influence to watch live game streaming (1= Strongly disagree, 2=Disagree ,3=Neutral, 4= Agree, 5 = Strongly Agree)
	Influencers or celebrity (sc_celeb)	Influencers or celebrity influence to watch live game streaming (1= Strongly disagree, 2=Disagree ,3=Neutral, 4= Agree, 5 = Strongly Agree)
	Social network (sc_scnw)	Social network influence to watch live game streaming (1= Strongly disagree, 2=Disagree ,3=Neutral, 4= Agree, 5 = Strongly Agree)

Feature	Types of content (ft_content)	Types of content influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)
	Types of game (ft_game)	Types of game influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)
	Rewarding or donation (ft_reward)	Rewarding or donation influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)
	Easy to use (ft_easy)	Easy to use platform influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)
	Chatting (ft_chat)	Chatting influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)
	Accessing in variety devices (ft_device)	Accessing in variety devices influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)
	Special event (ft_event)	Special event influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)
Additional purchase	Price of subscription fee (addp_sub)	Price of subscription fee influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)
	Price of rewarding (addp_reward)	Price of rewarding influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)
	Methods of purchasing (addp_method)	Methods of purchasing influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)
Motivation	Information motivation (moti_info)	Information motivation influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)
	Entertainment motivation (moti_ent)	Entertainment motivation influence to watch live game streaming (<i>1= Strongly disagree, 2=Disagree, 3=Neutral, 4= Agree, 5 = Strongly Agree</i>)

3.4 Data collection

Quantitative data

The questionnaire was designed based on literature review and uses and gratification theory via google form and distributed through social media and personal contact to recruit participants. There are 4 parts of questionnaire including Screen Question in one choice question form that will cut the people that never watch video game streaming out, audience behaviour part which will ask about hours watching video game, devices that they use , platform that they select and how did they know that platform,factors that affecting audience's watching live game streaming in important rating questions form which contain scale 1 to 5 strongly disagree to strongly agree and divided into 5 groups including streamer characteristic,social trend , feature , additional purchase and motivation. Demographic information in one choice question form in the last part of questionnaires

3.5 Data analysis

Results from data collection were analyzed through the STATA program and using multiple regression , mean , standard deviation ,and percentage as statistical methods to run the data.This numerical form is shown in the *Table1*. Due to the suggestion of S.Walter(2008), sometimes, putting too many variables in the regression model will make the prediction of results not precise because of redundancy of data. So the grouping of some demographic variables to decrease the number of dummy variables is needed to reduce omitted variables due to collinearity problems .

Thus, age, level of education and level of monthly income which include demographic factors are grouped from the original questionnaire as shown in *Table 2*. To see the relationship between the impact of all independent variables on the number of time that is spent on watching live game streaming and the significant factor through 99 ,95 and 90 percent. So, this paper decides to analyse all variables in one model.

Regression model

$$\begin{aligned} \text{hrsperweek} = & \beta_0 + \beta_1\text{playgame} + \beta_2\text{gender} + \beta_3\text{age} + \beta_4\text{occupation} + \beta_5\text{edu} + \beta_6\text{income} + \\ & \beta_7\text{streamercha_age} + \beta_8\text{streamercha_gender} + \beta_9\text{streamercha_sty} + \beta_{10}\text{sc_ff} + \beta_{11}\text{sc_celeb} \\ & + \beta_{12}\text{scnw} + \beta_{13}\text{ft_content} + \beta_{14}\text{ft_game} + \beta_{15}\text{rewa} + \beta_{16}\text{ft_easy} + \beta_{17}\text{ft_chat} + \\ & \beta_{18}\text{ft_device} + \beta_{19}\text{ft_event} + \beta_{20}\text{add_subprice} + \beta_{21}\text{addp_rewprice} + \beta_{22}\text{addp_method} + \beta_{23}\text{moti_info} \\ & + \beta_{24}\text{moti_ent} + \varepsilon_i \end{aligned}$$

The definition of those variables is already defined in *Table1*.

Table 2: Grouping demographic variables

Factors	Variable	Grouped variable
Age	Under age of 18	Teens
	18 - 22 years old	
	23 - 27 years old 28 - 32 years old Over 33 years old	Adults
Level of education	Below High school High school	Below than High school
	Bachelor's Degree Over Bachelor's Degree	Above than Bachelor's degree
Level of monthly income	Less than 15,000 Baht 15,001 - 30,000 Baht	Less than 30,000 Baht

	30,001 - 45,000 Baht 45,001 - 60,000 Baht More than 60,000 Baht	More than 30,001 Baht
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4 . Finding and Results

4.1 Finding from surveys

After collecting the data through questionnaires, 221 in total respondents are collected in this observation. In contrast, there are people who ever watch live game streaming only 184 people which can be accounted for 83.3% of overall. Majority of respondents are female which are 65.2% and teen generation by 65.8% which are students mostly. About the level of education and monthly income, over bachelor's degree in education level and less than 30,000 baht are major of the respondents respectively. So, the demographic findings are shown in the *Table 3. Demographic data summarize.*

Table 3 : Demographic data summarize

Demographic data	Amount	%
1. Gender		
• Female	120	65.2%
• Male	64	34.8%
2. Age		
• Teen	121	65.8%
Under age of 18	43	23.4%
18 - 22 years old	78	42.4%
• Adult	63	34.3%
23 - 27 years old	45	24.5%
28 - 32 years old	7	3.8%
Over 33 years old	11	6%

3. Occupation • Student • Business owner • Office worker • Government / State Enterprise • Freelancer	134 7 22 9 12	72.8% 3.8% 12% 4.9% 6.5%
1. Education • Below than high school • Above Bachelor's degree	52 3 49 132 116 16	28.2% 1.6% 26.6% 71.8% 63% 8.7%
5.Monthly income • Less than 30,000 Baht • More than 30,001 Baht (1)	164 118 46 20 8 3 9	89.1% 64.1% 25% 10.9% 4.3% 1.6% 4.9%

Table 4. Descriptive statistics of all variable

Variables	MEAN.	SD.	MIN.	MAX.
Dependent variable				
Hour watched (hours per week)	9.122	8.893	1.5	28
Independent variables				
Playgame	0.891	0.312	0	1
Gender	0.669	0.472	0	1
Age	0.342	0.476	0	1
Student	0.728	0.446	0	1

Business	0.038	0.192	0	1
Office	0.120	0.325	0	1
Government / State enterprise	0.049	0.216	0	1
Freelancer	0.065	0.248	0	1
Level of Education	0.717	0.451	0	1
Level of monthly income	0.109	0.312	0	1
Age of streamer	2.571	1.252	1	5
Gender of streamer	2.380	1.231	1	5
Style of playing game of streamer	4.288	1.039	1	5
Friend or family	2.728	1.286	1	5
Influencers or celebrity	2.886	1.282	1	5
Social network	2.897	1.274	1	5
Types of content	4.125	0.987	1	5
Types of game	4.255	0.967	1	5
Rewarding or donation	2.592	1.216	1	5
Easy to use	3.924	1.157	1	5

Chatting	3.380	1.321	1	5
Accessing in variety devices	4.076	1.048	1	5
Special event	3.005	1.320	1	5
Price of subscription fee	3.049	1.277	1	5
Price of rewarding	2.636	1.247	1	5
Methods of purchasing	2.929	1.335	1	5
Information motivation	3.777	1.135	1	5
Entertainment motivation	4.239	1.049	1	5

In *Table 4*, shown that the average style of playing of streamers are the highest in streamer characteristic by 4.288 which people mainly agree that this factor influences their decision to watch live game streaming. Also in social network in social trends categories , types of games in feature, price of subscription in additional purchasing and entertainment in motivation respectively that have highest average of total each categories. But only the kinds of games , subscription fee and interaction with social network that people don't determine as factors that affect frequency of watching by answering average in neutral mostly.

In terms of behaviour observations, respondents stated that they mainly use their smartphone as a gaming platform followed by the PC. Moreover, as the channel where users watched streamers playing games, Youtube gaming is the main one, followed by Facebook gaming and Twitch respectively. Regarding the preferred video game types, action/adventure video stand out , followed by online FPS TPS such as PUBG , Valrorent and MOBA such as

ROV, DOTA respectively and people know the platform mainly from social media followed by friends and streamers respectively. The graph of finding shown in *Appendix 2.3*

4.2 Multiple linear regression analysis

After running multiple linear regression in STATA, the result illustrates that type of content affects hours watched on live game streaming platform with 90 percent significant

For age of streamer, chatting feature and entertainment motivation have significant effect at 5% level of significance on the time spent on live game streaming as audiences. Beside with 0.33 R-squared value which means that these independent variables can be used to explain the number of hours watched per week 33 percent.

These results can imply that characteristics of streamer including ages, types of content and chatting in features affect frequency of watching of audience on this media

More ages of streamers are the factor that lead the number time of watching live game streaming decline 1.5 hours per week since coefficient is -1.54 as the negative relationship. On the other hand, due to positive coefficient, features that provide people to interact with each other are significantly positive to hour watched by increasing 1.44 hours per week as well as entertainment that can contribute to the audience to watch 2.82 hours per week or approximately 3 hour 20 minutes per week.

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entertainment that can contribute to the audience to watch 2.82 hours per week or approximately 3 hour 20 minutes per week.

However, demographic and behavior factors which ever play games or not have no significantly impacted to hours watched of live game streaming in this analysis

Table 5 : Regression results

Source	SS	df	MS	Number of obs	=	184
Model	4742.30238	27	175.640829	F(27, 156)	=	2.82
Residual	9730.44626	156	62.3746555	Prob > F	=	0.0000
				R-squared	=	0.3277
				Adj R-squared	=	0.2113
Total	14472.7486	183	79.0860581	Root MSE	=	7.8978

hrperweek	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
playgame	1.353546	2.044016	0.66	0.509	-2.683974	5.391066
gender	2.212218	1.418121	1.56	0.121	-.588978	5.013414
age	-2.489641	1.902467	-1.31	0.193	-6.24756	1.268279
student	-4.822633	3.568533	-1.35	0.179	-11.87151	2.226246
business	0	(omitted)				
office	-3.353742	3.801976	-0.88	0.379	-10.86374	4.156254
gov	4.312896	4.494484	0.96	0.339	-4.565001	13.19079
freelance	.237445	4.168615	0.06	0.955	-7.996768	8.471658
edu	.1183962	1.480668	0.08	0.936	-2.806349	3.043141
income	2.971384	2.271728	1.31	0.193	-1.515932	7.458699
streamer_age	-1.540542	.5865775	-2.63	0.009	-2.699201	-.3818825
streamer_gender	.698988	.6100689	1.15	0.254	-.5060735	1.90405
streamer_sty	-.7937894	.8620379	-0.92	0.359	-2.496562	.9089833
sc_ff	-.1029509	.6278628	-0.16	0.870	-1.34316	1.137259
sc_celeb	.356389	.672877	0.53	0.597	-.9727365	1.685515
sc_scnw	-.2296589	.6512639	-0.35	0.725	-1.516092	1.056775
ft_content	-1.55672	.9188886	-1.69	0.092	-3.371789	.258349
ft_game	-.0599049	1.020896	-0.06	0.953	-2.076469	1.956659
ft_reward	-.2474179	.747161	-0.33	0.741	-1.723276	1.22844
ft_easy	-.8642201	.7925717	-1.09	0.277	-2.429777	.701337
ft_chat	1.442964	.646833	2.23	0.027	.1652831	2.720645
ft_device	1.615822	.9824514	1.64	0.102	-.3248023	3.556445
ft_event	.321984	.6581561	0.49	0.625	-.9780635	1.622031
addp_subprice	-.5870257	.742593	-0.79	0.430	-2.05386	.879809
addp_rewprice	-.3460595	.9051935	-0.38	0.703	-2.134077	1.441958
addp_method	.1463369	.7701274	0.19	0.850	-1.374886	1.66756
moti_info	-.7783601	.7064645	-1.10	0.272	-2.173831	.6171103
moti_ent	2.828991	.9302882	3.04	0.003	.9914039	4.666577
_cons	7.683965	5.45575	1.41	0.161	-3.09271	18.46064

5. Conclusion

To answer the research question what is key factors of audiences to watching live game streaming and impact in terms of users as watcher preference ,the factors that are important for frequency of watching live game streaming are age of streamer ,types of content , chatting feature and entertainment motivation which the more they can provide these factors on the platforms, the more hours of viewers increase .On the other hand, more younger players who are broadcasters are, people watch more. The finding supported the results of Katrin S,Kaja J. Wolfgang G (2016) that people prefer streamers who are young or age between 13 - 20 years old.

In terms of chatting features, it has a positive relationship that P-value less than 0.05 with the number of hours watched and supported Mengdi Wang & Dong LiGharaibeh (2019) results that comment on chatting on online streaming platforms have a positive impact with the number of views.

According to Christopher L. & Pankaj N. & Sinead G & Hyoun Sook L,2018) results that illustrate that demographic factors play no role on decision to use online streaming which related with this studies which showed no significant impacts between demographic , behaviour variables and the time spending of audience on the platform

Entertainment or tension release motivation can contribute hours watched of live video game streaming which is consistent with previous studies from Luis Javier ,Sandra M. Fernando J. (2020) and (Max S.&Juho H.,2016). My studies revealed that there is no statistically significant impact between social trends ,information motivation and hours watched.In contrast, those two research results do not directly support the current findings.

Moreover to answer subscription fee impact question, this study indicated no significant impact on additional purchase with audiences' decision to watch live game streaming.

For further research, in the future technology will be more advanced in order to deal with human needs and the platform might have more new features and functions. So, factors can be changed to catch up with updated platforms, then they should have more factors when the trends and time passes by. As well as increasing the number of observations on the number of respondents about the factors will make the result more accurate for further research.

6. Limitation

In this research, there are some limitations. The first limitation is a time limit. It is the main problem for this observation because of the lack of factors that have not enough data to analyze. It has to spread questionnaires more to cover people in every generation. It is not only time consuming to observe the personal preference of using live game streaming platforms but also the deeper knowledge of game streaming behavior should be acquired to set proper variable to analyze the data.

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Appendix1 . Questionaries

1.1 Screening questions

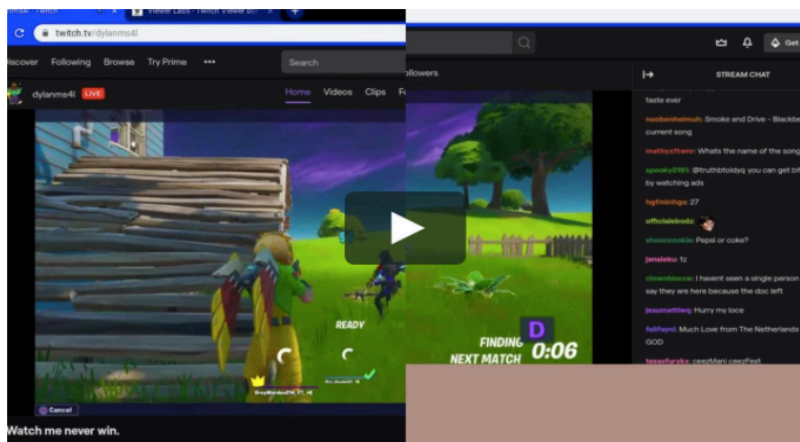
ปัจจัยที่ส่งผลต่อการตัดสินใจในการเลือกชม Live game streaming platform

แบบสอบถามนี้จัดทำขึ้นเพื่อเป็นส่วนหนึ่งของงานปริญญาโท ระดับปริญญาตรี คณะเศรษฐศาสตร์ ภาควิชาอังกฤษ (BE) มหาวิทยาลัยธรรมศาสตร์ โดยมีวัตถุประสงค์เพื่อศึกษาและเข้าใจปัจจัยในการตัดสินใจในการเลือกชม live game streaming platform เช่น Twitch ,Youtube gaming , Facebook Gaming

ผู้วิจัยขอความร่วมมือผู้ตอบแบบสอบถามทุกท่านตอบตามความเป็นจริง เพื่อการวิเคราะห์ข้อมูลที่แม่นยำที่สุด โดยการจัดเก็บข้อมูลเป็นไปแบบไม่ระบุชื่อและตัวตน จะถูกเก็บเป็นความลับ ผู้วิจัยจะนำเสนอเพียงเชิงสถิติ ในรายงานวิจัยเท่านั้น

ขอขอบพระคุณผู้ตอบแบบสอบถามทุกท่านเป็นอย่างสูงที่ให้ความร่วมมือในการตอบแบบสอบถามครั้งนี้

คำชี้แจง : แบบสอบถามแบ่งออกเป็น 3 ส่วน ได้แก่
ส่วนที่ 1 คำถามคัดกรอง โดยสนใจหรือเคยรับชม Live game streaming
ส่วนที่ 2 พฤติกรรมการรับชม Live game streaming platform
ส่วนที่ 3 ปัจจัยที่มีอิทธิพลต่อการเลือกชม Live game streaming platform
ส่วนที่ 4 ข้อมูลส่วนบุคคล



คุณเคยเล่นวิดีโอเกมหรือไม่ *

- ☐ เคย
- ☐ ไม่เคย

คุณเคยรับชมการ Live game streaming หรือไม่ *

- ☐ เคย
- ☐ ไม่เคย

1.2 Behavioral questions

ส่วนที่ 2 แบบทดสอบเกี่ยวกับพฤติกรรมการรับชม Live game streaming platform

คำชี้แจง : กรุณาเลือกคำตอบตามความจริง

1. คุณใช้เวลาในการรับชมการสตรีมเกมส์ที่ ชม ต่อครั้ง ? *

- ☐ น้อยกว่า 1 ชม
- ☐ 1 - 3 ชม
- ☐ มากกว่า 3 ชม

2. คุณใช้เวลาในการรับชมสตรีมเกมส์กี่ครั้งต่อสัปดาห์ *

- ☐ 1-2 ครั้ง
- ☐ 3-4 ครั้ง
- ☐ 5-6 ครั้ง
- ☐ ทุกวัน

3. คุณใช้อุปกรณ์อะไรในการรับชมการสตรีมเกมส์ ? (เลือกได้มากกว่า 1 คำตอบ) *

- ☐ Smartphone
- ☐ PC
- ☐ Tablets
- ☐ Smart TV
- ☐ Playstation, Xbox
- ☐ อื่นๆ

4. คุณรับชมการสตรีมเกมส์ประเภทไหน ? (เลือกได้มากกว่า 1 คำตอบ) *

- ☐ Action-Adventure เช่น Assassin's Creed
- ☐ Adventure เช่น Ghost of Tsushima , Watch Dogs
- ☐ MMORPG เช่น Ragnarok
- ☐ MOBA เช่น ROV, LOL , DOTA
- ☐ Real Time Strategy เช่น warcraft
- ☐ Turn Based Strategy เช่น PANZER CORPS
- ☐ Simulation เช่น The Sims
- ☐ Racing Games (เกมส์ขับรถ)
- ☐ Survival เช่น Minecraft
- ☐ Online FPS ,TPS เช่น PUB, Valorant
- ☐ Sport Games เช่น FIFA, NBA2K
- ☐ Arcade or casual เช่น จับผิดภาพ เรียงเพชร
- ☐ Other

5. คุณรับชมการสตรีมเกมส์ผ่านช่องทางไหน ? (มากที่สุด) *

- ☐ Twitch
- ☐ Youtube gaming
- ☐ Facebook gameing
- ☐ Other: _____

จากข้อ 5 , คุณรู้จักช่องทางนั้นจากทางไหน? (เลือกได้มากกว่า 1 คำตอบ) *

- ☐ เพื่อน
- ☐ ครอบครัว
- ☐ Social network
- ☐ influencers หรือ Celebrities
- ☐ Streamers
- ☐ Other: _____

1.3 Factors that influence audience's decision to watch live game streaming platform

ส่วนที่ 3 ปัจจัยที่มีอิทธิพลต่อการเลือกชม Live game streaming platform

คำชี้แจง : กรุณาเลือกคำตอบตามความจริง

ปัจจัยที่มีอิทธิพลต่อการเลือกชม Live game streaming platform

เรียงลำดับจาก 1-5 โดย : เห็นด้วยมาก = 5, เห็นด้วย = 4, ปานกลาง = 3, ไม่เห็นด้วย = 2, ไม่เห็นด้วยมาก = 1

คุณคิดว่าปัจจัยนี้ส่งผลต่อการตัดสินใจในการเลือกชม live game streaming platform (streamer's characteristic) *

	1	2	3	4	5
อายุของสตรีมเมอร์	☐	☐	☐	☐	☐
เพศของสตรีมเมอร์ส่งผลต่อการตัดสินใจในการเลือกดู live game streaming platform	☐	☐	☐	☐	☐
รูปแบบ(สไตล์)การเล่นของสตรีมเมอร์ เช่น ทักษะการเล่น	☐	☐	☐	☐	☐

คุณคิดว่าปัจจัยนี้ส่งผลต่อการตัดสินใจในการเลือกชม live game streaming platform (Social trend) *

	1	2	3	4	5
เพื่อน / ครอบครัว	☐	☐	☐	☐	☐
Influencer / Celebrity	☐	☐	☐	☐	☐
Social network เช่น ads ใน facebook , instagram	☐	☐	☐	☐	☐

คุณคิดว่าปัจจัยนี้ส่งผลต่อการตัดสินใจในการเลือกชม live game streaming platform (Feature) *

	1	2	3	4	5
ประเภทของเนื้อหา เช่น เล่นเกมอย่างเดียว หรือ เล่นเกมและชวนคุย	☐	☐	☐	☐	☐
ประเภทของเกมสื่้ที่สตรีม	☐	☐	☐	☐	☐
การให้รางวัลหรือบริจาคแก่สตรีมเมอร์ (rewarding /donation)	☐	☐	☐	☐	☐
รูปแบบของ Platform ง่ายต่อการใช้งาน	☐	☐	☐	☐	☐
การแชทถึงสตรีมเมอร์ หรือ ผู้ชมด้วยกัน	☐	☐	☐	☐	☐
การเข้าถึงของ platform ได้หลายอุปกรณ์ เช่น Tablets , PC ,โทรศัพท์	☐	☐	☐	☐	☐
กิจกรรมพิเศษ เช่น Esport event หรือ วิดีโอพิเศษ	☐	☐	☐	☐	☐

คุณคิดว่าปัจจัยนี้ส่งผลต่อการตัดสินใจในการเลือกชม live game streaming platform (Additional purchase) *

	1	2	3	4	5
ราคาของการสมัครสมาชิก หรือ Subscription (การติดตาม)	☐	☐	☐	☐	☐
ราคาของรางวัลที่ให้สตรีมเมอร์ เช่น Star , แพคเกจรางวัล	☐	☐	☐	☐	☐
ความหลากหลายของช่องทางการชำระ เช่น Paypal , True money wallet , Qr code	☐	☐	☐	☐	☐

คุณคิดว่าปัจจัยนี้ส่งผลต่อการตัดสินใจในการเลือกชม live game streaming platform (Motivation) *

	1	2	3	4	5
แรงจูงใจจากการอยากหาความรู้ ศึกษาวิธีการเล่น และอื่นๆ	☐	☐	☐	☐	☐
แรงจูงใจจากความสนุกสนาน หรือ ปลดปล่อยความตึงเครียด	☐	☒	☐	☐	☐

1.4 Demographic questions

ส่วนที่ 4 ข้อมูลส่วนบุคคล

คำชี้แจง : กรุณาเลือกคำตอบตามความจริง

เพศ *

- ☐ ชาย
- ☐ หญิง
- ☐ ไม่ต้องการระบุ
- ☐ Other: _____

อายุ *

- ☐ ต่ำกว่า 18
- ☐ 18 - 22 ปี
- ☐ 23 - 27 ปี
- ☐ 28 - 32 ปี
- ☐ มากกว่า 33 ปี

อาชีพ *

- ☐ นักเรียน / นักศึกษา
- ☐ ธุรกิจส่วนตัว / เจ้าของกิจการ
- ☐ พนักงานบริษัทเอกชน
- ☐ ข้าราชการ / พนักงานรัฐวิสาหกิจ
- ☐ ประกอบอาชีพอิสระ

ระดับการศึกษาในปัจจุบัน *

- ☐ ต่ำกว่ามัธยม
- ☐ มัธยมศึกษา
- ☐ ปริญญาตรี
- ☐ สูงกว่าปริญญาตรี

รายได้ต่อเดือน *

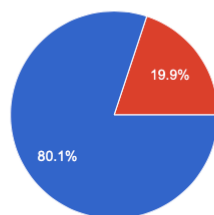
- ☐ ต่ำกว่า 15,000
- ☐ 15,001 - 30,000 บาท
- ☐ 30,001 - 45,000 บาท
- ☐ 45,001 - 60,000 บาท
- ☐ มากกว่า 60,000 บาท

2. Responds from questionnaires

2.1 Screen questionnaires

คุณเคยเล่นวิดีโอเกมหรือไม่

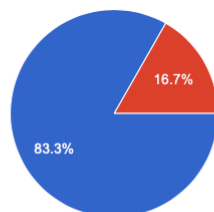
221 responses



● เคย
● ไม่เคย

คุณเคยรับชมการ Live game streaming หรือไม่

221 responses



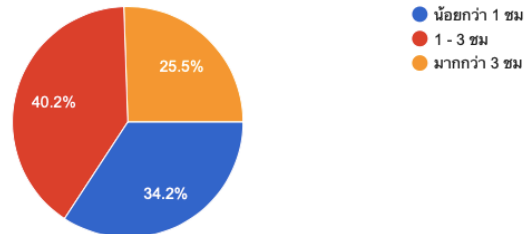
● เคย
● ไม่เคย

2.2 Behavioral questions

ส่วนที่ 2 แบบทดสอบเกี่ยวกับพฤติกรรมการรับชม Live game streaming platform

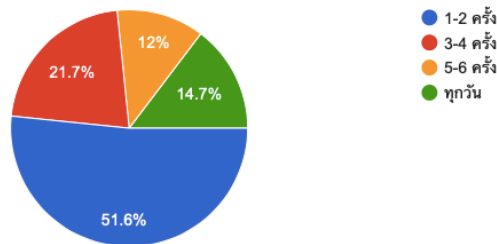
1. คุณใช้เวลาในการรับชมการสตรีมเกมส์กี่ ชม ต่อครั้ง ?

184 responses



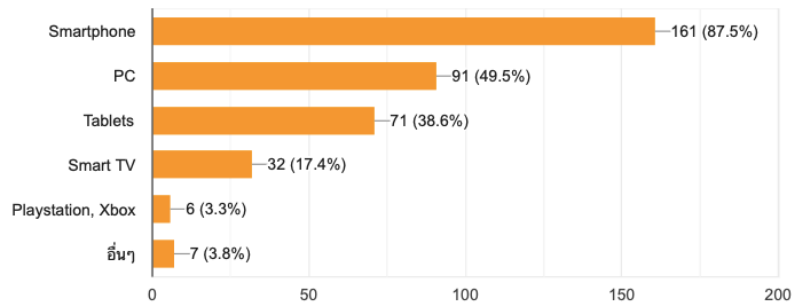
2. คุณใช้เวลาในการรับชมสตรีมเกมส์กี่ครั้งต่อสัปดาห์

184 responses



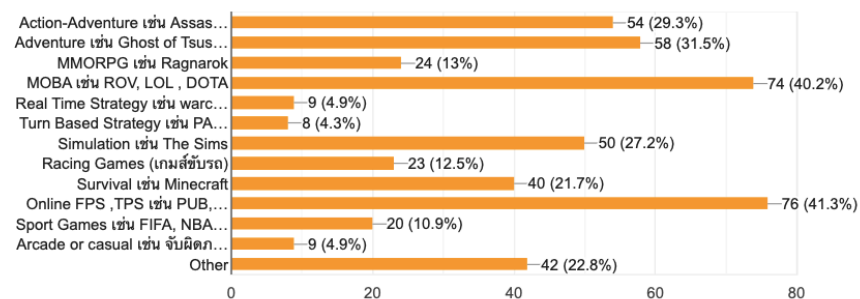
3. คุณใช้อุปกรณ์อะไรในการรับชมการสตรีมเกมส์ ? (เลือกได้มากกว่า 1 คำตอบ)

184 responses



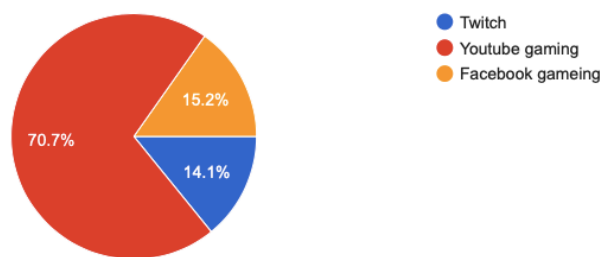
4. คุณรับชมการสตรีมเกมส์ประเภทไหน ? (เลือกได้มากกว่า 1 คำตอบ)

184 responses



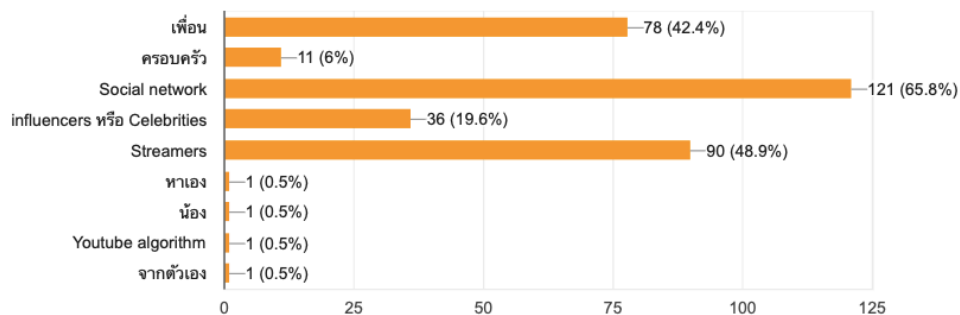
5. คุณรับชมการสตรีมเกมส์ผ่านช่องทางไหน ? (มากที่สุด)

184 responses



จากข้อ 5 , คุณรู้จักช่องทางนั้นจากทางไหน? (เลือกได้มากกว่า 1 คำตอบ)

184 responses

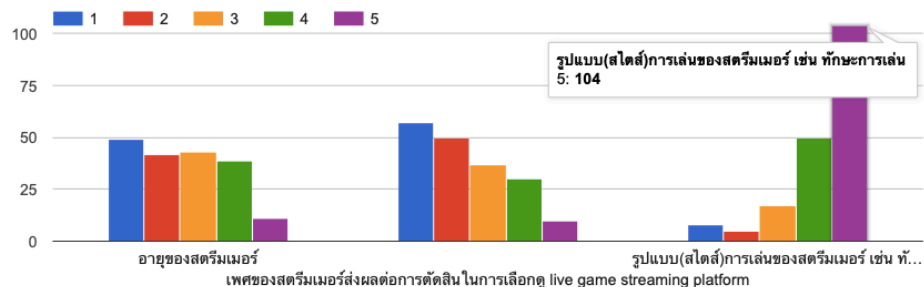


2.3 Factors that influence audience's decision to watch live game streaming platform

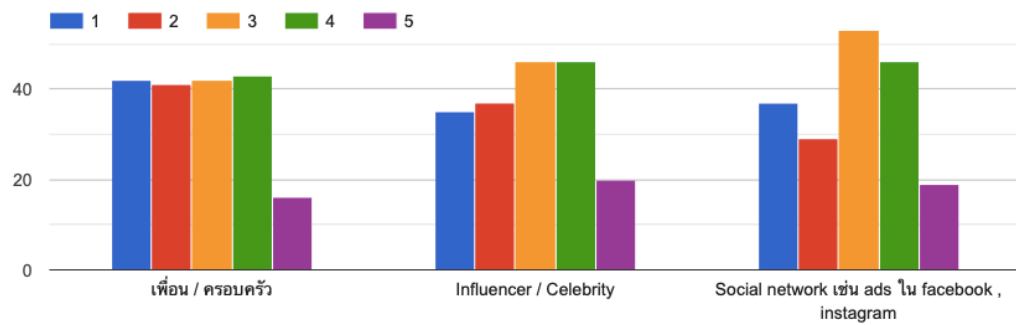
ส่วนที่ 3 ปัจจัยที่มีอิทธิพลต่อการเลือกชม Live game streaming platform

ปัจจัยที่มีอิทธิพลต่อการเลือกชม Live game streaming platform

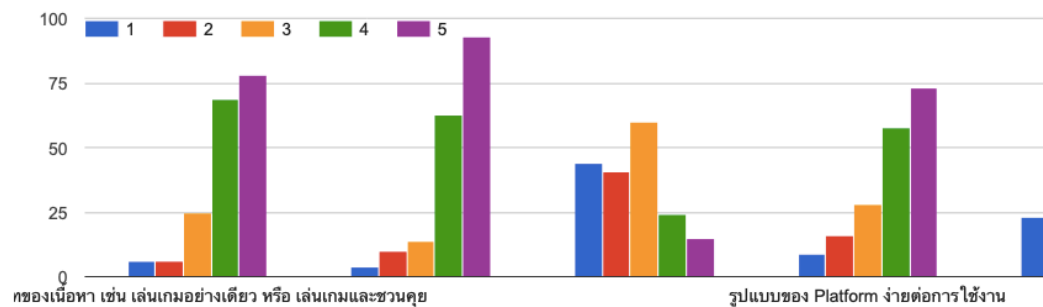
คุณคิดว่าปัจจัยนี้ส่งผลต่อการตัดสินใจในการเลือกชม live game streaming platform (steamer's characteristic)



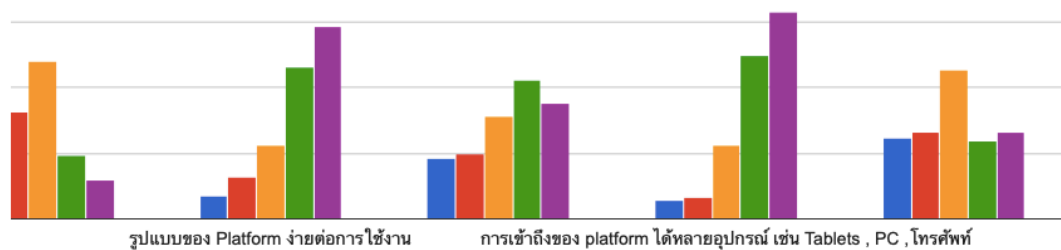
คุณคิดว่าปัจจัยนี้ส่งผลต่อการตัดสินใจในการเลือกชม live game streaming platform (Social trend)



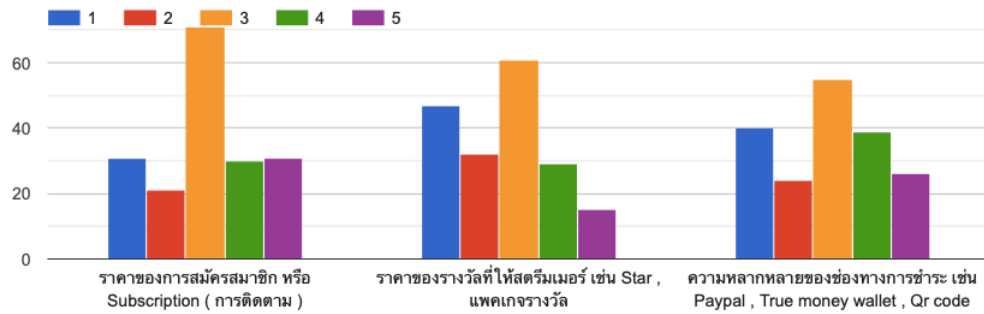
คุณคิดว่าปัจจัยนี้ส่งผลต่อการตัดสินใจในการเลือกชม live game streaming platform (Feature)



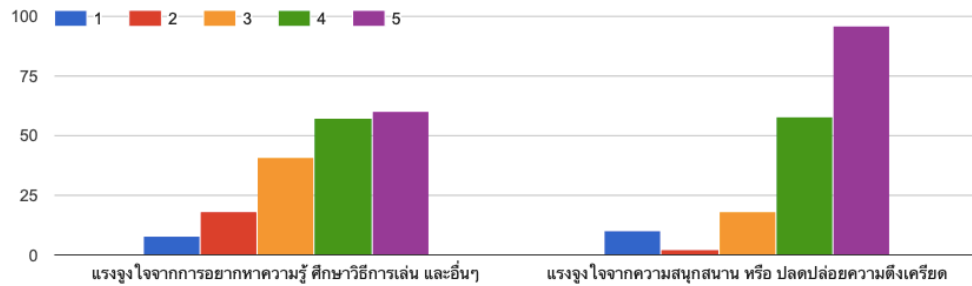
คุณคิดว่าปัจจัยนี้ส่งผลต่อการตัดสินใจในการเลือกชม live game streaming platform (Feature)



คุณคิดว่าปัจจัยนี้ส่งผลต่อการตัดสินใจในการเลือกชม live game streaming platform (Additional purchase)



คุณคิดว่าปัจจัยนี้ส่งผลต่อการตัดสินใจในการเลือกชม live game streaming platform (Motivation)

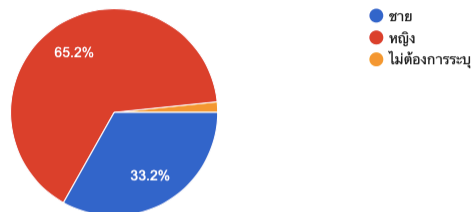


2.4 Demographic

ส่วนที่ 4 ข้อมูลส่วนบุคคล

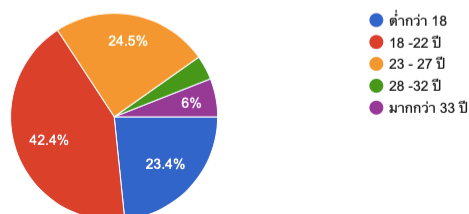
เพศ

184 responses



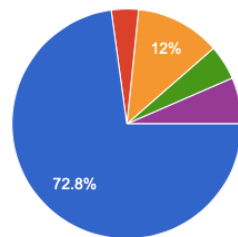
อายุ

184 responses



อาชีพ

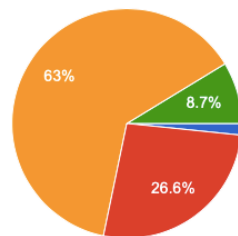
184 responses



- นักเรียน / นักศึกษา
- ธุรกิจส่วนตัว / เจ้าของกิจการ
- พนักงานบริษัทเอกชน
- ข้าราชการ / พนักงานรัฐวิสาหกิจ
- ประกอบอาชีพอิสระ

ระดับการศึกษาในปัจจุบัน

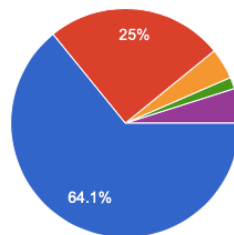
184 responses



- ต่ำกว่ามัธยม
- มัธยมศึกษา
- ปริญญาตรี
- สูงกว่าปริญญาตรี

รายได้ต่อเดือน

184 responses



- ต่ำกว่า 15,000
- 15,001 - 30,000 บาท
- 30,001 - 45,000 บาท
- 45,001 - 60,000 บาท
- มากกว่า 60,000 บาท

3. Regression results

Variable	Obs	Mean	Std. Dev.	Min	Max
playgame	184	.8913043	.3121062	0	1
gender	184	.6684783	.4720446	0	1
age	184	.3423913	.4758045	0	1
student	184	.7282609	.4460699	0	1
business	184	.0380435	.1918232	0	1
office	184	.1195652	.3253377	0	1
gov	184	.048913	.2162748	0	1
freelance	184	.0652174	.2475828	0	1
edu	184	.7173913	.4514963	0	1
income	184	.1086957	.3121062	0	1
streamer_age	184	2.570652	1.252498	1	5
streamer_gender	184	2.380435	1.23113	1	5
streamer_style	184	4.288043	1.039477	1	5
sc_ff	184	2.728261	1.285508	1	5
sc_celeb	184	2.88587	1.281655	1	5
sc_scnw	184	2.896739	1.274032	1	5
ft_content	184	4.125	.9865904	1	5
ft_game	184	4.255435	.9666419	1	5
ft_reward	184	2.592391	1.21563	1	5
ft_easy	184	3.923913	1.15691	1	5
ft_chat	184	3.380435	1.321056	1	5
ft_device	184	4.076087	1.047857	1	5
ft_event	184	3.005435	1.32028	1	5
addp_subprice	184	3.048913	1.277292	1	5
addp_rewprice	184	2.63587	1.24708	1	5
addp_method	184	2.929348	1.334866	1	5
moti_info	184	3.777174	1.135286	1	5
moti_ent	184	4.23913	1.049273	1	5

Source	SS	df	MS	Number of obs	=	184
				F(27, 156)	=	2.82
Model	4742.30238	27	175.640829	Prob > F	=	0.0000
Residual	9730.44626	156	62.3746555	R-squared	=	0.3277
				Adj R-squared	=	0.2113
Total	14472.7486	183	79.0860581	Root MSE	=	7.8978

hrperweek	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
playgame	1.353546	2.044016	0.66	0.509	-2.683974	5.391066
gender	2.212218	1.418121	1.56	0.121	-.588978	5.013414
age	-2.489641	1.902467	-1.31	0.193	-6.24756	1.268279
student	-4.822633	3.568533	-1.35	0.179	-11.87151	2.226246
business	0 (omitted)					
office	-3.353742	3.801976	-0.88	0.379	-10.86374	4.156254
gov	4.312896	4.494484	0.96	0.339	-4.565001	13.19079
freelance	.237445	4.168615	0.06	0.955	-7.996768	8.471658
edu	.1183962	1.480668	0.08	0.936	-2.806349	3.043141
income	2.971384	2.271728	1.31	0.193	-1.515932	7.458699
streamer_age	-1.540542	.5865775	-2.63	0.009	-2.699201	-.3818825
streamer_gender	.698988	.6100689	1.15	0.254	-.5060735	1.90405
streamer_style	-.7937894	.8620379	-0.92	0.359	-2.496562	.9089833
sc_ff	-.1029509	.6278628	-0.16	0.870	-1.34316	1.137259
sc_celeb	.356389	.672877	0.53	0.597	-.9727365	1.685515
sc_scnw	-.2296589	.6512639	-0.35	0.725	-1.516092	1.056775
ft_content	-1.55672	.9188886	-1.69	0.092	-3.371789	.258349
ft_game	-.0599049	1.020896	-0.06	0.953	-2.076469	1.956659
ft_reward	-.2474179	.747161	-0.33	0.741	-1.723276	1.22844
ft_easy	-.8642201	.7925717	-1.09	0.277	-2.429777	.701337
ft_chat	1.442964	.646833	2.23	0.027	.1652831	2.720645
ft_device	1.615822	.9824514	1.64	0.102	-.3248023	3.556445
ft_event	.321984	.6581561	0.49	0.625	-.9780635	1.622031
addp_subprice	-.5870257	.742593	-0.79	0.430	-2.05386	.879809
addp_rewprice	-.3460595	.9051935	-0.38	0.703	-2.134077	1.441958
addp_method	.1463369	.7701274	0.19	0.850	-1.374886	1.66756
moti_info	-.7783601	.7064645	-1.10	0.272	-2.173831	.6171103
moti_ent	2.828991	.9302882	3.04	0.003	.9914039	4.666577
_cons	7.683965	5.455575	1.41	0.161	-3.09271	18.46064