



Factors Affecting Subscription to Premium Package of Music Streaming Services in Bangkok Metropolitan Region

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Abstract

It was the objective of this research to look at three areas: first, the demographics and usage patterns of music streaming services; second, the link between demographics and the marketing mix; and third, the variables that influenced people's decision to pay extra for music streaming services. Those who participated in the study were 400 people who lived in Bangkok's metropolitan area and use online music streaming services. Purposive sampling was used in this study, and the information was gathered through an online survey. Inferential statistics, such as t-tests, F-tests, and applied binary logistic and probit regression, were employed to assess the data generated from the descriptive statistics. The study found that the majority of the participants were female, between the ages of 18 and 34, with a bachelor's degree, working for a corporation, and earning an average monthly salary of 15,000 to 25,000 baht. In most cases, they listen to music for pleasure and pay a monthly fee of fewer than 100 baht for music streaming. The importance of various marketing mix components was influenced by the demographics of the target audience. It was the combination of demographic and marketing mix elements (product and service, place) that influenced the decisions of the samples to subscribe to the premium package.

Keywords: 1) Music streaming 2) Marketing mix factors

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Introduction

The Internet system was created because of technological advancements to satisfy the demands and solve communication difficulties of individuals in society, allowing them to receive and send information to each other more easily and rapidly. As technology advances, the number of people who utilize the Internet would continue to increase. According to the Digital Thailand Report's assessment of Internet users globally in 2021, there were 4,660 million Internet users worldwide, representing for 59.5% of the entire population. The Thai population, which accounts for 69.5% of the overall population nationwide, was rated 39th in the world in terms of Internet access on the behavior of using the Internet for the purpose of viewing and listening to entertainment. online video streaming, which amounts to 99.0%, was the most popular form of entertainment, followed by Music streaming services counting for 67.5%, and 51.4% on online radio stations (DataReportal, 2021a, 2021b). Apart from the impact on service users' behavior, technological advancements on the Internet had an impact on corporate operations, both in terms of benefits and drawbacks. The businesses that gain advantages from the development and accessibility of the Internet were those related to computers, smartphones, Internet network operators, and service providers of various online entertainment activities (Prataungsuksakul, 2017, pp. 1-2), which covers the online music streaming services.

Online music streaming was similar to renting a song instead of purchasing it without

downloading it, and technology was applied to support users to listen to music in an online format using the Internet as a medium with compatible electronic devices. The services had both free and pay options for better quality and listening efficiency (Jongruangsap and Sangkapreecha, 2016, pp. 422-423). According to a survey of the Thai population's online music listening behavior in 2021, it was found that Thais prefer to listen to online music primarily through mobile phones, smartphones, and computers, with an average listening time of 1 hour 34 minutes per day, accounting for 17.9% of daily internet usage (DataReportal, 2021b).

Furthermore, the global music streaming service industry had continued to expand. According to the Global Music Report Year 2021 which shows the income of the offline and online music service businesses from 2010 to 2020, it was revealed that the total income of the music service businesses worldwide in 2020 was generated 21.6 billion US dollars, increasing by 7.4% in comparison to the previous year. The increased income was primarily due to the expansion of online music streaming services that were still in the early stages of development, accounting for more than 62.1% of the overall music industry in terms of revenue (International Federation of the Phonographic Industry, 2021). This agrees with the 46.07% average growth rate of online music streaming service subscribers from 2016 to 2020 (Statista, 2021b). As for the Statista's forecast of the total income growth rate of the online music streaming service industry globally from 2021 to 2025, it was discovered that the overall income of the business would



expand with an average growth rate of 9.69% (Statista, 2021a). This would continue to draw the attention of new entrepreneurs to be in this industry.

MiDiA (2021) surveyed the number of total global music streaming service subscribers in 2021 showing that YouTube Music had 2 billion subscribers which were considered the most used platform, followed by 365 million for Spotify, 87 million for JOOX, 72 million for Apple Music, and 5million for Tidal subscribers respectively. However, when the number of paid membership accounts was compared to the entire number of global subscribers of the five music service providers, it was found that paid membership accounts comprised only 10.7% of the overall number of subscribers. According to Marketeer's (2020) survey on the number of Thailand's Spotify app users in 2020, there were 5.8 million subscriber accounts, and 900,000 paid membership accounts out of entire subscribers which amounts to only 15.5%. Music service providers were continually looking for strategies that were customized to their target audience's needs to entice users to subscribe to both free and premium packages (Jongruangsap and Sangkapreecha, 2016, pp. 421-433). Moreover, in 2018, the majority of music streaming users in Thailand were in Bangkok with a proportion of 55%, while other regions account for a 45% share of total service usage (JOOX Thailand, 2019).

This study aims to study the relationship between the demographic factors and marketing mix factors of online music streaming users and to study the factors affecting the users' decision to subscribe to the premium

package of online music streaming services in the Bangkok metropolitan region. The study was conducted to benefit online music service providers or individuals interested in online music streaming services by using the data as a business guideline in updating, developing, and designing marketing strategies that were suited for the demands of the service users. This includes developing the strategies to entice consumers to upgrade to the premium subscription and creating a competitive advantage in this industry.

Objectives

1. To study the demographic factors and the consumption behavior of online music streaming service users.
2. To study the relationship between demographic factors and marketing mix factors of online music streaming service users.
3. To study the factors affecting the users' decision to subscribe to the premium package of music streaming services.

Literature Review

Demographic characteristics

Armstrong and Kotler (2003, pp. 199-201) described that the study of personal attributes was a study of human traits in terms of size, density, habitat, age, gender, and other statistical data. The statistics obtained from demographic characteristics measurement could be used to determine the target market or to identify the consumer market by considering the characteristics of individuals or groups of individuals (Grewal and Levy, 2008, pp. 50-51). The following were the demographic

characteristics variables that were widely used to examine the relationship between personal attributes and consumer behavior.

1. Gender was a variable in determining market share consisting of females and males which had different ideas, values, and attitudes.

2. Age was a factor that differentiates consumers in communication, thinking, and behavior. For example, older people were more conservative than younger people due to their longer lives and experience in different cultures.

3. Education involves both education received from an educational institution and experiences gained from previous lifetimes. It indicates the capacity to choose how and when individuals acquire information that provides them with ideas and knowledge.

4. Occupation refers to employment that receives an income. The occupation of each individual could represent the needs of vital goods and services differently.

5. Income refers to the return that people would receive when they had completed their work. It was a significant factor that indicates different power and ability of individual consumers to purchase product and service in terms of value and quantity.

Consumption behavior

Schiffman and Kanuk (1994, p. 3) described the definition of consumer behavior as a way consumer research to make a purchasing decision, take advantage of, and evaluate the results of product and service that were intended to meet individual needs under restricted resources and purchasing power.

Details were as follows.

1. Who was the product's consumer: to determine the occupants who practically had behavior in purchasing or using goods and services.

2. What consumers buy: to understand the consumers' real needs from purchasing objects and services.

3. Why consumers buy: to understand the consumers' objectives that cause their decision to purchase goods and services.

4. Who influences the consumers' purchasing decisions: to understand how other people or organizations motivate a consumer's decision to purchase or use goods and services.

5. When consumers buy: to understand the consumers' behavior in purchasing and using goods and services on various occasions.

6. Where consumers buy: to know the outlets where consumers could easily access goods and services.

7. How consumers buy: to understand the decision-making operations for purchasing or using consumer Product and service.

Marketing mix (7Ps)

McCarthy (1964, pp. 110-111) defined the marketing mix as a marketing strategy used to meet the target consumers' demands consisting of four fundamental factors, known as the 4Ps, namely Product and service, Price, Place, and Promotion to be in line with the modern service industry marketing which was different from the general business. Booms and Bitner (1981, pp. 47-51) added three service factors to be used in formulating marketing strategies, namely People, Physical Evidence,



and Process, collectively referred to as the 7Ps. Details were as follows.

1. Product and service refer to goods or services that a vendor had delivered or offered to the market in response to consumers' demands or requirements.

2. Price refers to the amount that consumers must pay to receive product and service, or it could refer to creating value from the utilization of the product or service.

3. Place refers to the structure of the channel, which comprises institutions and activities for the transportation of product and service to consumers.

4. Promotion refers to a marketing instrument used to create communication between sellers and consumers for satisfaction with product and service.

5. People refer to people who were responsible for providing services that had been carefully selected and trained to benefit the organization and to satisfy consumers differently than competitors.

6. Physical Evidence refers to the attributes of objects that contribute to the organization's overall quality in terms of physical and service patterns.

7. Process refers to a mechanism for delivering service quality from service providers to service users.

Relevant research to study the marketing mix of online music streaming services

Jaidee and Rojniruttikul (2018, pp. 23-31) studied the satisfaction of music streaming app users in Bangkok and found that the majority of the sample was female, aged between 26-30 years satisfied with the marketing mix in

each area of the service. The study revealed that the sample mostly satisfied with the Product, followed by Physical Evidence, Process, Place, Promotion, and People respectively, which had a statistically significant relationship with the use of music streaming apps.

Sihite (2019, pp. 26-30) examined the factors influencing Japanese consumers' propensity to subscribe to streaming services and found that the majority of the sample were female, aged between 21-30 years old, with the most use of online music services through the Apple Music app. The factors of ownership, tangible, and price were statistically correlated with the Japanese consumer sample group' purchasing intent for a subscription music streaming service.

Kusumawati, et al. (2014, pp. 1765-1771) studied the 7P's marketing mix factors impacting music product purchase intent in Indonesia and discovered that the majority of respondents were female, aged between 21-25 years old, preferring pop music. However, the sample group placed the greatest emphasis on the price marketing mix factor which had a statistically significant impact on music product purchase intentions in Indonesia.

Relevant research to study the instruments and methods utilized in the study

Derakhti, Ramírez-Rivas and amírez-Correa (2020, pp. 102-108) examined the film piracy behavior of service users in Chile, using the Logistic Regression method. The independent variables were analyzed, namely the factors of demographic characteristics and piracy behavioral aspects of service usage and movie

downloading, which used the Goodness of Fit method to verify the model's adequacy. The research found that piracy and movie streaming were influenced by each other, with the pressure element having a statistically significant impact on the decision to watch movies via streaming and download the non-copyrighted product.

Daw (2014, pp. 10-23) conducted an economic analysis of music piracy among students at the University of South Florida St. Petersburg Campus using the Logistic Regression model to analyze the demographic characteristics and behavioral factors of consumers' perceptions of music download piracy. Then, the Goodness of Fit method was used to verify the model's adequacy. It showed that the majority of the sample consumers were unconcerned about the law's potential repercussions. The ethnicity factors, as well as the

annual income aspect, were statistically significant in influencing the probability of deciding to download music illegally.

Potongsangarun, et al. (2012, pp. 473-477) studied the factors affecting the decision regarding mobile phone subscriptions among mobile phone network users in the Bangkok Metropolitan Region, using Logistic Regression analysis to estimate probabilities and analyze factors affecting attitudes towards mobile phone subscriptions. The study revealed that demographic characteristics factors; gender, age, status, and marketing mix factors; price, statistically significant determined attitudes towards mobile phone subscription prospects.

Conceptual Framework

As indicated in Figure 1, the researcher defines the study conceptual framework as follows:

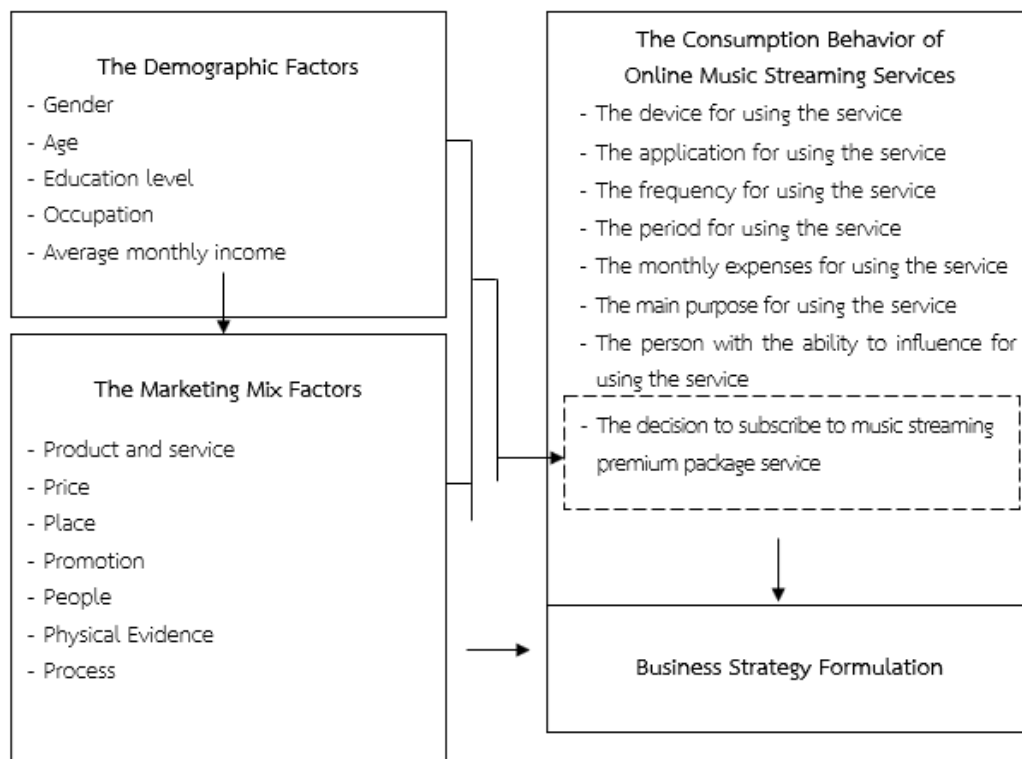


Figure 1 Conceptual Framework



Methods

According to the study of factors affecting subscription to a premium package of music streaming services in Bangkok Metropolitan Region, data from primary sources were collected, and obtained data were analyzed by descriptive and quantitative analysis. To achieve the study's objectives, therefore, the study's methods had been devised as follows:

1. Population and sample

The study's population was a group of people who had experience using online music streaming services in the Bangkok Metropolitan Region due to this population influenced the decision to use the music streaming application (Jaidee and Rojniruttikul, 2018, pp. 23-31). Music streaming users in Thailand mainly used service in Bangkok, 55%, while in other regions 45% of total service usage (JOOX Thailand, 2019).

Due to an imprecise study's population, Cochran's unidentified sample size criteria were applied in this study using 400 samples at a 95% confidence level (Cochran, 1977, p. 9).

2. Data compilation

This study used quantitative research methods to collect primary data through an online questionnaire via social media channels using purposive sampling for more convenience and speed. The data collection period was from January–March 2022.

3. Reliability of the questionnaire

In this study, the quality control of the research instruments was carried out as follows:

3.1 The content validity and construct validity of the questionnaire were examined by the advisers, Asst. Prof. Piyaphan Chang-

watchai, Ph.D., Lecturer at the Department of Economics, Kasetsart University, who checked its content validity, the structure of the question set utilized to examine the variables, and the propriety of utilizing neutral language.

3.2 Reliability of questionnaires was examined by pre-testing the produced questionnaires that had completed a comprehensive revision process before being used to assess the questionnaire's suitability and reliability using the Alpha Coefficient according to the Cronbach method (Cronbach, 1951, pp. 297-334). The test resulted in a rating of 0.86, which was higher than 0.7, indicating that the questionnaire's reliability was acceptable.

4. Hypothesis

4.1 The different demographic factors affected placing importance on the different marketing mix factors.

4.2 Variety of demographic factors and marketing mix factors affect the subscription to a premium package of music streaming services in Bangkok Metropolitan Region.

5. Data analysis

The data analysis and statistics used in this study were detailed as follows:

5.1 Descriptive statistics consisting of Frequency and Percentage were used to describe the data on demographic characteristics and service behavior of online music streaming service users. Mean, Standard Deviation, and the Likert Scale, which specifies the interpretation range of the importance scores to 5 levels, from least to most important, with each interval equal to 0.8, were used to calculate (Likert, 1967, pp. 137-138). The above data analysis and statistics were used to describe the relationship between demographic factors

and marketing mix factors of online music streaming users.

5.2 Inferential statistics consisting of hypothesis testing with t-test, F-test, Mean difference test on pairs of variables, and Fisher's method (LSD) were used to analyze different demographic characteristics statistically significant affecting a difference in focusing on the marketing mix. Binary Logistic Regression and Binary Probit Regression were applied in hypothesis testing to assess demographic factors and marketing mix factors that affect the users' decision to subscribe to a premium package of online music streaming services. The individuals who were interested in subscribing to the service were set to 1, while those who were not interested in it were set to 0. However, the criteria for selecting an appropriate model for the analysis and interpreting the test findings were determined based on the applicability and reliability of the model.

Results

1. The results of the analysis of demographic factors of online music or music streaming service users

The results of the study on demographic factors of a sample who use online music or music streaming service found that the samples were mainly female (80.5%), aged from 18–34 years old (94.8%), graduated with a bachelor's degree (81.2%), worked as company employees (46.2%), and earned an average monthly income of 15,000–25,000 baht (39.8%).

2. The results of the analysis of data on music service usage behavior of online music or music streaming service users

The results showed that the samples had mainly a behavior of choosing a mobile phone or a smartphone as a device for listening to online music (87.5%) through the YouTube / YouTube Music application (47.8%) and using more than 6 times a week (63.7%), one to two hours each (43.3%) for enjoyment and relaxation (91.3%). The influential person in deciding to use the service was themselves (84.2%), who choose to subscribe to use the service (75.3%) and had a subscription fee of fewer than 100 baht per month (38.6%) to use the service without ads (69.8%). In the future, if all online music service providers charge a minimum service fee, most of the sample groups would be willing to pay for the service of 51 - 100 baht per month (60.8%). However, there were the samples would be unwilling to pay the minimum fee because they felt it was not worth the money (54.5%).

3. The results of the analysis of the importance of marketing mix factors affecting the use of online music or music streaming services

When categorizing the samples according to the average rating of the marketing mix factor priorities by categorization of the average rating Likert method, the results of the study found that the samples focused on the marketing mix factor of Price to be ranked no.1 (Mean = 4.54), followed by Place (Mean = 4.53), Physical Evidence (Mean = 4.43), Process (Mean = 4.38), Product and service (Mean = 4.31) Promotion (Mean = 4.03) and People (Mean = 3.95) respectively, details were shown in Table 1 as follows:



Table 1 The results of the analysis of the importance of marketing mix factors affecting the use of online music or music streaming services.

The Marketing Mix Factors	Mean	Standard Deviation	Description	Ranked
Price	4.54	0.65	Very Important	1
Place	4.53	0.61	Very Important	2
Physical Evidence	4.43	0.59	Very Important	3
Process	4.38	0.72	Very Important	4
Product and Service	4.31	0.75	Very Important	5
Promotion	4.03	0.92	Important	6
People	3.95	0.86	Important	7

Reference: The analysis results.

4. The results of the analysis of data on the relationship between demographic factors and marketing mix factors of online music or music streaming service users

The details of Hypothesis testing results from analysis of different demographic factors and the focus of marketing mix factors affecting the decision to subscribe to online music or music streaming premium package service by using statistical values of t-test and F-test at 0.05 level of statistical significance were shown in Table No. 2 as follows:

People with different genders gave the same focus to the overall marketing mix factors. When considering each aspect, it was found that females focus on the People factor more than males. However, males focus on the Physical Evidence factors and the Process factors more than females.

People of different ages focus differently on the overall marketing mix factors. When considering each aspect, it was found that those aged 18 – 34 years prioritized the Price, Place, and Physical Evidence factors more than those of other age groups.

People with different levels of education had different priorities in the overall marketing mix factors. When considering each aspect, it was found that those with a higher education level than the bachelor's degree focused on Product and service, Prices, and Place more than those with the highest level of education at any other level.

People with different occupations focus on the marketing mix factors as a whole. When considering each aspect, it was found that those who had their own business/entrepreneur focused on the Product and service factor. People who were private employees/contract workers focused on the Place factors, and those with government officials/state enterprises focused on the Promotion and People factors than those who had other occupations.

People with different average monthly incomes focused on the overall and individual marketing mix factors with no difference.

Table 2 The results of the analysis of data on the relationship between demographic factors and marketing mix factors of online music or music streaming service users.

The Marketing Mix Factors	The Demographic Factors				
	Gender	Age	Education level	Occupation	Average monthly income
Product and service			/	/	
Price		/	/		
Place		/	/	/	
Promotion				/	
People	/			/	
Physical evidence	/	/			
Process	/				
Overall		/			

Note: / is the relationship between demographic and marketing mix factors at 0.05 level of statistical significance

Reference: The summary by the researcher.

5. The results of the analysis of demographic factors and marketing mix factors affecting subscription to premium package of music streaming services

The study used Binary Logistic Regression and Binary Probit Regression for testing demographic and marketing mix factors affecting subscription to premium package of music streaming services.

The researcher compared the two models by defining the criteria for selecting

an effective method for describing the test results based on the models' suitability and reliability, such as -2Log Likelihood, Cox & Snell R-Squared, and Nagelkerke R-Squared. To further explanation of the analysis' conclusions, the researcher chose a model with better statistical values than the above, details were shown in Table 3 as follows:

Table 3 List of variables used in the Binary Logistic Regression model and the Binary Probit Regression model.

Variables	Characteristics of Variables
Dependent Variable (Y) The decision to subscribe the premium package of music streaming services.	The dummy variables specify the user who decided to use the service as equal to 1 and the user who decides not to use the service as equal to 0.
Independent Variables	
The Demographic Factors	
Gender (GEN)	The dummy variables specify the male as equal to 1 and the female as equal to 0.



Variables	Characteristics of Variables
Age (AGE)	The dummy variables specify people aged 18 - 34 years as equal to 1 and those of people in other age ranges as equal to 0.
Education level (EDU)	The dummy variables specify people with higher education levels above a bachelor's degree as equal to 1 and people with other educational levels as equal to 0.
Occupation (OCC)	The dummy variables specify people who work as private employee/contract workers as equal to 1 and people who work in other occupations as equal to 0.
Average monthly income (INC)	The dummy variables by specify people who had an average monthly income of 25,000 baht or more as equal to 1 and people who had average monthly income in other amounts as equal to 0.
The Marketing Mix Factor	
Product and Service (PROD)	Average score for focusing on marketing mix factors in terms of Product and Service.
Price (PRI)	Average score for focusing on marketing mix factors in terms of Price.
Place (PLA)	Average score for focusing on marketing mix factors in terms of Place.
Promotion (PROM)	Average score for focusing on marketing mix factors in terms of Promotion.
People (PEO)	Average score for focusing on marketing mix factors in terms of People.
Physical Evidence (PHY)	Average score for focusing on marketing mix factors in terms of Physical Evidence.
Process (PROC)	Average score for focusing on marketing mix factors in terms of Process.

Reference: The summary by the researcher.

1. Results of correlation analysis of independent variables by using the Pearson correlation method

It found that the correlation coefficient of the independent variables that had the highest value was the marketing mix factors of Place and Physical Evidence. The result showed that it was equal to 0.69, correlated but not higher than 0.8. Therefore, it followed the conditions for the Regression model

analysis because the relationship did not had multicollinearity between the independent variables.

2. Results of Goodness of fit test and Omnibus tests of model coefficients

2.1 The results of models' suitability test by using Hosmer and Lemeshow's Goodness of Fit test method at the significance level of 0.05 had the following test hypotheses:

H0: The model was suitable;

H1: The model was unsuitable.

From the hypothesis testing, it was found that the Binary Logistic Regression model and the Binary Probit Regression model had Chi-square statistical values of 47.583 and 45.103, respectively, and had a P-Value of 0.400 and 0.420, respectively. It meant that the above test would accept the main hypothesis (H0), indicating that the Logistic model and the Probit model were suitable.

2.2 The results of the Omnibus tests of model coefficients by using the Chi-square statistic of the model at the significance level of 0.05 had the following test hypotheses:

H0: The user's decision to subscribe to a premium package of music streaming services does not depend on any independent variables;

H1: The user's decision to subscribe to a premium package of music streaming services depends on at least one independent variable.

From the hypothesis testing, it was found that the Binary Logistic Regression model and the Binary Probit Regression model had Chi-square statistical values of 65.035 and 66.073, respectively, and the P-Value was 0.000 for both models. It meant that the above test would reject the main hypothesis (H0), indicating that the user's decision to subscribe to a premium package of music streaming services depends on at least one independent variable.

3. The results of the forecasting accuracy test of the models (Classification Table).

From the test results of the model's forecasting accuracy, both Binary Logistic Regression and Binary Probit Regression, by comparing forecast values with actual data, it was found that there were 301 samples of the sample group who would decide to subscribe to a premium package of music streaming services. The Logistic model and the Probit model were able to predict 281 and 279 samples, representing accuracy of 93.4% and 92.6%, respectively. There were 99 samples of the sample group who decided not to subscribe to a premium package of music streaming services. The Logistic model and the Probit model were able to forecast 21 and 24 samples, representing accuracy of 21.2% and 24.2%, respectively. In the overall of Logistic model and Probit model were able to forecast with the accuracy of 75.5% and 75.8% respectively, as shown in Table 4 as follows:



Table 4 The results of the forecasting accuracy test of the Binary Logistic Regression and the Binary Probit Regression (Classification Table).

Observed Outcome	Predicted Outcome			% Correct
	The decision to subscribe to premium package of music streaming services			
	No	Yes		
1. Binary Logistic Regression				
The decision to subscribe to premium package of music streaming services	No	21	78	21.2
	Yes	20	281	93.4
	Overall			75.5
2. Binary Probit Regression				
The decision to subscribe to premium package of music streaming services	No	24	75	24.2
	Yes	22	279	92.6
	Overall			75.8

Reference: The analysis results.

4. The results of comparative analysis of the Binary Logistic Regression and Binary Probit Regression models for the analysis of demographic and marketing mix factors that affect the decision to subscribe to a premium package of music streaming services

4.1 Comparison of suitability and the reliability of the Model

In this study, the researcher determines the criteria for selecting an effective method for describing the test results of suitability values that were -2Log Likelihood by the model that had a low value, would be indicated as a very suitable model. The test result of the model's reliability evaluation was

the R-Squared. The model that had a high value, it would be indicated as a very reliable model. From the analysis results, the researcher chose the Binary Logistic Regression model to describe the analysis of the factors affecting subscription to premium package of music streaming services because the -2Log Likelihood value was 382.62 and the highest Cox & Snell R-Squared and Nagelkerke R-Squared values were 0.36 and 0.45, respectively. It could be explained that the Logistic model was more suitable and reliable than the Probit model. Show details as in Table 5 as follows:

Table 5 Comparison of suitability value and the reliability value of the models.

Model	R-Squared		-2 Log Likelihood
	Cox & Snell	Nagelkerke	
Logit Model	0.363	0.450	382.623
Probit Model	0.352	0.426	387.692

Reference: The analysis results.

4.2 Comparison of the factors affecting subscription to premium package of music streaming services of Binary Logistic Regression model, and Binary Probit Regression model

The results of the analysis were able to explain the different demographic factors and marketing mix factors affecting the decision to subscribe to premium package of music streaming services differed at a level

of statistical significance of 0.05. It found that the Logistic model and the Probit model had 6 factors affecting the decision to subscribe to premium package of music streaming services. The demographic factors were Gender, Age, Education level, and Average monthly income. The marketing mix factors were Product and Service, and Place. Show details as in Table 6 as follows:

Table 6(1) Comparison of the factors affecting subscription to premium package of music streaming services of Binary Logistic Regression model, and Binary Probit Regression model.

Variables	Binary Logistic Regression Model			Binary Probit Regression Model		
	Coefficient (B)	Marginal Effect (M.E.)	P-Value	Coefficient (B)	Marginal Effect (M.E.)	P-Value
The Demographic Factors						
Gender (GEN)	-1.147	-0.112	0.012*	-1.140	-0.053	0.009*
Age (AGE)	1.893	0.184	0.001*	0.733	0.034	0.001*
Education level (EDU)	-1.836	-0.179	0.004*	-1.208	-0.056	0.004*
Occupation (OCC)	0.065	0.006	0.847	-0.028	-0.001	0.882
Average monthly income (INC)	1.460	0.142	0.000*	0.722	0.034	0.000*

Table 6(2) Comparison of the factors affecting subscription to premium package of music streaming services of Logistic model, and Binary Probit Regression model.

Variables	Binary Logistic Regression Model			Binary Probit Regression Model		
	Coefficient (B)	Marginal Effect (M.E.)	P-Value	Coefficient (B)	Marginal Effect (M.E.)	P-Value
The Marketing Mix Factors						
Product and service (PROD)	0.201	0.020	0.004*	0.401	0.019	0.001*
Price (PRI)	-0.256	-0.025	0.459	-0.108	-0.005	0.581
Place (PLA)	0.104	0.010	0.025*	0.335	0.016	0.013*
Promotion (PROM)	0.267	0.026	0.270	0.171	0.008	0.229
People (PEO)	0.144	0.014	0.517	0.094	0.004	0.463
Physical Evidence (PHY)	0.234	0.023	0.550	0.082	0.004	0.718



Variables	Binary Logistic Regression Model			Binary Probit Regression Model		
	Coefficient (B)	Marginal Effect (M.E.)	P-Value	Coefficient (B)	Marginal Effect (M.E.)	P-Value
Process (PROC)	-0.237	-0.023	0.525	-0.116	-0.005	0.588
Constant	0.390		0.008*	0.616		0.003*

Note: * Statistically significant result: $p < 0.05$.

Reference: The analysis results.

From Table 6, the results of the analysis of factors affecting the to subscribe to premium package of music streaming services using a Logistic model because of the high suitability and reliability at a statistically significant of 0.05 which could set other factors to be constant. It found that:

1. Gender factor (GEN) affected the decision to subscribe to the service. The marginal effect was 0.112, meaning males were 11.2% lower probability to make a subscription decision, and they focused on the marketing mix factors of Physical Evidence and Process.

2. Age factor (AGE) affected the decision to subscribe to the service. The marginal effect was 0.184, meaning people aged 18-34 years had a probability of deciding to subscribe higher than other groups at 18.4%, and they focused on the marketing mix factors of Place and Physical Evidence.

3. Education level factor (EDU) affected the decision to subscribe to the service. The marginal effect was -0.179, meaning those with the highest education above a bachelor's degree had a 17.9% lower probability of deciding to subscribe, and they focused on the marketing mix factors of Product and service, Price, and Place.

4. Average monthly income factor (INC) affected the decision to subscribe to the

service. The marginal effect was 0.142, meaning people with an average monthly income of 25,000 baht or more would have a 14.2% increase in the probability of deciding to subscribe to the service, and the focus on the marketing mix factors was no different.

5. Product and service (PROD) and Place factors (PLA) affected the decision to subscribe to the service. The marginal effects were 0.020 and 0.010, respectively, meaning for those who gave the average score on the importance of Product and service and Place with a 1.0 point increase, the probability of making a decision to subscribe to them increased by 2.0% and 1.0%, respectively.

Conclusion and Discussion

1. Summary of the data analysis of demographic factors and behavior of online music or music streaming service users in Bangkok and Metropolitan

The results of the study on demographic factors of a sample of online music or music streaming service users found that the samples were mainly female, aged from 18 - 34 years old, consistent with a study by Jaidee and Rojniruttikul (2018, pp. 23-31), graduated with a bachelor's degree, worked as company employees, and earned an average monthly income of 15,000-25,000 baht. The

samples had mainly a behavior of choosing a mobile phone and smartphone as a device for listening to online music through the YouTube / YouTube Music application. The frequency of use was more than 6 times a week, 1-2 hours each time, intended for enjoyment and relaxation, consistent with a study by Kratpi boon and Praditsuwan (2017, p. 6) that studied service marketing mix related to listening behavior through free of charge JOOX music application. There was a monthly subscription charge of fewer than 100 baht to use the service without advertisements. The samples were mainly willing to pay 51-100 baht per month for the service. However, there were the samples that were unwilling to pay the minimum fee to use the service. Their main reason was that they felt it was not worth the money.

2. Summary of the data analysis of the relationship between demographic factors and marketing mix factors of online music or music streaming service users in Bangkok and Metropolitan

The results of the correlation test between the different demographic factors influence the marketing mix factors of online music or music streaming service users found that the samples gave the most priority to the Price factor, consistent with a study by Kusumawati, et al. (2014, pp. 1765-1771). The samples focusing on clearly specifying the price, the suitability of the service fee, and free trial service, respectively, which were related to personal factors including Age and Education level, consistent with a study by Sihite (2019, pp. 32-33). Details could be summarized as follows:

Age factor: From the study, it could be concluded that people aged 18 to 34 prioritize

in the Price factors than those aged 34 and over.

Education level factors: From the study, it could be concluded that those with a bachelor's degree pay more attention to the Price factor than those with a lower education degree.

3. Summary of the data analysis of factors affecting the decision to subscribe to the premium package of online music or music streaming service users in Bangkok and Metropolitan.

From the study of demographic factors and marketing mix factors affecting the decision to subscribe to the online music or music streaming service by using Binary Logistic Regression, details could be summarized as follows:

1. Different age-related demographic characteristics affect the users' decision to service subscription. People aged 18-34 had an increased probability of subscribing to a premium package of online music service. This was in line with the proportion of Thai users who listen to online music through the JOOX application in 2019, representing 18 - 34 aged users 71% out of total subscribers (JOOX Thailand, 2019). Those in that age group might be more interested in using online music services than other age groups. However, those between the ages of 18 - 34 would place a higher priority on the marketing mix factors in terms of Price.

2. Demographic factors regarding the different education levels affected the decision to subscribe to the service. Those with higher education above a bachelor's degree were less likely to decide to subscribe to the premium online music service package. It



might be due to higher education levels than a bachelor's degree had an increase in the cumulative stress of education level, which affects attitudes and desires to seek other leisure activities that could substitute the listening to music online. However, those with a bachelor's degree would prioritize their subscription decisions on the marketing mix factors in terms of Price the most.

The study found that if the provider had clearly stated the price of the subscription for the online music service with suitable for the Product and service or available free of charge during the trial period, it would make users aged 18 - 34 years with had at least a bachelor's degree more chances to decide to subscribe to online music services, consistent with a study by Potongsangarun, et al. (2012, pp. 473-477).

3. The marketing mix factors of Product and service and Place affected the decision to subscribe to the service. The average scorers focusing on Product and service and Place were more likely to decide to subscribe to the premium online music service, consistent with a study by Jaidee and Rojniruttikul (2018, pp. 23-31). If the provider could develop Product and service to meet the needs of the users, it would cause the users to be satisfied and want to use the service even more.

Recommendation

Recommendations from the study

From the study, it could be summarized as information on the target group, i.e., people aged 18 – 34 years old and those who graduated with a bachelor's degree. Because it was a demographic factor that was related to

the marketing mix factor, there was a probability of deciding to subscribe to the online music service. The recommendations from the study were as follows:

1. The service providers should set the subscription price appropriately in accordance with the service within the application. For example, the subscription service for new graduates with a bachelor's degree should be different from that of the general user.

2. The service providers should develop applications for comprehensive service features, such as improving music quality to have a high potential to enhance the enjoyment of listening to music services or adding an offline function.

3. The service providers should develop applications to support the operating systems of various devices, and be ready to provide services anywhere and anytime quickly and conveniently

Recommendation for future study

1. There should be more studies to compare factors affecting the decision to subscribe to premium packages of music streaming services in other regional areas in Thailand for more information.

2. Further studies should be conducted using qualitative data collection methods such as interviews for personal opinions and reasons for the decision to subscribe to other services to gain more useful insights into the study.

3. Further studies should be conducted using other analysis such as multiple regression or willingness to pay for subscription to premium package or a minimum fee of music streaming services.

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