

THE IMPACT OF INSTAGRAM IN-APP ADVERTISING TO CONSUMER AWARENESS OF THE NEW MOBILE GAMES (Case Study: Adolescents in Tomohon)

DAMPAK IKLAN APLIKASI INSTAGRAM PADA KESADARAN KONSUMEN BARU MOBILE GAME (Studi Kasus: Remaja di Tomohon)

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Abstract: This research designed to analyze the impact of Instagram in-app advertising to consumer awareness of the new mobile games using the Simple Linear Regression analysis. The variables are Instagram in-app advertising as independent variable and consumer awareness as the dependent variable. The object of this research is the adolescents in Tomohon. The respondents are the young people 17 years old until 19 years old, those people are still in adolescents category. The finding is $Y = 0.209 + 0.819 (X)$. The coefficient of determination is defined by $R^2 = 0.544$, or R square is 54.4% which means Consumer Awareness is able to be explained by Instagram in-app advertising and the rest 45.6% are caused by the other factors. Based on the hypothesis testing by F-Test and T-test, the result has proven that there is linear relationship between the variables partially and simultaneously. The F-Test and the T-test also shows that the Instagram in-app Advertising significantly influences the Consumer Awareness.

Keywords: *Instagram, in-app advertising, Consumer Awareness, Adolescent*

Abstrak: Penelitian ini dirancang untuk menganalisa dampak iklan di app Instagram untuk kesadaran konsumen new mobile game menggunakan analisis regresi Linear sederhana. Variabel adalah iklan di app Instagram sebagai variabel independen dan kesadaran konsumen sebagai variabel dependen. Objek dari penelitian ini adalah remaja di Tomohon. Responden adalah anak-anak muda 17 tahun hingga 19 tahun, orang-orang yang masih dalam kategori remaja. Temuan penelitian ini adalah $Y = 0.209 + 0.819 (X)$. Koefisien penentuan didefinisikan oleh $R^2 = 0.544$, atau R persegi adalah 54.4% yang berarti kesadaran konsumen dapat dipengaruhi oleh iklan Instagram dan sisanya 45.6% disebabkan oleh faktor-faktor lain. Berdasarkan pengujian oleh F-Test dan T-test hipotesis, hasilnya telah membuktikan bahwa ada hubungan linear antara variabel secara parsial dan secara simultan. F-test dan T-pengujian juga menunjukkan bahwa iklan di Instagram secara signifikan mempengaruhi kesadaran konsumen..

Kata Kunci: *Instagram, in-app advertising, Kesadaran Konsumen, Remaja*

INTRODUCTION

Research Background

Internet provides games, in order as the world entertainment center. There are many games can be installed to computer, laptop, pc tablet, smartphone, and gadget. Games have two of type, offline game and online game. Offline game is virtual game that do not require internet network. Meanwhile online game is game that require internet network and also provides the user and environment in which the player can meet another player in virtual world. Often times, participants can communicate with other gamers through text chat sessions during online gaming or, sometimes, players can actually speak to other players, using special audio hardware.

There are so many game companies that compete each other to produce games in order to get more profit and get more consumer. Not only just games production, but also the tools that people use to play games or what the called console. But nowadays, mobile smartphone is the most popular console to play mobile games it easy to use, and people bring it everytime everywhere. Game industry is growing rapidly along with the technology advancement especially mobile games. This growth is making the mobile game industry become the prosperous sector to do business.

Table 1. Mobile Games Revenue Growth

Year	Revenue (in Billion)	Growth
2016	104,8	
2017	116,0	10,69%
2018	125,4	8,10%
2019*	134,5*	7,26% *
2020*	143,5*	6,69% *

*)Predicted

Source: *venturebeat.com* (2017)

Game market researcher Newzoo reported that the global game market will hit \$116 billion in revenues on, up from 10.7 percent from a year earlier. Mobile gaming revenues for 2017 were revised upward the most, from \$46.1 billion to \$50.4 billion. With the growing popularity of esports games will see further growth, surpassing the \$130 billion to \$150 billion sports industry within three or four years from now. By 2020, games will hit \$143.5 billion in revenues on a global basis (*venturebeat.com*, 2017).

Instagram is a social media platform that allows the users to take, apply filters, edit, share, and comment photo or videos and follows the other user. Instagram also provides story feature, that allows the users to share or see videos or pictures of the followed users about their current condition and situation or even what their current activities and feelings. According to *napoleoncat.com* (2017) on March 2017, Instagram user in Indonesia reaches 41+ million users, and by age 13-24 reaches 53% of total users.

Knowledge of the corellation of Instagram in-app advertising and consumer awareness will make it easier for marketers to define and implement a marketing strategy. Understanding of this corellation also has an important role in the consumer's adoption process itself in order to create strategy to selling the new mobile games. The situation above also has been happening in Tomohon which becomes the location of this study.

Research Objectives

To analyze the impact of Instagram in-app advertising to consumer awareness of new mobile games among the adolescent.

THEORETICAL FRAMEWORK

Marketing

There are some definitions about marketing based on previous researchers. Grönroos in Hougaard and Bjerre (2003) explained marketing is a means to organize, preserve, and maintain relationships with consumers in a way that is profitable to achieve the objectives of both parties through a reciprocal relationship (reciprocal interchange) and keeping each other or keeping promises. Meanwhile Kotler and Armstrong (2012) explained that marketing is the process by which companies create value for customers and build strong customer relationships in order to capture value from customers in return.

Advertising

Advertising is one of the vital aspects to build the relationship between company and consumer. According to MacLnnis and Jaworski in Grewal and Levy (2008) “advertising is a paid form of communication, delivered through media from an identifiable source, designed to persuade the receiver to take some action, now or in the future.” Advertising encompasses an enormous industry and clearly is the most visible form of marketing communications—so much so that many people think of marketing and advertising as synonymous.

Based on the Table 2.1 we can see that every classification has their own objectives. The informative advertising will tell the market about the new product, describing available services, suggesting new uses for a product, correcting false impression, informing the market of a price change, reducing customers’ fears, explaining how the product works, and building a company image. Meanwhile, persuasive advertising can build brand preference, persuade consumers to purchase now, encourage switching brand, persuade customers to receive a sales call, and change customer perceptions of product attributes. And reminding advertising will remind customers that the product, keeping the product in customers’ minds may be needed in the near future during off-seasons, reminding customers where, maintaining top-of-mind product awareness buy the product.

In-Application Advertising

Mobile advertising is a form of advertising via mobile (wireless) phones or other mobile devices. The term “mobile in-app” refers to ads that are served specifically through smartphone devices, In-application advertising is another form of mobile advertising where the advertisements are integrated into the applications used on a mobile (Mottola, 2017).

Consumer Behaviour

Some of previous researches described the consumer behaviour with some typical definitions. Consumer behavior has been defined by Jacoby in Jacoby, Johar, and Moring (1998) as the “acquisition, consumption and disposition of products, services, time and ideas by decision making units”. Consumer behavior focuses on how individuals make decisions to spend their available resources (time, money, effort) on consumption related items. That includes what they buy, why they buy it, when they buy it, where they buy it, how often they buy it, how often they use it, how they evaluate it after the purchase and the impact of such evaluations on future purchases, and how they dispose of it.

Buying Decision Process

Most large companies research consumer buying decisions in great detail to answer questions about what consumers buy, where they buy, how and how much they buy, when they buy and why they buy. Marketers can study consumer purchases to find answers to questions about what they buy, where and how much. But learning about the whys of consumer buying behaviour and the buying decision process is not so easy – the answers are often locked within the consumer’s head (Kotler *et al.*, 2005).

The buyer decision process consists of five stages: need recognition, information search, evaluation of alternatives, purchase decision, and postpurchase behavior. The buying process starts long before the actual purchase and continues long after. Marketers need to focus on the entire buying process rather than on the purchase decision only (Kotler and Armstrong, 2012).



Figure 1 Buying decision process

Source: Kotler and Armstrong (2012)

The process starts from need recognition, the buyer recognizes a problem or need. The need can be triggered by internal stimuli when one of the person’s normal needs—for example, hunger or thirst—rises to a level high enough to become a drive. A need can also be triggered by external stimuli.

Buying Decision Process for New Products

A new product is a good, service, or idea that is perceived by some potential customers as new. It may have been around for a while, but our interest is in how consumers learn about products for the first time and make decisions on whether to adopt them. The adoption process is “the mental process through which an individual passes from first learning about an innovation to final adoption,” and adoptions the decision by an individual to become a regular user of the product (Kotler and Armstrong, 2012).

Awareness

During the first stage of the adoption process, consumers are exposed to the product innovation; the consumer becomes aware of the new product but lacks information about it. Product innovation can be done by two ways i.e. either by changing the physical properties and the packaging of the product such changes do not make the entire change in the product, this is known as product modification or the other way is making overall change and a distinct product is manufactured, this is known as product innovation. Now, if manufacturers make changes to the product the main function, which is required to be performed, is to make the awareness to the consumers. Until and unless the consumers get the information and only if the consumers are aware of new innovations and modifications then the producers or manufacturers can grab a large share of market (Kotler *et al.*, 2005).

Instagram

Instagram is a social networking app which allows its users to share pictures and videos with their friends through the free mobile application platform. Instagram is a photo and video-sharing social networking service owned by Facebook, Inc. It was created by Kevin Systrom and Mike Krieger, and launched in October 2010 exclusively on iOS. A version for Android devices was released two years later, in April 2012, followed by a feature-limited website interface in November 2012, and apps for Windows 10 Mobile and Windows 10 in April 2016 and October 2016 respectively.

Adolescent

Adolescent is a part of the human life stages before they become mature. According to UNICEF (2011), “Adolescence is an age of opportunity for children, and a pivotal time for us to build on their development in the first decade of life, to help them navigate risks and vulnerabilities, and to set them on the path to fulfilling their potential.”

Literature Review

In the first article by Alicia Barroso (2007) did the research about advertising and consumer awareness of a new product. The increase of a new product's sales is usually attributed to consumers becoming informed about the existence of the product. Advertising can accelerate this consumer awareness process. This paper evaluates this effect. I develop and estimate a structural model in which the consumer purchase decision is specified using a discrete choice model with variation in the choice set, according to the information diffusion of the new products. I also model the optimal price and advertising decisions of the firm, taking into account the dynamic effect of advertising on future sales (via an increase in the proportion of consumers aware of the product). The model is estimated using Spanish automobile data. The results suggest that advertising significantly enhances the information diffusion of new products and that firms take into account in their advertising decision this dynamics. The estimates show that advertising reduces the three year it takes for the information diffusion of a new product to half as long.

The second article by Philip Hans Franses and Marco Vriens (2004) that did research about advertising effects on awareness, consideration and brand choice using tracking data. Using weekly data on advertising expenditures in various media and response data on awareness, consideration and choice, researchers test the hierarchy of effects hypothesis. The empirical results, based on a simultaneous equations model with pooled parameters across brands, suggest that we can reject this hypothesis convincingly. Next, the researchers consider a vector error correction model, again with pooled parameters, to see if there are dynamic effects of advertising. For the category under scrutiny, researchers find that most advertising effects exist for awareness, although at the same time there are effects for choice. Newspaper advertising turns out to be most influential.

The last article by Elisabeth Honka, Ali Hortaçsu and Maria Ana Vitorino about. How does advertising influence consumer decisions and market outcomes? The researchers utilize detailed data on consumer shopping behavior and choices over bank accounts to investigate the effects of advertising on the different stages of the

shopping process: awareness, consideration, and choice. The researchers formulate a structural model with costly search and endogenous consideration sets, and show that advertising in the U.S. banking industry is primarily a shifter of awareness as opposed to consideration or choice. Advertising makes consumers aware of more options, search more, and find better alternatives. This increases the market share of smaller banks and makes the industry more competitive.

Conceptual Framework



Figure 2. Conceptual Framework
Source: Data Analysis Method (2018)

RESEARCH METHOD

Data collection Method

Data collected in this research was taken from the adolescent through two main data collection methods:

Primary Data

Primary data is information collected specifically for a current research problem or opportunity (Hair, Black, Babin, and Anderson, 2010). This research primary data is obtained from respondent who answer question via questionnaires. Questionnaires are distributes to respondents so they can respond directly on the questionnaires. There were two sections in the questionnaires that should be filled in by the respondents. The first section about the respondents' general data and the second section will be questions that are needed to be answered in order to prove the hypothesis.

Secondary Data

Secondary data was taken from the student itself, internet browsing, and textbooks that support primary data (Hair *et al.*, 2010). Collecting data from literature books and articles, also relevant information which are used to guide theory in this research and to create more understanding about the theory.

Population and Sample

Population

The entire group of people that will be investigated is called population. According to Sujareweni (2015), "Population is the generalization region consisting of the objects/subjects that have certain qualities and characteristics that set by researchers to learn and then drawn a conclusion". In this study population are all the adolescents in Tomohon who have ever exposed by Instagram in-application advertisement of new mobile games.

Sample

This research use purposive sampling because respondents selected in accordance with characteristic that meet the criteria in the study. Respondents were selected in this study have requirements, thos are: Older adolescent at 17 years to 19 years old, because investigators need answers that can be accounted for, and have Instagram account and ever exposed with Instagram in-application advertisement of new mobile games. The process of distribution questionnaires in this study done at random, because the outbreak was done at the same time, the number of different on different time and a different place.

Place and Time of Research

The location of this study will be conducted in Tomohon, North Sulawesi and the object of this research is the adolescents. The time of research is started from July to August 2018 for the period of 2 months.

Tools of Analysis

Simple Linear Regression Analysis

Simple Linear regression is used to model the value of a dependent scale variable based on its linear relationship to one or more predictors (SPSS help tutorial). According to Sekaran and Bougie (2009) simple regression analysis is used in a situation Where one indepenendt variable is hypothesized to affect one dependent variable. The linear regression model assumes that there is a linear, or “straight line” relationship between the dependent variable and each predictor.

Classical Assumption

A linear regression model should meet some basic assumption below:

Heteroscedasticity

Heteroscedasticity shows the analysis of the research model if it is apparent or not. Newbold, Carlson and Thorne (2010) explained that “Models in which the error terms do not all have the same variance are said to exhibit heteroscedasticity”.

Multicollinearity

Multicollinearity shows the intercorrelation of independent variables. The simplest and most obvious way to detect multicollinearity is to check the corellation matrix for the independent variables (Sekaran and Bougie, 2009). Even when multicollinearity is present, note that estimates of the importance of other variables in the equation (variables which are not collinear with others) are not affected.

Normality

Normality is the errors should be normally distributed—technically normality is necessary only for the t-tests to be valid, estimation of the coefficients (errors are identically and independently distributed. The assumption of a normally distributed error term can be examined by constructing a histogram of the residuals. A visual check reveals whether the distribution is normal. It is also useful to examine the normal probability of plot of standardized residuals compared with expected standardized residuals from the normal distribution. If the observed residuals are normally distributed, they will fall on the 45-degree line (Sreejesh, Mohapatra, and Anusree, 2014).

Testing the Goodness of Fit

Coefficient of Determination (R^2) and Coefficient of Correlaion (R)

According to Newbold, Carlson, And Thorne (2010), this R^2 provides a descriptive measure of the proportion or percent of the total variability that is explained by the regression model. Besides that, this often interpreted as the percent of variability in Y that is explained by the regression equation.

In addition, Newbold, Carlson, and Thorne (2010) said that, “ Coefficient of Deremination (R^2) routinely is used as a descriptive statistic to describe the strength of the linear relationship between the independent variables and dependent variable”.

Hypotesis Testing

The purpose of hypothesis testing is to determine accurately if the null hypothesis can be rejected in favor of the alternate hypothesis (Sekaran and Bougie, 2009) In order to test the hypotesis, statical analysis such as F_{test} and T_{test} has to be calculated. F_{test} and T_{test} will be usefull in a situation when the researcher needs to find out relationship between dependent and independent variables. When F_{test} and T_{test} are gained and compared t F_{table} and T_{table} , the hypothesis could be examined.

RESULT AND DISCUSSION

Result

Reliability Test

Table 2. Result of Reliability Test

Cronbach's Alpha	N of Items
,846	2

Source: Data Processed (2018)

As shown in the table 2, the Cronbach's alpha of this research is 0.846 which indicates good internal consistency reliability or consider that the data resulted is reliable.

Validity Test

Table 3. Result of Validity Test

		Correlations		
			Instagram In-app Advertising	Consumer Awareness
Instagram In-app Advertising	Pearson Correlation		1	,738**
	Sig. (2-tailed)			,000
	N		51	51
Consumer Awareness	Pearson Correlation		,738**	1
	Sig. (2-tailed)		,000	
	N		51	51

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Data Processed (2018)

Based on table 4.2, it can be seen obviously that the significant value is less than 0.05 and the correlation index is greater than 0.3 which is 0.738, therefore, the data is considered as valid.

Testing of Goodness of Fit

To test the goodness of fit, the coefficient of simple correlation (R) and coefficient of determination (R^2) should be determined.

Coefficient of Simple Correlation (R) and Coefficient of Determination (R^2)

Table 4. Result of R and R^2 Analysis

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,738 ^a	,544	,535	,55892

a. Predictors: (Constant), Instagram In-app Advertising

b. Dependent Variable: Consumer Awareness

Source: Data Processed (2018)

The coefficient of correlation (R) is 0.738, it means the level of relationship between independent and dependent variable is considered as very strong positive relationship. In other words, Instagram in-app advertising as the independent variable and Consumer Awareness as the dependent variable has a strong and positive relationship. The coefficient of determination is defined by $R^2 = 0.544$, or R square is 54.4% which means Consumer Awareness is able to be explained by Instagram in-app advertising and the rest 45.6% are caused by the other factors.

Simple Linear Regression

Table 5. Simple Linear Regression Analysis Output

		Coefficients ^a									
		Unstandardized Coefficients		Standardized Coefficients	Correlations			Collinearity Statistics			
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
Model											
1	(Constant)	,209	,338		,617	,540					
	Instagram In-app Advertising	,819	,107	,738	7,649	,000	,738	,738	,738	1,000	1,000

a. Dependent Variable: Consumer Awareness

Source: Data Processed (2018)

The result shows that the constant *a* is 0.209 and the constant *b* is 0.819. By those result, the model is defined as:

$$Y = 0.209 + 0.819 (X)$$

Where:

- Y : Consumer Awareness
- X : Instagram in-app Advertising

It means if the independent variable is equal to zero, the consumer awareness (Y) is predicted to be 0.209, or if the other are constant, an increase of one point in Instagram in-app advertising (X) will result in an average increase of at least 0.819 in consumer awareness (Y).

Classical Assumption

Multicolinearity

Table 6. Result of Multicolinearity Test

Model	Coefficients ^a	Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Instagram In-app Advertising	1,000	1,000

a. Dependent Variable: Consumer Awareness

Source: Data Processed (2018)

The table 4.5 shown that the tolerance value is 1 and the VIF is 1. Since the tolerance value is more than 0.20 and the value of VIF is less than 10, the model is concluded free from multicollinearity.

Heteroscedasticity

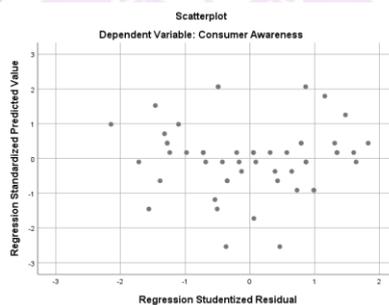


Figure 2. Heteroscedasticity Test Output

Source: Data Processed (2018)

In the figure 2 shows that the dots spreading in 0. This proves that the model is free from heteroscedasticity.

Normality

To identify the normality of the model, the figure 4.7 will show the graphic result for the normality test.

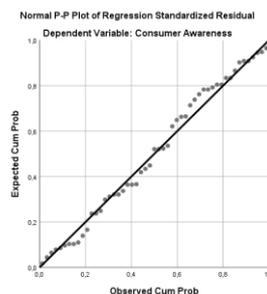


Figure 3. Normality Test Output

Source: Data Processed (2018)

Figure 3 shows that the data is represented by the dots are spreading near the diagonal line. It means that the model is normal.

Hypothesis Testin**F-Test****Table. 7 Simultaneous Test (F-test) Output**

ANOVA ^a							
Model		Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	18,278	1	18,278	58,512	,000 ^b	
	Residual	15,307	49	,312			
	Total	33,585	50				

a. Dependent Variable: Consumer Awareness

b. Predictors: (Constant), Instagram In-app Advertising

Source: Data Processed (2018)

$H_0 : \beta_1 = 0$ (Instagram in-app advertising (Y) has no influences on consumer awareness (X) simultaneously)

$H_1 : \beta_1 \neq 0$ (Instagram in-app advertising (Y) has any influences on consumer awareness (X) simultaneously)

If the $F_{\text{value}} > F_{\text{table}}$, the H_0 is rejected, and if the $F_{\text{value}} < F_{\text{table}}$, the H_0 is accepted. The table 4.6 shown that the F_{value} is 58.512. By using the level of significance of 0.05 ($\alpha = 0.05$) and the degree of freedom, the F_{table} can be determined by looking in the $F_{0,05}$ distribution table at $(1 ; 51 - 1) = (1 ; 50)$. The F_{table} is 4.03.

By that fact, found:

$$58.512 > 4.08 = F_{\text{value}} > F_{\text{table}}$$

Since the the F_{value} is greater than F_{table} , H_0 is rejected and H_a is accepted. It means that Instagram in-app advertising (Y) has any influences on consumer awareness (X) simultaneously. Thereby, the hypothesis is accepted.

T-test**Table 8. T-test Output**

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,209	,338		,617	,540
	Instagram In-app Advertising	,819	,107	,738	7,649	,000

a. Dependent Variable: Consumer Awareness

Source: Data Processed (2018)

Table 8 shown that t_{count} for Instagram In-app Advertising (X) is 7.649 and the t_{table} can be determined by using the significancy level on 0.05 (5%) and looking at the t-statistics table at $(0.05/2 ; 51 - 1 - 1) = (0.025 ; 49)$. The t_{table} is 2.01. By the fact, found that $t_{\text{count}} > t_{\text{table}} = 7.649 > 2.010$. Therefore, H_0 is rejected, H_1 is accepted. It means Instagram in-app advertising has significant relationship with consumer awareness.

Based on the hypothesis testing by F-Test and T-test, the result has proven that there is linear relationship between the variables partially and simultaneously.

Discussion

Consumer awareness is the one of the most important things to be analyzed in marketing, especially in the new product marketing. The marketers should consider about the consumer awareness as the start booster in order to get more consumer attention on their marketing process. By doing a research, marketers will get information of the impact to the market when using Instagram in-app advertising. Instagram became a new trend tools for the games developers to promote their new product to the new consumers. The adolescent or the young people in Indonesia nowadays are getting intense in using this photo sharing application, Instagram. In this research, data were collected from fifty one respondents that were categorized by gender, age, educational level, occupation, and the monthly expense for internet data of mobile phone. The data was taken from the young people in Tomohon that using Instagram. All of the respondents are student. From the questionnaires most of the respondent are 17 years old and studying in senior highschool, which is the age that was categorized as the young adolescent.

By using Instagram in-app advertising, the new mobile game can reach a new consumer easily and more clearly with many feature that provided in this application. Most of the respondents were knowing about the

new mobile games information easier through Instagram in-app advertising. Most of the getting know the kind of the mobile games that had been advertised through the post's caption.

CONCLUSION AND RECOMMENDATION

Conclusion

After examining the findings and discussing them, the research can be conclude that for the adolescents in Tomohon, the Instagram in-app advertising has a very strong and positive impact on the consumer awareness of new mobile games. The findings of the analysis are $Y = 0.209 + 0.819 (X)$ which means that an increase of one of Instagram In-app Advertising (X), leads to increase 0.819 of change in 0.209 of Consumer Awareness (Y). By this fact, the mobile game developers are highly recommended to use Instagram in-app advertising as one of the promotion tools for their new products in order to get known by the people especially among the adolescents.

Recommendation

Based on the result, the following are the recommendation of this research that can be used as suggestions:

1. For the game developers, using Instagram in-app Advertising as the promotion tools of the mobile games may increase the attention of consumer of the products.
2. For the game developers that makes new mobile games, providing more information about the game in the post caption may cause the increasing number of the knowledge of the consumer about the new mobile games.
3. By the result that the most young people are using Instagram more than one hour and the young people are getting easier to know the new mobile games through the Instagram in app advertising. The researcher recommends to the game developers company that promoting their products by Instagram in-app advertising to provide more young people friendly contents (video/photo) that provide more knowledge about the product. The format of the advertising is considered not affecting to much.

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