The Effect of The Characteristics of Product Innovation on Intention to Adopt Application-Based Motorcycle Taxi Service (Go-Jek) The Moderating role of Consumer Demographic Characteristic in Yogyakarta

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ABSTRACT

Application-based motorcycle taxi (ojek) service becomes one of the most popular startup businesses in the recent years. There are many emerged companies that offer application-based transportation service, one of them is PT. Go-Jek Indonesia. However, there are only few researches that examine factors that might influence companies to design suitable and user-friendly application-based transportation service. This study aims to determine the influence of the characteristics of product innovation on intention to adopt app-based ojek service (Go-Jek) in which consumer demographic characteristics variable is used as moderators. Primary data were collected through questionnaires with a sample size of 280 respondents. This research used multiple regression analysis on millennial, non-millennial, and combined generations, and conducted moderate regression analysis of characteristics of an innovation (relative advantage, compatibility, complexity, trialability, observability). The result shows that relative advantage, compatibility, trialability, observability in the millennial generation have positive and significant effect on intention to adopt, whereas complexity variable has no significant effect. It was found that variables of relative advantage, trialability, and observability in the non-millennial generation have positive and significant effect, whereas complexity variable has negative effect on intention to adopt. On the other hand, the result proves that compatibility variable has no significant effect. In addition, the result also shows that variables of relative advantage, compatibility, trialability, and observability in combined generations have positive effect on intention to adopt Go-Jek application, whilst complexity variable has a negative effect on intention to adopt Go-Jek app. Factor of generation shows that the effect of variable of characteristics of an innovation (relative advantage, compatibility, complexity, trialability, observability) has stronger effect on intention to adopt in non-millennial compared with millennial generation.

INTRODUCTION

The change will continue to happen consciously or unconsciously from time to time. The world of business is also inseparable from it, even sometimes occurs drastically that needs to be anticipated. One of the predicted changes that will affect the business world in the future is the change in the development of science and technology that requires all aspects of life to continually adapt to the change, and

companies are no exception. They are required to adapt to the innovation and change in every aspect of business.

One of business that is being encouraged to adapt to the development of science and technology is the business of transportation services. The development of technology in telecommunication and information is continually revolutionizing this industry, especially motorcycle taxi. If the first motorcycle taxies are managed conventionally and sole proprietorship, there is now app-based motorcycle taxies managed professionally by connecting the drivers to prospective passengers. There are many things that supposed to be improved in motorcycle taxi service such as service problems, safety, and price. App-based motorcycle taxi service is part of an innovation made the company in taking the advantage of business opportunities im transportation service area.

The increasing number of app-based motorcycle taxi service providers lead to a fierce competition among themselves, as well as other public transportation providers. In addition to technology-based innovation, the company makes other innovations such as improving delivery service, safety standards, and tariffs calculation. PT Go-Jek Indonesia is one of app-based transportation service companies that makes an innovation in providing easy access for potential customers and drivers to connect. This kind of solution is given not only for customers, but also for the drivers.

The usage of technology is easier to adapt by the millennials. The millennials is growing with the technology and characterize as a better generation in adoption of the latest technology. Several studies have shown that innovation adoption in the millennials is more positive than non-millennials. One of the factors is because of the difference in characteristics between generations. The research released by the Pew Research Center explains the uniqueness of the millennials over previous generation, that is in the use of technology. The millennials cannot be separated from the technology, especially internet that already become the basic needs. It is important for the company to be able to understand the millennials, considering that the millennials will shape consumer and business market for upcoming years. The companies might lose the opportunity in business if they are not able to understand the behavior of the millennials well.

This phenomenon attracts the researcher to conduct the study about the effect of the characteristics of product innovation on the intention to adopt app-based motorcycle taxi service provider (Go-Jek). This study is a modification of previous research conducted by Al-Jabri and Sohail (2012) which states that variables of relative advantage, compatibility, complexity, trialability, observability have an effect on the intention to adopt mobile banking, and the research conducted by Cheng et.al (2009) states that five characteristics of product innovation (relative advantage, compatibility, complexity, trialability, observability) would effect on the intention to adopt hybrid convenience store. The researcher also adds the generation as a variable to strengthen or weaken the characteristics of product innovation on the intention to adopt. Based on this background of study, the researcher formulates the research title "The Effect of The Characteristics of Product Innovation on Intention to Adopt Application-Based Motorcycle Taxi Service (Go-Jek): The Moderating role of Consumer Demographic Characteristic in Yogyakarta.

Innovation is one of strategies to win the competition and increase competitive advantage of the company. Application-based motorcycle taxi service is an innovation

in transportation that was developed to overcome problems which is previously found in conventional transportation especially in motorcycle taxi services. Since its founding in 2010 and launching an app-based service in early Januari 2015, Go-Jek created an innovation that offers a variety of advantages which were not found in conventional motorcycle taxies. In Yogyakarta, it is not only the millennials that contributes to Go-Jek, but also the non-millennial generation. Based on the statement, this study examines the characteristics of product innovation (relative advantage, compatibility, complexity, trialability, observability) that have an effect on the intention to adopt app-based motorcycle taxi provider (Go-Jek), and the generation as a variable that is able to strengthen or weaken the effect of characteristics of product innovation on intention to adopt.

METHOD

The existence of Go-Jek makes the researcher to analyze this business. The following is the model of research which is adapted from the research of Al-Jabri and Sohail (2012) and is developed by adding generation variable as moderator variable. This research aims to examine how Go-Jek is adopted with the effect of consumer demographic.

Picture 1. Model Analysis
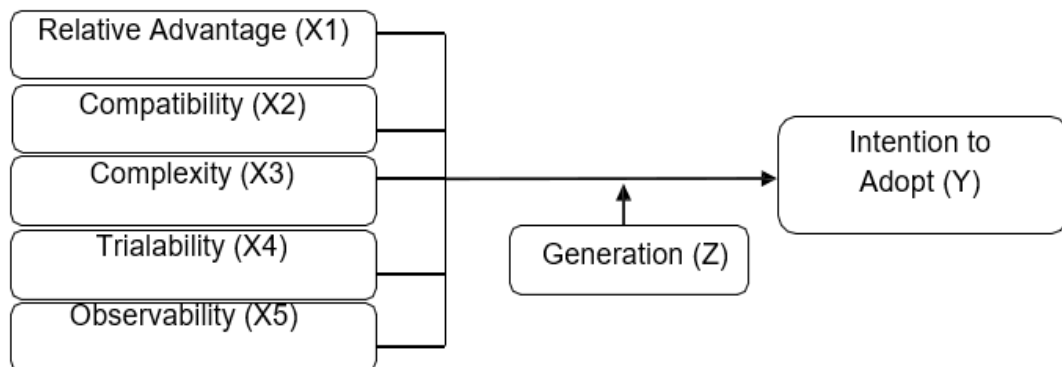
This research used quantitave approach by distributing quitionnaires with likert scale. The purposive sampling method is used in this research. This study also examined the causality relationship relating to how characteristics of product innovation of Go-Jek are adopted through the influence of consumer demographics. The data used in this research is primary data which is obtained through survey by using quitionnaires. This research was conducted in Special Region of Yogyakarta as it is a considered as a centre of education and often considered as an Indonesian miniature. There are many high schools and college students come from various tribes. They are mostly 16 to 24 years old (the millennials) and are the biggest consumers of Go-Jek. The population in this study is all Go-Jek customers that live in Yogyakarta. The sample in this research is a partially customers of Go-Jek. The sampling technique was done by purposive sampling technique. This technique based on the characteristics that are considered eligible is living in Yogyakarta, aged over 17 years and have used Go-Jek at least once for the last three months. The number of samples taken in this study was determined by using Hair et. al (2010) in which the sample size depends on the number of indicators multiplied by 5 to 10. In this research, there are seven indicators, the minimum numbers of samples is 7x10=70.

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RESULTS AND DISCUSSION

Instrument Accuracy Test

Validity Test

The validity test is used to examine the item questions in the questionnaire are able to describe something that will be measured by using the questionnaire (Ghozali, 2012). Based on the analysis, the result is as follows:

Table 1. The Result of Validity Test

Item	Component						Result
	X1	**X5**	**X2**	**Y**	**X4**	**X3**	
X1.1	0.819						Valid
X1.2	0.820						Valid
X1.3	0.848						Valid
X1.4	0.722						Valid
X1.5	0.731						Valid
X2.1			0.686				Valid
X2.2			0.883				Valid
X2.3			0.845				Valid
X3.1						0.908	Valid
X3.2						0.820	Valid
X4.1					0.851		Valid
X4.2					0.787		Valid
X5.1		0.694					Valid
X5.2		0.780					Valid
X5.3		0.797					Valid
X5.4		0.897					Valid
Y.1				0.879			Valid
Y.2				0.809			Valid
Kaiser Meyer Olkin (KMO)= 0,675 and Sig= 0,000							

Source: Processed data, 2016

On the result of validity test, the value of KMO is 0.675>0.50. It shows that the factor analysis could be done. The result of the rotated component shows that each group of factor is in the respective column and the value of loading factor is above 0.50 which means that all items on each variable is valid.

Reliability Test

Reliability test is conducted to examine the consistency of respondents' answer over time. A questionnaire is considered reliable if the value of croanbach alpha > 0.70 (Ghozali, 2012). The result of reliability test of each variable is as follows:

Table 2. The Result of Reliability Test

Variabellllle	Croanbach's Alpha	Requirement	Result
X1; Relative Advantage	0.901	0.70	Reliable
X2; Compatibility	0.840	0.70	Reliable
X3; Complexity	0.721	0.70	Reliable
X4; Trialability	0.889	0.70	Reliable
X5; Observability	0.829	0.70	Reliable
Y; Intention to Adopt	0.831	0.70	Reliable

Source: Processed data, 2016

The result of reliability test on each variable shows that the value of Croanbach's Alpha is > 0.70 so this means that the five variables are reliable.

The Description of Data
The Characteristics of Respondents

The sampling technique is conducted in accordance with the following condition; the respondents are living in Yogyakarta, over 17 years of age, and have used Go-Jek at least once for the last three months. It is obtained 280 respondents (220 of the millennials and 60 of non-millennials). The result of the characteristics of respondents can be identified as follows:

Table 3. Description of Consumers Gender

Gender	The Millennials		The Non-Millenials		Total	
	N	%	N	%	N	%
Male	78	3	33	55.0	111	39.6
Female	142	6	27	45.0	169	60.4
Total	220	10	60	100.0	280	100.0

Source: Processed data, 2016

Overall, Go-Jek app users are women with the percentage of 60.4%. the result also shows that women also dominate Go-Jek app users in the millennials at 64.5%. This is because on average, women more often to use ojek transportation service compared with men. In the non-millennials, the percentage of women as Go-Jek app users is only 45%. This is because women in the non-millennials are usually traveling with their relatives.

Table 4. Description of Consumers' Age

Age	The Milennials		The Non-Millennials		Total	
	N	%	N	%	N	%
Under 21 years old	88	40.0	0	0.0	88	31.4
21 -25 years old	120	54.5	0	0.0	120	42.9
26 -30 years old	8	3.6	0	0.0	8	2.9
31 -35 years old	4	1.8	0	0.0	4	1.4
Above 39 years old	0	0.0	60	100.0	60	21.4
Total	220	100.0	60	100.0	280	100.0

Source: Processed data, 2016

The majority of Go-Jek app users are dominated by groups of 21 to 25 years of age with the percentage of 42.9%, whereas the majority of Go-jek app users in the non-millennials age group is above 39 years old. This is because in this group of age, most of the respondents are the students who are living in Yogyakarta, so they need mode of transportation like Go-Jek service.

Table 5. Description of Consumers' Occupation

Occupation	The Millennials		The Non-Millennials		Total	
	N	%	N	%	N	%
Private employee	13	5.9	35	58.3	48	17.1
Student	187	85.0	13	21.7	187	66.8
Public employee	1	.5	4	6.7	14	5.0
Private employer	7	3.2	8	13.3	11	3.9
Others	12	5.5	8	13.3	20	7.1
Total	220	100.0	60	100.0	280	100.0

Source: Processed data, 2016

The majority of Go-Jek app users are student with the percentage of 66.8%. If it is classified by the generation, 85% of the millennials respondents are student, while 58.3% of the non-millennial respondents are private employees. Thus, this results shows that the non-millennials is dominated by private employees, eventhough some respondents are the student as they are studying to get a higher education.

Descriptive Statistics of Each Variable

The descriptive statistics will show minimum, maximum, and average value of each variable in a whole and generations. The result of descriptive statistics of each variable is presented in Table 6:

**Table 6.** The Result of Descriptive Statistics of Each Variable

Variable	The Millennials			The Non-Millennials			Combined Generation		
	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
KR	1.00	3.85	5.00	2.20	3.71	5.00	1.00	3.82	5.00
KS	1.00	3.31	5.00	1.67	3.04	4.67	1.00	3.25	5.00
KP	1.50	3.58	5.00	2.00	3.74	5.00	1.50	3.61	5.00
DC	1.00	4.04	5.00	2.00	3.81	5.00	1.00	3.99	5.00
DO	1.25	3.78	5.00	2.25	3.68	5.00	1.25	3.76	5.00
NUM	1.00	4.07	5.00	2.00	3.94	5.00	1.00	4.04	5.00

Source: Processed data, 2016

The table 6 shows that each variable in the millennials has a higher mean than in the non-millennials. However, the complexity variable has a higher mean of 3.74 in the non-millennials, while mean in the millennials is 3.58.

By paying attention to the variable of intention to adopt, the millennials look at variable of the characteristics of innovation and intention to adopt more positive than the non-millennials as most of them think that Go-Jek app is more familiar and easier to use. The result also shows that the millennials is more likely to use Go-Jek app and recommend this app to users' friends or relatives. The following is mean graph of relative advantage variable.
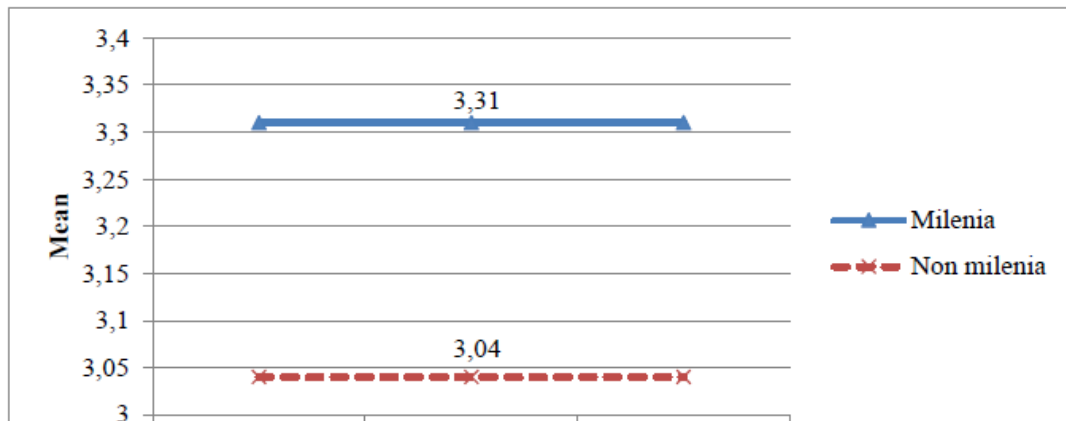
Picture 2. Relative Profit
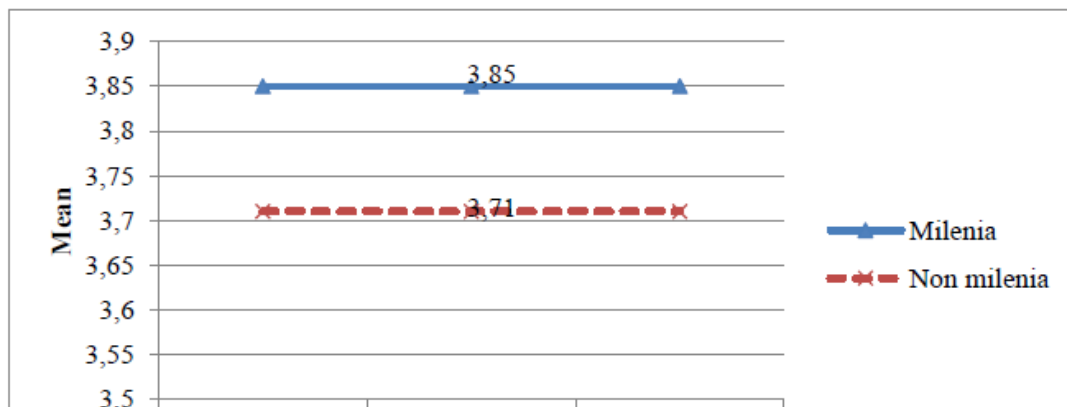
In compatibility variable, mean of this variable is higher in the millennial's generation than in the non-millennials. Mean in the millennials is 3.31 while 3.04 in the non-millennials. Overall, mean of compatibility variable is 3.25 and consider as

pretty good. It means that, the consumers think that the Go-Jek app is fit the consumer's needs. The following is mean graph of compatibility variable.
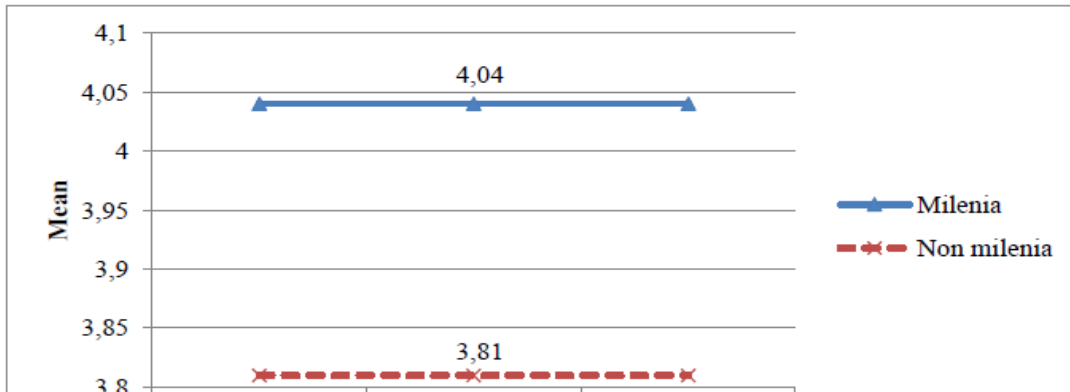
Picture 3. Conformity

In the variable of complexity, mean of this variable is higher in the non-millennials than the non-millennials. Mean of complexity variable in the non-millennials is 3.74, while in the millennials is 3.58. Overall, mean of complexity variable is 3.61. The graph of mean of complexity variable is as follows:
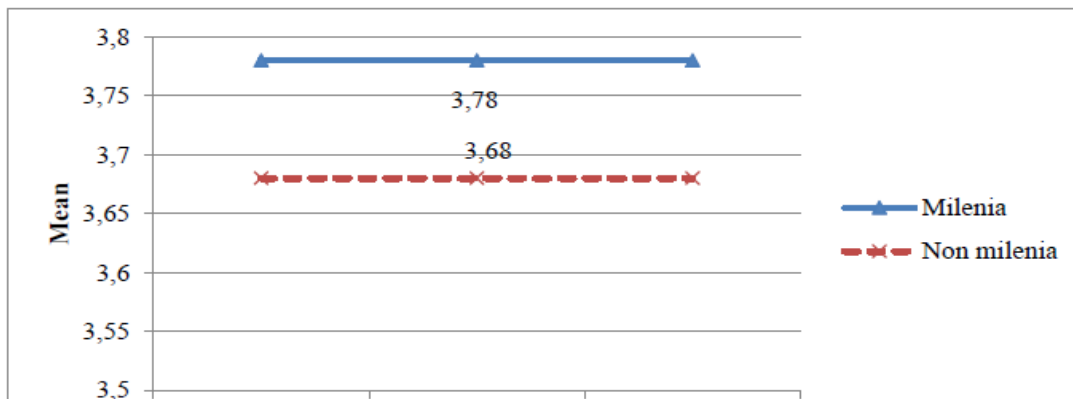
Picture 4. Complexity
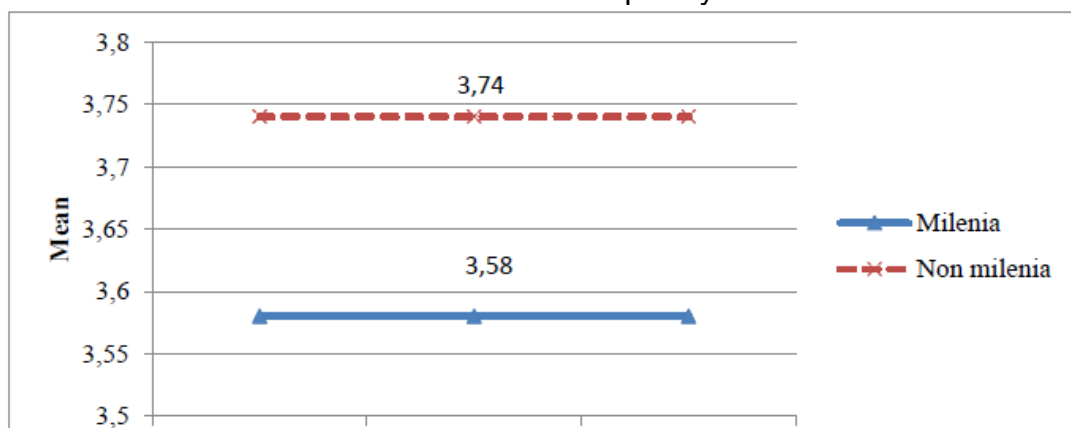
In the variable of trialability, mean is higher in the millennials than in the non-millennials. Mean in the millennials is 4.04, whereas in the non-millennials is 3.81. Overall, mean of trialability variable is 3.99 and consider as pretty good. This means the consumers think that the Go-Jek app is testable. The graph of mean of trialability variable is as follows:

Picture 5. Can be Tested

In the variable of observable, mean is higher in the millennials than in the non-millennials. Mean in the millennials is 3.78, and 3.68 in the non-millennials. Overall, mean of observable variable is 3.76 and consider as pretty good. This means the Go-Jek app is observable. The following is the graph of mean of observable variable.

Picture 6. Can be Observed

In the intention to adopt variable, mean is higher in the millennials rather than in the non-millennials. Mean of intention to adopt variable in the millennials is 4.07 and 3.94 in the non-millennials. Overall, mean of this variable is 4.04 and consider as pretty good. This means the consumers has a desire to use and recommend Go-Jek app. The following is the graph of mean of intention to adopt variable.

Picture 7. Intention to Adopt
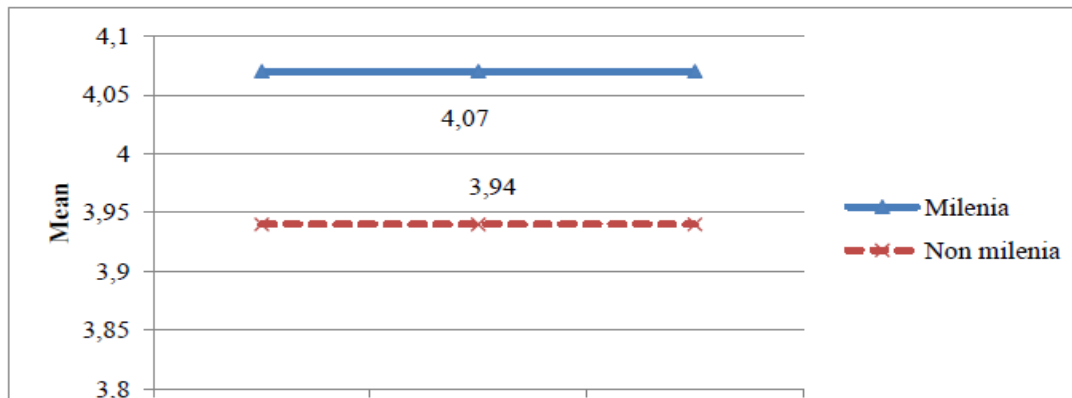
Based on Table 7, the millennials look at variable of the characteristics of innovation and intention to adopt more positive. However, it is found that mean of the variable of complexity in the non-millennials is higher than in the millennials. The following is the recapitulation of five characteristics of an innovation and the variable of intention to adopt. Picture 8 shows that mean of each variable is higher than the millennials.

Picture 8. Average of Research Variables
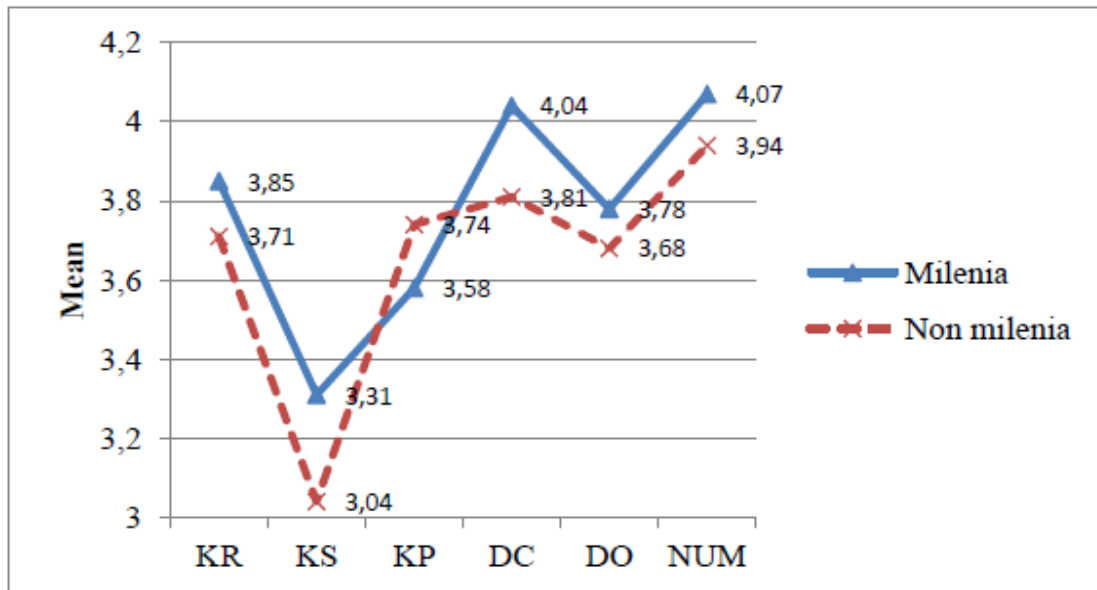
Mean of each variable is higher in the millennials as most of them think that Go-Jek app is more familiar and easier to use than in the non-millennials. It is also found that the millennials have a tendency to use and recommend the Go-jek app to their friends or relatives.

Descriptive Statistics of Each Item

Table 7 shows the minimum, maximum, and mean of each item which based on the generation, so that mean of each item in the millennials and non-millennials would be discovered. The result of descriptive statistics of each item of two generation is as follows.

Table 7. The Result of Descriptive Statistics of Each Item

Item	The Millennials			The Non-Millennials			Combined Generation		
	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
KR1	1.0	4.01	5.0	2.0	3.90	5.0	1.0	3.99	5.0
KR2	1.0	3.78	5.0	2.0	3.63	5.0	1.0	3.75	5.0
KR3	1.0	4.20	5.0	2.0	3.90	5.0	1.0	4.13	5.0
KR4	1.0	3.76	5.0	1.0	3.67	5.0	1.0	3.74	5.0
KR5	1.0	3.51	5.0	1.0	3.45	5.0	1.0	3.50	5.0
KS1	1.0	3.32	5.0	1.0	3.08	5.0	1.0	3.27	5.0
KS2	1.0	3.23	5.0	1.0	3.00	5.0	1.0	3.18	5.0

Item	The Millennials			The Non-Millennials			Combined Generation		
	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
KS3	1.0	3.38	5.0	2.0	3.05	5.0	1.0	3.31	5.0
KP1	1.0	2.96	5.0	1.0	3.30	5.0	1.0	3.04	5.0
KP2	1.0	4.19	5.0	1.0	4.18	5.0	1.0	4.19	5.0
DC1	1.0	3.86	5.0	2.0	3.65	5.0	1.0	3.81	5.0
DC2	1.0	4.23	5.0	1.0	3.97	5.0	1.0	4.17	5.0
DO1	1.0	4.05	5.0	2.0	3.93	5.0	1.0	4.03	5.0
DO2	1.0	3.60	5.0	1.0	3.63	5.0	1.0	3.61	5.0
DO3	1.0	3.68	5.0	2.0	3.48	5.0	1.0	3.64	5.0
DO4	1.0	3.79	5.0	1.0	3.67	5.0	1.0	3.76	5.0
NUM1	1.0	4.05	5.0	2.0	3.85	5.0	1.0	4.00	5.0
NUM2	1.0	4.09	5.0	2.0	4.03	5.0	1.0	4.08	5.0

Source: Processed data, 2016

Each question item in the millennials category has a higher mean than in the non-millennials. However, there are two items with a higher mean in the non-millennials. The question of complexity one (KP1) in the non-millennials is 3.30 and 2.9 in the millennials. In addition, the question of observable two (DO2) in the non-millennials is 3.63 and 3.60 in the millennials.

Classical Assumption Test
Normality Test
Normality tes is used to determine whether the residuals are normally distributed. This test is done by using One Sample Kolmogorov Smirnov method. The data is normal if the significance value is above 0.05. The following table shows the result of normality test in regression model.

Table 8 The Result of Normality Test

Residual	Kolmogorov-Smirnov Z	Signifiance	Result
Residual of the Millennials	0.65	0.720	Normal
Residual of the Non-Millennials	0.808	0.531	Normal
Residual of Combined Generation	0.765	0.603	Normal

Source: Processed data, 2016

It is obtained the significance level from Kolmogorov-Smirnov test for three regression models is above 0.05. It shows that three regression models are well-modeled by a normal distribution.

Multicollinearity Test
Multicollinearity test is conducted to determine whether independent variables are not correlated to each other or there is no linier relationship between independent variables in the regression model. A good regression model should not have the problems of multicollinearity. A regression model has problems of multicollinearity when tolrenace value is ≤ 0.10 or VIF value is ≥ 10 (Ghozali, 2012).

Table. 9 The Result of Multicollinearity Test

Variable	Tolerance	VIF	Result
Model 1; Regresision Model of The Millennials			
X1;Relative Advantage	0.389	2.572	Non-Multicollinearity
X2;Compatibility	0.537	1.861	Non-Multicollinearity
X3;Complexity	0.914	1.094	Non-Multicollinearity
X4;Trialability	0.668	1.498	Non-Multicollinearity
X5;Observability	0.693	1.442	Non-Multicollinearity
Model 2; Regression Model of The Non-Millennials			
X1;Relative Advantage	0.478	2.092	Non-Multicollinearity
X2;Compatibility	0.508	1.968	Non-Multicollinearity
X3;Complexity	0.595	1.680	Non-Multicollinearity
X4;Trialability	0.660	1.515	Non-Multicollinearity
X5;Observability	0.737	1.356	Non-Multicollinearity
Model 3; Regresision Model of Combined Generation			
X1;Relative Advantage	0.408	2.449	Non-Multicollinearity
X2;Compatibility	0.536	1.866	Non-Multicollinearity
X3;Complexity	0.951	1.051	Non-Multicollinearity
X4;Trialability	0.678	1.475	Non-Multicollinearity
X5;Observability	0.701	1.427	Non-Multicollinearity

Source: Processed data, 2016

The result of multicollinearity test shows that tolerance value is higher than 0.10 in all regression models and VIF value is lower than 10. It means that there is no problems of multicollinearity among independent variables.

Heteroscedasticity Test

Heteroscedasticity test is conducted to examine whether sub-populations in the regression model have different variables from others. A good regression model should have no heteroscedasticity problems (Ghozali, 2012). Heteroscedasticity test in this research used glejser test is the significance value is higher than 0.05.

Table. 10 The Result of Heteroscedasticity

Variable	Sig.	Result
Model 1; Regression Model of The Millennials		
X1;Relative Advantage	0.843	Non-Heteroscedasticity
X2;Compatibility	0.715	Non-Heteroscedasticity
X3;Complexity	0.245	Non-Heteroscedasticity
X4;Trialability	0.578	Non-Heteroscedasticity
X5;Observability	0.452	Non-Heteroscedasticity
Model 2; Regression Model of The Non-Milllennials		
X1;Relative Advantage	0.848	Non-Heteroscedasticity
X2;Compatibility	0.691	Non-Heteroscedasticity
X3;Complexity	0.815	Non-Heteroscedasticity
X4;Trialability	0.210	Non-Heteroscedasticity
X5;Observability	0.861	Non-Heteroscedasticity
Model 3; Regression Model of Combined Generation		
X1;Relative Advantage	0.875	Non-Heteroscedasticity
X2;Compatibility	0.616	Non-Heteroscedasticity
X3;Complexity	0.424	Non-Heteroscedasticity
X4;Trialability	0.670	Non-Heteroscedasticity
X5;Observability	0.190	Non-Heteroscedasticity

Source: Processed data, 2016

It is obtained that the result of heteroscedasticity test from three models is higher than 0.05, so it means that there are no heteroscedasticity problems.

The Result of Multiple Regression

The Effect of Independent Variable on the Intention to Adopt Adopting the App-Based Transportation Service (Go-Jek)

This research analyses four regression models; regression model of the millennials, the non-millennials, combined generation, and moderated regression. The following is the resut of regression analysis.

Table 11 The Result of Multiple Regression

Variable	1; Regression Model of The Millennials			2; Regression Model of The Non-Millennials			3; Regression Model of Combined Generation		
	B	t-	Sig.	B	t-value	Sig.	B	t-value	Sig.
Constanta	0.342			1.448			0.409		
X1:Relative	0.310	3.393	0.001	0.368	2.054	0.045	0.327	4.069	0.000
X2:Compatibility	0.286	4.426	0.000	0.002	0.016	0.987	0.242	4.149	0.000
X3:Complexity	-0.057	-	0.244	-	-2.056	0.045	-0.081	-	0.052
X4:Trialability	0.169	2.341	0.020	0.225	2.041	0.046	0.195	3.302	0.001
X5:Observability	0.295	4.378	0.000	0.285	2.135	0.037	0.296	4.930	0.000
	F				F		F value Sig)=61.163(0.000)		
	Adj.R^2 = 0.520			Adj.R^2 = 0.506			Adj.R^2 = 0.519		

*** (significance of 1%); **(significance of 5%); *(significance of 10%) NS (not significance)

Source: Processed data, 2016

The following is the regression equation:

$$\text{millennials} = 0{,}342 + 0{,}310X_1{}^{***} + 0{,}286X_2{}^{***} \square 0{,}057X_3{}^{NS} + 0{,}169X_4{}^{**} + 0{,}295X_5{}^{***} \dots\dots(1)$$

$$\text{non-millennials} = 1{,}448 + 0{,}368X_1{}^{**} + 0{,}002X_2{}^{NS} \square 0{,}219X_3{}^{**} + 0{,}225X_4{}^{**} + 0{,}285X_5{}^{**} \dots\dots(2)$$

$$\text{combined generation} = 0{,}409 + 0{,}327X_1{}^{***} + 0{,}242X_2{}^{***} \square 0{,}081X_3{}^{*} + 0{,}195X_4{}^{***} + 0{,}296X_5{}^{***} ..(3)$$

The result of regression analysis consists of simultaneous test (F-test), Partial test (t-test), and coefficient of determination (Adj.R^2). Based on the regression equation above, it can be said that:

Simultaneous Test (F-Test)

Simultaneous test is conducted to examine the effect of independent variables on dependent variables simultaneously. There is a significance impact if significance value is lower than 0.05. In regression model of the millennials, non-millennials, and combined generation, the significance value is 0.000. It is concluded that there is significant simultaneous effect of variable of relative advantage, compatibility, complexity, trialability, and observability on the intention to adopt Go-Jek app in the millennials, non-millennials, and combined generation models.

Partial Test (t-Test)

There is a significant effect if significance value is lower than 0.10. The following is the explanation of partial test result.

a). X1; Relative Advantage on Intention to Adopt

In the millennial's generation, it is found that significance value of t-test is 0.001 which means that there is a significant effect of relative advantage on the intention to adopt Go-Jek app. The regression coefficient is 0.310 which means that there is a positive effect of relative advantage. In the non-millennials, it is found that the significance value of t-test is 0.045 which means that there is a significant effect of relative advantage on intention to adopt Go-Jek app. The value of coefficient regression 0.368 which means that there is a positive effect of relative advantage. Moreover, in the combined generation model (the millennials and non-millennials), it is found that the significance value of t-test is 0.000 which means that there is a significant effect of relative advantage on the intention to adopt Go-Jek app. The value of regression coefficient is 0.327 which means that there is positive effect of relative advantage.

b). X2; Compatibility on Intention to Adopt

It is found that the significance value of t-test in the millennials is 0.000, which means that there is a significant effect of compatibility on intention to adopt Go-Jek app. Regression coefficient value is 0.286 which means that there is positive effect of compatibility. It is also found that the significance value of t-test in the non-millennials is 0.987 which means that there is a significance effect of compatibility on intention to adopt Go-Jek. It shows that Go-Jek passanger rating has no effect on intention to adopt the app. Moreover, the result shows that the significance value of t-test in combined regression (the millennials and non-millennials) is 0.000, which means that there is a significant effect of compatibility on intention to adopt Go-Jek app. Regression coefficient value is 0.242 which means that there is a positive effect of compatibility variable.

c). X3; Complexity on Intention to Adopt

The result of research shows that the significance value of t-test in the millennials is 0.244 which means that there is a significance effect of complexity variable on intention to adopt Go-Jek app. It means that complexcity variable has no effect on the intention of the millennials to use or recommend the app. In addition, the significance value of t-test in the non-millennials is 0.045 which means that there is a significance effect of complexity on intention to adopt the app. Regression coefficient value is -0.219 which means that there is a negative effect of complexity variable. In the contrary, it is obtained that the significance value of t-test in the combined generation regression model is 0.052 which means that there is significance effect of complexity on intention to adopt the app. Regression coefficient value is -0.081 which means that there is a negative effect of complexity.

d). X4; Trialability on Intention to Adopt

The result of research shows that the significance value of t-test in the millennials is 0.020 which means that there is a significant effect of trialability on the intention to adopt Go-Jek app. Regression coefficient value is 0.169 which means that there is a positive effect of trialability variable. The result also shows that the significance value of t-test in the non-millennials is 0.046

which means that there is a significant effect of trialability on intention to adopt the app. Regression coefficient value is 0.225 which means that there is a positive effect of trialability. In the regression model of combined generation, it is obtained that the significance value of t-test is 0.001 which means that there is a significant effect of trialability on the intention to adopt the app. Regression coefficient value is 0.195 which means that there is a positive effect of trialability.

e). X5; Observability on Intention to Adopt

The result shows the significance value of t-test in the millennials is 0.000 which means that there is a significant effect of observable in the intention to adopt the Go-Jek app. Regression coefficient value is 0.295 which means that there is a positive effect of observability variable. The result shows that the significance value of t-test in the non-millennials is 0.037 which means that there is significant effect of observability on the intention to adopt the app. Regression coefficient value is 0.285 which means that there is positive effect of observability. It is also found that the significance value of t-test in the combined generation regression model is 0.000 which means that there is significant effect of observability on the intention to adopt the app. Regression coefficient value is 0.296 which means that there is a positive effect of observability.

Determination Coefficient (Adj.R^2)

Determination coefficient is conducted to examine the effect of independent variables on the dependent variable. In the millennial's regression model, it is obtained that determination coefficient is 0.520 which means that the variable of relative advantage, compatibility, complexity, trialability and observability have an effect on intention to adopt the Go-Jek app in the millennials of 52.0% and 48.0% is influenced by other variables. In the non-millennial's regression model, it is obtained that determination coefficient is 0.506 which means that the variable of relative advantage, compatibility, complexity, trialability, and observability has an effect on the intention to adopt the app of 50.6% and 49.4% is influenced by other variables. In the regression model of combined generation, it is found that determination coefficient is 0.519 which means that the variable of relative advantage, compatibility, complexity, trialability, and observability has an effect on the intention to adopt the app of 51.9% and 48.1% is influenced by other variables.

The Characteristics of Product Innovation (Relative Advantage, Compatibility, Complexity, Trialability, Observability) on Intention to Adopt: Moderating Role of Consumer Demographic Variable.

Regression analysis with moderating variable used residual test. Residual test examines the effect of deviation in a model. Moderating variable test with interaction test and absolute deviation test have a high multicollinearity among variables and will violate the classical assumption in regression of ordinary least square (OLS). Furthermore, in order to resolve multicollinearity problems, it is then developed another method called residual test (Ghozali, 2012). Regression equation of residual test explain whether moderating variable (Z) which is shown by coefficient value (b1) of dependent variable (Y) is negative and significant (which means that there is a lack of fit between independent variable (Xi) and moderating variable (Z) that affect the dependent variable (Y) decrease and has a negative effect).

Table 12 The Result of Moderation Regression Test

Variable	B	t value	Sig.
Constanta	0.508		
Y; Intention to Adopt	-0.045	-2.877	0.004 ***
Dependent variable = Moderated Residual Absolute			
F value (Sig)=8.276(0.004)			
Adj.R^2 = 0.025			

Source: Processed data

*** (significant value of 1%); **(significant value of 5%); *(significant value of 10%); NS (Not significant)

Regression analysis with moderating variable used residual test. Residual test examines the effect of deviation in a model. The result of regression shows that the significance value of moderating variable is below 0.05 and coefficient value is -0.045. It can be concluded that moderating variable is able to negatively moderate the effect of independent variables on the intention to adopt Go-Jek app.

Discussion

a. Relative Advantage Has Positive Effect on Intention to Adopt the Go-Jek App

Relative advantage variable is proven to has positive and significant effect on Intention to adopt the Go-Jek app in the millennials, non-millennials, and combined generation. This is proven by the significance value of 0.001. Regression coefficient is 0.310 which means that there is positive effect of relative advantage on the intention to adopt the app. This means that the higher the advantage perceived by the consumers in using the app, the higher the intention to adopt the app and recommend the app to others. The consumers would choose the Go-Jek app as an alternative transportation service if the potential consumer gets the benefit of using the app.

Relative advantage perceived by the consumers could be in the form of time effectivity, travel quality, convenience, and price. Security system of the Go-Jek app requires registered drivers that provide security and trust to the consumer when they are using the app. In addition, the company also offers variety of services, which is not only focus on pick and drop service for customer but also for food and courier service. This is a value added for the customer to use this transportation service.

b. Compatibility Has Positive Effect on Intention to Adopt the Go-Jek App

Compatibility variable is proven to has positive and significant effect on the intention to adopt in the millennials and combined generation models. This is proven by the significance value of 0.000. The regression coefficient is 0.242 which means that there is a positive effect of compatibility on the intention to adopt the app. This means that the higher the value of compatibility perceieved by the consumer, the higher the intention to adopt the Go-Jek app and recommend the app to the others. It is found that there has no proof that compability variable has positive and significant effect in the non-millennials, which means that the variable of compatibility would not affect the intention to adopt in the non-millennial generation. Compatibility is the degree in which the innovation arises consistently with existing values, past experiences, and habits as well as the needs of the adopters.

In this subject of research, the Go-Jek app offers a new concept of transportation service. People behavior would change consistently and would decrease the degree of doubt in using Go-Jek and make an adoption of the concept of app-based

transportation is easier if this new concept suits to the experience when using the existing transportation service. The consumers who consider that using the Go-Jek app suits to the consumer style will increase the intention to adopt the app.

c. Complexity Has Negative Effect on Intention to Adopt the Go-Jek App

The variable of complexity is proven too has negative and significant effect on the intention to adopt the Go-Jek app in the non-millennials and combined generation. This is proven by the significance value of 0.052 which means that the more the complexity of the app, the less the intention to adopt the app, while there is no proof that the complexity has negative effect and significant on the intention to adopt in the millennials. This means that the complexity variable has no effect on the intention to adopt and recommend the app to others in the millennials. Complexity variable in this research means the degree to which innovation is perceived as difficult to understand or use. The more complexity of the innovation, the less the intention to adopt the app. The complexity in using the app includes the difficulty in using smartphone. The non-millennials consider that it will be difficult for them to use the app if the app is too complex.

d. Trialability Has Positive Effect on the Intention to Adopt the Go-Jek App

The variable of trialability is proven to has a positive and significant effect on the intention to adopt the app in the millennials, non-millennials, and combined generation models. This is proven by the significance value of 0.001. Regression coefficient value is 0.195 which means that there is positive effect of trialability on the intention to adopt the app. This means that the higher the value of trialability perceived by the consumer, the higher the intention to adopt the app and recommend the app to others. Rogers (2003) in Cheng et al (2009) defines that trialability is the degree to which an innovation could be tested even on a limited scale. Trialability gives the opportunity to the adopters to try and test the app so that the potential adopters will get use to the innovation. The potential adopters will gain the confidence and perceive that the innovation meets their expectation. Therefore, it will decrease the degree of doubt so that the potential adopters will focus on the innovation adoption.

e. Observability Has Positive Effect on Intention to Adopt the Go-Jek App

Observability variable is proven too has positive and significant effect on the intention to adopt the app in the millennials, non-millennials, and combine generation. This is proven by the significance value of 0.000. Regression Coefficient Value is 0.296 which means that there is positive effect of observability on the intention to adopt the app. This means that the higher the value of observability variable perceived by the consumer, the higher the intention to adopt the app and recommend it to others. In this research, the consumer will observe the app to understand the process of using the app-based transportation service that could give the benefits such as a clear information of tariff, safety priority, etc. Therefore, the potential consumer will consider the Go-Jek app as the alternative transporation service.

f. The Characteristics of Product Innovation (Relative Advantage, Compatibility, Complexity, Trialability, Observability) on Intention to Adopt in the Millennials will be Stronger than the non-Millennials

The result of moderated regression shows that the significance value of moderating variable (generation variable) in the effect of characteristics of product innovation (relative advantage, compatibility, complexity, trialability, observability) on the intention to adopt the app is 0.004 with coefficient value of -0.045. This means that moderating variable able to moderate negatively the effect of independent

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variables on intention to adopt Go-Jek. However, the sixth hypothesis in the Chapter II is not proven. This is because the constanta in regression model of the non-millennials is 1.448, while in the millennials is 0.342. The result shows that the effect of characteristics of product innovation variable on the intention to adopt the app is stronger in the non-millennials than in the millennials without any influence from other independent variables. Regression coefficient value of relative advantage and trialability in the non-millennials is higher than in the millennials. This is because the non-millennials could gain the benefits and advantages of the app. In the contrarty, regression coefficient value of compatibility and observability in the millennials is higher than in the non-millennials. The variable of complexity is not proven to have significant effect in the millennials. This is because the millennials tend to have the experience in adopting the technology, able to learn the app easily so that the consumer has a good basic knowledge when using the app, and more responsive to the new innovation so that the consumer will perceive the benefit of the innovation.

CONCLUSION

Based on the research on the intention to adopt Go-Jek application, it is found that: 1. Relative advantage variable has a positive and significant effect on intention to adopt Go-Jek, both in the millennials and non-millennials, and in combination of both generations. 2.Compatibility variable has positive and significant effect on intention to adopt Go-Jek, both in the millennials and combined generation, while compability variable has no significant effect in the non-millennials. 3.Complexity variable has negative and significant effect on intention to adopt Go-Jek in the millennials. On the contrary, complexity variable has negative and significant effect in the non-millennials and combined generation. 4.Trialability variable has positive and significant effect on intention to adopt Go-Jek in the millennials, non-millennials, and combined generation. 5.Observability variable has positive and significant effect on intention to adopt Go-Jek in the millennials, non-millennials, and combined generation. 6.Generation variable is able to moderate negatively the effect of independent variables on intention to adopt Go-Jek.

Acknowledgment

It is found that the complexity has negative effect on intention to adopt Go-Jek. This result of research can be used as a consideration for the company to make the application is more user-friendly. The company could formulate marketing communication strategies by considering the millennials as a market target, such as using a variety of compelling contents that matches with the current issues to attract the millennials interest. Go-Jek operators could also make a periodic observation to figure out the development of the market and consumer preferences. Go-Jek operators could always make an update for the app and make the apps more user-friendly.

It is better to not only involve one city to conduct the research but also some cities in Indonesia in order to distinguish the characteristics of the respondents among cities or regions. The researcher recommends for future research to focus more on the millennials by considering other factors that might affect the intention to adopt.

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