

ANALYSIS OF FACTORS THAT INFLUENCE BEHAVIOR USING MOBILE CELLULAR APPLICATION AB WITH UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY 2 (UTAUT 2) IN MILLENNIAL CUSTOMERS OF ABC IN JABODETABEK AND JABAR

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ABSTRACT

The millennials segment has a huge market potential in using various digital developments. XYZ has a large proportion of millennial's customers and helps in digitizing, one of which is by providing AB as a cellular application from the A cellular card. This study aims to analyze the factors that influence the intention of customer behavior in using A technology services using the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model that are modified and consist of Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic motivation, Price Value, Habit and Content as the main variables as well as Age, Gender and Experience as moderate. This study uses descriptive and causal methods to explain customer perceptions of variables and examine causal relationships between variables based on hypotheses in the study. The study used a survey conducted by conducting questionnaires on A users with millennials age, in Jabodetabek and West Java and already or not yet using A to provide perceptions of adoption using A. The data analysis technique was carried out using Partial Least Squares (PLS) as one method of Structural Equation Modeling (SEM) which complemented the weak regression method using the Variance Based SEM approach.

Keywords: Millennial; Unified Theory of Acceptance and Use of Technology; LOOPkita; LOOP; Application Technology Services.

INTRODUCTION

The Nielsen survey report in 2016 on the population of mobile phone users of 12-65 years old group, XYZ dominates the 12-19 years old customer group, which is the millennial segment. XYZ customers of 17-24 years old as millennial segment have a proportion of 52% of the total market share of XYZ. This shows that the majority of XYZ customers are within the category of millennial segment. Therefore, it is necessary to produce a Digital Marketing based products for the millennial segment target, one of which is inventory from the XYZ Digital Marketing, the AB application. AB is the derivative product of A card in the form of applications. A is intentionally introduced by not showing its relationship with the XYZ because the survey results on the perception of young generation on XYZ card showed that XYZ card is associated with old people or employees' card with its relatively expensive price (Nielsen; Internal XYZ, 2016).

XYZ acts as the largest cellular operator in Indonesia today and continues to develop its products by presenting a convenience, maximum service and adapting to digital changes and developments. In March 2016, XYZ launched AB apps as a mobile application on smartphone for A card cellular customers which can manage and display the data internet usage. AB plays a role to grow and target its millennial customer segment.

The development of smartphone today is increasing, especially its use among the public where smartphones are commonly used in all type of circles. A smartphone is capable of showing pictures, playing videos, checking and sending e-mail, and surfing the Web. The modern smartphone, such as iPhone and Android phones can also run third-party applications, which provide unlimited functionalities in today's digital world. The market share and the penetration level of smartphone are predicted to continue to increase throughout the Asia Pacific until 2018, and the Asia Pacific becomes the most potential region for companies to compete in providing benefit value to telecommunication customers (Srivastava, 2014).

AB is a mobile application that can manage and display internet data usage for smartphone and can be downloaded on the Android Operating System (OS). AB application depends on customers A. The analysis of customer A behavior and communication with the millennial segment is very important to help XYZ to provide the right content to customers so that it can be the key to increase the number of AB application users. AB can help to serve the XYZ customers, but the current adoption is not significant enough for AB's performance.

The customer's decision to accept and use technology is influenced by several factors of customer behavior (Harsono & Suryana, 2014). UTAUT2 is one of the models to identify customer behavior as an individual's behavior in accepting and using technology (Venkatesh, Thong & Xu, 2012). The contribution of acceptance and use of products of technology and system information can be done using the UTAUT2 (Indrawati, 2017).

LITERATURE

Consumer Behavior

Consumer behavior is a study of processes that develop when individuals or groups of people choose, use or discard a product, service, idea or experience to satisfy their needs and desires (Solomon, 2016). The factors that influence consumer behavior are culture, social, personal and psychology; internal factors which include age, occupation, lifestyle, personality, motivation, perception, beliefs and attitudes; and also external factors which include culture, family, reference groups, environmental conditions and situations (Kotler & Keller, 2016).

Information Technology

Some definitions and descriptions of IT according to several sources in (Riqotunnihlah, 2014):

1. Haag and Keen: a set of tools that help to work with information and perform tasks related to information processing.
2. Martin: computer technology used to process and store information and includes communication technology to send information.
3. Keown: all forms of technology used to create, store, change and use the information in all of its forms.
4. Willams and Sawyer: a combination of computers connected to high-speed communication channels for sending data, both in the form of text, audio and video as a general form that describes any technology that helps to produce, manipulate, store, communicate and/or convey information.
5. Loudon: a tool used by managers to deal with information changes that occur when the information has been processed and previously stored in the computer.

Theory of Adoption Technology

UTAUT is a proposed integrated model based on empirical studies of 8 main models related to information technology adoption research which combines the TRA and TPB into TAM as Acceptance, C-TAM-TPB, MM, MPCU, IDT and SCT into 4 main variables, there are Performance Expectancy, Effort Expectancy, Social Influence and Facilitating Conditions sebagai Behavior Intention atau Use Behavior 4 moderator variables, there are Gender, Age, Experiečne and Voluntariness of Use as factors that can influence the interest in accepting and using the IT (Venkatesh, Thong & Xu, 2003). UTAUT is the highest exploratory model for the adoption of technology acceptance and use behavior compared to other theories (Indrawati, 2017).

Modification of Unified Theory of Acceptance and Use of Technology 2

UTAUT2 for technology services consist of Perfomance Expectancy, Effort Expectancy, Social Influeny, Facilitating Condinations, Hedonic Motivation, Price Value and Habbit as the main variable as well as Age, Gender and Experience as moderate (Venkatesh, Thong & Xu, 2012). Content is added as a variable that affects customer interest in using the application (Indrawati, 2017).

Venkatesh, Thong & Xu (2003):

1. Performance Expectancy: “the degree to which an individual believes that using the system will help him or her to attain gains in job performance”.
2. Effort Expectancy: “the degree of ease associated with the use of the system”.
3. Social Influence: “the degree to which an individual perceives that important other believe he or she should use the new system”.
4. Facilitating Conditions sebagai “the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system”.

Brown & Venkatesh (2005) in Indrawati (2017):

5. Hedonic Motivation: “the fun or pleasure derived from using a technology, and it has been shown to play an important role in determining technology acceptance and use”.

Venkatesh, Thong & Xu (2012):

6. Price Value: one of the important differences between the use of technology by consumers and organizations is that consumers usually bear the financial costs of use, while employees do not.
7. Use Behavior: adoption of mobile internet in Hong Kong, Use Behavior is measured based on the frequency of mobile internet usage.

Limayen et. al. in Venkatesh, Thong & Xu (2012):

8. Habit: “the extent to which people tend to perform behaviors automatically because of learning”.

Heijden, Verhagen and Creemers dalam Indrawati (2017):

9. Content: “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party”.

Ajzen (1991) in Indrawati (2017):

10. Behavior Intention: “Intentions are assumed to capture the motivational faktors that influence a behavior: the are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior”.

MODEL FRAMEWORK

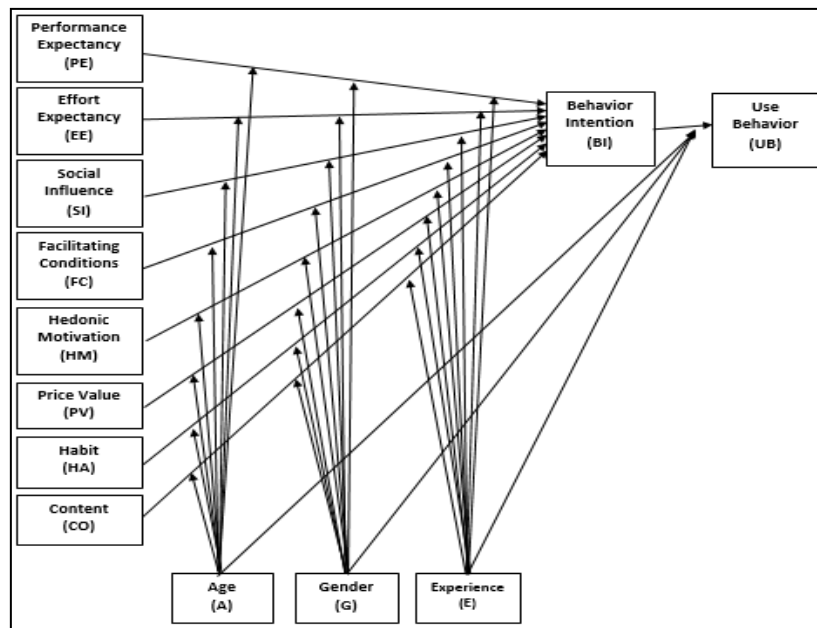


Figure 1. Model Framework Application AB of Card Cellular A of XYZ

HIPOTHEESIS

1. H1a0: Performance Expectancy affects Behavior Intention
- Performance H1a1: Performance Expectancy not affects Behavior Intention
- Expectancy H1b0: Age moderates the influence of Performance Expectancy
- (PE) H1b1: Age not moderates the influence of Performance Expectancy
- H1c0: Gender moderates the influence of Performance Expectancy
- H1c1: Gender not moderates the influence of Performance Expectancy
- H1d0: Experience moderates the influence of Performance Expectancy
- H1d1: Experience not moderates the influence of Performance Expectancy
- (countinue until last variable that is Behavioral Intention (BI))

METHODS

Descriptive is study where researchers want to describe the usage characteristics of a product and know the user's perception of a product. (Indrawati, 2017). Causal is study where researchers want to describe one or more factors that cause problems (Bougie & Sekaran, 2013).

A population is all groups of individuals, events or interesting things which are being studied with predetermined quantities and characteristics, while samples are part of the population (Bougie & Sekaran, 2013). The sampling technique used was Nonprobability Sampling, where the sample does not have a previous probability to be selected with Convenience Sampling, where the sample was chosen because of the right conditions, time and place and sample size is the number of samples used in the study (Malhotra, 2013). The sample size is at least 100 to ensure and describe the characteristics (Fraenkel and Wallen, 2012).

A questionnaire is a measuring instrument or form which consists of a series of questions formalized to obtain information from respondents (Malhotra, 2013). Data analysis techniques used was PLS as one of the methods of SEM and functioned as an evaluation

for the outer model, inner model, path analysis, mediation testing/indirect influence and multi-group comparison (Hussein, 2015).

DESCRIPTIVE ANALYSIS

Descriptive analysis is the basic transformation of raw data in a way that can describe basic characteristics such as central tendency, distribution, and variability with the following formula for interpreting values (Zikmund and Babin, 2013):

1. interval value = $\frac{\text{higher score} - \text{lower score}}{\text{total classification}}$
2. interval for each classification = $\frac{\text{interval value}}{\text{total classification}}$
3. lower index = $\frac{\text{lower score}}{\text{total classification}}$
4. higher index = $\frac{\text{higher score}}{\text{total classification}}$

Table 1. Index of Respondent's Score for 6 Classifications

Classification	Interval Index
Very High	$100 \% \geq x > 86,12 \%$
High	$86,12 \% \geq x > 72,23 \%$
Enough High	$72,23 \% \geq x > 58,34 \%$
Enough Low	$58,34 \% \geq x > 44,45 \%$
Low	$44,45 \% \geq x > 30,56 \%$
Very Low	$30,56 \% \geq x \geq 16,67 \%$

Outer Model Analysis

Outer model was performed to ensure that the measuring instrument used has a relationship between its indicator and variable (Hussein, 2015).

Table 2. Outer Model Analysis (Ghozali, 2016)

Outer Model	Parameter	Indicator
Validitas		
Convergent Validity	Loading Factor	$\geq 0,7$
Discriminant Validity	Cross Loading	korelasi Indikator untuk Variable konstruksinya harus lebih tinggi dibandingkan dengan Indikator lainnya
	Average Variance Extracted (AVE)	$\geq 0,5$
Reliabilitas		
Cronbach's Alpha		$\geq 0,7$
Composite Reliability		$\geq 0,7$

Inner Model Analysis

Inner model was performed to ensure that the structural models were robust and accurate (Hussein, 2015).

Table 3. Inner Model Analysis (Ghozali, 2016)

Inner Model	Parameter	Indicator
Variance		
R-Square	R^2	0,25 = model weak 0,50 = model moderate 0,75 = model strong
Fit Index	Goodness of Fit (GoF) = $\sqrt{\text{rata - rata Communalita} \times \text{rata - rata } R^2}$ *rata-rata Communalita = 0,5 *rata-rata R^2 untuk kondisi model: lemah = 0,02, moderate = 0,13, kuat = 0,26	0,1 = small 0,25 = medium 0,36 = big
Significancy Based On Path Coefficient		
Significant		$\geq 0,1$
Significancy Based On Bootstrapping		
T-Value	T-Statistics	H0 Accept If: 1. -T Table \geq T Statistics \geq T Table 2. Probability $> 0,1$ H0 Reject If: 1. -T Table $<$ T Statistics $<$ T Table 2. Probability $< 0,1$
Multi Group Analysis (MGA)		
Bootstrapping	Path Coefficient Original dari Bootstrapping	Comparison of path coefficient from each groups
MGA	P-Value from MGA	1. P-Value $\leq 0,05$ 2. P-Value $\geq 0,95$

RESULT AND ANALYSIS

This study used a sample of 200 card A customers from XYZ, both those who have used and have not used the AB application. Data was collected and obtained based on questionnaires distributed online and offline. Online distribution was performed with 364 private conversations through Instagram that were incorporated in the A card community which obtained by 60 respondents; and 1 campus email community which obtained 12 respondents, therefore, a total of 160 respondents were obtained. Offline distribution was performed by directly meeting the AB card customers from XYZ at the XYZ service office and 40 respondents were obtained.

Table 5. Factor Loading of Modification of UTAUT2 AB

No.	Variable	Indicator	Factor Loading	No.	Variable	Indicator	Factor Loading
1	PE	PE1	0,795	19	HM	HM3	0,900
2		PE2	0,887	20	PV	PV1	0,875
3		PE3	0,896	21		PV2	0,862
4		PE4	0,875	22		PV3	0,906
5	EE	EE1	0,887	23	HA	HA1	0,915
6		EE2	0,920	24		HA2	0,870
7		EE3	0,860	25		HA3	0,887
8		EE4	0,887	26		HA4	0,895
9	SI	SI1	0,819	27	CO	CO1	0,833
10		SI2	0,886	28		CO2	0,896
11		SI3	0,880	29		CO3	0,871
12		SI4	0,732	30		CO4	0,811
13	FC	FC1	0,747	31	BI	BI1	0,883
14		FC2	0,777	32		BI2	0,863
15		FC3	0,875	33		BI3	0,902
16		FC4	0,825	34		BI4	0,889
17	HM	HM1	0,860	35	UB	UB1	0,987
18		HM2	0,952	36		UB2	0,987

	1PE	2EE	3SI	4FC	5HM	6PV	7HA	8CO	9BI	10UB
PE1	0,795	0,229	0,251	0,257	0,196	0,091	0,246	0,158	0,155	0,212
PE2	0,887	0,330	0,349	0,422	0,327	0,204	0,258	0,279	0,291	0,350
PE3	0,896	0,260	0,291	0,356	0,246	0,124	0,282	0,233	0,226	0,261
PE4	0,875	0,360	0,325	0,406	0,378	0,165	0,268	0,323	0,318	0,270
EE1	0,350	0,887	0,267	0,336	0,357	0,299	0,332	0,343	0,439	0,439
EE2	0,261	0,920	0,248	0,342	0,363	0,321	0,299	0,383	0,423	0,352
EE3	0,347	0,860	0,271	0,383	0,439	0,315	0,265	0,419	0,444	0,319
EE4	0,297	0,887	0,342	0,397	0,357	0,359	0,332	0,415	0,440	0,345
SI1	0,321	0,217	0,819	0,415	0,291	0,228	0,300	0,410	0,324	0,335
SI2	0,306	0,248	0,886	0,513	0,393	0,351	0,285	0,467	0,432	0,279
SI3	0,304	0,251	0,880	0,509	0,363	0,430	0,263	0,509	0,414	0,309
SI4	0,267	0,325	0,732	0,584	0,383	0,236	0,099	0,460	0,440	0,311
FC1	0,337	0,223	0,434	0,747	0,290	0,135	0,231	0,299	0,280	0,244
FC2	0,394	0,248	0,526	0,777	0,329	0,216	0,227	0,353	0,296	0,297
FC3	0,361	0,428	0,526	0,875	0,447	0,320	0,157	0,485	0,385	0,323
FC4	0,320	0,383	0,508	0,825	0,453	0,259	0,215	0,434	0,411	0,251
HM1	0,394	0,415	0,439	0,492	0,860	0,357	0,265	0,662	0,448	0,322
HM2	0,300	0,401	0,379	0,413	0,952	0,317	0,290	0,630	0,444	0,398
HM3	0,248	0,339	0,363	0,397	0,900	0,315	0,279	0,556	0,410	0,338
PV1	0,148	0,308	0,326	0,268	0,285	0,875	0,231	0,437	0,445	0,238
PV2	0,217	0,372	0,387	0,323	0,389	0,862	0,221	0,543	0,483	0,181
PV3	0,104	0,279	0,289	0,192	0,286	0,906	0,254	0,462	0,458	0,145
HA1	0,274	0,331	0,255	0,248	0,312	0,266	0,915	0,227	0,309	0,313
HA2	0,272	0,292	0,237	0,232	0,335	0,187	0,870	0,217	0,203	0,212
HA3	0,244	0,290	0,281	0,197	0,221	0,250	0,887	0,189	0,234	0,222
HA4	0,295	0,312	0,225	0,218	0,230	0,237	0,895	0,194	0,246	0,267
CO1	0,267	0,315	0,489	0,381	0,522	0,513	0,217	0,833	0,464	0,286
CO2	0,272	0,417	0,420	0,464	0,633	0,501	0,177	0,896	0,559	0,276
CO3	0,240	0,418	0,519	0,384	0,606	0,471	0,233	0,871	0,557	0,309
CO4	0,257	0,339	0,486	0,461	0,564	0,388	0,170	0,811	0,529	0,291
BI1	0,293	0,451	0,417	0,367	0,418	0,514	0,222	0,594	0,883	0,278
BI2	0,265	0,491	0,368	0,388	0,461	0,447	0,311	0,472	0,863	0,360
BI3	0,251	0,367	0,433	0,362	0,369	0,453	0,263	0,580	0,902	0,358
BI4	0,264	0,433	0,520	0,415	0,454	0,445	0,211	0,549	0,889	0,355
UB1	0,328	0,421	0,376	0,366	0,391	0,211	0,289	0,337	0,388	0,987
UB2	0,313	0,388	0,355	0,313	0,380	0,209	0,283	0,335	0,366	0,987

Figure 3. Cross Loading of Modification of UTAUT2 AB

Table 6. AVE and Cronbach's Alpha of Modification of UTAUT2 AB

No.	Variable	AVE	Cronbach's Alpha	No.	Variable	AVE	Cronbach's Alpha
1	PE	0,717	0,889	6	PV	0,811	0,856
2	EE	0,829	0,911	7	HA	0,750	0,915
3	SI	0,728	0,850	8	CO	0,779	0,875
4	FC	0,644	0,825	9	BI	0,811	0,907
5	HM	0,899	0,888	10	UB	0,968	0,973

All variables have a factor loading value of 0.7 above, AVE value of 0.5 above and bigger cross-loading for the construct variable compared to other indicators that measure all indicators of variables valid. All variables have Cronbach's Alpha value and composite reliability of 0.7 and above that measure all construct variables are reliable.

Result of Outer Model Analysis

Table 7. R-Square of Modification of UTAUT2 AB

No.	Variable	R ²	R ² Adjusted	Result
1	BI	0,577	0,487	model moderate
2	UB	0,218	0,190	model weak

Behavior Intention can be explained by the exogenous latent construct variable which consists of 8 dependent variables, consist of PE or Performance Expectancy, EE or Effort Expectancy, SI or Social Influence, FC or Facilitating Condition, HM or Hedonic Motivation, PV or Price Value, HA or Habbit and CO or Content with 57.7%, while 42.3 % is explained by other variables. 8 independent variables as exogenous latent construct variables have a moderate influence for Behavior Intention. Use Behavior can be explained by the exogenous latent construct variable which consists of 1 dependent variable, namely Behavior Intention with 21.8%, while 78.2% is explained by other variables. 1 independent variable as a latent exogenous construct variable has a weak influence for Use Behavior.

Table 8. Goodness of Fit of Modification of UTAUT2 AB

No.	Variable	Average Communality	R ²	Model	Average R ²	GoF	Result
1	BI	0,5	0,577	weak	0,02	0,1	model small
2	UB	0,5	0,218	Weak	0,02	0,1	model small

8 independent variables as exogenous latent construct variables have a small effect with 10% on the dependent variable of Behavior Intention as an endogenous latent construct variable. 1 independent variable as a latent exogenous construct variable has a small effect with 10% on the dependent variable of Use Behavior as an endogenous latent construct variable.

Table 9. Significant Path Coefficient Modification UTAUT2 AB

No.	Exogenous Variable	Endogenous Variable		Result	No.	Exogenous Variable	Endogenous Variable		Result
		BI	UB				BI	UB	
1	PE	0,033	-	not significant	6	PV	0,223	-	significant
2	EE	0,198	-	significant	7	HA	-0,001	-	not

3	SI	0,191	-	significant	8	CO	0,237	-	significant
4	FC	-	-	not significant					
		0,015	-	significant					
5	HM	0,060	-	not significant	9	BI	-	0,324	significant

Exogenous variables of CO, PV, SI and EE have a strong influence on the hypothetical relationship on endogenous variables of BI with significant values of 0.237, 0.223, 0.198 and 0.191. Exogenous variables of PE, FC, HM and HA cannot predict the BI because the value is < 0.1 , among others 0.033, -0.015, 0.06 and -0.001. The exogenous variable BI has a strong influence of hypothesis relationship on endogenous variables of UB with 0.324.

Table 10. T Statistics Modification UTAUT2 AB

No.	Variable		T Stat.	Result	No.	Variable		T Stat.	Result
	Dependent	Independent				Dependent	Independent		
1	PE		0,325	not significant	6	PV		2,933	significant
2	EE		2,351	significant	7	HA	BI	0,062	not significant
3	SI	BI	2,412	significant	8	CO		2,017	significant
4	FC		0,024	not significant					
5	HM		0,528	not significant	9	BI	UB	4,736	significant

Variable that have a positive influence on the behavior of individual interest in using AB is 5, there are Effort Expectancy, Social Influence, Price Value and Content to Behavior Intention serta Behavior Intention to Use Behavior. Variable that do not have a positive influence on the behavior of individual interest in using AB is 4, there are Performance Expectancy, Facilitating Condition, Hedonic Motivation and Habit to Behavior Intention.

Table 11. MGA Moderate Age of Modification of UTAUT2 AB

No.	Variabel		Path Coefficient Original		p-value	Result
	Dependent	Independent	1 (milennial)	2 (bukan)		
1	PE		0,056	-0,081	0,130	not significant
2	EE		0,228	0,031	0,184	not significant
3	SI		0,126	0,229	0,747	not significant
4	FC	BI	0,020	0,055	0,570	not significant
5	HM		-0,033	0,442	0,968	significant
6	PV		0,172	0,514	0,957	significant
7	HA		0,054	-0,161	0,084	significant
8	CO		0,346	-0,135	0,019	not significant
9	BI	UB	0,309	0,613	0,993	significant

Table 12. MGA Moderate Gender of Modification of UTAUT2 AB

No.	Variabel		Path Coefficient Original		p-value	Result
	Dependent	Independent	1 (pria)	2 (wanita)		
1	PE	BI	-0,005	0,155	0,924	significant
2	EE		0,216	0,147	0,315	not significant
3	SI		0,151	0,104	0,376	not significant
4	FC		0,002	0,039	0,588	not significant
5	HM		-0,001	0,041	0,585	not significant
6	PV	UB	0,150	0,299	0,857	not significant
7	HA		0,067	0,009	0,370	not significant
8	CO		0,365	0,196	0,200	not significant
9	BI		0,430	0,307	0,181	not significant

Table 13. MGA Moderat Experience Modification UTAUT2 AB

No.	Variabel		Path Coefficient Original		p-value	Result
	Dependen	Independen	1 (1-2kali)	2 (3-4kali)		
1	PE	BI	-0,089	-0,265	0,697	not significant
2	EE		0,305	-0,029	0,217	not significant
3	SI		0,044	-0,055	0,536	not significant
4	FC		0,031	0,302	0,918	significant
5	HM		0,026	-0,031	0,427	not significant
6	PV	UB	0,134	0,539	0,841	not significant
7	HA		0,152	0,351	0,074	significant
8	CO		0,390	0,168	0,324	not significant
9	BI		0,692	0,506	0,267	not significant

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