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Factors Influencing Behavioral Intention to Use Hear Me Application towards the Hearing People

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Abstract: *Communication plays a vital role in life. Improved communication media to bridge the communication gap between The Hearing and The Deaf can be done with an Indonesian sign language translator application, called the Hear Me application. In Indonesia, Hear Me application is classified as new technology. Before launching the Hear Me application to the public, it is essential to understand the factors that encourage somebody's interest or intention in accepting the use of new technology. Since the first features that are now being developed in the application operate from The Hearing sides to translate the audio or text into sign language in 3D animation forms. Therefore, Hear Me has never been further identified to determine the interests or behavioral intentions of prospective users, mainly from The Hearing sides, regarding their intention to use it. Whereas understanding the acceptance of new technology by users is essential and helps for the further development of this technology. This research analyzes the factors that influence the behavioral intention to use Hear Me application towards The Hearing people in Bandung, Surabaya, and Jakarta using Unified Theory of Acceptance and Use of Technology (UTAUT) model that have four independent variables of Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC). In this research, the method used is quantitative by distributing questionnaires online to gather data from 203 respondents of The Hearing people who fit the criteria. The data analysis uses Multiple Linear Regression. The results showed that three independent variables of performance expectancy, effort expectancy, and social influence significantly influence behavioral intention to use. While facilitating conditions are insignificant on influencing behavioral intention to use the application.*

Keywords: application, communication, sign language, Unified Theory of Acceptance and Use of Technology, Multiple Linear Regression

1. Introduction

1.1 Background

Humans, as social beings, cannot be spared from interaction or communication in daily life. The understanding and being understood process by way of ideas, facts, thoughts, and emotions can be defined as communication (Akilandeswari, et al., 2015). The previous study by (Cornelssen & Schmitz, 2008 as cited in Möbus, 2016) shows that language is a higher barrier, especially for the special population, specifically The Deaf people. In this research, the topic discussed more is the communication barriers of language differences while communicating between The Deaf and The Hearing. Deaf is a group consisting of The Deaf, hard-of-hearing, and cochlear implant (CI) people (Möbus, 2016). Deafness can be identified

as the inability to understand conversational speech through only the ears (Bowe, et al., 2005). The only thing which separates them from The Hearing people is communication, so their alternative way to communicate is only through sign language (Suharjito, et al., 2017). Sign language is not universal, and there are hundreds of different sign languages in every country (Möbus, 2016). In contrast, The Hearing means a person who can understand conversation through the ear, since they were not diagnosed as having a hearing impaired. Due to the language differences, one of the ways to communicate with The Deaf is through sign language interpreter services (Suharjito, et al., 2017). Besides, the number of sign language interpreters is still limited (Parakerja, 2020).

The solution is required to communicate easily between The Deaf and The Hearing people. The researcher's company comes up to overcome this problem by making a Hear Me application. Hear Me application as a social enterprise, is a technology or services which provide Indonesian sign language translator application for bridging the communication between The Deaf and The Hearing. The application will provide two features, converting from voice or text to sign language and sign language to voice or text. In the first features, The Hearing will record their voice or typing the conversation and then it will be converted into sign language in 3D animation. While in the second feature, The Deaf can record their hand movement using a smartphone's camera and then translate it into a voice or text. The main value is to make both parties easy to communicate and raise the equality of rights through our "Bridging the Communication" tagline.

1.1.1 Problem Statement

In this era of industry 4.0, technology is increasingly sophisticated and several technologies are designed to solve problems in a community. Hear Me is currently in the development phase of the beta version before the application will be launched to the public. Hear Me has developed the first features that will be able to convert from voice or text to sign language in 3D animation forms. The existing features are operating from The Hearing sides. Since Hear Me's establishment in 2019, the main problem of determining the intention to use from the prospective users of this application, especially from The Hearing has not been further identified. During this stage, businesses need prospective users who are compatible with the target market. If this application provided is compatible with its users, there is a huge potential for Hear Me's growth in the future. Hear Me is trying to promote the application to the users, it might encourage The Hearing's interest in using the Hear Me application. Furthermore, since Hear Me is a technology-based business, users' acceptance of new technology is also important and will help the further development of this technology implementation (Taherdoost, 2017). A process is needed to receive a translation application of Indonesian sign language for The Hearing, which is classified as a new technology in Indonesia. There was no single study examining the acceptance of Indonesian sign language translation applications. Also, the acceptance of sign language translation applications as a new technology in Indonesia is essential to be known by Hear Me company and also important for the successful implementation and growth of these applications.

User acceptance can be seen when the consumer has influenced their behavior to use the technology and then demonstrates a positive attitude about the use of the technology itself. Individuals can apply or use technology until they have the intention of using it (Hartono, 2007). The lack of this data from The Hearing's perspective makes it needs to be further identified. Therefore, this research was conducted to determine the acceptance by The Hearing as a user of this technology in analyzing the factors that influence the behavioral intention to use Hear Me application. Some researchers have developed several technology

acceptance models. One of the theoretical models to determine the factors of technology acceptance is the Unified Theory of Acceptance and Use of Technology (UTAUT) proposed by Venkatesh et al. (2003). Thus, this research is conducted to determine the behavioral intention to use the Hear Me application among The Hearing people using the Unified Theory of Acceptance and Use of Technology (UTAUT) as the research model.

1.2 Research Question

1. What factors determine behavioral intentions to use the Hear Me application of The Hearing people using the UTAUT model?
2. What is the recommendation for Hear Me company based on the previous results?

1.3 Research Objective

1. To understand the effect of the performance expectancy, effort expectancy, social influences, and facilitating conditions on The Hearing people's behavioral intention to use the Hear Me application.
2. To propose a recommendation for Hear Me company based on the previous results.

1.4 Scope and Limitation

This research is more focused on analyzing the factors of acceptance that affect The Hearing people in communicating with The Deaf while using Hear Me application. This research is limited to The Hearing people in Bandung, Surabaya, and Jakarta. The choice of three cities as the domiciles is based on the top 3 rankings of the majority of Hear Me's followers on Instagram. This study's sample size is The Hearing people aged between 15 years old until 45 years old who have or have not been interacting with The Deaf people.

2. Literature Review

2.1 Sign Language

According to (Yunanda et al., 2018), a language used by people with special needs to communicate manually by combining body language and lip movements, rather than using sounds to communicate is defined as a sign language.

2.1.1 Sign Language in Indonesia

As stated in (Yunanda et al., 2018), there are two systems of Indonesian sign language that are used in Indonesia, *Sistem Isyarat Bahasa Indonesia* (SIBI) known as Indonesian Sign Language System and *Bahasa Isyarat Indonesia* (BISINDO) known as Indonesian Sign Language. Indonesian Sign Language defined as a sign language that adopts the values of Indonesia's indigenous cultures and is easy to use to communicate among The Deaf people in daily life. The speed and practicality of these sign language make it easier to understand for The Deaf even though does not follow the grammar of the Indonesian language.

2.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

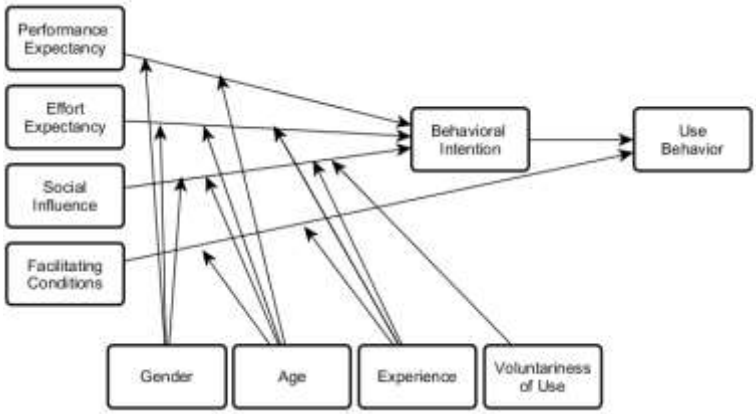

Figure 2.1: The UTAUT Model

UTAUT is a model to explain user behavior towards technology. UTAUT model is a combination of eight leading theories that have been successfully developed previously. UTAUT has four constructs which are performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) that influence the user's acceptance and behavioral intention towards technology. The three constructs of performance expectancy, effort expectancy, and social influence are speculated to affect behavioral intention to use technology, while facilitating conditions are speculated to influence directly on the use behavior (Venkatesh et al., 2003). In the UTAUT model, four variables act as the moderators, namely gender, age, experience, and voluntariness of use.

2.2.1 Performance Expectancy

Performance Expectancy defined as the level to which technology usage will benefit users in carrying out certain activities (Venkatesh, et al., 2003).

2.2.2 Effort Expectancy

Effort expectancy is the level of simplicity correlated with the use of technology by the users (Venkatesh et al., 2003).

2.2.3 Social Influence

Social influence is the level to which users expect that other relevant people, such as family and friends convince that certain such technologies must be used (Venkatesh, et al., 2003).

2.2.4 Facilitating Conditions

Facilitating conditions referring to the perceptions of users towards the technical, resources, infrastructure, and support that is available to conduct behavior in encouraging technology usage (Venkatesh, et al., 2003).

2.2.5 Behavioral Intention

In designing the UTAUT model, there was no description of behavioral intention provided by Venkatesh et al. (2003). It explains that they measured behavioral intentions using items adapted from Davis et al. (1989) that were commonly used in several prior technology acceptance studies. Shin (2010) states that intention is the cognitive representation of someone's readiness to perform a certain behavior. Besides, (Jogiyanto) 2007 explains that individuals will perform a behavior if they have the desire or interest to do so (Mustaqim, et al., 2018).

2.2.6. Moderating Variables

As stated by (Venkatesh, et al., 2003), the four constructs variable has four moderators from gender, age, voluntariness of use, and experience. The findings from (Mentaya et al., 2015) found that the moderating variables (gender, age, voluntariness of use, and experience) do not have a significant effect on the relationship between the dependent and the independent variable. Thus, researchers modified the UTAUT model by not including age, gender, experience, and voluntariness of use as moderators between the dependent and independent variables.

2.3 Conceptual Framework

Researchers want to determine the factors influencing behavioral intention to use the Hear Me application using the UTAUT framework approach. Researchers create a framework to assist this research in achieving research objectives. Hence this research will propose a conceptual framework as set out in Figure 3.3 below.

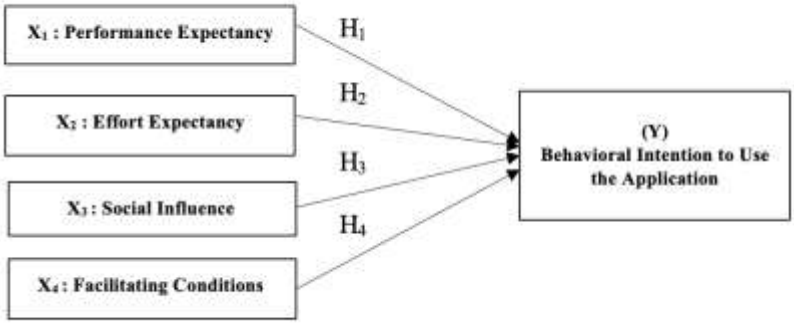

Figure 2.2: Research Framework

H_1 : Performance expectancy has a significant and positive influence on the behavioral intention to use the application.
H_2 : Effort expectancy has a significant and positive influence on the behavioral intention to use the application.
H_3 : Social influences have a significant and positive influence on the behavioral intention to use the application.
H_4 : Facilitating conditions have a significant and positive influence on the behavioral intention to use the application.

3. Methodology

In this study, the primary data were gained from an online questionnaire. The researcher chooses a non-probability sampling method of convenient or accidental sampling which selects a sample of the person or unit that can be easily obtained, encountered, and accessed that meets the criteria as a research sample. The measurement of this study uses a seven-point Likert scale where it will be a ranging from scale 1 to 7 values in the questionnaire. Scale 1 indicates strongly disagree and scale 7 indicates strongly agree. The questionnaire has been distributed online to 203 respondents in Bandung, Surabaya, and Jakarta. This research has passed the pilot test, to measure the validity test and reliability test of the items in the questionnaire. The data will be analyzed using Multiple Linear Regression, it aims to assess the influence of independent variables on dependent variables. These studies have passed the classical assumptions consisting four tests of the normality test, multicollinearity test, heteroskedasticity test, and linearity test.

3.1 Multiple Linear Regression Analysis

Table 3.1: Model Summary (R2 Table)

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate
1	.703	.494	.484	.511801

As shown in the Table 3.1, the coefficient correlation (R) value generated in this study is 0.703 and it represents that there is a strong association between the dependent variables to independent variables. The adjusted R-square value is 0.484, which indicates that the variability of the dependent variable that can be explained by the variability of the independent variable is 48.4%. The remaining 51.6% percentage can be explained by other variables that are not identified in this research.

Table 3.2: Coefficient Table of T-Test Results

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig
	B	Std. Error	Beta		
(constant)	1.441	.288		5.002	.000
Performance expectancy	.360	.070	.360	5.155	.000
Effort expectancy	.273	.074	.287	3.700	.000
Social influence	.156	.068	.151	2.287	.023
Facilitating conditions	.021	.071	.021	.292	.770

Based on the significance level from Table 3.2, the results show that performance expectancy, effort expectancy, and social influence have a significance value of less than 0.05. These results indicate that from the four independent variables, there are three variables of performance expectancy, effort expectancy, and social influence variables significantly influence behavioral intention to use application. These results are consistent with the previous findings as stated in (Venkatesh, et al., 2003), three constructs of performance expectancy (PE), effort expectancy (EE), and social influence (SI) are asserted to affect behavioral intention to use.

The beta scores indicate that the greater the beta score, the stronger the effect on behavioral intention to use. The highest beta among the variables that have a significant impact is owned by performance expectancy (0.360), effort expectancy (0.287), and followed by social influence (0.151). These results are related to previous findings stated in (Venkatesh, et al., 2003), it is proven that performance expectancy is the strongest predictor of behavioral intention to use new technology. The regression equation in this research can be formed as:

$$Y= 1.441 + 0.360X1 + 0.273X2 + 0.156X3 + \varepsilon$$

With the explanation of the equation :
Y= Behavioral intention to use application
X1= Performance expectancy
X2 = Effort expectancy

X3= Social Influence
Ɛ = Error

Based on the equation above, it represents that if there were no variables of performance expectancy (PE), effort expectancy (EE), and social influences (SI) then the constant value of the behavioral intention to use is 1.441. Each addition by one point of the performance expectancy variables will increase the behavioral intention to use by 0.360. And any addition by one point of effort expectancy variables, hence behavioral intention to use will increase by 0.273. Also, every addition of one unit social influence variable, the behavioral intention to use will increase as much as 0.156.

Performance expectancy has the highest and most positive value, which means this variable has the most significant effect and positive relation to the dependent variable. It is followed by effort expectancy variables which also has a positive relationship and has the influence on the dependent variable but not as strong as the performance expectancy. Then, the social influence also indicates that the relationship is positive and has the influence on the dependent variable. By positive relationship, it means that the behavioral intention to use will also increase if the performance expectancy, effort expectancy, and social influence. Thus, the hypothesis could be answered as shown in the Table 5.15 below :

Table 3.3: Summary Results of Hypothesis Testing

Hypothesis		Results
H1	Performance expectancy has a significant and positive influence on the behavioral intention to use the application.	Support
H2	Effort expectancy has a significant and positive influence on the behavioral intention to use the application.	Support
H3	Social influences have a significant and positive influence on the behavioral intention to use the application.	Support
H4	Facilitating conditions have a significant and positive influence on the behavioral intention to use the application.	Not support

4. Conclusion

Based on the analysis of the results in the previous chapter, it can be concluded that there are three variables out of four tested variables, performance expectancy, effort expectancy, and social influences that have a significant and positive influence on behavioral intention to use Hear Me application among hearing people in Bandung, Jakarta, and Surabaya. Meanwhile, the Facilitating Conditions (FC) variable does not significantly influence behavioral intentions to use the application. Overall, the four predictors of Performance Expectancy (PE), Effort Expectancy (EE), Social Influences (SI) are only able to explain the effect on behavioral intention to use (BIUS) by 48.4%. The rest of the percentages are explained by other variables that are not included in this research.

Hear Me should improve performance expectancy to provide users with various benefits that can help users improve their performances, especially in communicating easily via smartphone with The Deaf at any time, anywhere, and have innovative features. Also, Hear Me must improve effort expectancy to provide the user with convenience in terms of an

application usage guide, integrated login system, and have Frequently Asked Questions (FAQs) pages. Furthermore, Hear Me needs to improve social influence in terms of high encouragement from closest people, influencers, or inspirational people.

Further research can explain more than behavioral intentions, but in the context of actual use. Then there might be other factors that can influence the level of acceptance towards sign language translation application technology apart from those discussed in this study. Also, may broaden the scope to The Hearing throughout Indonesia, variables, and segmentation to achieve broader results in the market and to obtain different findings. However, there are also some limitations to this research. As this form of sign language translation application is relatively new, the researcher cannot also provide the actual use or use behavior of the technology by end-users. Since the Hear Me application has not yet been released to the public. This research also has limitations for the hearing people in Bandung, Jakarta, and Surabaya.

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