Users' Acceptance of *Kumandang* Interactive Reading Aloud Smartphone-Based Apps

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A R T I C L E I N F O

A B S T R A K

Dalam pembelajaran abad-21, pengembangan aplikasi berbasis telepon pintar untuk mendukung pembelajaran terutama literasi baca tulis telah menjadi kebutuhan mendasar. Tujuan penelitian ini adalah untuk mengaalisis hal yang menjadi faktor penerimaan pengguna atas aplikasi berbasis Android bernama Kumandang, Kegiatan Membaca Lantang. Jenis penelitian ini adalah penelitian survey. Subyek penelitian ini adalah sembilan puluh partisipan yang terdiri dari guru, orang tua, dan wali. Instrumen penelitian yang digunakan dalam penelitian ini yaitu lembar kuesioner. Teknik pengumpulan data yaitu penyebaran angket. Teknik analisis data menggunakan model persamaan struktural dengan bantuan aplikasi SMARTPLS. Model penelaahan menggunakan UTAUT2 yang terdiri dari beberapa indikator, antara lain; Harapan Kinerja (PE), Harapan Usaha (EE), Pengaruh Sosial (SI), Kondisi Fasilitasi (FC), Nilai Harga (PV), Motivasi Hedonis (HM), dan Kebiasaan Terhadap Niat Berperilaku (H). Hasil penelitian menunjukkan bahwa harapan usaha (EE) yang berkaitan dengan kemudahan serta kenyamanan dalam penggunaan Kumandang berpengaruh positif terhadap penerimaan pengguna. Selain itu, motivasi hedonis (HM) yang berkaitan dengan kesenangan dan hiburan juga secara positif mempengaruhi niat orang tua dalam menggunakan aplikasi Kumandang. Hasil penelitian juga menunjukkan bahwa harapan kinerja (PE), pengaruh sosial (SI), kondisi yang memfasilitasi (FC), kebiasaan (H), dan pengaruh harga (PV) tidak mempengaruhi penerimaan orang tua dalam menggunakan aplikasi Kumandang.

A B S T R A C T

In 21st century learning, the development of smartphone-based applications to support education, especially literacy, has become a basic need. This study aims to analyze the factors that factor in user acceptance of an Android-based application called Kumandang, Reading Aloud Activities. This type of research is survey research. The subjects of this study were ninety participants consisting of teachers, parents, and guardians. The research instrument used in this study was a questionnaire sheet. The technique of data collection is the distribution of questionnaires. The data analysis technique uses a structural equation model with the help of the SMARTPLS application. The study model uses UTAUT2, which consists of several indicators, including; Performance Expectations (PE), Business Expectations (EE), Social Influence (SI), Facilitation Conditions (FC), Price Value (PV), Hedonic Motivation (HM), and Habits of Behavioral Intentions (H). The results showed that business expectations (EE) related to the ease and convenience of using Kumandang positively affected user acceptance. In addition, hedonic motivation (HM) related to fun and entertainment also affects parents' intention to use the Kumandang application. The results also show that performance expectations (PE), social influences (SI), facilitating conditions (FC), habits (H), and price effects (PV) do not affect parents' acceptance of using the Kumandang application.

1. INTRODUCTION

Reading skills are a provision to make a person a long-life learner. Growing interests and reading habits are the forerunners to the success of reading skills. Reading habits are the situations when children willing, enjoy, and read often both at home and school (Baba & Rostam Affendi, 2020; Lange et al., 2021; Peura et al., 2021; Rajab & Al-Sadi, 2015). The government has launched GLN (National Literacy Movement)

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to instill the love of reading in Indonesia (Narahawarin & Winarsih, 2019; Nudiati, 2020). Several things hinder the development of interests and reading habits in early-class children (Artini et al., 2019; Astuti & Istiarini, 2020; Darnis, 2018). The first is the difficulty of access to quality reading books. the limited number of books and not varied becomes an obstacle to the success of the National Literacy Movement. Second, the lack of parental support at home in growing reading interest early on is a barrier. It's important to understand that increasing interest in reading originated early on and started at home (Paratore, 2011). In line with this, the importance of growing reading habits since childhood through repetitive routines at home with parental involvement (Christianti, 2013; Mifsud et al., 2021; Winarti & Suryana, 2020). This habit will also foster unique value in developing children's learning and the relationship between children and parents.

Related to the above problems, many researchers have conducted studies and uncovered ways to overcome this. One thing that many researchers recommend is the use of technology in learning. The use of technology in digital literacy can be use as a teaching medium that can increase children's motivation and understanding of the material (Afrianti & Wirman, 2020; Sobakhah & Afakhrul Masub Bachtiar, 2019; Syahrowardi & Permana, 2016). Smartphones are suitable for improving language learning especially reading. Technology has become part of everyday activities, so integrating technology in learning and involving parents in student learning will significantly beneficial (Cahyani & Jayanta, 2021; Pindeh et al., 2016; Piper et al., 2016). Students will be motivated and understand better when technology and parents are involved. Technology in learning is worth considering. Technology has changed the paradigm of education (Ahmadi, 2018; Andriah & Amir, 2021). The other research states that applications in technology are very constructive in education (Kusuma, 2021).

A technology ideally suited to the development of reading habits is the smartphone. By using a smartphone, students can access various applications, including applications in accessing books (Chao et al., 2017; Riyanto et al., 2020; Wu & Chen, 2018). Several researchers have researched the use of smartphones in reading. The electronic books have been widely used to improve student literacy. However, investing in technology without proper instructions will not significantly impact (Piper et al., 2018; Rusli & Antonius, 2019; Tambunan et al., 2020). Parents' role in accompanying children in using technology, especially in reading, will have a tremendous impact (Knauer et al., 2020; Mifsud et al., 2021). Combining the use of technology, the part of parents, and proper instruction will boost the growth of literacy skills.

Today, most people own smartphones. Due to the ease of accessing smartphones, this changes students' learning styles (Narayan et al., 2019; Suartama et al., 2019; Yudhiantara & Saehu, 2017). To understand this change in learning style, educators must innovate to foster children's motivation, especially in learning to read (Tong et al., 2021; Varga, 2020). Banning the use of smartphones is not a solution. Utilizing the widespread use of smartphones to support literacy learning is the right step. Facilitating by providing access to electronic book applications and guiding children in accessing them by embracing parents is the right choice (Antee, 2021; Dorris et al., 2021). With the ease of accessing quality content accompanied by parental assistance, students will be motivated and improve their reading habits. explaining that smartphone users have made many applications in language learning, including reading, especially in English. This means that technology is highly considered in support of today's learning. Although smartphones have been widely owned, and various learning applications are present along with the rampant use of technology, the real challenge is finding access to quality, quality and following the readiness stages of Indonesian children (Bartel & Hagel, 2014; Hanif et al., 2018; Irwanto et al., 2019).

The findings of previous studies also state that reading habits are essential for students because they can improve students' cognitive abilities (Asih & Sunarso, 2020; Baba & Rostam Affendi, 2020; Le et al., 2019). The findings of previous studies also stated that smartphone assistance would help students' literacy (Cohn, 2016; Durán et al., 2021). Other research states that media can help improve students' reading habits (Gading et al., 2019)(Herlinda, 2014)(Widyowati et al., 2020). Therefore, researchers developed an application that can provide easy access to various books in Indonesian. The app comes with instructions that parents can easily understand and follow. This application can be used by parents when accompanying children in reading aloud at home or can be done by children independently. This app is called Kumandang. This study aims to analyze factors that impact the user's intention to use Kumandang. The analysis uses the UTAUT2 (Unified Theory of Acceptance and Use of Technology) acceptance, model.

2. METHOD

This research is a survey study. Survey research is research conducted from large or small populations, but the data studied are from samples taken from that population. The instrument used in data retrieval is a questionnaire. Researchers distributed online questionnaires to respondents representing different geographical conditions. The sample was selected intentionally from a parent or caregiver whose

kids was 5 to 9 years old. When the data sample has reached the desired amount, the data collection process stops, and no one else can participate. Ninety questionnaires were collected, but only 87 were complete and further analyzed. The questionnaire consists of three parts. The first section provided information about socio-demographic profiles and smartphone habits. These questions aim to gather information about prospective Kumandang users. Once participants complete the first part, they get information about the use of Kumandang, such as its benefits, features, and goals, to ensure they have the same understanding of the Kumandang app. The second part of the questionnaire gathers parents' knowledge of Kumandang based on their expertise in the early stages of the questionnaire. Respondents were asked to rate the use of Kumandang in certain situations using the UTAUT2 construct. In the last section, respondents were asked to provide more information about additional features they want to access that are not included in Kumandang. The report uses a purposive random sampling approach with the target of parents of kindergarten and elementary age students. This preliminary questionnaire was translated into Indonesian and evaluated by two researchers specializing in technology and literacy. Adjustments were made before the questionnaire was distributed to respondents. Ninety questionnaires were collected, but only 87 were complete and further analyzed, and their demographic profiles were summarized in table 1. The largest age group of respondents was 31-40 years old, which accounted for 58.9% of the total sample.

Table 1. Elemental Compositions of Sampling Sites

Respondent Demography	Indicator	Number	Percentages
Age	31-40	53	58.9%
	41-50	25	27.8%
	20-30	9	10%
	others	3	3.3%
Gender	Female	59	65.6%
	Male	31	34.4%
Place of living	Badung	40	44.4%
	Denpasar	19	21.1%
	Tabanan	14	15.6%
	Java	8	8.9%
	Singaraja	5	5.6%
	Klungkung	2	2.2%
	Outside Bali	4	5%
	Negara	1	1.1%
	Karangasem	1	1.1%
Phone usage frequency	Everyday	82	91.1%
	Not very often	8	8.9%
Number of phones owned	One	18	20%
	More than one	72	80%

Regarding gender, female respondents were more numerous (65.6%) than male respondents. Respondents spread across Java and Bali, but respondents from Bali districts dominated 91%. Most participants use a smartphone every day (91.1%), about 80% of respondents have more than one smartphone. The report uses the Unified Theory of Acceptance and Use of Technology 2 (UTAUT 2) method as a technology acceptance model (Martins et al., 2018). UTAUT 2 is a development of UTAUT by adding three new variables, namely hedonistic motivation, price value, and habits. The primary purpose of UTAUT2 is to understand how users accept new technologies. In the use of mobile internet, his attitude is always voluntary (Dakduk et al., 2020). Below is a description of UTAUT 2 and each of its variables.
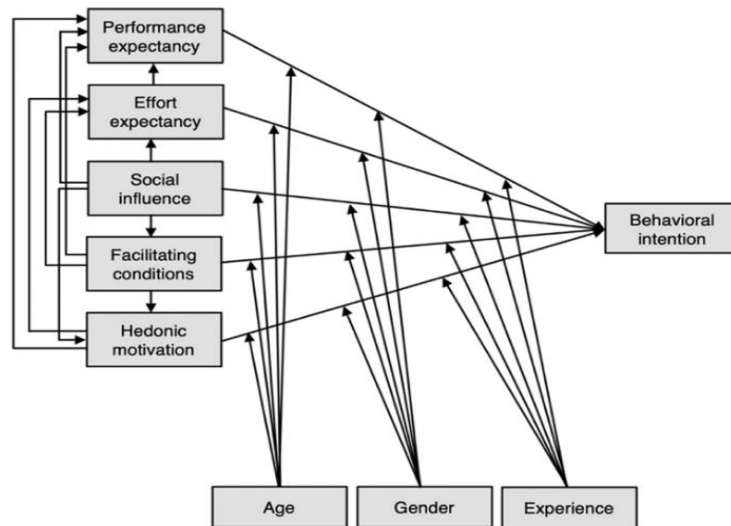
Figure 1. UTAUT 2 model adapted to the context of this research by (Viswanath et al., 2006)

3. RESULT AND DISCUSSION

Result

Partial Least Square Equation Model (PLS-SEM) using SmartPLS 3.0 software analyzes the proposed model. The bootstrap method is used to evaluate the model. The re-sampling amount is set at 500 to achieve a stable parameter estimate. The advantage of using smart PLS is the stable parameter value of a small sample and for experimental research purposes (Joe F. Hair et al., 2014).
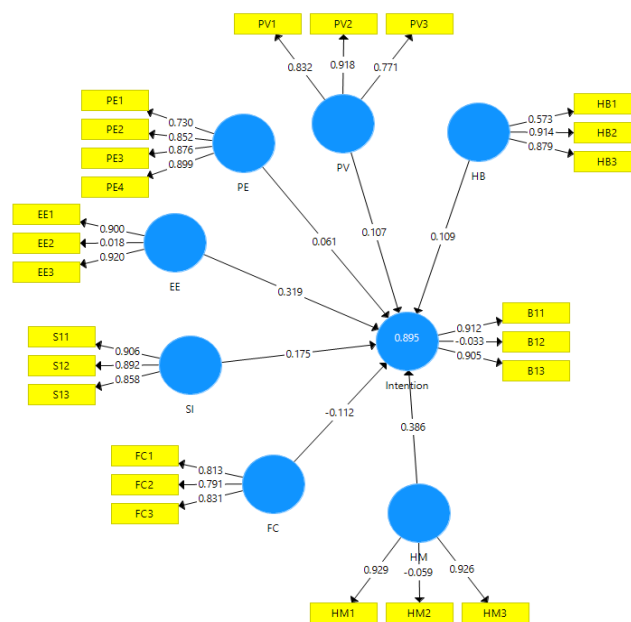

Figure 2. Structural model measurement

The purpose of measuring the structural model shown in figure 2 is to describe the relationship between latent variables or constructs. The measurement of structural models uses (R^2), path coefficients (ß), and t-statistics using smart pls. The range of R^2 values is from 0 to 1. The higher the R^2, the more the endogenous construct can be explained by exogenous. The rule of thumb for classifying R2 scores is 0.75). Based on the R^2 test, the behavioural intention variable score is 0.895. The score concluded that exogenous variables, namely performance expectations, business expectations, social influences, facilitation conditions, hedonistic motivations, price values, and habits) can substantially explain exogenous variables (behavioural intentions). All construct in this research model is first-order reflective. Measurement quality was verified by analyzing convergent validity, discriminant validity, and internal consistency to verify

measurement quality. Concurrent validity was measured as follows; item reliability was assessed for each convergent item validity requiring indicator loading to be 0.6 or above. All construct presented loading to be 0.6 or above except for four: one effort expectancy indicator, one hedonic motivation indicator, and one habit indicator. According to this result, these three items were then removed from the model. The remaining item loading (see table 3) revealed acceptable convergent validity and were kept for further analysis.

Measurement quality is verified by analyzing convergent validity, discriminant validity, and internal consistency to verify measurement quality. Concurrent validity is measured as follows; Item reliability is assessed for any validity of convergent items requiring indicator loading to 0.6 or more. All constructs in this research model are first-order reflective. All constructs are presented loading to 0.6 or above except four: one indicator of business expectations, one indicator of hedonistic motivation, and one indicator of habit. All three items were removed from the model based on these results. The loading of the remaining items (in table 2) reveals acceptable and stored convergent validity for further analysis.

Table 2. Outer model summary

Indicator	Code	Load	Composite Reliability	Cronbach's Alfa	AVE
Perfomanca Expectancy-PE	PE1	0,726	0,909	0,865	0,714
	PE2	0.855			
	PE3	0.890			
	PE4	0.898			
Effort Expectation-EE	EE1	0,904	0.911	0,804	0,836
	EE2				
	EE3	0,925			
Social Influence-SI	SI1	0,904	0,918	0,866	0,789
	SI2	0,891			
	Si3	0,869			
Facilitating Condition-FC	FC1	0,807	0,846	0,730	0,647
	FC2	0,794			
	FC3	0.813			
Hedonic Motivation-HM	HM1	0,931	0,929	0,847	0,867
	HM2				
	HM3	0,931			
Price Value-PV	PV1	0,798	0,869	0,775	0,689
	PV2	0,904			
	PV3	0,783			
Habbit-HB	HB1		0,913	0.810	0,840
	HB2	0.917			
	HB3	0,916			

Composite reliability (CR) indicators were significantly higher than 0.7, and internal consistency was assessed using Cronbach Alpha Coefficient. Values for all constructions range from 0.7 - 0.8, indicating high reliability for all constructions (Joseph F. Hair et al., 2019). The composite reliability indicator (CR) is significantly higher than 0.7, and internal consistency is assessed using the Alpha Cronbach Coefficient. The average extracted variance (AVE) was also checked for each construct, and its value was significantly greater than suggestion of 0.5 (Zhu, 2017). Discriminant validity is evaluated by associating all loaded items to estimate a better value with the same construct than other variables (in Table 2. Cross-Factor Loading and Construction Reliability). This comparison meets discriminant validity, as suggested by chin's standards (Saputra et al., 2021). Also, the square of the AVE root for each construct is higher than the correlation between scales. These results demonstrate satisfactory reliability and convergent validity.

This study follows the SEM-PLS criteria of R2 adjusted value, Beta Coefficient, and effect size to assess the hypothesis model. Before testing the structural model, fit adjustment with SRMR value was evaluated, and the results were 0.068, indicating a reasonable fit adjustment (Alike et al., 2008). In terms model's predictive power, motivation value suggests that it explains 89.5% of the variance in behavioural intention. Bootstrapping was Motivation out a significant level of each hypothesized relationship. According to the results, effort expectancy (EE) and hedonic motivation (HM) significantly predict behavioural intention to use *Kumandang*. In particular, hedonic motivation (HM) emerged as the best predictor, followed by effort expectancy. Values of 0.02, 0.15, and 0.35 represent small, medium, and large effect sizes.

The value of intention a was a small but significant contribution of the variables whose hypotheses were confirmed. The summary of this discussion is in Table 3.

Table 3. The Result of Path Coefficient and T- statistic Test

Path	B (Path Coefficient)	T-Value	P-Value	Result
H1: Performance Expectancy-Intention	0.061	0.754	0.451	Not confirmed
H2: Social Influence-Intention	0.175	1.782	0.075	Not confirmed
H3: Facilitating Condition-Intention	-0.112	1.208	0.228	Not confirmed
H4: Effort Expectancy-Intention	0.319	2.615	0.009	Confirmed
H5: Hedonic Motivation-Intention	0.386	2.910	0.004	Confirmed
H6: Habit-Intention	0.109	0.919	0.358	Not confirmed
H7: Price Value-Intention	0.107	0.708	0.480	Not confirmed

Discussion

The hedonic perceptions that include fun and entertainment are predictors of users' exploration of technology use (Jihad Mohaidat, 2013; Magni et al., 2010). Other research indicates that hedonic motivation influences behavioural intention; in their study, it is stated that the desire to use applications is based on user experience in obtaining pleasure and entertainment. As expected, the analysis revealed that hedonic motivation (HM) has a direct and positive influence on intention. The results show that HM has a direct and positive impact on using applications in everyday life. Although the effect found in this study is small compared to other studies, the predictive power observed in this study is similar to what was seen by (H.-Y. Wang et al., 2013). Likewise, these results are consistent with what was seen by many researchers in several countries (Taiwan and United States).

The second-best prediction in using applications in learning is Effort Expectancy (EE). EE refers to the notion that applications are easy to use. The finding confirms that the ease and convenience of using applications in learning is an essential component (Richardson et al., 2021; Teo & Noyes, 2014). Previous research stated that users believe that mobile phone applications are easy to use and understand and can use them skillfully; therefore, they want to adopt them (Chandrathilaka et al., 2021; Susanti et al., 2020). Other research also stated that the more comfortable users are in using an application, the more they are interested in using it (Hariyanti et al., 2020; Pratama et al., 2020). The findings also suggest that age affects perceived ease of use of technology. From the explanation above, it can be inferred that when users think that an application is easy to use to get the information they need, this will help users achieve their goals more quickly, so they are willing to adopt it. On the other hand, if the user thinks that using an application requires more effort.

In this study, performance expectation (PE) is related to the user's belief that the application will improve their performance. However, the analysis results stated no direct and positive relationship between PE and BI. This finding contradicts what was found in several previous systematic studies using UTAUT which stated that performance expectations have a significant effect on behavioural intention to use technology and also increase productivity in daily life (Bidin & Ziden, 2013; Leong et al., 2013; Y. Wang & Sun, 2010). Perceived usefulness is fundamental and has a more practical effect concerning desire. Furthermore, this study also noted that PE is more important than. Even if an application is easy to use, the user will not use it if it is not practical (Bidin & Ziden, 2013; Omland, 2021; Pindeh et al., 2016). In other words, users will use an application if the application is beneficial (Ivonne et al., 2020; Wiana et al., 2017).

The absence of a relationship between PE and BI could occur because parents are unaware of its role in children's reading progress. The study shows that Performance Expectancy does not significantly affect behavioural intention because they think the developed application adds to the workload even though the purpose of the application is to help improve performance (Haris et al., 2019). There may be variations in this relationship concerning the brand chosen to use. This assumption is in line with the findings of the research when examining banking applications using UTAUT in Bangladesh. He found no relationship between PE and BI (Chang, 2012; Leong et al., 2013). On the other hand, when this relationship was investigated associated with a particular brand, the relationship between PE and BI was positive. Hence *Kumandang* is relatively new to them, and they haven't fully explored the app to adopt its benefit.

Social Influence relates to the level of influence of the closest people (family or friends) on a person's desire to use the application. This study indicates that users are not influenced by opinions, suggestions, or recommendations from those closest to them in determining utilizing the application. This is in line with the findings (H.-Y. Wang et al., 2013). The absence of a relationship between SI and BI may be

related to the reluctance of people around who are technology users to influence users in using this application or the possibility of a person's distrust of the opinions of those closest to him. The explanation of the previous statement is because there is a review feature or expert opinion in an application. This finding proves that users use personal opinions in using the application and are not influenced by word-of-mouth opinions. The view of the close relative regarding the use of the application does not affect a person's desire to use the application. However, it contradicts research stated that social influence affected behavioural intention (Hariyanti et al., 2020; Martins et al., 2018).

In this study, the facilitating condition is related to the infrastructure level available in accepting a technology application. This study found no relationship between FC and BI, meaning that infrastructure cannot increase the user desires to adopt *Kumandang.* This finding is in line with the results of (Hariyanti et al., 2020). When users find an application easy to use, this study reduces their dependence on external infrastructure. This explains why FC has no relationship with BI because the EE construct is significant in this study. Venkatesh, 2003 support this statement. This lack of connection between FC and BI shows that users feel confident that they have their resources, knowledge, and ability to control HP applications. In this study, habit refers to the automatic attitude in using the application. The findings in this study state that habit does not affect behavioural intention. From these findings, it can be explained that although users often use an application, it does not guarantee that they will adopt the use of an application. The explanation is that using *Kumandang* is mandatory for the user, so they haven't developed self-awareness in using it automatically. The findings of previous studies stated that the mandatory use of the application made them use it every day without self-awareness (Saputra et al., 2021). Although it has been used frequently, they have no desire to adopt this application.

In this study, PV refers to the user's perception of the value of an application. The results of this study found that PV did not affect BI. These findings are consistent with. Users believe that the price spent using this application does not reflect its value because the benefits obtained from this application are not worth the price paid. The presentation explains why there is no relationship between PV and BI. Because the questionnaire was issued during the pandemic and most of the respondents were from areas affected by the pandemic, it is possible that their primary priority need is not buying a quota for the internet using the Kumandang application. Additional quota usage to use the Kumandang application may not be a priority. However, if the perceived benefit of the application is increased, it will affect the user desire and willingness to use the application. This contradicts the findings, which states that the higher the user's awareness of the benefits and the lower the costs involved in using the application, the more interested users are in using an application (Hariyanti et al., 2020).

This study has limitations that should be aware of for future research. The majority of respondents in this study came from Bali, which could not represent Indonesia. Socio-economically and culturally, Balinese people are different from people on other islands in Indonesia. The majority of respondents aged 30-40 who would raise the question of external validity given the 30-40 have different perceptions and acceptances about technology than respondents in their 20s and aged 50 or over. Based on these two things, the generalization of the research results is limited. Regarding methodological limitations, in this study using survey methods and structural equation models, it is essential to understand that the sample used in this research framework was chosen to facilitate research. However, the demographic composition of the piece is not fully representative. Based on the limitations contained in this study, future research should use a broader range of respondents both in terms of age and ethnicity or can also conduct cross-country comparisons to gain a deeper understanding of adoption intention in different cultural contexts. In addition, future research may consider age differences using the UTAUT2 method. Considering moderator variables will also increase the depth of future research results. In the final stage, the Longitudinal research approach can also be used in future research to predict usage over time. For example, the model should be validated at different timeframes and compared, for instance, before adopting and after the application's use.

4. CONCLUSION

The results showed that effort expectations (EE) related to convenience and comfort in the use of Kumandang positively affect user acceptance. In addition, hedonistic motivation (HM) related to pleasure and entertainment also positively affects parents' intentions in using the Kumandang application. The results also showed that performance expectations (PE), social influence (SI), facilitating conditions (FC), habits (H), and price influences (PV) did not affect parental acceptance in using kumandang applications.

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