Factor analysis of ruangguru application use on high school students in Jember

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Abstract. The quality of education in Indonesia is oriented toward the education in Jakarta. PISA 2015 Results in Focus published in 2018 indicates that Indonesia occupies the 62nd place of 70 countries. On the other hand, COVID-19 pandemic has a significant impact in education. All schools in the world are simultaneously doing online learning, which leads to a shift in interaction patterns in the world of education from face-to-face to technology-based learning. The aim of the research is to know the dominant factors in influencing high school students in Jember on the use of Ruangguru Online Tutoring application. The research used the quantitative method. The sampling technique in the research was the incidental sampling technique to 100 respondents. We have found the most dominant factor of some other influencing factors for Ruangguru users was the product, besides that there was a significant influence between product, price, location, promotion and service with purchasing decision. We recommend that the Ruangguru application is more innovative in technology-based education contents.

Keywords: online tutoring, education, Ruangguru application

1. Introduction

The quality of education in Indonesia is oriented toward education in Jakarta, supported by quite complete facilities and infrastructures, is the dream of the government for all regions in Indonesia. However, the reality is different from the results of the Program for International Student Assessment (PISA) 2015 [1] Results in Focus published in 2018. It indicates that Indonesia, with a total of 218,234 schools, 2,708,011 teachers, and 45,540,700 students, occupies the 62nd place of 70 countries. It is in line with the latest research from Prof. Lant Pritchett (2016) [2] entitled The Need for a Pivot to Learning: New Data on Adult Skills from Indonesia, known that the majority of the quality of education for children, especially those aged 15 years, is 128 years behind compared to other countries.

The quality of teaching staff plays an important role in determining the quality of education, which can be seen from the average TCT (Teacher Competency Test) results. The national performance of teachers in Indonesia from the national TCT average result carried out in 2015 was 53.02 out of 100, a value which is still far from the standard of Teacher Competency Test (TCT) completeness. On the other hand, the outbreak of COVID 19 (Corona Virus Disease, discovered in 2019) has a significant impact, especially in the field of education. All schools in Indonesia and the world are doing online learning simultaneously. DL (Distance Learning) having been done so far leads to a shift in interaction patterns in the world of education from face-to-face to technology-based learning.

In addition to the average result of TCT score, the COVID 19 outbreak, which requires students to do online learning, has made many students find problems to understand the materials provided by the teachers. This is one of the reasons strengthening parents to find solutions so that their children continue to excel and get far more and better knowledge. Tutoring is one solution that parents then choose so that their children better understand and can develop their knowledge of the subjects explained at school.
The impact of COVID-19 has made several conventional tutoring institutions which originally provide face-to-face services now begin to add to their services by utilizing several applications with the aim that users can learn comfortably like what Ganesha Operation, Neutron and other tutoring institutions do. Ruangguru, which is one of the online tutoring institutions, feels competed with the changes made by conventional tutoring institutions. However, there are some differences between the two, Ruangguru as a basic online tutoring program is much more ready with all online features in one application, from animated learning videos stored in the application, pictorial summaries, to question banks with answer keys and discussions, while the conventional tutoring application uses several applications that make users sometimes confused. Besides, in conventional tutoring application the learning videos change at a certain time, and there are no discussions for each problem in the question banks.

Many users have trusted Ruangguru online tutoring application to learn and add their insights. More than 15 million students and 300,000 teachers in Indonesia have subscribed to Ruangguru. In 2020 Ruangguru also expanded to several countries such as Vietnam named Kien Guru launched in 2019, Thailand named StartDee launched in 2020, and Singapore. The Ruangguru's existence can also be seen from a number of awards that have been won from 2015 to 2019, a total of 16 awards from UNICEF, Bubu Award, Google Launchpad Accelerator, MIT Solve, Forbed, and many others. The Ruangguru's success is more or less inseparable from the users' role, from user satisfaction which makes Ruangguru's consumer loyalty increase.

Many high school students who use Ruangguru have switched from offline to online tutoring because of the various conveniences offered by online tutoring that are not available in offline tutoring. The advantages obtained from studying at Ruangguru are easy because a collection of learning videos and practice questions provided can be accessed anywhere and anytime. In line with Aripurnamayan's opinion in Gideon [3], he states that mobile learning is a service to provide electronic information in general about learning content to users that helps the attainment of knowledge regardless of location and time. The reason for choosing high school students as research subjects is because they are old enough and have a role in making decision about the use of Ruangguru Online Tutoring service.

The interaction pattern of the school community has shifted from traditional (face-to-face) to modern (online) pattern. This is in line with the theory of Gemeinschaft (traditional) and Gesellschaft (modern). According to Martono [4], Gesellschaft (modern) is considered a concept of weak public relations so that the resulting role is not good. It is reinforced by Sztompka's opinion that the concept of the Gesellschaft relationship is based on certain goals. The interaction between teachers and students and the interaction between students and other students are now increasingly clear to have a specific goal. There are clear boundaries. The interaction between the two is based on one goal, namely the creation of pleasant learning condition. However, this condition makes the interaction between the two even weaker, due to the lack of intensity of face-to-face meetings. The COVID-19 outbreak creates changes in product purchasing decision, in this case Ruangguru tutoring.

There are several factors for high school students in the City of Jember whose learnings are to switch from offline tutoring to online tutoring. Some of the factors are the external factors: product, price, promotion, location, and service. In line with Suwatno et al.’s research [6], the factors that influence high school students to choose a tutoring institution are product, price, location, promotion, process, and physical evidence.

2. Methods
This study is non-experimental research (survey) with descriptive research design. The sample was chosen using accidental sampling technique, which was performed spontaneously by giving questionnaires to respondents encountered during data collection in the research location. Based on the Lemeshow formula, the sample size was 100 respondents. The sample calculation used the Lemeshow formula because the population was unknown. Here is the Lemeshow's formula:
Information:

\[ n = \frac{z^2 p(1-p)}{d^2} \]  

Information:

\[ n = \text{number of samples} \]
\[ z = \text{standard value} = 1.96 \]
\[ p = \text{maximum estimate} = 50\% = 0.5 \]
\[ d = \text{alpha (0.10) or sampling error} = 10\% \]

Respondents in this study were 97 respondents, rounded up to 100 respondents who attended tutoring program at Ruangguru tutoring application. The results are presented in Table 1. Based on gender, the respondents were dominated by females totalling 81 people (81%).

| Table 1. Respondent Profile |
|-----------------------------|
| Male | Female | Total |
|---- |---- |----- |
| 19 | 81 | 100 |
| (19%) | (81%) | (100%) |

Source: Processed Data (2020)

The validity test was done using Karl Pearson's product moment formula with the criteria if \( r_{\text{count}} \) is larger than \( r_{\text{table}} \) at alpha 5%. Additionally, the reliability test used was Cronbach alpha with criteria if \( r_{\text{count}} \) is larger than \( r_{\text{table}} \) at alpha 5%. The data analysis technique used was SEM analysis. Descriptive analysis was used to describe the profile of respondents, while explanatory factor analysis was used to determine factors that shape consumer decisions in choosing Ruangguru tutoring application.

3. Results and Discussion

3.1. Validity and Reliability Test

The results of the validity test were two items removed from the model, so that there were only extracted question items that were truly capable of being used to measure the constructs used. While the reliability test results showed that if \( r_{\text{count}} \) is larger than \( r_{\text{table}} \) at alpha 5%, it can be said that the instrument used was quite reliable to measure the variables studied.

| Table 2. Validity Test Results |
|-----------------------------|
| No. | Variable | Indicator | Pearson Correlation | Significance | Validity Result |
|---- |---------- |----------- |--------------------- |-------------- |----------------- |
| 1 | Product  | creative learning features | .851 | .000 | Valid |
| | | complete study package | .616 | .012 | Valid |
| | | competence of the tutor | .733 | .000 | Valid |
| | | brand image | .600 | .000 | Valid |
| 2 | Price | affordable price | .712 | .002 | Valid |
| | | the price suits the facilities | .658 | .000 | Valid |
| | | the price suits the quality | .634 | .000 | Valid |
| 3 | Access | easy access in 1 application | .849 | .000 | Valid |
| | | flexible access | .731 | .000 | Valid |
| 4 | Promotion | discount available | .842 | .000 | Valid |
| | | advertising on tv and social media | .577 | .000 | Valid |
| | | the artist’s brand ambassador | .633 | .000 | Valid |
| 5 | Service | the staff gives good service | .588 | .000 | Valid |
| | | quick administrative process | .554 | .000 | Valid |
| | | easy administrative process | .693 | .000 | Valid |
| | | customer service | .454 | .000 | Valid |

Source: Processed Data (2020)
Table 2 shows the 5 variable components and 16 indicators that influence the students’ decision to study in the Ruangguru application. All statement items in the questionnaire can be used and trusted for data collection.

| No. | Variable | Alpha Value | Reliable Crash | Test Result |
|-----|----------|-------------|----------------|-------------|
| 1   | Product  | 0.892       | 0.67           | Reliable    |
| 2   | Price    | 0.877       | 0.67           | Reliable    |
| 3   | Access   | 0.854       | 0.67           | Reliable    |
| 4   | Promotion| 0.873       | 0.67           | Reliable    |
| 5   | Service  | 0.822       | 0.67           | Reliable    |

Table 3 shows that the variables of product, price, access, promotion, and service are proven to be reliable. This means that the research results are quite reliable and in accordance with reality, and the results remain the same even though the questionnaire is distributed twice to the respondents.

3.2. Data Analysis

3.2.1. Structural Equation Modelling Analysis

The analysis used was the analysis of Structural Equation Modeling (SEM) or confirmatory factor analysis using the AMOS software version 20.00.

Figure 1. Structural Equation Modelling

Based on the chart above, it is known that the variables of product, price, access, promotion, and service have a direct effect on purchasing decision. The results of data analysis using SEM can be seen that the product factor has a dominant influence on the decision to study in the Ruangguru application. This is indicated with the path coefficient value of 0.420. After that, the second influencing variable is
access with a path coefficient value of 0.412. The third is promotion with a path coefficient value of 0.382, 4th is price with a path coefficient value of 0.372 and the last is service with a path coefficient value of 0.351. Based on the analysis, it is also found that the coefficient of determination is 0.88, which means that 88% of the decision to study in the Ruangguru application was influenced by the five independent variables, while the remaining 12% was influenced by other factors that were not identified in this study.

3.2.2. Product Influence on Purchasing Decision
The features in the Ruangguru application product become the factors that have the most significant influence on the decision of high school students in Jember to study in the Ruangguru application indicated by the path coefficient value of 0.420. The available features include animated learning videos for 3 levels, summaries, question banks, learning progress, study schedules, teacher Robo, Ruangguru adventure, questions and answers, playmates and many others. Based on the questionnaire that has been distributed, it is known that respondents really like the products provided by the Ruangguru application because they are very helpful in understanding concepts when learning independently.

COVID 19 changes from traditional (face-to-face) learning to modern (online) learning. This raises negative impacts, one of which is the lack of student interaction to understand the material, which affects the level of students’ understanding of some of the materials being taught. In addition, Ruangguru also develops special products for elementary schools’ grade 1-3 with a game-like appearance and several majors for vocational high schools.

3.2.3. The effect of price on purchasing decision
Based on the research, price has a significant influence in decision making of high school students in Jember to study in the Ruangguru application indicated by the path coefficient value of 0.412. The price offered to users is much more affordable when compared to conventional tutoring, starting from IDR 499,500 - IDR 3,000,000 per year with an initial payment. The price paid depends on the selected study packages. The study packages are Ruangbelajar, Ruangbelajar Plus, and Brain Academy (offline and Online). Meanwhile, offline tutoring starts from IDR 4,000,000 - IDR 8,200,000 per year depending on the institution you choose.

3.2.4. The effect of access on purchasing decision
Based on the research, access has a significant influence in decision making for high school students in Jember to study in the Ruangguru application indicated by the path coefficient value of 0.382. The features provided in the subscription packages can be accessed in one application to make it easier to transfer knowledge, as well as flexible access. It means that it can be accessed anytime and anywhere. It is different with the access provided by conventional tutoring, whose accesses are limited, such as limited meetings, limited material access at certain levels.

3.2.5. The effect of promotion on purchasing decision
Based on the research, promotion has a significant influence in decision making for high school students in Jember to study in the Ruangguru application indicated by the path coefficient value of 0.372. Promotions carried out by Ruangguru tutoring through TV, print media, promotions to schools, YouTube, and many others. In addition, Ruangguru also uses several matters as a Brand Ambassador such as Iqbal Ramadhan which is quite influential to attract users’ attention. But now the Ruangguru Brand Ambassador has been replaced by Betrand Putra Onsu. This is very different from the promotions carried out by conventional tutors.
3.2.6. The effect of service on purchasing decision

Based on the research, service has a significant influence in decision making of high school students in Jember to study in the Ruangguru application, indicated by the path coefficient value of 0.351. Services provided to users or potential users are carried out quickly, starting from the consultation processes, purchasing products, to reporting problems. This makes users more confident in studying at Ruangguru to support their independent learning. This good service is not only from speed in terms of administration, but also friendly service and explanation that are easy to understand by the users so that it creates a sense of satisfaction with the choice of learning in the Ruangguru application.

The results of this overall study prove that the dominant factor affecting the purchasing decision of high school students in Jember to study in the Ruangguru application is the product indicated by the path coefficient value of 0.420. External factors in this study consist of price, access, promotion, and service. All the factors have an influence, but from the path coefficient value, it is known that the product factor is greater than the factor of price, access, promotion, and service.

Kotler and Armstrong in Jefry and Maskarto [6] state that product quality is a product or service characteristic that depends on its ability to satisfy customers’ needs, either stated or implied. It is strengthened by the opinion of experts that brand image (product) has an influence on purchasing decision. Richardson et al. (1994) in the journal Gilaninia and Mousavian [7] state that brand image is often used as an extrinsic factor in making purchasing decision. Schiffman and Kanuk [8] state that consumers tend to trust a brand that is liked or known, if the consumers have no experience about a product.

4. Conclusions

This study tries to include several external factors including product, price, access, promotion, service in analyzing the dominant factors that influence the purchasing decision of high school students in Jember to study in the Ruangguru application. Our results show that product factor has a dominant influence on the decision to study in the Ruangguru application. This is indicated by the path coefficient value of 0.420. Then, the second influencing variable is access with a path coefficient value of 0.412, the third is promotion with a path coefficient value of 0.382, 4th is price with a path coefficient value of 0.372, and the last is service with a path coefficient value of 0.351.

Both product and promotion have a positive and strong relationship with each other. There are two reasons for the strong positive relationship. First, through promotion, customers find out the product attributes and facilities of the product that encourage people to buy. Second, promotion can increase product sales and brand image. The number of customers using this product makes the brand image higher. This brand image is the key in product marketing. Schiffman and Kanuk [8] state that consumers tend to trust a brand that is liked or known, if the consumers have no experience about a product.

Apart from the results of this study, the Ruangguru tutoring application now competes with conventional tutoring institutions. The COVID pandemic creates a new normal condition that requires all fields including conventional tutoring institutions to start switching to using IT. Even so, the users of the Ruangguru application still entrust their learning to Ruangguru. This is because conventional tutoring institutions are not ready for the use of IT, such as incomplete facilities in the application provided, limited access, so there is no discussion in the question banks. It is different with the Ruangguru application which has innovated and strengthened its brand image regarding online tutoring applications that can be accessed easily in one application.

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