Technology acceptance model for evaluating IT of online based transportation acceptance: a case of GO-JEK in Salatiga

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Abstract

GO-JEK acceptance in Salatiga, as a provider of online transportation reservation based on mobile phones, is not running without problems. The difficulties in accessing certain features, the lack of support from Salatiga government, and other obstacles have an impact on the performance of the Salatiga GO-JEK drivers. With the Technology Acceptance framework that is processed with a qualitative approach, we try to get what factors which have an impact on GO-JEK acceptance process in Salatiga. Our goal is to get the problems from the experience of Salatiga GO-JEK drivers that had never been thought before by the researcher. The result is that technological support, local policies, market share, and market rivalry affect the GO-JEK acceptance process in Salatiga.

Keywords: GO-JEK, new technology acceptance, online-based transportation, technology acceptance model, Salatiga

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1. Introduction

GO-JEK as the provider of two-wheeled online transportation services has become a successful startup in Indonesia. Not only as an innovation in the technology world but also as a means to improve the community economy. Based on A mobile phone, GO-JEK offers a variety of services such as transportation reservation (motorbikes and cars), shipping goods, bill payments and the other.

Finally, GO-JEK spread the announcement of employee registration in Salatiga in the mid of April 2017. Salatiga is a town in Central Java Province which borders with Semarang Regency and Solo. Since the first employee registration until the time this research was begun (in mid-October 2017), GO-JEK has more than 400 drivers. However, with the conflict between the conventional and online drivers, it emerged the government considered GO-JEK as a threat. Thus, they issued a warning for GO-JEK to stop its operation. Although it was banned, GO-JEK insisted on operating in Salatiga until now.

This article primarily seeks to explore the drivers’ experience in using GO-JEK application in Salatiga. The researchers interviewed GO-JEK drivers in Salatiga to determine how far the GO-JEK adoption process in Salatiga was. To test the adoption of GO-JEK application, we employed the Technology Acceptance Model (TAM) which was introduced by Fred Davis in 1986 to find out the factors causing the users to accept a technology at the first time it was introduced.

Although technology has developed rapidly, the use of TAM in measuring the acceptance of new technology is still valid [1-3]. A number of studies have attempted to identify the factors influencing at the beginning of GO-JEK adoption process in Jakarta [4], Malang [5], and Kediri [6]. In addition, previous related study sought to identify the GO-JEK payment method using GO-PAY [7]. Another similar research was conducted to investigate the use of Radio Frequency Identification (RFID) keys with the TAM method. In the study, it was found that there were lecturers who refused to use RFID because it was considered to be less efficient [8]. Other studies also applied TAM to test the acceptance of their new technology [9-11]. The difference is that the present research used a qualitative approach. TAM method with a
qualitative approach was employed to explore the experience of research participants on the use of the GO-JEK application in Salatiga. Accordingly, we expected to be able to obtain factors that have not been mapped by any previous researchers.

2. Research Method

To achieve the objective of this research, researchers approached the study qualitatively. The aim of doing qualitative study was to explore more information and understand the phenomena that exist in the field more deeply with naturalistic procedures [12]. This study examines the emerging of individual’s understanding in interpreting their activities [13]. Further, we used TAM method which was adopted from Vogelsang et al. following Mayring’s qualitative research concept [14].

In the beginning of data collection process, the researchers conducted a field observation. Then a few questions proposed following the observation involving Salatiga residents who work as taxi drivers, both conventional and online. The objective of these stages is to find out how far the GO-JEK application had adapted. Then we tried to delve deeper about the peoples’ understanding of the application and the obstacles which they might encounter in using the application. After gaining enough information, GO-JEK drivers who use the application in their daily lives were selected as the participants. Next, TAM method and qualitative approach were determined as the methods to analyze the obtained data. Lastly, questions for the instrument were formulated based on TAM variables: Perceived Usefulness, Perceived Ease of Use, Attitude Towards Using, Behavioral Intention to Use, and Actual System Use [15]. Yet, the questions prepared are only for guidelines and the interview were conducted based on tightly structured questions [16].

After structuring the research, we began to conduct interviews. The data of the interview section was recorded during the process. The addressed interview questions implemented open-form questions since it allows the participants to express their answers without limitation. By having this form of questions, each participant may share the experiences they encountered during the use of GO-JEK application. When the researchers had obtained the data needed, the oral information of the interview was then transcribed purely based on the participants’ statements without reducing or adding any words.

From the transcript writing, the collected information was translated. Thereafter, we identify the information from one research participant to the others about the problem described. We took a number of issues that were kept informed by several different sources to be collected in order to maintain objectivity. These problems were then analyzed and categorized based on their relativity with five elements of TAM (Perceived Usefulness, Perceived Ease of Use, Attitude Towards Using, Behavioral Intention to Use, and Actual Use).

After categorizing, we reviewed the problems related to the five elements of the TAM. If examined, in each element there will be found several problems that affect technology adaptation, for example, in the Perceived Ease of Use it was found that there were difficulties in using the application because the internet connection was unstable. Thus, here we have found that the internet can influence the process of receiving technology. Figure 1 is the detail of the research stage.
Our initial research model used a model from TAM. Figure 2 depicts the initial model which was cited from TAM by Davis. The indicators used in TAM were External variables, Perceived Usefulness, Perceived Ease of Use, Attitude Towards Using, Behavioural Intention to Use dan Actual Use. From the indicators used in the model, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) were two major factors contributing to the attitude of application users (Attitude Towards Using) [15]. Regarding with External Variables, PU and PEOU act as mediation relationship between the External Variables and users’ attitude (Attitude Towards Using) [17, 18].

Based on the field observation, the arrival of GO-JEK in Salatiga was influenced by the environmental changes, marked by technological development, and the online transportation trends which are reaching the community. Simultaneously, Davis claimed that PU and PEOU were influenced by external variables such as others’ encouragement or pressure, environmental changes, and trends occurring in the user’s environment [15]. However, this study only utilizes two external variables (trends and environmental changes), adjusted to the field of the study.

Davis stated that the simplicity of technology usage procedures benefits the users, which resulting in users’ trust-achievements in using the technology (Attitude Towards Using) [19, 20]. The previous studies showed that ease of using a new technology makes users want to adopt the technology (Attitude Towards Using) [21-24]. Whereas, the difficulties experienced by the users in utilizing the technology may contribute to new technology rejection [8]. The previous studies about the benefits of technology also revealed that a technology which supports its users’ performance will be trusted (Attitude Towards Using) [22-26].

Consequently, the trust obtained from the users (Attitude Towards Using) will provoke the users to use the technology regularly [15]. The willingness is important in determining whether the users will continuously use the technology or not. In the previous studies [8], it was discovered that users’ dissatisfaction might result in the loss of intention in using the technology (Behavioral Intention to Use).

Behavioral Intention to Use (BIU) later on determined the behavior of end user in the actual usage (Actual Use). The previous research proved that behavioral intention has delivered benefits for actual use [22]. Actual use is assessed with the intensity and frequency of actual technology use which done continuously [15].

3. Results and Analysis
3.1. The Current State of GO-JEK within the Society in Salatiga

The presence of GO-JEK as an online-based transportation in Salatiga triggered many issues. It started with a protest from the Road Transportation Organization (Oganda) and the Parent of Salatiga Public Transportation Association (IPAS) about their displeasure towards GO-JEK presence to the Mayor of Salatiga, Yulianto at his official residence in July (7/7/2017). Quoted from Kompas online newspaper (7/7/2017), Suyanto as the representative of other public transportation (angkot) drivers expressed their anxiety because they saw GO-JEK had harmed them.

Continuing their action, the angkot drivers protested on Tuesday, July 25th, 2017. Angkot drivers’ protest happened again on Monday, August 21st, 2017. According to the news
on Solopos online newspaper (21/8/2017), this time’s protest was more massive causing the traffic on Sudirman St. obstructed. At last, the action came to an end by carrying through a discussion among Yulianto, Ady Suprapto as the Head of Salatiga Transportation Department and the angkot drivers. Ady Suprapto on his social media account, Facebook, wrote several agreements obtained from the discussion. Significantly, he asked appeals to stop the process of GO-JEK recruitment in Salatiga. Also, GO-JEK application for Go-ride service needs to stop operating until there is an agreement with related parties (Organda, IPAS, conventional taxi bike, pedicab, and dokar). Equally important, they demanded GO-JEK not to open branch office in Salatiga before obtaining the licensing as required.

Furthermore, the appeals resulting from the discussion did not make GO-JEK drivers stop operating. Tribun Jateng online newspaper on August 23rd, 2017, reported that there had been an arrest of three online drivers by public transportation (angkot) drivers. Those three men were then handed over to Satpol PP Salatiga. The caught drivers gave a confession that they had not received any notice regarding the appeals for GO-JEK from the management.

3.2. GO-JEK Application is Still Used by The Drivers

Although there is an act of disapproval against GO-JEK done by the conventional transportation drivers and the official permission has not yet issued by the government of Salatiga, GO-JEK drivers insisted to operate in Salatiga. Yet, in order to avoid the riot, the drivers do not wear their attributes such as the official jackets or helmets. This is done so that the GO-JEK drivers can avoid the conventional transportation drivers who like to mob GO-JEK drivers seen and seize their attributes. For GO-JEK drivers in Salatiga, GO-JEK is where they look for profit. Unemployed citizens, university students, and even employed people who look for part-time jobs participate in taking profits from GO-JEK application.

Despite of the emerging conflicts, GO-JEK can still be spotted in Salatiga. This means the GO-JEK application is still intensively used by drivers. The intensity of system usage can indicate the possibility of the system to be received. Mr. Ahmad, Mr. Hari, and Mr. Sofyan admitted that they use the GO-JEK application every day because GO-JEK is their only livelihood. On the other hand, there are also those who do not use this application on daily basis due to their main job. Mahfud who works as a casual worker (buruh) uses GO-JEK only to spend his spare time when he does not get any job call. As said by Mahfud below:

“I do what is there for me. Sometimes there’s a call to be a construction worker (tukang). Sometimes I do a freelance job too, in Mangkang. It’s the place for making a trellis, light steel, or light steel production. Thus, sometimes I do stirring, sometimes unpacking loads in Bangsar. If there’s nothing to do, I will take orders (from GO-JEK). It’s not a regular job.”

On the intensity of application usage, it turns out that each driver has a different intensity level. The variety of intensity adjusts the users’ need for the application. The users who make GO-JEK as their one and only medium for earning money tend to use the application more frequent. Nevertheless, the users who have some alternative media to make money less likely appear to use the application.

Moreover, the fact that the Government of Salatiga has not allowed GO-JEK to operate officially makes the drivers decide to operate without attributes. GO-JEK official jackets and helmets are no longer visible in Salatiga. The drivers no longer use mobile phone buffer affixed on the dashboard of their motorcycles. This is done to avoid a riot between GO-JEK and conventional transportation drivers.

3.3. The Ease in Using GO-JEK Application for Drivers in Salatiga

The acceptance success rate of an application can be identified from the interaction between the users and application. GO-JEK application tends to be handy and easy to be operated. The users do not need much effort to interact with the application. The management of GO-JEK also conducted briefings during the initial recruitment to overcome a confusion in operating the application which is often experienced by the drivers. Additionally, GO-JEK partners who have already familiar in using the application also guide the new partners to understand it.
Yet, sometimes the map feature in the application does not show the exact location required. Mahfud complained that the map feature in the application cannot show the locations in Salatiga properly. As Mahfud proposed his complaint:

"Sometimes the map is not appropriate. So, the maps here, as like what I feel, are less accurate in Salatiga. Sometimes it is invisible, not appropriate. Sometimes if we type (a specific location) here, it points to the other place. Yet, yesterday, I tried it in Bawen area, Ambarawa, it was accurate. I got an order yesterday from here, Salatiga, to Banyubiru, near Ambarawa, at the farming area, I thought the map was wrong but it was actually right in front of his house. Yes ... sometimes GPS is not accurate here."

Based on the respondent's narration, the GO-JEK application is easy to operate and not difficult to learn. Although the drivers got confused during their first time using the application, the new drivers do not need more effort to understand it. However, the map inaccuracy becomes the main obstacle. It is unable to locate precise locations in Salatiga, as complained by Mahfud who elaborated that sometimes the map feature of the application does not show the location as requested. According to Mahfud, this is very unfortunate because the map will be very helpful to show the proper costumers' locations.

3.4. The Benefits of GO-JEK Applications for Drivers in Salatiga

The use of GO-JEK applications is perceived to be useful for the community, especially among the drivers in earning income. Mr. Sofyan who was once a conventional taxicab (ojek) confessed that he resigned from the job and joined GO-JEK because the income he earned from the GO-JEK is greater, as it fulfilled his daily needs. In addition, Mr. Ahmad believes that this application can increase work effectiveness, so that it can increase the work productivity. By using this application, Mr. Ahmad does not need to offer ojek services to people because the application will automatically put the customer’s orders for him.

However, the system of performance-reduction point whenever the customers cancel their orders appears to be another drivers’ challenge. Mahfud complained about this issue as the drivers’ performance points will consistently be reduced despite the reasons of the customer cancelling the order, which sometimes only caused by the closed stores or unavailable ordered foods. Mahfud’s confession is on the following:

"Because it will ruin our performance. If my performance is bad, as time goes by until it gets to the target (points are stopped), I cannot get a bonus because of my bad performance. Performance is very influencing us. For example, like the previous case, which is ordering food but the store is already closed. If it is closed, my performance will be down even though I have not run the orders yet. Later on, I have to look for more orders to reach the minimum target of performance points earlier in order to get the bonus that I may not get."

In addition, the money disbursement from GO-PAY makes the drivers encounter further difficulties. The customers gradually switch to use GO-PAY recently because the price offered is lower than in cash. For the drivers, however, sometimes GO-PAY puts them in a difficulty, as the money in GO-PAY cannot be immediately disbursed. There is a minimum limit for the disbursement, which is IDR 50,000, and a long waiting period for fund disbursement. Below is Mr. Ahmad’s explanation:

"Sometimes if the money runs out, we have to borrow money from a partner because Go-Food uses our own money as the capital. We withdraw at least IDR 50,000. We withdraw at 9 o’clock, but it will come out at 3-4 o’clock. So, we have to borrow friends by beforehand (to complete the Go-Food orders). The customers rarely used GO-PAY previously. Now, almost all of them have started to use it because it’s convenient if they use GO-PAY as they only need to receive food. By using GO-PAY, it costs IDR 6,400 only while it costs IDR 8,000 on cash."

Not only the financial benefit that can be achieved through the use of the GO-JEK application, but the drivers also obtain the increasing productivity and work effectiveness as told
by Mr. Ahmad. Unfortunately, the order cancellation by the customers that affect the drivers’ performance turns to be another complaint. Although the cancellation is done due to external reasons, in which the order is sold, the store is closed, or the menu is out of stock, these still cause the drivers’ performance points decrease. The drivers who achieve below average performance are risky of not getting the bonus in spite of successfully reaching the targeted points. According to the drivers, the impact on bonuses is very unfortunate as they should work even harder to reduce the restored performance points. Furthermore, the long waiting period for the disbursement of GO-PAY funds is also a constraint for the drivers, realizing that they cannot complete the Go-Food orders if they do not have cash.

Based on the respondent’s narration, the GO-JEK application is easy to be operated and not difficult to learn. The application confused the drivers during the first usage, but later on, the new drivers do not need more effort to understand it. Only the map inaccuracy is perceived to be the obstacle as it cannot show the points of the locations in Salatiga. It becomes the drivers’ complaint as it constrains the drivers’ performance. The complaint was proposed by Mahfud who pointed that sometimes the map feature of the application does not show the location accurately. According to Mahfud, this is very unfortunate because the map is helpful in informing the drivers about the exact location of the customers.

3.5. Salatiga Drivers’ Attitude in Using GO-JEK Application

The attitude of agreement or disagreement toward the presence of a new technology may reveal the user’s attitude towards the use of new technology. For instance, Mr. Hari, who was interested in GO-JEK because of the news on the internet, directly registered himself in GO-JEK once it was newly established in Salatiga. The reason for joining GO-JEK as a partner was because the income earned from GO-JEK is not significantly different from his income during his time working at a mine in Kalimantan before he got dismissal (PHK).

Unfortunately, the drivers are sometimes not convenient in using GO-JEK application. The existence of ‘fictitious orders’, the orders from the customers who are only messing around, make the drivers anxious. This makes them always worried because the ‘fictitious orders’ will greatly interfere with their performance, as told by Mr. Ahmad:

“We're just worried about that. We have to be careful, too. I often received fictitious orders too. The customers which couldn’t be called, their numbers didn't appear on WA. Then, suddenly they cancelled the orders. We've picked them up, then, cancelled. It's probably the same phone number used for GO-JEK. So it's not updated.”

Not only the attitude of agreement and comfort that can indicate the acceptance of new technology, but the attitude towards the use of technology can also show how the form of user’s behavior in response to the existence of the new technology. In this study, the informants revealed that there had been a termination of the relationship between GO-JEK management and GO-JEK partners (drivers) recently. This termination was done because the drivers did violations such as asking friends to ‘cheat’ (tembakan) orders to reach the required point closing or frequently take orders outside of Salatiga. Below is the narration about the recent terminations from Mr. Ahmad:

“Approximately, maybe 200 or more drivers were expelled from GO-JEK because they often cheated (nembak) or took orders outside of Salatiga too often. Sometimes if their point needs one more, some drivers like to ask their friends to cheat. It is fine if they took order in Ambarawa, Bawen, Ungaran, but if it is too often, it’s not allowed. We should also appreciate other GO-JEK drivers in other areas.”

Various attitudes were present during the application use, such as the attitudes of an agreement, inconvenience during the use due to the ‘fictitious order’, and the violations causing the employment termination. These attitudes arose because of the users’ need for expected benefits obtained from the use of the application. Unfortunately, the benefits obtained have not been able to meet the users’ needs yet, so that it triggers negative attitudes toward the use of the application.
3.6. A Desire to Keep Using GO-JEK Application in Salatiga

Although the use of GO-JEK application generates the advantages as mentioned earlier, according to Mr. Ahmad, he only got two or three orders placed in a day lately. Even sometimes, he did not get any order at all. This eventually made Mr. Ahmad decided to work in Malang as a bus technician and gave up his job as a GO-JEK driver. According to Mr. Ahmad:

"I did not get any order at all yesterday. But, it's quite nice that I got 2 orders to Ambarawa, one for IDR 20,000. Unfortunately, now I only get two or three orders sometimes. Well, now the income is not certain because most UKSW students were the ones who usually ordered while they are going back home as this is a holiday. It's quiet. So, I can only get 2 orders from morning to night."

Nonetheless, Mr. Ahmad continued to offer GO-JEK to his colleagues who were currently unemployed. Although the income obtained from GO-JEK has not been able to meet their needs, Mr. Ahmad hopes that GO-JEK can hire his unemployed friends.

3.7. Discussion

From the interview results, several findings were discovered in accordance with the TAM mapping. Perceived Ease of Use identifies the ease of use that is shown by the briefing and reduction of drivers for several users. Perceived Usefulness, that sees a person's level of trust that an information system can provide benefits, is shown by the existence of GO-JEK drivers despite the warnings from the government, as well as some people who select GO-JEK as their livelihood. Then, the Attitude Towards Using, which is defined as the evaluation of the user for his interest of the information system expressed through attitudes in the usage, is indicated by the emergence of some drivers who violate the rules while using the GO-JEK application. This attitude is deemed as an outcome of external factors (this external factor will be explained in the next paragraph) which results in reduced benefits (in financial form), stimulating drivers to break the rules to get more profit. The following point is the Behavioral Intention to Use, which refers to the desire of maintaining the information system usage. It is shown by several drivers who lose interest because the benefits are unable to meet their needs. Lastly, the Actual Use, which deals with the frequency of time used to interact with the information system. The time spent to interact with the system differs from one driver to another, which can be identified from their needs and desires in looking for customers.

Furthermore, the researchers also found a number of external factors influencing PEOU, PU, ATU, BIU and AU that occurred in the use of the GO-JEK application in Salatiga. Some of these external factors were not found in the external variables mentioned by TAM. Thus, the addition of these new external factors are constructed in a final model as shown in Figure 3.

3.7.1. Technology

In the field, the researchers found that the system itself required support from the existing technological capabilities. The problems with the GO-PAY and map features which had been described above provide evidence that the lack of technological capabilities used for

Figure 3. Final model
operating the information systems can reduce the benefits gained. Another completed research also confirmed that the absence of compatible technology to support information systems reduces users' interest in using the information system due to its inefficiency [8].

3.7.2. External Policies
The policy made by the Salatiga government directly affects drivers' attitude in using the GO-JEK application. The drivers claimed that they were operating clandestinely because they could not stop to make money for living. This infers that policies made by the government can directly affect PU, PEO, and ATU.

3.7.3. Market Shares
The number of GO-JEK drivers which are not comparable to the number of customers greatly affects the benefits of using the GO-JEK application. The majority of GO-JEK customers are students who often have long semester break and leave Salatiga to go back to their hometowns. Thus, the income is drastically declining which leads the drivers to cheat in order to achieve the required point closing.

3.7.4. Market Competitions
The existence of "fictitious orders" is another problem that is often complained by the drivers, as "fictitious orders" are perceived to be very detrimental in terms of drivers' financial and performance. This can be indicated from the existence of an opposing party trying to cause harm to GO-JEK.

The four factors we discovered and two factors belong to Davis' TAM external variable directly affect Perceived Usefulness and Perceived Ease of Use, as PU and PEOU will affect the user's attitude (Attitude Toward Using). However, the external variables can also directly affect the user's attitude. Then, from the user's attitude, how far the motivation of the user to continue using the information system (Behavioral Intention to Use) can be inferred. Later on, BIU will influence the actual frequency of information system usage (Actual Use).

4. Conclusion
The findings disclose that, in fact, when the researchers entered the field of the study, there were several things which were unable to be predicted by the researchers. These new discoveries are the findings that technology, external policies, market share, and competition can influence the process of GO-JEK adaptation in Salatiga, in addition to environmental changes and trends given by Davis. However, with the situation occurring in the field, this built-in model cannot be generalized to other case studies. The case study of GO-JEK in other regions may exhibit different factors that affect the application adaptation process.

References


