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From Students for Students: Innovation Adoption of the KO-MAH Online Ride-Hailing Service

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Abstract

Student mobility on campus often presents a challenge due to the distance between buildings, limited internal transportation options, and high travel costs, creating a need for more adaptable mobility solutions. In response, students at Universitas Islam Negeri Sultan Syarif Kasim Riau developed the Kece Ojek Mahasiswa (KO-MAH). This "from-students-for-students" transportation innovation operates solely through WhatsApp groups, rather than commercial ride-hailing applications. This study aims to examine the adoption of the KO-MAH service using the Diffusion of Innovations framework, which includes the stages of knowledge, persuasion, decision, implementation, and confirmation. A descriptive quantitative method was employed involving 100 respondents. Data were collected using a 1–4 Likert scale questionnaire and analyzed based on the average score for each adoption stage. The findings reveal a high level of adoption, specifically in knowledge (83.2%), persuasion (81.2%), decision (78.4%), implementation (79.2%), and confirmation (80.8%). These results suggest that KO-MAH is widely accepted due to its relative advantage, compatibility with student mobility needs, ease of use through WhatsApp, and strong interpersonal communication within the campus community. Overall, the study demonstrates that community-based campus transportation innovations can achieve effective adoption even with simple technology, as long as they remain relevant to user needs and gain social legitimacy within the student population. Students from various campuses in Riau and West Sumatra then adopted this innovation model.

Keywords: Adoption of innovation, sharing economy, ride-hailing, student innovation

INTRODUCTION

For students, moving around on campus may be difficult due to distance, travel time, and transportation costs. It is difficult for students to move around on campus due to distance, travel time, and transportation costs, and relevant transportation alternative to meet the needs of students in Pekanbaru City (Armansyah, 2023). This KO-MAH service does not use a digital application like commercial online motorcycle taxi services in general, but is based on a WhatsApp group. In practice, students who want to use the

KO-MAH service must first join the KO-MAH WhatsApp group. The group serves as the main booking space, where users can submit transportation requests by listing the pickup location and destination. Next, the group admin will forward the request to a special WhatsApp group for KO-MAH drivers, who are also students of UIN Sultan Syarif Kasim Riau. From there, one of the drivers will contact the user directly to confirm and arrange the trip details. Based on the description of this phenomenon, researchers are interested in conducting research on the adoption of the innovative student motorcycle taxi (KO-MAH) pick-up and drop-off service among students of UIN Sultan Syarif Kasim Riau. And based on observations, the KO-MAH pick-up and drop-off service is indeed used by UIN Sultan Syarif Kasim Riau students as a means of transportation. To find out the answer scientifically, research is needed.

In a broader context, the development of KO-MAH cannot be separated from the technological dynamics of the Industrial Revolution 4.0 era. Digital transformation has impacted almost all sectors of life, including mobility and transportation. Modern transportation systems now rely on digital technology, connectivity, and collaborative platforms that are part of the sharing economy (Astuti et al., 2020). In the sharing economy, having access to services is more important than ownership (access to services rather than ownership). This strategy encourages the effective use of resources through shared use of digital platforms (Hamari et al., 2016; Riyadi Putra et al., 2022). Further research shows that the concept of access-based consumption allows users to obtain the benefits of mobility without the need for a private vehicle (Chen et al., 2015). Mobility sharing services also reflect the transition of consumer behavior from ownership to access, as digital mobility services offer convenience, lower costs, and resource efficiency (Curtis & Lehner, 2019). In line with this, Rayle et al. (2016) underlined that ride-hailing services offer an adaptive and accessible mobility option for urban communities (Rayle et al., 2016).

Online transportation services are an important part of this transformation. Online transportation is defined as a transportation service that uses an online platform, such as an application that connects passengers with drivers. Passengers determine their pickup and destination locations, for a fixed fare. This service is managed by a third party, namely a transportation network company (Pham et al., 2017). In practice, this service can significantly increase passenger efficiency in ordering online transportation and reduce waiting times and vacancy rates for online transportation compared to traditional transportation (Feng et al., 2021) . The convenience and benefits of ride-hailing services have made this service easily accepted worldwide (Clewlow, 2001) . Thus, the existence of ride-hailing not only reflects changes in mobility patterns, but also serves as a concrete representation of how digitalization is changing consumer behavior in accessing transportation services.

Theoretically, this study will use the Diffusion of Innovations Theory from Everett M. Rogers as an analytical framework. According to Rogers, diffusion is Diffusion of innovation according to Rogers is a process when an innovation is communicated through certain channels and over a certain period of time to members in a social system. This process explains how an innovation is introduced, understood, accepted, rejected, or adopted by individuals and groups in society (Rogers, 2003). The innovation adoption process according to Rogers consists of five stages, namely knowledge, persuasion, decision, implementation, and confirmation (Rogers, 2003). In the context of KO-MAH services, innovation diffusion analysis can be used to analyze why students choose to use the shuttle service innovation created by this community, even though the infrastructure is relatively simple .

Previous research on the adoption of shuttle service innovations has also been studied by Badri (2019) showing that the post-millennial generation has a strong level of knowledge and persuasion towards transportation applications (Badri, 2019) . In addition, Marbun and Matondang (2022) regarding the Gojek Campus Group (Gopus) at UIN North Sumatra showed that the campus community-based shuttle service run through the WhatsApp Group was proven effective in increasing student mobility. (Marbun & Matondang, 2025). On the other hand, Naimah et al. (2024) through an analysis of student interest in shuttle services at Semarang State University found that cost, convenience, and accessibility factors greatly influence students' decisions to use shuttle services (Naimah et al., 2024). Furthermore, research from Soemantadiredja, Vitayala, and Hermadi (2015) on the adoption of Gojek application innovations shows that it is not enough to only have profitable innovation characteristics, technical aspects of information systems such as stability, system reliability, and the information provided also play an important role in adoption decisions (Soemantadiredja et al., 2015). And the following research from Annatasya (2024) on online motorcycle taxi service innovations found that the success of online motorcycle taxi service adoption is not only determined by its technological aspects, but also by the connection with urban social structures that support high mobility. (Annatasya et al., 2024).

Although several previous studies have discussed the adoption of innovations in online transportation services such as Gojek and other ride-hailing services, all of these studies focused on digital application-based innovations supported by complex, commercial information systems. These studies emphasized factors such as application ease of use, relative advantage, cost, and information system quality as determinants of adoption. However, no research has yet examined how campus community-based transportation innovations like KO-MAH, which operates solely through WhatsApp Groups, operate. This difference in operational models creates a new research space because KO-MAH relies on social mechanisms and community closeness, rather than modern application technology. Therefore, this study fills an

academic gap by examining how students at UIN Sultan Syarif Kasim Riau adopted the KO-MAH service innovation in a campus context, a previously unstudied approach.

The problem in this study is how the adoption of the KO-MAH shuttle service innovation among students of UIN Sultan Syarif Kasim Riau. This study aims to determine how students recognize, consider, and adopt the KO-MAH service as a campus mobility solution. Conceptually, this study provides a new contribution to the study of innovation communication, especially regarding campus community-based innovations managed by the students themselves. The novelty of this study lies in its context which is different from commercial online transportation services such as Gojek or Grab because KO-MAH operates on a community scale with a social orientation. The results of this study are expected to enrich academic understanding of innovation adoption patterns in the campus ecosystem in the digital era.

METHODOLOGY

This study uses a quantitative approach with a descriptive format. Descriptive research aims to describe certain events, behaviors, or objects (Kriyanto, 2006). This study then employed a non-probabilistic sampling technique, chosen taking into account the population's characteristics, which were spread across various faculty campuses and the limitations of research resources. Specifically, the technique employed was purposive sampling, where respondents were selected based on specific criteria relevant to the research objectives (Kriyanto, 2006). The exact number of users who have adopted the KO-MAH innovation at UIN Sultan syarif kasim Riau is not precisely known. However, based on the 2025 student population data from the UIN Sultan Syarif Kasim Riau website (uin-suska.ac.id), the total number of students is 30,934. The researchers used the Slovin formula to determine the sample size for the respondents (Kriyanto, 2006). Thus, the number of respondents used in this study was 100 people.

This research instrument uses a Likert Scale of 1-4, a Likert Scale is a scale used to measure a person's attitude or opinion about an object (Kriyanto, 2006). This study measures respondents' attitudes or opinions towards the innovation of the student motorcycle taxi pick-up and drop-off service starting from the knowledge, persuasion, decision, implementation, and confirmation stages. This research instrument was developed by the researcher himself referring to the stages of the innovation decision process. The scores were then accumulated and presented in five categories. A score of 1% to 20% indicates that the respondent's attitude or opinion falls into the very low category. Furthermore, a score of 21% to 40% indicates a low assessment level. A score of 41% to 60% indicates that the respondent falls into the medium category. A score between 61% and 80% is categorized as high. Finally, a score of 81% to

100% indicates that the respondent's assessment falls into the very high category.

RESULTS AND DISCUSSION

Research result

The respondents of this study consisted of 100 people with gender 46 male (46%) and 54 female (54%) with various majors in each faculty with the percentage of Faculty of Science and Technology 25 students (25%), Faculty of Tarbiyah and Teacher Training 10 students (10%), Faculty of Sharia and law 15 students (15%), Faculty of Da'wah and communication 22 students (22%), Faculty of Economics and Social Sciences 8 students (8%), Faculty of Psychology 2 students (2%), Faculty of Ushuluddin 6 students (6%), Faculty of Agriculture and Animal Husbandry 12 students (12%). After the explanation of the description of the respondents, the stages of the innovation adoption process are presented which are divided into five, namely: (1) Knowledge, (2) Persuasion, (3) Decision, (4) Implementation, and (5) Confirmation.

Knowledge stage

At the knowledge stage, students were very familiar with the KO-MAH service, as indicated by an average score of 83.2%. Students knew that KO-MAH was a transportation innovation created by students at UIN Sultan Syarif Kasim Riau (85%), understood how to order via WhatsApp (80%), and understood the benefits and functions of KO-MAH for campus activities (83%). Most information about KO-MAH was obtained through campus social media and friends (83%). This shows that the dissemination of information about KO-MAH was effective and students had a strong knowledge base before moving on to the next stage.

Table 1. Indicators of knowledge of adoption of KO-MAH service innovation

No.	Indicator	Score (%)
1	KO-MAH Services is a transportation innovation made by students of UIN Sultan Syarif Kasim Riau.	85
2	Understand the use of KO-MAH services via whatsapp group	80
3	Understand the benefits of KO-MAH services	83
4	Knowing that KO-MAH provide transportation services on campus	85
5	Find out information about KO-MAH from campus or friends' social media	83
	Average score	83.2

Source: Research data (2025)

Persuasion stage

In the persuasion stage, students began to assess and form attitudes toward KO-MAH, with an average score of 81.2% indicating a positive view. Students considered KO-MAH affordable (79%), effective as a campus transportation solution (83%), safe to use (80%), and easy to order (80%). Furthermore, students viewed KO-MAH as a positive student innovation (84%), thus strengthening their confidence to try and use KO-MAH.

Table 2. Persuasion indicators for adoption of KO-MAH service innovation

No.	Indicator	Score (%)
1	KO-MAH offers affordable rates for students.	79
2	KO-MAH is an effective solution to overcome transportation difficulties in the campus environment.	83
3	Trust KO-MAH services safe to use.	80
4	KO-MAH ordering process easy to understand for new users	80
5	Assess KO-MAH as a positive student innovation.	84
	Average score	81.2

Source: Research data (2025)

Decision stage

The decision stage showed that students tended to choose to use KO-MAH with an average score of 78.4%. KO-MAH was considered faster than other transportation on campus (85%) , and students were satisfied upon first use (77%). The decision to use KO-MAH was also influenced by the suitability of the service to their needs (75%) and consideration of other users' experiences (78%). This indicates that students were not only interested but also made a decision to adopt the service.

Table 3. Indicators of KO-MAH service innovation adoption decisions

No.	Indicator	Score (%)
1	KO-MAH Services faster than other transportation around campus	85
2	KO-MAH services after knowing the benefits.	77
3	Felt satisfied when I first used KO-MAH .	77
4	Choose KO-MAH because it is more suited to needs	75
5	Consider other people's experiences before deciding to use KO-MAH .	78
	Average score	78.4

Source: Research data (2025)

Implementation stage

In the implementation stage, students actually used KO-MAH in their daily activities, as shown by an average score of 79.2%. Students supported the sustainability of KO-MAH services on campus (81%), used KO-MAH for college activities (78%), and felt KO-MAH helped save time (77%). They were also satisfied with the driver service (78%) and felt communication with the driver via WhatsApp was very easy (82%). This indicates that the KO-MAH user experience went well and met user expectations.

Table 4. Indicators of implementation of KO-MAH service innovation adoption

No.	Indicator	Score (%)
1	Support the sustainability of KO-MAH services in the campus environment.	81
2	Using KO-MAH for college activities or campus activities	78
3	KO-MAH Services helps save travel time.	77
4	Feel satisfied with the service of the KO-MAH driver .	78
5	Feel easy to communicate with KO-MAH driver via whatsapp.	82
	Average score	79.2

Source: Research data (2025)

Confirmation stage

The confirmation phase showed that students were confident in their decision to use KO-MAH, with an average score of 80.8, indicating that they felt it was the right decision (79%), were willing to recommend KO-MAH to others (80%), and believed KO-MAH was worthy of becoming a permanent campus service (81%). Students also believed KO-MAH had the potential for sustainability (83%) and did not regret using it (81%). This demonstrates that KO-MAH has succeeded in building long-term satisfaction.

Table 5. Confirmation indicators for the adoption of KO-MAH service innovations

No.	Indicator	Score (%)
1	Feel the decision to use KO-MAH is the right decision.	79
2	Will encourage others to use KO-MAH .	80
3	Feel KO-MAH worthy of being developed into a permanent campus service.	81
4	Believe KO-MAH can be a sustainable transportation innovation.	83
5	No regrets about using KO-MAH services	81
	Average score	80.8

Source: Research data (2025)

Discussion

The students of UIN Sultan Syarif Kasim Riau who were the subjects of this study are quite active users of campus digital services, as indicated by their high level of knowledge of the existence of the KO-MAH service as a campus transportation innovation (85%). This condition is a supporting factor that facilitates the process of diffusion of the KO-MAH service innovation, because students are accustomed to accessing digital-based information and services, especially through WhatsApp groups and social media. This finding is in line with Rogers' (2003) view which emphasizes that the process of innovation adoption is greatly influenced by an individual's ability to obtain information through communication channels close to everyday life (Rogers, 2003). In this context, students' active use of digital communication devices and platforms is an important asset that allows them to more quickly recognize, understand, and consider the use of innovative transportation services such as KO-MAH.

At the knowledge level, students demonstrated a relatively high level of awareness about the existence and operation of KO-MAH services. In this case, the average score reached 83.2%. This proportion seems to represent a representative result that KO-MAH information had been actively shared at

that time, through campus social media, and student friendship networks. In fact, students who play a role that relies heavily on campus social systems for information, recognize the phenomenon of campus social systems that rely heavily on interpersonal communication. Rogers emphasized the importance of the information stage, which is the first measurement of the diffusion principle in which people perceive innovations evaluating and deciding to use it (Rogers, 2003; Sahin, 2006). Based on the interviews obtained, students tend to learn about KO-MAH from campus friends. This finding shows that KO-MAH has succeeded in achieving broad visibility and awareness despite only operating through WhatsApp Groups, not high-tech digital applications like commercial online transportation services.

The persuasion stage also showed high results with an average score of 81.2%, indicating that students have a strong positive attitude towards KO-MAH. Students considered KO-MAH to be affordable (79%), effective as a campus transportation solution (83%), safe (80%), easy to use (80%), and a positive innovation initiated by students (84%). These percentages indicate that KO-MAH has a strong relative advantage compared to other transportation options on campus. In Rogers' theory, a positive attitude at the persuasion stage is crucial because interpersonal channels play a significant role in shaping and strengthening the belief to try or adopt an innovation (Sahin, 2006). In addition, research by Putri (2025) shows that interpersonal communication is very effective in spreading innovation in homogeneous communities because social proximity strengthens persuasion (Putri et al., 2025). And also findings by Girsang & Situmeang (2014) found that strong interpersonal channels among students can influence the formation of persuasive attitudes (Maissalinya & Oisina, 2014). Some students stated that their confidence in using KO-MAH was strengthened by their friends' positive experiences, so interpersonal recommendations were an important factor in forming positive attitudes towards this service.

An average of 78.4% in the decision stage shows that students are not only interested in KO-MAH, but have also made the decision to fully utilize the service. Speed of transportation was rated 85% of students that KO-MAH was the fastest option, while 77% of students reported satisfaction on their first use of the service. Several factors contributed to the decision stage, including service satisfaction fit and consideration of others service usage (75% and 78% respectively). These percentages underline the fact that decisions of adoption are not based on information only but empirical evidence and social referrals. The factors of empirical evidence and social referrals are Rogers' Compatibility and Trialability and KO-MAH meets both with a simple, inexpensive, and quick service. Faster adoption and use of KO-MAH was also reported based on social referrals, where the decision to use KO-MAH was reported by peers to have used the service.

During the implementation phase, the average score for this phase was 79%, a strong indication that participants are users of service KO-MAH.

Students overwhelming support the KO-MAH service sustainability (81%), use KO-MAH for their campus activities (78%), believe KO-MAH saves their time (77%), are satisifed with KO-MAH driver services (78%), and find communication with KO-MAH drivers via WhatsApp to be easy (82%). The high score on the communication with drivers indicator suggests that the WhatsApp-based driver communication system fosters a sense of social closeness to the system. This pattern is in contrast to results of investigations into app-based transportation innovations where the focus is on stability of the app system. For KO-MAH, the social dimension of the system is dominant, and community closeness is a community driver of the social transport system. Interview participants stated that communication with KO-MAH drivers via WhatsApp made use of the KO-MAH service in daily life much more convenient.

On the confirmation stage of the process, students maintained their decisions, with 80.8% of them convinced that KO-MAH was the right choice. 79% of students confirmed that their decision was a right one, 80% were willing to recommend KO-MAH, 81% thought KO-MAH was deserving of being a permanent campus service, 83% thought KO-MAH was sustainable, and 81% did not regret using the service. With such high scores, we can say KO-MAH has reached the third and perhaps most stable stage of acceptance according to the Rogers' theory. Students' support confirms that KO-MAH is a service that fulfills functional requirements as well as the socially prevalent needs and support structures of the campus community.

Based on the research undertaken, it was decided that basic tools like WhatsApp are more useful in a college context than more advanced tools like commercial ride-hailing apps. From a technical perspective, WhatsApp's success is due to its accessibility and ease of use. From a social perspective, WhatsApp's success is due to its ability to facilitate and support informal, collective social interactions that are crucial for forming and maintaining social bonds. In a campus context, social groups, easy information sharing, and real-time communication channels create student collaboration forums that transform academic and social discourse. Furthermore, these tools are easy to master, reducing cognitive load, so users quickly become proficient and are more likely to use the forums daily (High et al., 2025).

Second, from the standpoint of network society and community informatics, easily available technologies can serve as network infrastructure for communities to continuously connect and coordinate. Campus communities tend to have social structures that are characterized by mutual familiarity and trust, therefore systems like WhatsApp promote information exchange, activity coordination, and social support more successfully than sophisticated programs (Wikipedia, 2025). Furthermore, the concept of Social Trust, the trust that develops among members of a social community with shared social and cultural links, plays a crucial role in the adoption of simple technology. This trust provides a sense of security and loyalty to platforms that

are already integrated into social life (e.g., WhatsApp), prompting students to prefer them for their regular campus activities over new, more difficult applications. This trust is sometimes greater than merely technical considerations, especially in communal technology adoption decisions (Wikipedia, 2025).

Overall, these results show that KO-MAH satisfies all of Rogers' criteria for innovation, including relative advantage (fast, inexpensive), compatibility (suited to student needs), low complexity (based on the familiar WhatsApp), high trialability (easy to try), and clear observability (results of use are immediately visible in mobility efficiency). Another unusual conclusion in this study is that students' interpersonal networks are the main way that knowledge spreads, not advanced information system-based applications like Gojek or Grab services. This study adds to the field of innovation communication by showing that innovations based on campus communities can be widely adopted even when they use simple technology, as long as the innovation is useful, meets needs, and gets social approval from the user community.

CONCLUSION

This survey reveals that the KO-MAH transportation service is well-received by students. They understand how it works and its benefits, and regard KO-MAH to be an easy-to-use, safe, and helpful alternative for movement around campus. Most students choose to use KO-MAH because it meets their daily needs. Users also tend to continue using the service and recommend it to other students. Overall, KO-MAH's success is affected by ease of access, perceived direct benefits, and supportive communication among students, enabling this community-based innovation to develop effectively.

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