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Unveiling drivers and inhibitors in cashless readiness adoption: Evidence from Batam, Indonesia

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ABSTRACT

Cashless readiness reflects a society's preparedness to adopt digital payments over cash transactions. This study investigates key factors influencing cashless adoption in Batam, Indonesia, using the Technology Readiness Index 2.0 and the Technology Acceptance Model. A quantitative survey was conducted with 400 valid responses. Statistical analysis reveals that ease of use did not significantly impact readiness. However, usefulness, optimism, innovativeness, and lack of awareness significantly affected readiness. Additionally, readiness strongly influenced adoption. These findings suggest that addressing awareness barriers while promoting innovation and optimism can enhance cashless adoption. Policymakers should prioritize financial education programs, and service providers should improve accessibility and user experience to encourage digital payment use.

Introduction

The development of technology has grown rapidly until now. Technology has become a convenience that is felt in people's lives. The convenience presented by technology continues to assist people in their daily activities, especially in conducting financial transactions. Cashless society is an environment of community life without using cash. The perceived advantages of a cashless society are greater than the disadvantages (Abbas, 2017). When conducting financial transactions, debit cards, credit cards, mobile banking, and e-wallets can be used (Wijoyo et al., 2021).

Based on data from Bank Indonesia (2022), the implementation of a cashless society in Indonesia is carried out through the National Non-Cash Movement (GNTT), which aims to create efficient, safe, and smooth payment transactions. According to a statement from Bank Indonesia, the transaction value of utilizing electronic money climbed by 50.3% in April 2022, supporting the growth of the use of electronic money in Indonesia (AUD, 2022). This is supported by records from Bank Indonesia, which continue to experience developments from 2013 to 2022. In 2013, the number of electronic money readers amounted to 139,157 units and continued to increase yearly. In 2022, the number of electronic money readers amounted to 1,386,545 units (Bank Indonesia, 2022).

Cashless readiness plays a significant role in accounting practices, particularly regarding financial transparency, transaction recording, and internal control systems. Understanding how digital payments contribute to these aspects can provide valuable insights for businesses and policymakers in optimizing financial governance. Jensen and Meckling (1976) on Agency Theory explain how conflicts of interest between business owners (principals) and managers (agents) can be reduced through increased financial transparency. In this context, digital payments increase transparency because all transactions are automatically documented in an electronic system, reducing the possibility of data manipulation and fraud.

Batam is a city in the Riau Island Province that, until now, has not been in the top 10 provinces with electronic money users. With this in mind, this research will examine the driving and barrier factors for implementing a cashless society in Batam. Based on Balakrishnan and Shuib (2021), which aims to determine cashless readiness in Malaysian society, the study adopted cashless readiness using financial transaction applications circulating in Malaysia. This study specifically examines the elements driving and inhibiting Malaysia's adoption of cashless ready. These elements include ease of use, usefulness, optimism, innovativeness, and lack of awareness.

A key element driving the acceptance of cashless ready is ease of use. This element has to do with how simple it is to understand and use digital payment services. More consumers will use digital payment systems if they are easy to use. Usability greatly impacts on people's intentions to utilize digital payment services (Phonthanukitithaworn et al., 2016). However, the simplicity of use of digital payment services has little to no effect on their adoption (McLean et al., 2020), (Daragmeh et al., 2021).

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The usefulness of digital payment systems is influenced by a supporting aspect called usefulness. Digital payment services are more likely to be adopted by the general public if they are more helpful in facilitating payment transactions. The factor of usefulness significantly impacts the utilization of digital payment services (Daragmeh et al., 2021). On the other hand, the impact of usefulness on the use of digital payment services is relatively minor (McLean et al., 2020).

Optimism is a powerful characteristic that is linked to a person's positive views and can impact their readiness to use digital payment systems. Positive influences on digital payment service adoption can be traced back to an individual's positive perspective. The adoption of digital payment methods is largely influenced by an individual's positive attitude (Yan et al., 2021, Al-Saedi et al., 2020, Cruz-Cárdenas et al., 2019).

Creativity serves as another contributory element to cashless readiness acceptance. Individuals with a propensity for embracing change and integrating new technology tend to exhibit innovativeness. Given the continuous introduction of technological advancements, particularly within digital payment services, this factor becomes noteworthy. The influence of innovation on the intention to use digital payment systems is notably pronounced, as demonstrated by studies such as Sun et al. (2023) and Patil et al. (2020). However, it is worth noting that conflicting findings arise from studies conducted by Yan et al. (2021) and Oliveira et al. (2016), indicating that innovation might not substantially impact the intention to adopt digital payment systems.

Lack of awareness stands as a significant barrier impeding the progress of cashless readiness implementation. Although knowledge pertains to an individual's awareness of ongoing technical advancements, people often revert to familiar habits, resulting in an absence of awareness concerning the evolution of digital payment systems. Awareness substantially impacts the intention to use digital payment systems (Singh et al., 2023). In contrast, Loh et al. (2021) suggest that entrenched habits have minimal influence on adopting cashless readiness.

In summary, optimism's positive influence on digital payment adoption is supported by multiple studies. Creativity, denoting a willingness to embrace new technology, is a pivotal factor in readiness for cashless adoption, although some discrepancies exist in the literature. Lack of awareness, stemming from a limited understanding of technological advancements, acts as a barrier to cashless readiness implementation, with studies showing varying impacts on digital payment intentions.

Literature Review

The Technology Acceptance Model (TAM), introduced by Davis in 1985, stands as a prominent framework for explaining users' behavior when adopting technology. Perceived ease of use denotes the extent to which an individual foresees using a particular technology or system as convenient. The more straightforward a technology, the quicker its acceptance, thereby impacting the establishment of a cashless society (Davis, 1989). Ease of use significantly influences mobile payment services (Phonthanukitithaworn et al., 2016). As technology, like cashless payments, evolves to provide enhanced convenience, user activities are streamlined.

Perceived usefulness, or the degree to which a system is perceived to offer benefits and usability, directly influences a user's performance (Davis, 1989). This concept is rooted in the TAM proposed by Davis (1986). Perceived usefulness has a substantial impact on the adoption of digital payment services (Daragmeh et al., 2021). The continuous utility of evolving technology becomes a significant driver for technology utilization. This suggests that perceived usefulness bears a positive effect on fostering a cashless society.

Optimism pertains to the belief that a product or service can fulfill user needs. It forms the basis for Technology Readiness, ultimately contributing to the Technology Readiness Index (Parasuraman, 2000). As an attribute of individual disposition, optimism plays a pivotal role in technology acceptance and readiness (Parasuraman & Colby, 2015). Yan et al. (2021) substantiated that optimism significantly influences cashless readiness. High optimism among technology users supports successful technology implementation.

Innovativeness gauges an individual's inclination to adopt emerging technology. This concept underpins Technology Readiness, eventually informing the Technology Readiness Index (Parasuraman, 2000). Innovations are placed in the Technology Readiness Index (TRI) model, relating to individual traits that influence technology usage readiness (Parasuraman & Colby, 2015). Sun et al. (2023) highlighted personal innovation's significant impact on mobile payment service adoption. This innate innovativeness acts as a catalyst for fostering a cashless society.

Lack of awareness refers to users' familiarity with new technology and their comprehension of its implications (Dinev & Hu, 2007). This deficiency in understanding technology and its benefits hampers the implementation of cashless payments. This lack of awareness stems from inadequate information, resistance, and deficient infrastructure support (Oliveira et al., 2016). Loh et al. (2021) found lack of awareness to have an insignificant effect on cashless readiness. The absence of awareness obstructs technological advancements, hindering users from recognizing the rapid progress in technology.

Readiness is defined as individuals' propensity to embrace new technology to attain life goals, as characterized by the TRI model (Parasuraman, 2000). Trinugroho et al. (2017) demonstrated the significant

influence of cashless readiness on technology adoption readiness. This readiness concept revolves around individuals transitioning from cash to non-cash payments in the context of a cashless society's adoption.

The combination of TAM and TRI models is considered suitable for this study because it can measure the ease and benefits of using technology and the psychological readiness of users. This is also in accordance with the objectives of this study, which focus on the driving and inhibiting factors that drive the implementation of non-cash payments. In addition, the combination of these models is considered relevant to Batam society, which has unique economic and demographic characteristics, with many industrial workers and cross-border trade activities.

Research Method

Thisresearch used quantitative method. Researchers used this method to test hypotheses based on theories related to this research. This method analyzes data clearly in numerical form using statistical methods. This method assures researchers that they can test whether the variable relationship will have a significant effect.

Table 1. Operational Variables and Measurement

Variables	Indicator
Ease of use	1. Ease of learning about digital payment services.
	2. Ease of use of digital payment services.
	3. Payment using digital payment services is easier.
Usefulness	1. Payments can be completed using digital payment services.
	2. Efficiency of digital payment services.
	3. Assist with expense management.
Optimism	1. Lifestyle fit with digital payments.
	2. Have the means to use digital payments
	3. Flexibility in making digital payments.
Innovative	1. Willingness to use new digital payment services.
	2. Interested in keeping up with the latest digital payments.
	3. Interested in using the latest digital payments.
Lack of awareness	1. Don't know when to use digital payments.
	2. Not knowing where to use digital payments.
	3. Not aware of available digital payments.
Cashless Readiness	1. Readiness to use digital payment services
	2. Readiness to use digital services in the near future
Adoption	1. Long-term use of digital payments.

The data used in this study was based on the ordinal data measurement scale, which is used to produce measurements ranging from strongly disagree to strongly agree on a scale of 1-4. This study's data source is original data, which was obtained firsthand. The data was derived from research objects that match the criteria for becoming the subject of this study. The data for this study came from distributing questionnaires online via Google Forms.

This study used a questionnaire research instrument that contains questions related to the application of cashless in the community. This instrument was given to the object of research online using a Google Form that met the research criteria. This questionnaire consists of six parts, namely: (1) Ease of Use, (2) Usefulness, (3) Optimism, (4) Innovativeness, (5) Lack of Awareness, (6) Cashless Readiness and Adoption with three questions each.

This questionnaire was distributed online to make it easier for respondents to fill out the questionnaire. All questionnaire questions in this study were adopted from Balakrishnan and Shuib (2021). Measurement using this instrument used a Likert scale, where the object of this research is to indicate the level of agreement to implement a cashless society. The Likert scale of the level of approval is measured by numbers 1-4.

The population in this study comprised the residents of Batam City, which, according to BPS data from 2023, totals 1,196,396 people. Given the large population size, this study employed the Slovin formula to determine the appropriate sample size, with a 5% margin of error, resulting in a sample of 400 respondents. The sampling technique utilized was proportionate stratified random sampling, wherein the population was systematically divided into sub-populations or strata in proportion to their size, and the samples were selected randomly. Specific criteria are established to ensure that the selected respondents were suitable for this study, including an age range of 18 to 50 years and prior experience using digital payment services.

In this study, the formula used to calculate each sample size based on sub-district is:

$$n_A = \frac{N_A}{N} \times n$$

Description:
nA : Sample in district A
NA : Population in district A

N : Total Population
n : Total Sample

Based on the calculation results using the formula above, the number of samples per district is as follows:

Table 2. Proportionate Stratified Random Sampling Calculation

District	Population per District	Sample per District
Belakang Padang	22,439	8
Bulang	10,707	4
Galang	16,989	6
Sungai Beduk	96,193	32
Sagulung	209,386	70
Nongsa	81,451	27
Batam Kota	198,617	66
Sekupang	156,283	52
Batu Aji	139,512	47
Lubuk Baja	84,533	28
Batu Ampar	60,450	20
Bengkong	119,836	40
Total	1,196,396.00	400

Source: Central Bureau of Statistics, 2023

Results and Discussion

Results

The questionnaire was distributed to 493 respondents, 400 of whom were valid respondents using digital payment services, and the remaining 93 respondents did not meet the criteria of this study. Before completing the questionnaire, respondents were given information about the purpose of the study and their rights as participants. Participation in the study was voluntary, and respondents could stop at any time without consequences. All data collected was kept confidential and used for academic purposes only. No personal information that could identify individuals was stored or published.

Table 3. Respondent Characteristics

Description		Frequency	Percentage
Gender	Female	247	62%
	Male	153	38%
Age	18-30 years old	266	67%
	31-40 years old	64	16%
	41-51 years old	70	18%
Income	< 4.5 million	117	29%
	4.5 - 10 million	248	62%
	> 10 million	35	9%
Digital payment services used	Mbanking	347	32%
	QRIS	162	15%
	Gopay	231	21%
	Shopepay	158	15%
	Dana	164	15%
	More	21	2%
Address (District)	Belakang Padang	8	2%
	Bulang	4	1%
	Galang	6	2%
	Sungai Beduk	32	8%
	Sagulung	70	18%
	Nongsa	27	7%
	Batam Kota	66	17%
	Sekupang	52	13%
	Batu Aji	47	12%
	Lubuk Baja	28	7%
	Batu Ampar	20	5%
	Bengkong	40	10%

Source: Research Result

Table 3 provides information about respondents who use digital payment services and reside in Batam City, with a percentage of 100%. The most common digital payment service used by Batam City residents is Mbanking, followed by GoPay. Many people in Batam City use more than one digital payment service.

Table 4. Factor Loading and Indicator Items

Factor	Indicator	Load
Ease of use	Ease of learning about digital payment services.	0.805
	Ease of use of digital payment services.	0.797
	Payment using digital payment services is easier.	0.786
Usefulness	Payments can be completed using digital payment services.	0.772
	Efficiency of digital payment services.	0.768
	Assist with expense management.	0.834
Optimism	Lifestyle fit with digital payments.	0.802
	Have the means to use digital payments	0.790
	Flexibility in making digital payments.	0.798
Innovative	Willingness to use new digital payment services.	0.806
	Interested in keeping up with the latest digital payments.	0.839
	Interested in using the latest digital payments.	0.852
Lack of awareness	Don't know when to use digital payments.	0.895
	Not knowing where to use digital payments.	0.906
	Not aware of available digital payments.	0.786
Cashless Readiness	Readiness to use digital payment services	0.883
	Readiness to use digital services in the near future	0.879
Adoption	Long-term use of digital payments.	1.000

Source: SmartPLS output version 4.0 (2023)

Sanchez (2013) explains that valid and reliable indicators must have a value > 0.70. Table 4 above explains the outer loadings of each variable. All variables are said to be able to absorb information or explain each indicator in each variable because all indicators have a value> 0.70. Outer loadings are used to determine how close the relationship between indicators and variables is.

Validity test

Convergent validity evaluation is a test designed to assess the relationship between indicators within the same construct. The convergent validity indicator employed in this investigation is AVE > 0.50. Table 5 shows the results of the variables' AVE calculations. Each variable has an AVE value greater than 0.50 based on the data processed. This means that the probability of the indicator has met the requirements of good validity. After the convergent test is fulfilled and valid, further testing of the discriminant test can be carried out.

Table 5. Convergent Validity

Variables	Average Variance Extracted (AVE)
Ease of use	0.627
Usefulness	0.624
Optimism	0.630
Innovativeness	0.688
Lack of awareness	0.744
Readiness	0.772

Source: SmartPLS output version 4.0 (2023)

Indicators within a single concept should not exhibit strong correlations with indicators from other constructs, as assessed through the examination of discriminant validity. In this study, discriminant validity was evaluated using cross-loading values, which should demonstrate that the correlation between an indicator and its corresponding construct is higher than the correlation between the indicator and other constructs. Additionally, the Average Variance Extracted (AVE) root for each construct should surpass the correlations between other constructs in the model.

The outcomes of the discriminant validity analysis, conducted using Smart PLS version 4.0, are outlined below. For each construct, the AVE root must exceed the inter-construct correlations and the correlations between indicators and other constructs. The obtained data suggests that the cross-loading values were equal to or greater

than the correlation values of the indicators with their respective constructs. This observation signified robust discriminant validity for the constructs or variables under consideration at this juncture.

Table 6. Discriminant Validity

	ADP	EOU	INOV	LOA	OPT	RDN	UFN
ADP 1	1.000	0.220	0.501	-0.165	0.379	0.613	0.337
EOU 1	0.139	0.805	0.240	-0.020	0.407	0.206	0.425
EOU 2	0.147	0.797	0.221	0.006	0.447	0.212	0.420
EOU 3	0.243	0.786	0.274	-0.083	0.409	0.200	0.370
INOV 1	0.384	0.266	0.806	-0.136	0.369	0.406	0.465
INOV 2	0.442	0.217	0.839	-0.124	0.397	0.416	0.451
INOV 3	0.424	0.283	0.852	-0.136	0.432	0.423	0.441
LOA 1	-0.158	0.010	-0.133	0.895	-0.124	-0.215	-0.081
LOA 2	-0.159	-0.039	-0.151	0.906	-0.116	-0.205	-0.104
LOA 3	-0.101	-0.092	-0.127	0.786	-0.128	-0.154	-0.097
OPT 1	0.303	0.421	0.456	-0.093	0.802	0.378	0.376
OPT 2	0.310	0.424	0.344	-0.133	0.790	0.332	0.373
OPT 3	0.293	0.420	0.338	-0.112	0.798	0.332	0.410
RDN 1	0.546	0.196	0.445	-0.214	0.371	0.883	0.362
RDN 2	0.535	0.261	0.434	-0.182	0.401	0.879	0.350
UFN 1	0.211	0.332	0.384	-0.074	0.330	0.270	0.772
UFN 2	0.252	0.504	0.371	-0.093	0.384	0.304	0.768
UFN 3	0.322	0.376	0.515	-0.087	0.425	0.372	0.834

Note: EOU: Ease of Use; UFN: Usefulness; INOV: Innovation; OPT: Optimism; LOA: Lack of Awareness; RDN: Readiness; ADP: Adoption
Source: SmartPLS output version 4.0 (2023)

Reliability Test

Table 7. Reliability

Variables	Cronbach's alpha	Composite reliability
Ease of use	0.702	0.834
Usefulness	0.702	0.833
Optimism	0.707	0.836
Innovativeness	0.772	0.868
Lack of awareness	0.828	0.897
Readiness	0.704	0.871

Source: SmartPLS output version 4.0 (2023)

The reliability test serves the purpose of evaluating the stability and consistency of respondents' answers to the provided questions over time. This assessment is carried out through the utilization of two internal measures: Cronbach's alpha and composite reliability. To indicate satisfactory reliability, both of these measures should exceed a value of 0.70. The results obtained from the reliability test are detailed in Table 5.

The results of the reliability test demonstrated that both Cronbach's alpha and composite reliability values surpass the threshold of 0.70, indicating a high level of consistency. Consequently, all the variables can be deemed reliable for the study's purposes.

Model Evaluation

Table 8. R Square

	R-square
Adoption	0.376
Readiness	0.326

Source: SmartPLS output version 4.0 (2023)

In Table 8 above, the presented results illustrate the R-square values, which serve to quantify the extent to which the independent variables impact the dependent variable. Hair et al. (2012) classify the R-square value into three categories: strong, medium, and weak. Specifically, an R-square of 0.75 falls within the strong category, 0.50 falls within the medium category, and 0.25 falls within the weak category.

Referring to Table 8, the readiness variable yielded an R-square value of 0.326. This value indicated that approximately 32% of the variation within the readiness variable can be elucidated by the collective influence of its constituent components—namely ease of use, usefulness, innovativeness, optimism, and lack of awareness. The remaining portion of the readiness variance is attributed to factors beyond the scope of this study.

Likewise, the adoption variable's R-square value was calculated to be 0.376. This signified that about 37% of the variance within the adoption variable can be accounted for by the variables incorporated in this research model. The residual explanation of 63% of the adoption variable was attributed to variables not considered in this study.

One of the key factors contributing to the low evaluation results of this research model is the omission of a crucial variable: education. Education in this context refers not only to formal educational background but also to financial literacy. This aligns with the findings of Marlina et al. (2020), and Ompusunggu and Poniman (2024), who state that Indonesia's readiness to transition into a cashless and cardless society remains a long-term process due to disparities in educational attainment. Therefore, the education factor should be considered as a variable in future research to enhance the study's comprehensiveness.

Table 9. Hypothesis Result

	Relationship	p-value	t	Results
H1	EOU -> RDN	0.672	0.423	Not Supported
H2	UFN -> RDN	0.022	2.295	Supported
H3	OPT -> RDN	0.000	3.720	Supported
H4	INOV -> RDN	0.000	5.552	Supported
H5	LOA -> RDN	0.002	3.094	Supported
H6	RDN -> ADP	0.000	13.328	Supported

Note: EOU: Ease of Use; UFN: Usefulness; INOV: Innovativeness; OPT: Optimism; LOA: Lack of Awareness; RDN: Readiness; ADP: Adoption
Source: SmartPLS output version 4.0 (2023)

Hypothesis testing is significant if the p-value is <0.05 and is supported by a t-table value> 1.965. Table 9 explains the test results of each hypothesis in this study.

Discussion

The outcomes obtained from the t-table, featuring values of 0.423, 1.956, and a significant value of 0.67 > 0.05, were employed to evaluate the concept of ease of use. These findings, when scrutinized at a significance level of 0.05, did not lend support to the formulated hypothesis 1, indicating that H1 lacked empirical backing. The initial sample's bootstrapped value of -0.022 signified an adverse influence on the community's inclination to adopt digital payment systems. Consequently, as the ease-of-use factor heightens, the community's readiness to adopt digital payment services experiences a decrease. This observation contradicts the premise outlined by the TAM put forth by Davis (1986), which posits that perceived ease of use revolves around an individual's conviction about the convenience of utilizing a particular technology. While encompassing facets like simplicity of learning and application, using digital payment services generally holds a reputation for being user-friendly. In light of this, the deduction drawn from these findings is that ease of use holds a relatively insignificant negative sway over the community's willingness to embrace digital payment services. This outcome is driven by digital payment service users who find the technology uncomplicated to navigate. The segment of respondents expressing reservations about the ease of digital payment utilization contributes to the lack of a substantial negative influence on community readiness. This perspective aligns with the research conducted by Phonthanukitithaworn et al. (2016), which emphasizes the pivotal role of ease of use for individuals unfamiliar with the technology, as increased familiarity tends to render the technology more approachable. A study conducted by Daragmeh et al. (2021) reinforces this notion by revealing that ease of use does not exert a significant impact on an individual's intention to adopt a technology.

In terms of usefulness, based on a t-table value of 2.295 > 1.965 and a significant value of 0.02 < 0.05, these outcomes support hypothesis 2 at a significance level of less than 0.05. The bootstrapping outcomes from the original sample value of 0.126 suggest a positive influence on the public's inclination to adopt digital payment services. This implies that higher perceived usefulness corresponds to greater community readiness to adopt digital payment services. This is consistent with the TAM theory proposed by Davis (1989), which posits that perceived usefulness concerns an individual's belief in the system's capacity to be advantageous and beneficial. Daragmeh et al. (2021) and Thakur and Srivastava (2014) concur with this idea, demonstrating the significant impact of usefulness on a person's intention to use digital payments. In conclusion, the results indicated that usefulness significantly influences people's readiness to adopt digital payment services.

Turning to optimism, the t-table value of 3.720 > 1.965 and a significant value of 0.00 < 0.05 supported the thesis 3 at a significance level of less than 0.05. The bootstrapping results from the original sample value of 0.221 demonstrated a favorable effect on community readiness to adopt digital payment services. This suggests heightened optimism increases community readiness to adopt these services. In accordance with the TRI theory by Parasuraman and Colby (2015), optimism refers to a positive belief in a product or service's capability to fulfill user needs. Research by Cruz-Cárdenas et al. (2019) underscores the significance of a person's attitude towards technology, indicating that a positive attitude impacts technology utilization for daily requirements. Similarly, Yan et al. (2021) establish that an optimistic attitude significantly influences the adoption of digital payments and QR codes. Consequently, the results affirm that optimism influences people's readiness to embrace digital payment services.

Considering innovativeness, the t-table value of 5.552 > 1.965 and a significant value of 0.00 < 0.05 support hypothesis 4 at a significance level of less than 0.05. The bootstrapping outcomes from the original sample value of 0.310 indicated a constructive impact on public readiness to adopt digital payment services. This implies that greater innovativeness corresponds to heightened community readiness for adopting digital payment services. In line with the TRI theory by Parasuraman and Colby (2015), innovativeness gauges an entity's inclination to adopt emerging technologies. Sun et al. (2023) confirm this view, showing innovation's substantial influence on the Chinese population's intention to use delivery applications. Furthermore, Rahman et al. (2020) demonstrate that as technology innovates, the intention to use digital payments increases, highlighting innovativeness' significant effect on cashless payment adoption. Thus, the findings confirm that innovativeness influences people's readiness to adopt digital payment services.

Addressing the lack of awareness, the t-table value of 3.094 > 1.965 and a significant value of 0.00 < 0.05 supported hypothesis 5 at a significance level of less than 0.05. The bootstrapping outcomes from the original sample value of -0.132 indicated a negative impact on community readiness to adopt digital payment services. This signifies that reduced lack of awareness corresponds to heightened community readiness for digital payment service adoption. Awareness pertains to users' familiarity with new technology and their understanding of its components. The absence of awareness regarding technology and its benefits poses a challenge to implementing cashless payments. Rahadi et al. (2021) research on Gen Z's cashless behavior in Indonesia corroborates this, highlighting a significant effect of lack of awareness on their cashless behavior. Consequently, the results underscore that lack of awareness influences people's readiness to adopt digital payment services.

Regarding readiness, the t-table value of 13.328 >1.965 and a significant value of 0.00 < 0.05 supported hypothesis 6 at a significance level of less than 0.05. The bootstrapping outcomes from the original sample value of 0.613 revealed a favorable effect on the adoption of electronic payment systems. This suggests that increased readiness corresponds to greater utilization of digital payment systems. In alignment with the TRI theory by Parasuraman and Colby (2015), readiness reflects people's disposition to use novel technology to achieve life objectives. Trinugroho et al. (2017) emphasize that individuals well-versed in technology, particularly digital payment technology, are more prepared for a cashless society. Hence, considering Trinugroho et al.'s (2017) findings and the hypothesis test outcomes, it can be concluded that gauging community readiness before adopting digital payment services is pivotal. Readiness significantly influences the community's readiness to adopt digital payment services.

Conclusion

This study has provided an empirical insight into the readiness of cashless payments in Batam, Indonesia. The findings confirm that usefulness, optimism, and innovation positively impact readiness, while lack of awareness is a significant barrier. Ease of use does not affect readiness, indicating that familiarity with digital payments is widespread among users. In addition, readiness significantly predicts the adoption of digital payments, emphasizing the importance of digital payments in shaping consumer behavior.

Despite its contributions, this study has several limitations. The respondents were between 18 and 50 years old, most of whom regularly used digital payment systems for daily transactions. The study focused on participants in Batam City with varying income levels and payment preferences. Another limitation is the use of an online questionnaire, which increases the risk of response bias and potential misunderstandings of survey questions. A more effective approach to data collection would involve direct engagement with respondents, allowing for deeper insights and more accurate assessments.

For future research, it is recommended that the study area and sample size be expanded to assess community readiness to adopt digital payment systems. Additionally, future studies should incorporate more relevant driving and inhibiting factors to enhance understanding of community preparedness in embracing digital transactions. Expanding the age range to include a broader generational spectrum and integrating variables related to education would further enrich the findings.

This research is expected to assist financial institutions and digital payment service providers in continuously innovating digital payment technology. The goal is to enhance simplicity and usability, making digital payments accessible and beneficial to all consumers. Furthermore, efforts should be made to introduce this valuable technology to individuals who have had limited or no prior experience with digital payment services.

The government also plays a crucial role in this transition by implementing policies promoting awareness and supporting cashless payments. As highlighted in previous studies, education is a key factor influencing individuals' readiness to adopt digital payment systems. Therefore, educational campaigns and direct assistance programs are essential to fostering widespread adoption. On the other hand, this study is different from Balakrishnan and Shuib (2021). This study was conducted in Indonesia, especially in Batam City, so the results of this study can also influence the Batam City government's policy regarding cashless adoption.

The findings of this study are also expected to contribute to a broader knowledge base, not only in financial technology but also within the accounting domain. This is particularly important as adopting cashless payment systems can enhance financial reporting efficiency, improve tax compliance, and streamline audit processes. By integrating digital transactions, businesses and individuals can maintain more accurate financial records, reduce the risk of errors, and ensure greater transparency in financial management.

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Appendix

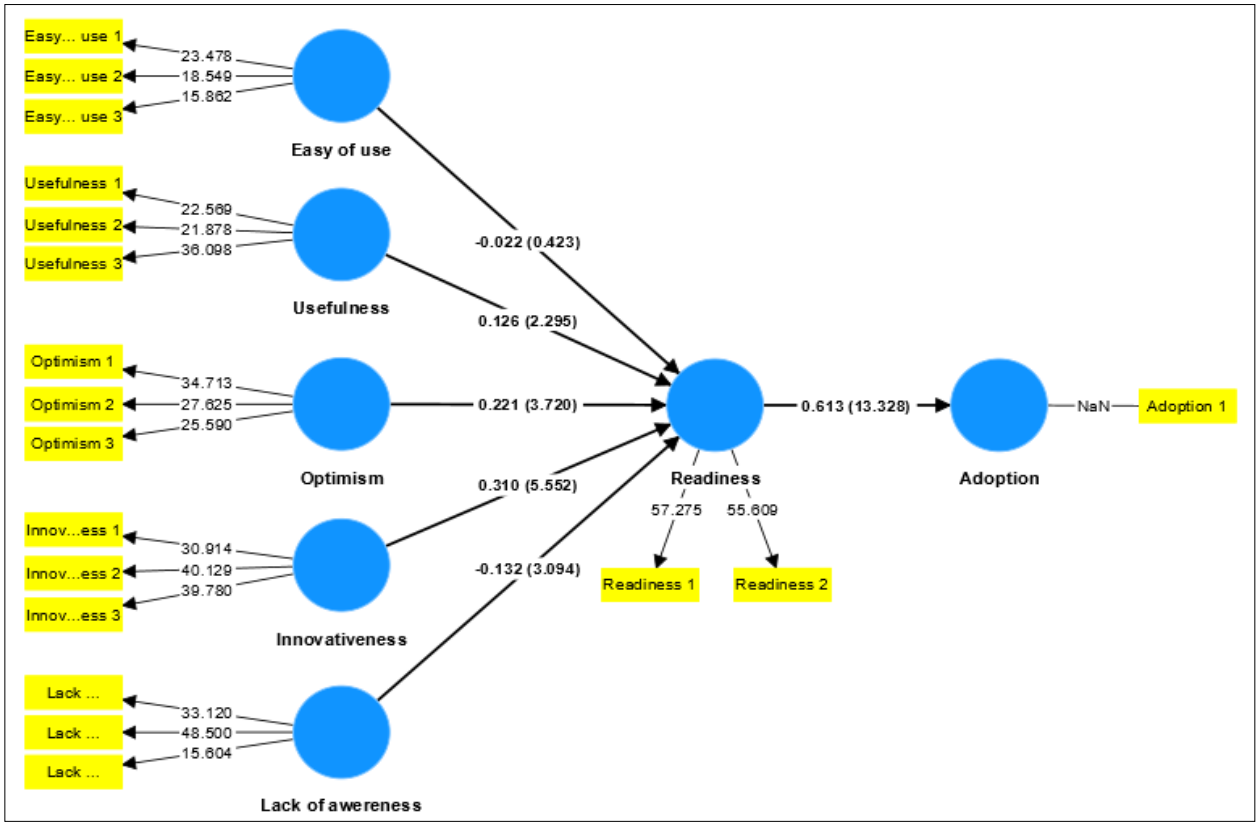

Figure 1. Bootstraping
Source: SmartPLS output version 4.0 (2023)