Journal of Theoretical and Applied Information Technology
31st October 2020. Vol.98. No 20

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

A MODEL OF THE E-WALLET ADOPTION IN SMALL AND MEDIUM ENTERPRISES (SME) INDONESIA

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ABSTRACT

Information technology (IT) is widely recognized as an important resource for increasing the productivity of a country's economy. New technological innovations in business transactions have a huge impact on current business activities. Electronic Wallet (E-Wallet) is one of the technological innovations that is currently developing. E-wallet is a software that uses electronic devices such as personal computers or smartphones to make transactions online. Along with the development of e-wallet in Indonesia, this study aims to find out the e-wallet adoption model to analyze the decisions of SMEs using e-wallet. To analyze an organization about the adoption of a technology, the adoption of suitable theories is the Technology-Organization-Environment (TOE) and Diffusion of Innovations (DOI). The proposed research model was developed by extending the TOE and DOI by adding the Technology acceptance model (TAM) and guanxi theories. The variables that will be used to analyze the determinant factors of e-wallet adoption in Small and Medium Enterprises (SME) in Indonesia are: perceived compatibility, perceived security, perceived cost, perceived benefits, firm's financial resources, perceived complexity, employee IT Knowledge, SME IT infrastructure, top management support, culture, competitive pressure, customer pressure, government support, perceived usefulness, perceived ease of use and knowledge sharing. The result of this study would be useful to understand about the adoption of E-Wallet in Small and Medium Enterprises (SME) Indonesia.

Keywords: *E-Wallet, Small And Medium Enterprises (SME), Technology Acceptance Model (TAM), Diffusion Of Innovations (DOI), Technology-Organization-Environment (TOE), Guanxi.*

1. INTRODUCTION

Now smartphones are a critical part of our daily lives. The number of smartphone users is rising every day due to lower smartphone costs and a range of specifications. [1]. Today's mobile features are also changing very quickly according to the needs of consumers [2]. Based on data from the Ministry of Communication and Information of the Republic of Indonesia in early 2020 internet users in Indonesia reached 175.4 million [3]. Smartphone users in Indonesia have also increased from year to year, in 2020 smartphone users reached 81.87 million [4]. Currently, smartphones can be used to make transactions and payments using only the applications within the smartphone.

New technological innovations in business transactions have a huge impact on current business activities [5]. Electronic Wallet (E-Wallet) is one of the technological innovations that is currently developing. E-wallet is a software that uses electronic devices such as personal computers or smartphones to make transactions online [6]. Currently, E-wallet products are already used for retail transactions for merchants and consumers, however, there are some concerns for policymakers about the impact of E-wallets on the economy and financial stability. [7]. Until now, 50 electronic wallet products that have obtained permission from Bank Indonesia. Examples of E-Wallet products are DANA, GOPAY, OVO Cash, Link Aja, DOKU, PayTren, ShopeePay, Go Mobile, Sakuku, and Uangku [8].

In economic development in Indonesia, SMEs are defined as a sector that plays an important role. Based on data from the Ministry of Cooperatives and SMEs, the total contribution of SMEs to the national gross domestic product (GDP) in 2019 can reach 65% or around Rp 2,394.5

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

trillion [9]. Data from the Ministry of Cooperatives and SMEs, for 2018 the number of SMEs in Indonesia reached 64.194.056 [10]. Small and medium-sized enterprises have an significant and strategic role to play in the growth of national economies. While playing a role in economic growth and employment, small and medium-sized enterprises often have a role to play in the distribution of development outcomes.

According to Bank Indonesia, electronic money transactions in 2019 continue to experience a surge with a growth of 241.2%, indicating public preference for digital money that continues to strengthen, but in some cities, the use of electronic money in SMEs is still very low [11]. It is due to a variety of factors, including a shortage of support systems and a limited number of traders or sellers of goods and services receiving electronic money payments. Nevertheless, the community's practice of using cash is still ingrained, and payment with electronic money has not been seen as a necessity. In terms of SME owners themselves, their readiness to use E-Wallet technology is unknown at this time. Until now only 5% (3 million) SME has implemented “Go Digital”. By providing customers with a choice of payment methods via e-wallet, SMEs can increase sales and can also add customers through reward systems such as cashback, points, or reward cards [12]. This paper conducts a preliminary analysis of the model for essential determinants of e-wallet adoption in Indonesia for small and medium-sized enterprises (SMEs).

2. LITERATURE REVIEW

This section, explain literature review that related to the Electronic Wallet (E-Wallet), and some of the model about adoption technology that will be used to proposed new model to analyze E-Wallet Adoption in Small and Medium Enterprises (SME) Indonesia.

2.1 Electronic Wallet (E-Wallet)

Electronic wallet is an electronic service capable of storing payment data and money to make payments where the money is stored electronically on a physical device or server [13]. According to Bank Indonesia electronic wallet is an electronic service for the storing of payment instrument data, including payment instruments using cards and/or electronic money, which may also carry funds to make payments [14]. Electronic wallet is now very popular everywhere, many people use it because of the ease of transaction. New business ideas and new start-ups now offer convenience in payments through mobile wallet. The ease of transaction and its requirements make the use of an electronic wallet exceed the use of credit cards [1]. In a global view, e-wallet drives the economy towards a cashless society. E-wallet is one of the payment alternatives available, Barkhordari's research results state that technical and transaction procedures and access to security guidelines are the most influential factors on perceived trust of customers [15]. In other studies, habit and effort expectancy do not have a significant impact, but hedonic motivations, security, and privacy have larger roles [16]. perceived ease of use (PEOU), perceived usefulness (PU), trust, security, facilitation conditions, and lifestyle compatibility have a significant impact on consumer behavior and intention to use a e-wallet [17].

2.2 Micro, Small and Medium Enterprises (MSMEs)

In Indonesia, the law regulating micro, small and medium-sized enterprises (SMEs) is Law No. 20 of 2008. In that rule, small and medium-sized enterprises are clarified as: "A company classified as MSME is a small company owned and managed by someone or owned by a small group of people with a certain amount of wealth and income” [18]. Table 1 shows the definition of SME from the Indonesian government. In Indonesia, SMEs have a very large contribution to the economy in Indonesia. Table 2 shows contribution of SMEs to Indonesian Macroeconomic Performance from 2015 until 2018. The development of MSMEs in Indonesia is inseparable from technological developments that occur at this time. One factor that supports the development of MSMEs is due to the use of ICT (technology, information and communication) facilities. Businesses are starting to utilize technology facilities such as smartphones to expand their business markets. In fact, it has become the government's target to make SMEs to take advantage of the digital world, such as e-commerce, to sell and develop their businesses. The introduction of Information and Communication Technology (ICT) helps companies to be more efficient and to improve their efficiency, whereas expenditure in ICT by SME is a feature of their policy and market place [19].

Table 1: The definition of SME

Business Size	Criteria: Asset	Criteria: Turnover
micro business	Maximum Rp. 50 million	Maximum Rp.300 million

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

small business	>Rp.50 – Rp.500 million	>Rp.300 million – Rp.2.5 billion
medium business	>Rp.500 million – Rp.10 billion	>Rp.2.5 – Rp.50 billion
enterprises business	> Rp.10 billion	> Rp.50 billion

Table 2: Contribution of SMEs to Indonesian Macroeconomic Performance (2015-2018)

Type of Contribution	2015	2016	2017	2018
Total employment	123,23 million (96,71 %)	112,89 million (97,04 %)	116,67 million (97,02 %)	116.97 million (97,00 %)
Contribution to the National GDP	61,41 %	59,84 %	60,00 %	61,07
Contribution in Exports	15,73	14,38	14,17	14,37
Contribution in Investment	61,28	57,87	58,18	60,42

2.3 Technology acceptance model (TAM)

The technology acceptance model is a model pioneered by Davis in 1989. TAM is one of the most popular models in information systems research [15]. TAM is an adaptation of the Theory of Reasoned Action (TRA). TAM argues that perceived usefulness and ease of use decide the individual's intention to use a program designed to serve as a mediator for the actual use of the program. Perceived usefulness is often seen as directly affected by perceived ease of use. Perceived Ease of Use (PEOU), is the perception of ease of use of a technology mentioned as a measure by which someone believes that computers can be easily understood and used. Perceived Usefulness (PU), is defined as a measure where the use of technology is believed to bring benefits to its users. Behavioral Intention to Use (BIU), the tendency for behavior to keep using the technology. The level of use of computer technology in a person can be predicted from the attitude of his attention to technology [20].

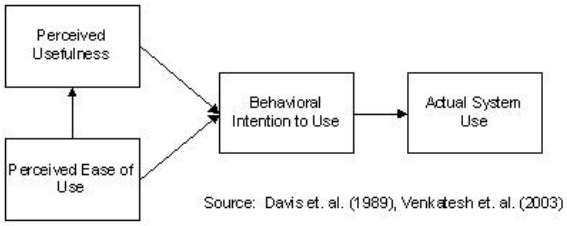

Figure 1: TAM Model

In other studies using TAM to customers who make transactions using traditional payments using debit cards, credit cards, or physical wallets. The findings found that perceived usefulness and perceived ease of use are important influences in the consumer's attitude towards switching from traditional payments to mobile wallets [21].

Wu and Liu also concluded that perceived usefulness substantially decreases consumer awareness of risk and that the effect of positive usefulness on adoption intention is significantly higher at the stage of business development than at the point of market entry [22]. Factors including Usefulness and Satisfaction in e-wallet apps allow users to use them for a range of services [23].

2.4 The Technology-Organization-Environment (TOE)

Tornatzky developed a framework explaining the influence of contextual variables on innovation acceptance, the framework is The Technology-Organization-Environment (TOE). There are three aspects in the organization that affect the adoption of technological innovations, namely technological aspects (internal and external technology), organizational aspects (managerial size and structure), and environmental aspects (competitors, government regulations) [24]. The existing studies using the TOE framework in digital payments, the result utilizing digital payments for SMEs in Ghana can improve SME performance, this helps SME owners to increase their sales and improve stakeholder relationships [25]. This model is also used to analyze M-Pesa mobile payments in Kenya and MTN's Mobile Money in Rwanda, using eight factors in the TOE framework for analysis, which generates four guidelines for stakeholders in Rwanda. First, adjust the distribution network structure, second, develop more effective regulation, third, provide third party coordination among stakeholders, and finally carry out full efforts to obtain a reliable supply of electricity [26]. The success of technology adoption is not only because of the technical aspects but also because of the technological, social, environmental, and individual aspects [27]. The TOE Framework also explains that organizational factors also

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

influence the adoption of internet-based technology [28].

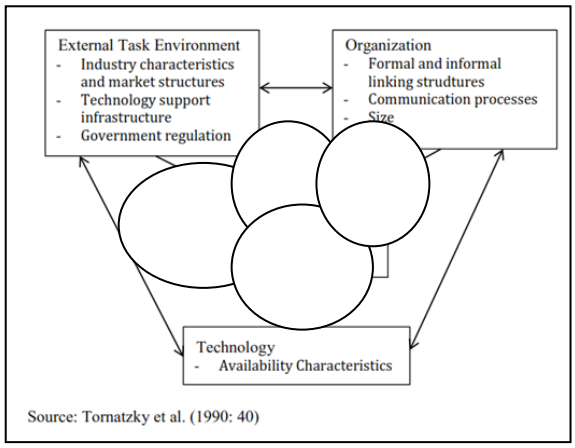

Figure 2: TOE Framework

2.5 Diffusion of Innovations (DOI)

Diffusion is a mechanism through which, over time, creativity is transmitted through various networks among the participants of the social network. It's a different form of correspondence, in that the communications are filled with fresh concepts. The innovation diffusion model relies mainly on the 'process-oriented' view in order to understand how innovation can be obtained and distributed amongst individuals [29]. Initially, Rogers developed the Innovation Diffusion (ID) model utilizing specific psychological and sociological theories. The creativity cycle in companies becomes much more nuanced. This typically includes a variety of people, maybe even proponents and critics of innovative innovations, each of whom plays a part in innovation-decision-making [30]. Rate of adoption is the relative level at which innovation is accepted by representatives of the social network. One essential interpretation of the pace of acceptance of innovation is the perceived attributes of innovation. The bulk of the difference in the pace of acceptance of technologies, from 49 to 87 percent, is clarified by five attributes: relative advantage, compatibility, complexity, trialability, and observability [29]. In addition to these five perceived attributes of an innovation, there are certain factors such as (1) the form of innovation-decision, (2) the complexity of the communication networks disseminating innovation at different stages of the innovation-decision process, (3) the nature of the social environment through which innovation is diffused, and (4) the degree to which the efforts of change-makers to encourage innovation have an effect on the speed of innovation.

Figure 3: Variables determining the Rate of Adoption of Innovations

2.6 Guanxi

Guanxi originates from Confucian philosophy which refers to the idea of a relationship-centered which inclusive society that seeks the unity of social relationships [31]. Guanxi, a Chinese concept that describes the social networks with influence and rewards, maybe split into inter-personal and inter-organizational relationships. The core to principles guanxi contains a variety of elements: ganqing (affection), mianzi (face, reverence for authority), renqing (harmony or favor), xinren (trust), and huibao (reciprocal duty) [32], [33]. Guanxi has a major impact on innovation in China [34]. Technology usage is often compulsory, but it is not a sufficient prerequisite for staff to work together and to share knowledge [35]. In other words, while it is important to establish engagement networks that enable individuals not only to access the same information but also to work together and communicate across the network, knowledge production and learning seldom happens when individuals do not connect [36]. So, promoting a healthy workplace atmosphere will also be key to inspiring workers to collaborate and share knowledge [37]. Guanxi greatly affects the sharing of information in a variety of respects. Next, as workers are connected by guanxi, their ability to work with each other is strengthened [38]. Guanxi is a type of relationship that is powerful, binding, and long-lasting. Both the guanxi and the sharing of information will stretch organizational boundaries. Actions of searching and acquiring information from a guanxi-linked associate are also essential to the sound management of guanxi. To order to obtain information, the employee, therefore, wants both to learn who knows everything
of value and to provide guanxi with that distant source of knowledge [39].

In table 3 we can see several research topics on e-wallet, a lot of research focus on e-wallet customers. There is still little research model from the perspective of SMEs regarding e-wallet adoption. Therefore, it is necessary to see what dominant factors can be successful in adopting e-wallet technology in terms of SME owners. Some studies on e-payment in SMEs in Indonesia using only one city sample, can not be seen as a full picture in Indonesia as a developing country. Can be seen that the adoption model is widely used using the TAM model, while on the stakeholder side, the TOE and DOI models are widely used. In

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

research on m-commerce in organizations, the TOE and DOI models are the most dominant models for analyzing important determinants of m-commerce adoption in organizations [40].

Table 3: Themes of e-wallet research

3. A CONCEPTUAL FRAMEWORK

To analyze an organization about the adoption of technology, the adoption of suitable theories is the TOE and DOI. DOI is regarded by other researchers as being able to recognize "perceived" essential characteristics of technologies innovations (e.g relative advantage, compatibility, complexity, observability, and trialability) that affect the actions of future IS adapters or rejecters [41]. TOE is an organizational-level development implementation theory that explains how the company environment affects the acceptance of technological innovations [42]. Some of the technology adoption experiments were focused on a mixture of some theories for a deeper explanation of adoption [43].

Figure 4 shows the proposed model for investigating the critical determinants of e-wallet adoption in Indonesian SMEs. Some frameworks that will be used to analyze the critical determinants of e-wallet adoption in Indonesian SMEs are the TOE, DOI, TAM, and guanxi frameworks.

Figure 4: Research Model

Knowledge sharing is key to the sustainability of an organization in today's intensely competitive environment [44]. Knowledge-sharing intention refers to the ability and willingness of individuals to exchange knowledge with others [45]. And the last model used is the guanxi model with one variable is knowledge sharing.

H1: Knowledge sharing is critical for the decision to adopt e-wallet

In the TAM framework, there are two variables namely perceived usefulness, perceived ease of use.

H2: The perceived usefulness is critical for the decision to adopt e-wallet

H3: The perceived ease of use is critical for the decision to adopt e-wallet

The TOE and DOI frameworks can be classified into technological context, organizational context, and environmental context.

Technology is a method for instrumental intervention that eliminates the ambiguity in the cause-effect interaction involved in obtaining the intended result [46]. In the technological context, there are variables perceived benefits, perceived compatibility, perceived complexity, and with two other additional variables, namely variables perceived security, perceived cost. As a result, five following hypotheses are proposed

H4: The perceived benefits is critical for the decision to adopt e-wallet

H5: The perceived compatibility is critical for the decision to adopt e-wallet

H6: The perceived complexity is critical for the decision to adopt e-wallet

H7: The perceived security is critical for the decision to adopt e-wallet

H8: The perceived cost is critical for the decision to adopt e-wallet

The degree of convergence between the features of creativity and existing corporate processes also influences the implementation of technology adoption [47]. The organizational structural context is defined in terms of the institutional tools necessary to promote the adoption of innovation. Such requirements include the scale and reach of the organization, the sophistication of the organizational process, and the consistency and efficiency of the company's human capital [28]. In an organizational context, there are variables firm's financial resources, employee IT Knowledge, SME IT infrastructure, top management support. As a result, four following hypotheses are proposed

H9: Financial resources is critical for the decision to adopt e-wallet

H10: Employee IT Knowledge is critical for the decision to adopt e-wallet

H11: SME IT infrastructure is critical for the decision to adopt e-wallet

H12: Top management support is critical for the decision to adopt e-wallet

Economic competition has been generally accepted and empirically validated as one of the main variables in the environmental sense of the TOE model in the IT adoption literature [48]. In the

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

environmental context, there are variables culture, competitive pressure, customer pressure, government support.

H13: The perceived culture is critical for the decision to adopt e-wallet

H14: The perceived competitive pressure is critical for the decision to adopt e-wallet

H15: The perceived customer pressure is critical for the decision to adopt e-wallet

H16: The perceived government support is critical for the decision to adopt e-wallet

4. CONCLUSION

The cashless transaction offers other advantages as it complements the customer and stakeholders with a range of features. In fact, with the advent of e-wallets, the advantages have been intensified and the variety has expanded. The current study aims to make a model for determinant factors influencing SME intention to adopt e-wallet adoption in Indonesia SMEs. The proposed model in this study will be used to examine SME's intention to adopt e-wallet in Indonesia. The model to be used is the adoption of several existing models by adding several variables. The models used include the TOE, DOI, TAM, and guanxi models. In the technological context, there are variables perceived benefits, perceived compatibility, perceived complexity, and with two other additional variables, namely variables perceived security, perceived cost. In an organizational context, there are variables firm's financial resources, employee IT Knowledge, SME IT infrastructure, top management support. In the environmental context, there are variables culture, competitive pressure, customer pressure, government support. In the TAM framework, there are two variables namely perceived usefulness, perceived ease of use. And the guanxi model with one variable is knowledge sharing. The author also makes hypotheses for each variable that will prove the effect of these variables in future research.

5. FUTURE SCOPE

Our future research is to implement the model to analyze determinant factors influencing SME intention to adopt e-wallet. The approach to be used in this review is the quantitative examination of research methods. The target population is SMEs in Indonesia. The sample used is derived from data from several associations in Indonesia including the Indonesian Micro and Small Entrepreneurs Association (HIPMIKINDO), the Indonesian MSME Association (AKUMINDO), the Indonesian Association of Small and Medium Enterprises (AKUMANDIRI), the Association of Indonesian Micro and Small Micro Enterprises (HIPMIKIMDO). Data obtained using a questionnaire. The questionnaire will be sent to owners and managers of Indonesian small and medium-sized enterprises. The questionnaire includes closed questions and consists of questions about e-wallet adoption patterns in Indonesian SMEs, SME demographic data, and questions to assess the determinants of E-Wallet Adoption in Indonesian SMEs. The questionnaire was circulated electronically through e-mail or Google Form, and directly with the SME owner. Data processing using SPSS and SmartPLS 3 software.

6. ACKNOWLEDGEMENT

The authors would like to thank the Centre for Advanced Computing Technologies (CACT), Fakulti Teknologi Maklumat Dan Komunikasi, Universiti Teknikal Malaysia Melaka (UTeM) for supporting this research.

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Table 3: Themes of e-wallet research

References	Methods	Data and Context	Associated adoption theories	Critical determinants
[49]	research model has been developed by expanding UTAUT	Consumer in Indonesia	UTAUT	PE, PS, EE, SI, Culture
[22]	data collection using online surveys and Hypothesis was tested by structural equation modeling and multigroup analysis	484 consumer in China	TAM	PR, PU, PEO, AI, DS
[1]	data collection using a questionnaire and the data was analyzed using the following techniques: Descriptive Statistics, Correlation Analysis, Regression Analysis, Cluster Analysis	150 consumer in India	TAM & UTAUT	PU, EoU, SI, SE, PIIP, AA, PV, PR
[21]	Online questioner and analyze using the partial least squares structural equation modeling (PLS-SEM)	98 staff of Universiti Kuala Lumpur	TAM	PU, EoU, BA, PR, BI
[50]	data were obtained through crowdsourcing and analyzed using SmartPLS.	270 consumer	DOI	RA, EoU, TR, VS, PR, PS, UQ, IU
[23]	data collection using a questionnaire	250 consumers in India	TAM	EoU, PU, Trust, Security, Satisfaction
[12]	online questionnaire using the Google Docs, analysis of the measurement model using the confirmatory factor analysis to examine the reliability and validity.	250 user	TAM, TPB, DOI, Trust	EOU, PBC, COM, TR, BI
[17]	survey was conducted using the questionnaire and model analyzed using SmartPLS	744 respondents in India	TAM & UTAUT	ATT, FC, INT, LC, EoU, PU, SEC, TR
[51]	questionnaire distributed online and data is processed using the structural equation modeling (SEM) method	214 GO- PAY users in Indonesia	TAM	PU, EoU, SI, PT, PS, PV, AOA, ITU
[52]	The SEM-ANN method is used to capture linear-nonlinear and non-compensatory connections between exogenous and endogenous variables.	478 m-wallet user	Innovation resistance theory Innovation	UB, VB, RB, TB, IB, PN, RS
[53]	data obtained by online survey and face-to-face conversation and analyzed using SmartPLS	330 e-wallet user in Malaysia	TAM	PU, EoU, Privacy, and Security
[13]	data collected by circulating random questionnaires and measured using SPSS	432 e-wallet user	UTAUT	PE, EE, SI, FC, BI, UB
[16]	data were obtained using questionnaire	613 customers of e-wallets in India	UTAUT	PE, EE, SI, FC, HM, PV, HT, PSe, PSa, GP, ITU
[54]	data were obtained using questionnaire and analyzed using SmartPLS.	421 SME in Yogyakarta	UTAUT	PE, EE, SI, FC, A, BI
[25]	questionnaire distributed online, and partial least squares structural equation modeling method used to analyze results.	176 SME in Ghana	TOE	EoU, RA, TMS, CP, SI, UODP, BP
[55]	data obtained from direct interviews with respondents using questionnaires and the analysis uses partial least squares (PLS)	99 SME in Indonesia	TIB	B, FL, A, SF, BI, Habit, FC, PB
[56]	qualitative studies, data collected with interviews, retail events, and conferences, and with the help of a questionnaire.	Stakeholders in Sweden	TAM, DOI, network externalities	Organization strategy, SI, ME, mobile payment solution,

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[26]	qualitative approach, primary data collected by conducting expert interviews	interviewed 28 managers in Rwanda and Kenya	TOE	Technology Standard, Resources, Agents, Regulatory, Collaboration, Financial Infrastructure, Electricity

Figure 3: Variables determining the Rate of Adoption of Innovations

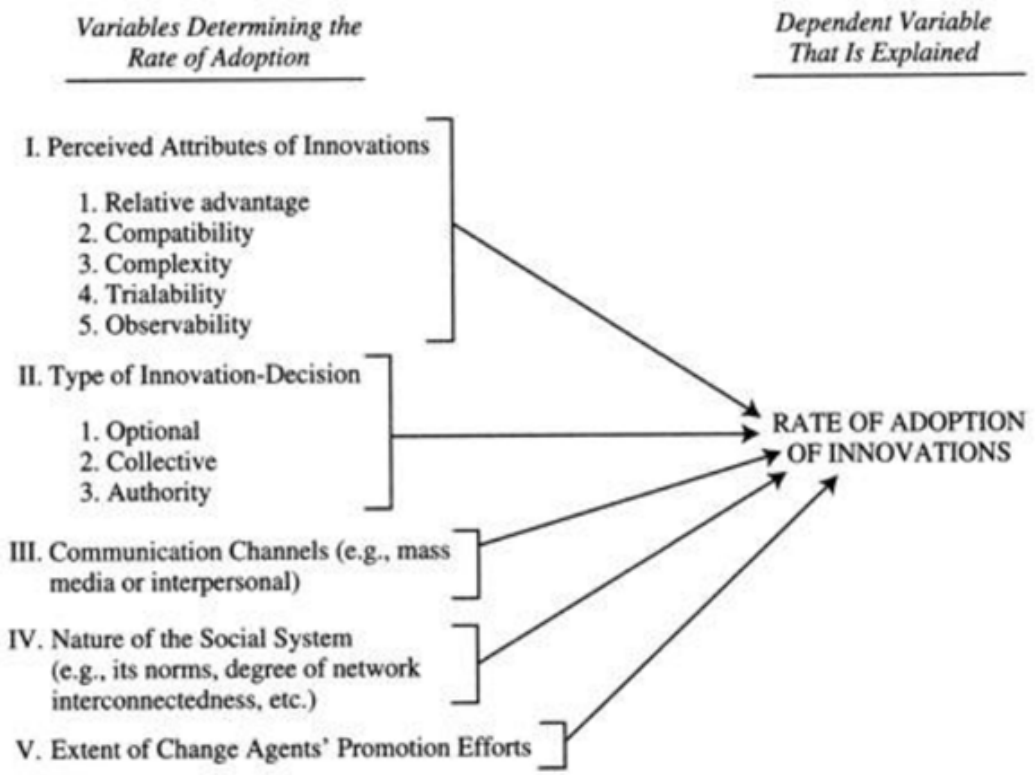

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Figure 4: Research model