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Modeling the Micro-Entrepreneurs' E-commerce Acceptance: The Role of Government Support Programme

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Abstract:

This study aims to measure the role of government digitalization support programme (GSP) in enhancing rural e-commerce activities. In this study, GSP was introduced as a new independent variable in Technology Acceptance Model. The results showed that GSP in fact did not significantly act as a moderating variable in TAM. Notwithstanding that, GSP had a significant influence in the direct relationship with intention. Meanwhile, the study expected PEOU and PU to play a big role in influencing the intention. Indeed, the role of GSP in TAM has never been tested and it rarely gets any attention from researchers. Thus, this study fill the research gap and seeks that the findings from this study will shed new light on TAM as well as the studies on government business support. The study also outlines a number of recommendations to further support the digitalization of rural business activity.

Keywords: government intervention, rural micro-entrepreneurs, E-commerce, technology acceptance model

1 Introduction

Rural areas in Malaysia are defined as areas that have lower standards of living in comparison to their urban counterparts. The rural economic development typically comes at a much slower pace and is usually fraught with instabilities due to the low level of education and skills among many of its population [1]. Suffice to say, rural areas and poverty are inextricably connected. A majority of people living in rural areas are normally involved in traditional economic activities such as traditional agriculture and cottage industries [2]. Apart from those, many of them also work in the manufacturing sector, or as low-skilled construction workers and lower-class government servants. Meanwhile, in some rural areas, the population income is still mostly below poverty line. Indeed, unemployment is one of the major issues experienced by many people living in rural areas [3]. This issue of lack of employment has subsequently become a push factor for the huge migration of rural population to urban areas. This particular phenomenon invites a vast array of trivial socio-economic problems as a large number of rural population migrate to cities, leaving the older generations behind. This means that rural areas will continue to remain backward and that the living standards of their residents will also never improve for the better [3].

In order to resolve this pertinent issue, the Malaysian government encourages the rural population to actively engage in entrepreneurial activities. Previous research indicates the leading role that entrepreneurship plays in poverty eradication and jobs creation in the rural areas in Malaysia [4-7]. The establishment of a new entrepreneurial venture means more job opportunities are being created. Consequently, this means that people in rural areas will have more chance to increase their household income, in turn positively affecting their overall standard of living.

Considering the favourable impact that entrepreneurship plays on the overall rural development, the Rural Development Policy 2030 (RDP 2030) was launched in 2019 which aims to foster entrepreneurship as a career prospect for income generation activities among people living in rural areas. The current growth of the new entrepreneurship venture demonstrates the success of the government's effort to exploit entrepreneurship activities as catalysts for rural development. According to the Company Commissioner of Malaysia, there were 1,340,024 new business registrations recorded in 2020 compared to 1,198,592 in 2019, an increase of 141,432 or 12 percent of the total registrations in one year. The number indicates a significant growth in the entrepreneurship activity of rural areas three years after RDP 2030 was first introduced. Nonetheless, despite no available specific statistics for new business registration in rural areas, the study believes that the government's entrepreneurship policy has positively impacted the overall development of rural areas.

Rural entrepreneurship activities indeed do need continuous support from the government in order to maintain stable growth and continuously contribute to the socio-economic wellbeing of the country. Undoubtedly, rural entrepreneurs must move in tandem with the dynamic current business developments which are also replete with challenges [8]. Besides, the Fourth Industrial Revolution or Industry 4.0 calls upon rural entrepreneurs to transform their traditional business model into one that is digitally based. Traditional business model needs to be rejuvenated by adopting a key Industry 4.0 element – cyber physical system - so that businesses can remain relevant and adapt easily to the ever-increasing challenging business environment. This wave of technological development leave entrepreneurs with no choice but to integrate new technologies such as E-commerce into their business model [9, 10]. Evidently, adopting E-commerce has become an urgent need for many traditional brick-and-mortar entrepreneurs as the COVID-19 pandemic plagues the world's economy with unprecedented impacts, going beyond the anticipation and arguments of many experts. It is not an exaggeration to say that the pandemic has crippled almost an entire global economic system, not only causing a huge loss of human lives but also restricted human movement across the world. This consequently leads to the forced cultivation of new norms in people's daily lives including in their business transactions. Online transactions or more commonly known as E-commerce are becoming increasingly popular among many consumers and merchants of today. It is indeed obvious how increasingly important E-commerce has become in light of the current business environment. It is a matter of fact that in order for businesses to sustain themselves, the E-commerce technology needs to be incorporated into the new business framework of many entrepreneurs. Despite this fact, the main challenge in creating a paradigm shift among rural entrepreneurs into accepting changes for the survival of their businesses still remains unresolved. This is evident through past studies which demonstrated the low adoption rate of E-commerce among micro entrepreneurs [8, 9, 11].

Therefore, using TAM it is imperative to determine the influence of its variables on the rural entrepreneurs' intention to use E-commerce. Moreover, the present study set out with the aim of examining the influence of GSP on the variables. Result from this research are intended to provide stakeholders and rural economic development agencies with relevant data that will consequently further enhance rural development efforts in Malaysia.

2. The Underpinning Theory

2.1 Technology Acceptance Model

"Technology Acceptance Model (TAM)" essentially describes factors that

influence consumers' intentions and behaviours towards the use of a particular new technology. TAM has been widely used to study consumers' responses to technologies, in particular, ICT [12-14]). This model was first introduced by Davis who argued that consumer behaviours towards consumer technologies is in fact influenced by their intention. Davis went on to argue that intention is influenced by two important elements, namely PEOU and PU of users regarding the technology in question. Thus, TAM dictates that PEOU and PU are the two dominant variables that consequently determine consumers' intentions and behaviours. Between these two variables, past researchers found that PU was in fact more dominant and had a stronger relationship with intention as well as behaviour compared to PEOU [13]. Besides that, TAM as a model has also evolved in parallel with the many changes occurring in the environment. It is important to note that several changes and improvements were made to the basic model of TAM by past researchers.

[15] was the first person to first introduce TAM2. TAM2 suggests that acceptance to technology very much depends on the task fit and the technology performance output. In an instance where the technology being discussed is perceived to have failed to produce the desired output, the model indicates that this will eventually affect consumer acceptance of the technology. Three years after that, Venkatesh, et al. [16] introduced the "Unified Theory of Acceptance and Use of Technology (UTAUT)". Theoretically, "UTAUT" focuses on social influences and technology usage. This model was developed by adding another factor such as subjective norms, image and anxiety that may affect PEOU and PU [17]. The abovementioned model has been extensively applied and has its validity and robustness proven [18].

Thus, the current study is designed to investigate the effect of PU and PEOU on the rural entrepreneurs' intention to adopt E-commerce. Indeed, there extensive studies were conducted on E-commerce adoption by many previous scholars. However, it was found that the studies on rural entrepreneurs in developing countries are still lacking in number. This study also integrates GSP in TAM as a moderating variable as to identify its role in the relationship between PU, PEOU and the intention. It is also worth mentioning that there were very limited studies that test on GSP as a moderator in this relationship, especially in TAM. The idea to introduce GSP in TAM is based on its role as a catalyst in entrepreneurial activities. In the context of this study, the dimensions of government support cover the financial support for the use of technology, provision of infrastructure, skills in upgrading the programmes and advisory services. In theory, GSP enhances rural entrepreneurs' skills and knowledge [19-23]. Moreover, the availability of financial support provides opportunities for a business model transformation among rural entrepreneurs. Thus, this study argues that GSP can indeed give a favorable effect on the relationship between PU, PEOU and intention.

3. Research Framework

The current research framework is depicted succinctly in Figure 1. The framework exhibits that the rural entrepreneurs' intention to utilize e-commerce rural entrepreneurs is influenced by PEOU and PU, similar to the basic concept of TAM. But, unlike previous studies, the novelty of the new framework lies in the introduction of GSP in TAM as a moderator variable. This study thus investigates the extent in which GSP influences rural entrepreneurs' intention to adopt E-commerce by moderating their daily business activities. According to [23], government supports act as catalysts for entrepreneurial activities, primarily among small entrepreneurs. Hence, this study serves as a timely examination into the role that government supports play in the larger government's digitalization effort in further promoting rural growth via entrepreneurship.

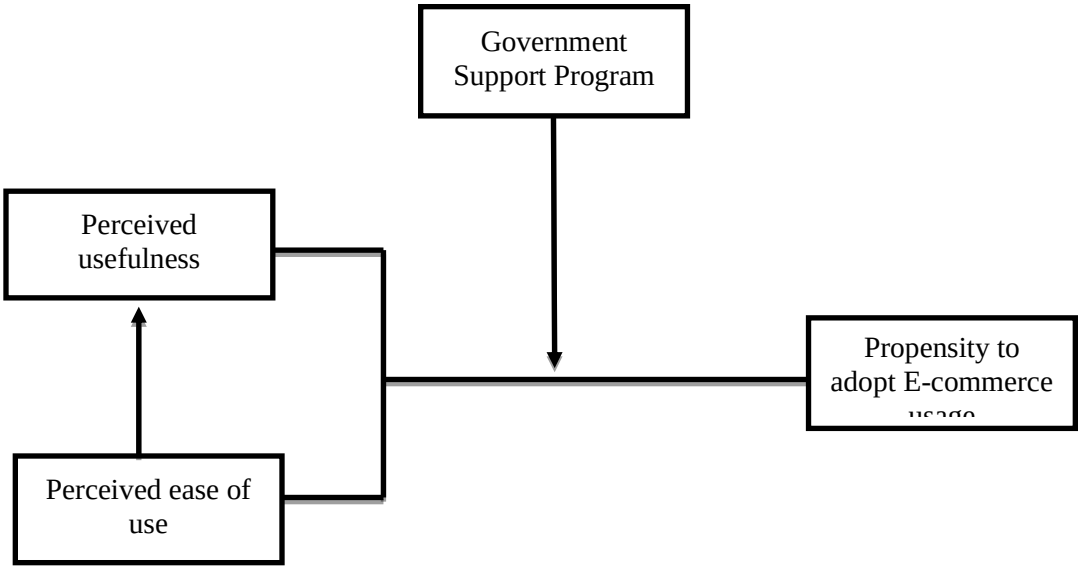

Figure 1: Research Framework

Perceived Ease of Use & Perceived Usefulness

PU is the first predictor variable in TAM that measures the perceptions of rural entrepreneurs towards benefits derived from a system or technology - in this study, this refers to the benefits derived from the use of E-commerce. The second predictor variable is PEOU which measures the rural entrepreneurs' perception on the operation and use of E-commerce. This variable is simple and does not require high energy and effort to use the technology. These two predictor variables subsequently become determinants on the propensity to adopt E-commerce [13, 24]. Besides, TAM is also widely used to predict consumer behaviour towards purchasing activities [13]. On top of that, these two predictor variables are also interrelated. In TAM, PEOU shaped PU significantly. The perception of a simple and user-friendly technology greatly influences the perceived benefits derived from its use.

Numerous studies on PU and PEOU shown the significant role of these two constructs on intention [25], on multimedia application study found that PU and PEOU positively influence teachers' attitude towards multimedia application in classroom exercises. On the other hand, [26] asserted that PU has a great impact on stimulating the community members' desire to share knowledge. The finding was further supported by [27] who have highlighted the influence of PU and PEOU on the usage of mobile banking.

The relationship of the two constructs has been extensively studied and it was found that PEOU significantly influences PU. A research by [28] on cryptocurrency payments found that the PEOU's cryptocurrency payment system has a significant influence towards PU on its adoption. The findings confirmed the work from [29] who found that PU on Fintech services is influenced

by PEOU. Meanwhile, a study on the role of PU and PEOU in TAM has attracted many researchers to understand consumers' attitudes and acceptance of new technologies. Furthermore, a study related to the adoption of Augmented Reality in Malaysia's retail sector found that both PU and PEOU help influence the technology's adoption among retailers [29]. According to above findings, this study hypothesizes the following statements:

H1: Rural entrepreneurs' PU significantly influence their intention to use E-commerce

H2: Rural entrepreneurs' PEOU significantly influence their PU of E-commerce; and

H3: Rural entrepreneurs' PEOU significantly influence their intention to use e-commerce

Government Supports

Indeed, the provision of business support largely emanates from the neo-classical economic theory on the basis of imperfect markets [30]. The inability of small businesses to acquire information and knowledge about the market exposes them to unfair competition. Apart from that, lack of competitiveness and internal resources has reduced many SMEs to a state of vulnerability and fragility. Moreover, a high on-demand business support are in fact in line with a firm's objective to grow and fulfil its size threshold [31].

On top of that, dynamic changes taking place in the current economic environment add more burdens on many rural entrepreneurs. Besides lacking the necessary funds and skills [32, 33], now rural entrepreneurs' existing problems are exacerbated by the emergence of new technologies that require not least, new investment and skills. This scenario forces many of them to leave conventional business practices and adopt new ones. The change of business model from a traditional brick-and-mortar to one that is digital-based leave rural entrepreneurs with no choice but to adapt in order to sustain. This is because a growing number of consumers and merchants are now shifting from conventional business transactions to online transactions via E-commerce platforms. At present, this mode of transaction has become a new norm in the wake of the COVID-19 pandemic which has largely restricted human movement [23,45,46,47,48]. This means that entrepreneurs who fail to act on transforming their business model may suffer from adverse financial impacts of the pandemic, severely striking their business performance. Thus, in order to address this issue, the Government proposed a novel approach of promoting the usage of E-commerce in the daily business activities of the rural entrepreneurs. This was done as the Government aims to transform rural entrepreneurs' traditional business model into those that are digitally-based. To realize this goal, the Government has mobilized all entrepreneur development agencies to run awareness programmes and provide related E-commerce and business digitalization-related trainings. This timely initiative is part of the National Entrepreneurship Policy 2030 agenda [23]. Apart from that, the Government also provides infrastructure facilities such as online business hubs and market database.

Comprehensive government support includes the development of soft and physical skills among rural entrepreneurs with the potential to maximize the utilization of E-commerce thereby transforming traditional business model into a digital-based business model, in line with current business developments. Moreover, digitization of business enables a more effective marketing activity.

Suffice to say, government supports are essential in the greater efforts of rural economic development and can truly become a catalyst for wider technology adoption and consequently, economic growth. The rural digitalization programme is one of the most important tools harnessed by the Government to ensure that rural entrepreneurs remain resilient and are competent enough to face a dynamic economic environment. In view of macroeconomics, the Government's intervention in providing business support through agencies and government-linked corporations (GLCs) has been recognized as exerting a favorable impact on the overall success of the East Asian economy, including

Malaysia [34]. In their comprehensive study on Fintech adoption Yee-Loong Chong, et al. [35]

of the success factors in Fintech adoption among SMEs. The Government also plays a crucial role in determining the success of online banking among SMEs [36]. According to the above arguments, it could conceivably be hypothesized that:

H4: Government supports (GSP) significantly influence rural entrepreneurs' intention to use e-commerce usage; and that

H5: Government supports (GSP) moderate significantly the relationship between PEOU, PU and rural entrepreneurs' Intention towards e-commerce usage.

Methodology

4.1 Data Collection

This study is to analyze relationship of PEOU, PU with intention and to determine the moderating effect of GSP in the relationship. Therefore, a sample of entrepreneurs who own micro-sized businesses in four districts throughout the state of Kelantan were selected. in Table 1.

concluded that government supports are also one

A total of 302 respondents were randomly selected from a sample frame of entrepreneurs under the supervision of the People's Trust Council, a rural entrepreneurs' development agency. This number of respondents was selected as suggested by [37]. A total of 302 data were successfully collected and used for analysis purposes. The data were analyzed using structural equation modeling (SEM) in order to measure the relationship between each variables under study. To verify the hypotheses, the partial least square (PLS) technique was chosen as it suits the objectives of this study where it is more forecast-oriented.

A descriptive analysis show that 87 percent of respondents are operate as sole proprietorship. In terms of the type of business activities that prevailed among them, a majority of them are involved in the services sector (93 percent) and that only 7 percent are involved in the manufacturing sector. In addition, 64 percent of them have been in business for less than 10 years. Based on the demographic information obtained, this sample is deemed valid to answer the study's research questions and to achieve its objectives. The respondents' demographic particulars are presented comprehensively

Table 1 Sample's background

	N	%
Business Activity		
Manufacturing	22	7
Non-manufacturing	280	93
Ownership		
Sole-Trader	262	87
Partnership	6	2
Private Limited Liability	34	11
Tenure		
< 1 year	2	1
1-10	190	63
11-20	88	29
> 20 years	22	7

Instrument of Development

This study uses a quantitative method where respondents were required to answer survey questions in order to measure each variable under study. The measurement items were adopted from measurement scales which were developed and used by previous researchers. This approach was used to ensure that the measurement items adopted in this study obtain high validity and reliability as these measurement items have been tested by previous studies. To measure the constructs under GSP, this study utilized measurement scales developed by [29] which comprise of five items. On the other hand, a measurement scale was borrowed from Pikkarainen, et al. [38] to measure PEOU and PU. This scale contains four and five measurement items respectively. Last but not least, intention was measured using four questionnaires suggested by [39] and [40]. All questionnaires to measure construct used a five-point Likert. Respondents were asked to express their feedback by choosing a value from 1 to 5.

5. Results

5.1 Measurement Model Assessments

Three tests were performed, namely confirmatory factor analysis, convergent and discriminant validity to ensure that the instrument used to measure the construct was reliable and valid. For confirmatory factor, Hair, Ringle, and Sarstedt (2011) suggested that the minimum loading value per item is 0.7. Items with a loading value of 0.7 and more are considered significant for the study [41,47,48]. The loading value of each measurement item for each variable is illustrated in Table 4.

The convergent validity test is to check the degree of similarity between a measurement scale with another construct and another measurement scale from the same construct. The level of similarity can be measured by referring to the value of average variance extracted (AVE) with a threshold value of 0.5, and a composite reliability (CR) value of not more than 0.7 [41,47,48]. The result of measurement scale's reliability of this study is shown in Table 4.

Table 4 Measurement Model Result

Construct	Label	λ	Composite Reliability	Ave Variance Extracted
GSP	GSP1	0.813	0.924	0.709
	GSP2	0.855		
	GSP3	0.862		
	GSP4	0.858		
	GSP5	0.821		
Intention	Intn1	0.943	0.974	0.903
	Intn2	0.950		
	Intn3	0.959		
	Intn4	0.950		
PEOU	PEOU1	0.881	0.928	0.763
	PEOU2	0.863		
	PEOU3	0.890		
	PEOU4	0.860		

PU	PU1	0.787	0.921	0.700
	PU2	0.867		
	PU3	0.797		
	PU4	0.872		
	PU5	0.856		

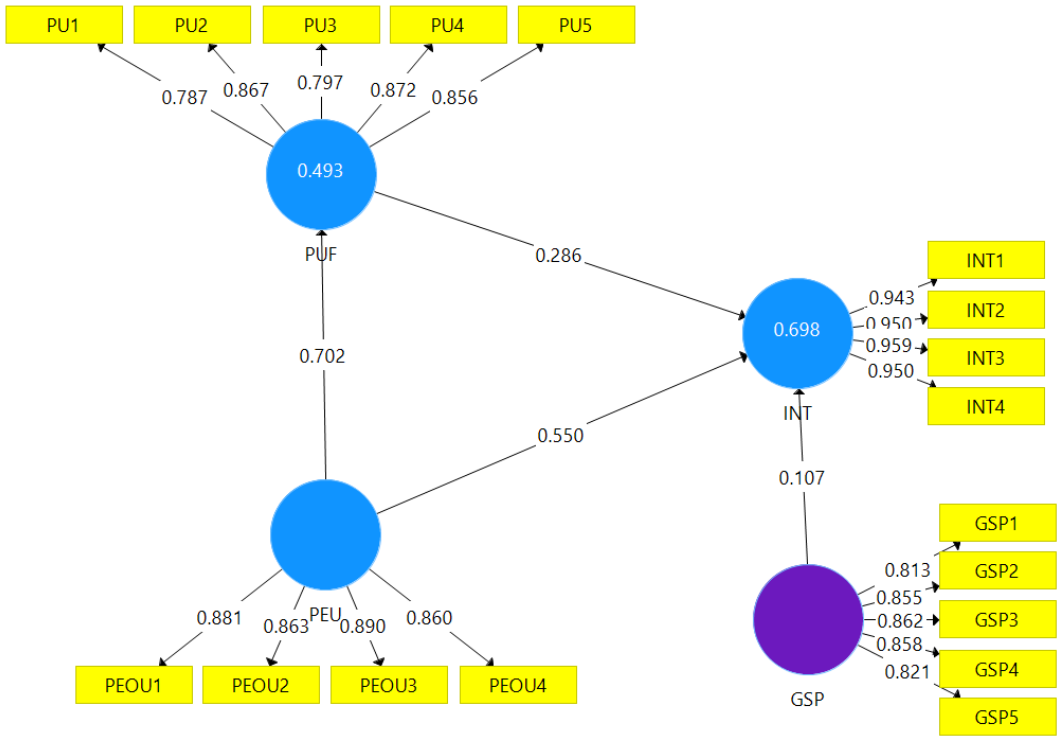

Figure 1: Path analysis

The discriminant validity test is to provide empirical evidence that there are differences between each construct so that there is no overlap. The results in Table 5 show that all AVE values are higher than the squared correlation, hence the discrimination validity of each construct is acceptable [42, 43,47,48]

Table 5 Discriminant validity analysis.

	GSP	INT	PEU	PU
GSP	0.842			
INT	0.491	0.950		
PEOU	0.466	0.800	0.874	
PUF	0.447	0.720	0.702	0.837

Structural Model Assessments

Under structural model , path coefficient and explained variance is calculated in order to test the hypothesis [44]. The hypothesis test result and coefficient path analysis result is shown in Table 6 and Figure 3.

Table 6. Explained variance and hypotheses

Hypotheses	Path Regression	SE	t-value	p-value	Hypothesis Support
H4	GSP -> INT	0.107	3.041	0.002	YES
H1	PEOU -> INT	0.550	8.778	0.000	YES
H3	PEOU -> PUF	0.702	15.533	0.000	YES
H2	PUF -> INT	0.286	4.469	0.000	YES

The findings of the study in Table 6 and Figure 2 show that all of the hypotheses in the beginning of this study are well supported. It is evident that there were significant positive correlations between all independent constructs with their respective dependent constructs. Moreover, GSP, which is the new construct introduced in TAM had a significant relationship with intention. In addition, PEOU and PU also had a significant influence on intention.

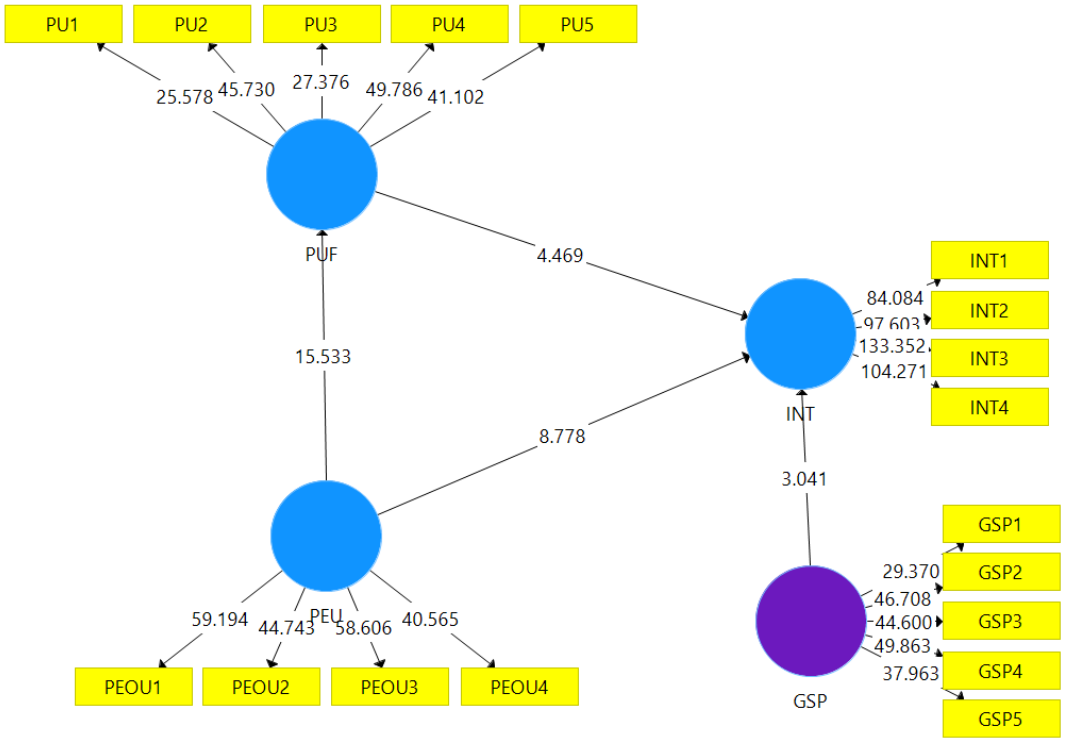

Figure 2 Structural Model

Moderating Results

Table 6 Research Hypotheses

	SE	t-value	p-value	R2	Hypotheses Supported
GSP -> INT	0.113	2.966	0.003	0.699	YES
GSP PEU -> INT	-0.042	0.670	0.503		NO
GSP PU -> INT	0.030	0.496	0.620		NO
PEU -> INT	0.545	8.499	0.000		YES
PEU -> PU	0.702	15.279	0.000	0.493	YES
PU -> INT	0.279	4.176	0.000		YES

The moderation analysis result failed to support both hypotheses of this study. From the data in Table 6, there was no evidence that GSP significantly moderates the relationship of PEOU, PUF and intention, where $p > 0.05$.

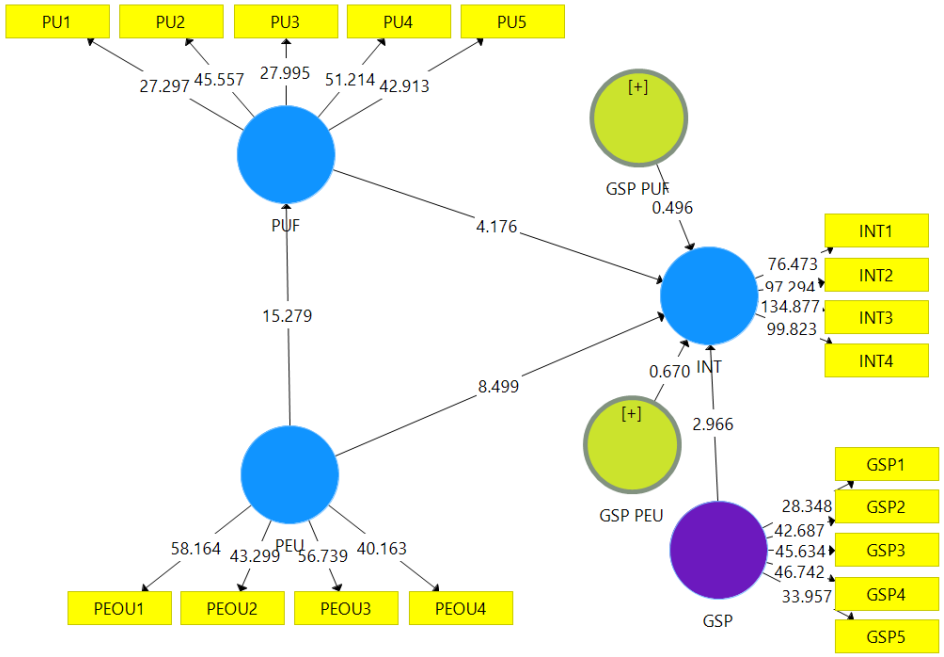

Figure 3 Moderation Model

Discussion

It goes without saying that not all entrepreneurs have equal opportunities when it comes to expanding their businesses. Urban entrepreneurs are generally assumed to have more opportunities at their expense to thrive as they have bigger markets, are exposed to more facilities and generally have easy access to diverse types of financial and non-financial assistance. In contrast, rural entrepreneurs are typically plagued by a myriad of weaknesses in which they have nothing more than a meagre capital, skills and infrastructure facilities. Notwithstanding those points, rural entrepreneurs need to still move in line with the changes that are taking place in the current dynamic business environment. The sustainability of rural entrepreneurs is extremely

crucial as they play a powerfully relevant role in developing the rural areas. Thus, a timely and appropriate government intervention in many rural entrepreneurial activities, particularly, in the digitalization programme is highly required in order to boost greater development for the rural areas.

For the purpose of this study, a quantitative approach was utilized in which 320 responses were successfully collected from the rural entrepreneurs under study. The data were analyzed using PLS in order to answer two research questions. Firstly, is their intention to use E-commerce influenced by PEOU and PU; and secondly, what is the extent to which government support play the catalyst role in the readiness to use E-commerce. To answer both of these questions, a conceptual framework was developed based on TAM with the addition of government support variables as mediators in the relationships between PEOU, PU and intention.

The results of the study indicate that PEOU and PU of rural entrepreneurs are greatly influenced their intention. This particular finding strongly supports the hypothesis, is indeed highly expected. The current finding confirms the results of previous studies and further reinforces the significant role that PEOU and PU play towards the acceptance of new technologies, new processes or new approaches in the business communities of rural areas. Within the context of the study, PEOU and PU evidently have a strong influence on the intention. By the same token, the relationship found between PEOU and PU is in line with previous findings, in which PEOU significantly influences PU as hypothesized earlier in the study.

Interestingly, the most persuasive argument of this study is that GSP does not significantly moderate the relationships between PEOU, PU and Intention. This finding unexpectedly opposes the hypothesis made previously. This is to say that the intervention programme did not actually affect the strength of the relationships between PEOU, PU and the Intention. In short, GSP does not effectively intervene in the rural entrepreneurs' perceptions and tendencies to use E-commerce. For example, without the GSP's intervention, rural entrepreneurs with high PEOU and PU are actually found to be more inclined towards E-commerce for their businesses. Conversely, GSP is less effective to strengthen the relationship between perceptions and intentions to use E-commerce for a group of rural entrepreneurs with low PEOU and PU. This indicates clearly that PEOU and PU are more dominant in this framework and their relationship with the Intention was not in any way affected by government intervention. Nevertheless, a question arises on how favorable is the idea of PEOUs and PUs being developed for rural entrepreneurs known to be lacking in technological knowledge and skills? How do these entrepreneurs obtain information and knowledge about E-commerce? The result collected on the direct relationship between GSP and Intention shows that indeed there is a positive correlation between these two variables. Meanwhile, GSP does not significantly moderate the relationship between PEOU, PU and Intention. As a matter of fact, GSP is a very influential predictor variable in determining the intention to use E-commerce beside PEOU and PU.

In short, GSP is an imperative feature and plays an essential role in the efforts to increase the use of technology, especially E-commerce among rural entrepreneurs. Various government programmes and initiatives such as soft skills courses, financial assistance and infrastructure facilities have a strong direct relationship with the propensity to use E-commerce. This is evinced by the fact that the diverse government initiatives have resulted in the successful instilment of knowledge and awareness on the topic of E-commerce among micro-entrepreneurs. Nonetheless, more intensified support programmes for rural entrepreneurs need to be created in order to further enhance the digital transformation efforts of rural areas.

On the other hand, from a theoretical framework point of view, GSP does not fit to act as a moderating variable in TAM. Thus, GSP is an acceptable, appropriate and a very effective independent variable, in addition to PEOU and PU, in measuring the intention of rural entrepreneurs to use E-commerce. Furthermore,this study contributes to a deeper understanding on the role of GSP in the relationship between perceptions on E-commerce and the tendency to use it. The results

of this study show that PEOU and PU are two predictor variables that are highly influential on consumer intentions - in this context, the rural entrepreneurs. Thus, this study argues that GSP does not intervene in the relationship between the perceptions on E-commerce and the intention to use it. Entrepreneurs who are well-informed and exposed to a particular technology being discussed are found to be well-prepared to make appropriate changes such as adopting the said technology. They hardly require GSP intervention to reinforce their intention to use E-commerce. Therefore, this study is of the view that GSP does not significantly function as a moderator in TAM.

With respect to the practical contribution of this study, the results obtained provide precious information to entrepreneurs' development agencies showing that the support programmes they implemented do affect the intentions of entrepreneurs towards the use of technology in their businesses. Therefore, based on the results obtained, the study proposes for an enhancement of more capacity-building programmes that are comprehensive so that all rural entrepreneurs can benefit from them. Since the government programmes conducted did not affect the relationship between the perceptions and intentions to use E-commerce, the courses of the programmes should therefore be reviewed, particularly by targeting entrepreneurs with a difficulty in gaining access to information and those with a low awareness on the importance of technology for their businesses. To identify this group of entrepreneurs, it is proposed that a formal comprehensive study is conducted on the different level of awareness and knowledge about E-commerce prevalent among rural entrepreneurs. This study is imperative as awareness not only lead to attitude changes, but it can also transform rural entrepreneurs' traditional business practices [33].

7. Conclusion

This study widely reveals the role of GSP in the business development and entrepreneurial activities of rural areas. This study has shown that GSP has a significant influence on the tendency to use the E-commerce technology in the business activities of rural entrepreneurs. In addition, the results of this study also show that PEOU and PU in TAM are truly two strong success factors for a traditional business model to transform into a new digital-based business model, especially in rural areas. Overall, this study further strengthens the robustness of the prediction power of TAM on the subject of technology adoption. The novelty of this study revolves around the significant of GSP as a predictor variable rather than a moderator variable. These findings can pertinently add to the diversity of strategies of government's business supports as well as towards the rich literature on TAM. Government intervention in small business activities is imperative. However, as the study demonstrates, in a theoretical sense, intervention does not strengthen the relationship between PEOU, PU and Intention to use E-commerce. Furthermore, available government support programmes such as skills enhancement building, financial assistance and infrastructure facilities do have a strong direct relationship with the intention. This is evident when the conducted programmes have traditionally successfully increased the knowledge and awareness on technology among rural entrepreneurs. This therefore calls for the arrangement of more support programmes so that more opportunities for rural entrepreneurs to be involved in E-commerce activities can be created.

In essence, this study proposes a comprehensive framework in understanding the tendency to use E-commerce by incorporating the GSP elements in TAM. However, this study naturally also had several limitations. Firstly, the results of this study are based on a limited sample from only four rural districts in Kelantan. Although admittedly there was a sufficient number of respondents, the results obtained are a far cry from a generalization of the entire country as that will naturally require a larger number of respondents. Therefore, it is suggesting that the sample used in this study be extended to other rural areas in the East Coast of Peninsular Malaysia for future studies. Secondly, this study did not examine the level of readiness of rural entrepreneurs towards the transformation of their conventional business model into a technology-based business model. Hence, future studies are proposed to take into account the influence of technology readiness among rural entrepreneurs in TAM on the actual act of E-commerce usage among them. Finally, this study is limited by the

lack of information on the role of private sector support in rural entrepreneurship activities, in particular, the support given by telecommunication companies. Future studies are recommended to look at the impact and the role that private sector support plays in the tendency for rural entrepreneurs to use E-commerce.

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References

[1] A. R. Siti Masayu Rosliah, "Capability of ICT in Improving the Achievements of Rural Women Entrepreneurs in Malaysia," *Journal of Social Science and Humanities*, vol. 11, no. 2, pp. 78-103, 2016.

[2] I. MacGregor-Fors and L.-B. Vázquez, "Revisiting 'rural'," *Science of The Total Environment*, vol. 741, p. 132789, 2020/11/01/ 2020, doi: https://doi.org/10.1016/j.scitotenv.2019.06.135.

[3] P. Surchev, " Rural Areas - Problems and Opportunities for Development.," *Trakia Journal of Sciences*, vol. 8, 3, pp. 234-239, 2010.

[4] N. Hoque, M. A. Khan, and K. D. Mohammad, "Poverty alleviation by Zakah in a transitional economy: a small business entrepreneurial framework," *Journal of Global Entrepreneurship Research*, vol. 5, no. 1, p. 7, 2015/05/20 2015, doi: 10.1186/s40497-015-0025-8.

[5] C. Sutter, G. D. Bruton, and J. Chen, "Entrepreneurship as a solution to extreme poverty: A review and future research directions," *Journal of Business Venturing*, vol. 34, no. 1, pp. 197-214, 2019/01/01/ 2019, doi: https://doi.org/10.1016/j.jbusvent.2018.06.003.

[6] S. Lin, C. Winkler, S. Wang, and H. Chen, "Regional determinants of poverty alleviation through entrepreneurship in China," *Entrepreneurship & Regional Development*, vol. 32, no. 1-2, pp. 41-62, 2020/01/01 2020, doi: 10.1080/08985626.2019.1640477.

[7] D. A. Shepherd, V. Parida, and J. Wincent, "Entrepreneurship and Poverty Alleviation: The Importance of Health and Children's Education for Slum Entrepreneurs," *Entrepreneurship Theory and Practice*, vol. 45, no. 2, pp. 350-385, 2021, doi: 10.1177/1042258719900774.

[8] Y. D. Wei, J. Lin, and L. Zhang, "E-Commerce, Taobao Villages and Regional Development in China*," *Geographical Review*, vol. 110, no. 3, pp. 380-405, 2020/07/02 2020, doi: 10.1111/gere.12367.

[9] N. C. Astuti and R. Nasution, "Technology Readiness and E-Commerce Adoption among Entrepreneurs of SMEs in Bandung City, Indonesia," *Gadjah Mada International Journal of Business*, vol. 16, pp. 69-88, 2014.

[10] M. Ismail *et al.*, "Determine Entrepreneurial Characteristics Using Mobile Android Game Freezer," *International Journal of Interactive Mobile Technologies*, vol. 12, no. 1, pp. 141-150, 2018.

[11] S. Kabanda and I. Brown, "A structuration analysis of Small and Medium Enterprise (SME) adoption of E-Commerce: The case of Tanzania," *Telematics Informatics*, vol. 34, pp. 118-132, 2017.

[12] A. A. Alalwan, A. M. Baabdullah, N. P. Rana, K. Tamilmani, and Y. K. Dwivedi, "Examining adoption of mobile internet in Saudi Arabia: Extending TAM with perceived

enjoyment, innovativeness and trust," *Technology in Society*, vol. 55, pp. 100-110, 2018/11/01/ 2018, doi: https://doi.org/10.1016/j.techsoc.2018.06.007.

[13] D. F. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of informaton technology," *MIS Quarterly*, vol. 13, no. 3, pp. 319 - 340, 1989.

[14] K. Wei-Loon and S. Nurul Afiqah, "The Motivation to Adopt E-commerce Among Malaysian Entrepreneurs," *Organizations and Markets in Emerging Economies*, vol. 11, no. 21, pp. 189-202, 2020.

[15] V. Venkatesh, "Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model," *Information systems research*, vol. 11, no. 4, pp. 342–365, 2000.

[16] V. Venkatesh, M. G. Morris, G. B. Davis, and F. D. Davis, "User acceptance of information technology: Toward a unified view," *MIS Quarterly*, vol. 27, no. 3, pp. 425-478, 2003.

[17] V. Venkatesh and H. Bala, "Technology acceptance model 3 and a research agenda on interventions," *Decision Science*, vol. 39, no. 2, pp. 273-315, 2008.

[18] W. R. King and J. He, "A meta-analysis of the technology acceptance model," *Information & Management*, vol. 43, no. 6, pp. 740-755, 2006/09/01/ 2006, doi: https://doi.org/10.1016/j.im.2006.05.003.

[19] M. N. H. Yusoff, Ed. *The utilisation of the government business support services: The senior adviser perspectives* (Entrepreneurial education and entrerpreneurship in Malaysia. . Kelantan: Universiti Malaysia Kelantan, 2010.

[20] S. Park, I. H. Lee, and J. E. Kim, "Government support and small- and medium-sized enterprise (SME) performance: the moderating effects of diagnostic and support services," *Asian Business & Management*, vol. 19, no. 2, pp. 213-238, 2020/04/01 2020. [Online]. Available: https://doi.org/10.1057/s41291-019-00061-7.

[21] V. B. Nakku, F. W. Agbola, M. P. Miles, and A. Mahmood, "The interrelationship between SME government support programs, entrepreneurial orientation, and performance: A developing economy perspective," *Journal of Small Business Management*, vol. 58, no. 1, pp. 2-31, 2020/01/02 2020, doi: 10.1080/00472778.2019.1659671.

[22] S. Doh and B. Kim, "Government support for SME innovations in the regional industries: The case of government financial support program in South Korea " *Research Policy*, vol. 43, no. 9, pp. 1557-1569, 2014.

[23] M. N. H. Yusoff *et al.*, "The Role of Government Financial Support Programmes, Risk-Taking Propensity, and Self-Confidence on Propensity in Business Ventures," *Sustainability*, vol. 13, no. 1, p. 380, 2021. [Online]. Available: https://www.mdpi.com/2071-1050/13/1/380.

[24] D. Gefen and D. Straub, "The Relative Importance of Perceived Ease of Use in IS Adoption: A Study of E-Commerce Adoption," *Journal of the Association for Information Systems*, vol. Volume 1, no. Article 8 October, 2000.

[25] F. Weng, R.-J. Yang, H.-J. Ho, and H.-M. Su, "A TAM-Based Study of the Attitude towards Use Intention of

Multimedia among School Teachers," *Applied System Innovation*, vol. 1, no. 3, p. 36, 2018. [Online]. Available: https://www.mdpi.com/2571-5577/1/3/36.

[26] F. Hashim Kamarul and B. Tan Felix, "Examining the determinant factors of perceived online community usefulness using the expectancy value model," *Journal of Systems and Information Technology*, vol. 20, no. 2, pp. 152-167, 2018, doi: 10.1108/JSIT-11-2016-0068.

[27] S. A. Raza, U. Amna, and S. Nida, "New determinants of ease of use and perceived usefulness for mobile banking adoption," *Int. J. Electronic Customer Relationship Management*, vol. 11, no. 1, 2017.

[28] G. Nuryyev *et al.*, "Blockchain Technology Adoption Behavior and Sustainability of the Business in Tourism and Hospitality SMEs: An Empirical Study," *Sustainability*, vol. 12, no. 3, 2020, doi: 10.3390/su12031256.

[29] Z. Hu, S. Ding, S. Li, L. Chen, and S. Yang, "Adoption Intention of Fintech Services for Bank Users: An Empirical Examination with an Extended Technology Acceptance Model," *Symmetry*, vol. 11, no. 3, 2019, doi: 10.3390/sym11030340.

[30] S. Johnson, D. J. Webber, and W. Thomas, "Which SMEs use external business advice? A multivariate subregional study," *Environment and Planning*, vol. 39, pp. 1981-1997, 2007.

[31] K. Mole, "The Value of Business Advice," Enterprise Research Centre, Warwick University, 2016, vol. 44.

[32] M. N. H. Yusoff, A. Al Mamun, M. D. Ibrahim, and H. Hassan, "Measuring and Comparing Functional Business Skills and Knowledge among Asnaf Community in Malaysia," *Economics and Sociology*, vol. 11, no. 2, pp. 229-247, 2018.

[33] F. David *et al.*, "Business development and the growth of rural SMEs," OECD, 2019. [Online]. Available: https://www.oecd-ilibrary.org/content/paper/74256611-en

[34] A. A. Wint, "The role of government in enhancing the competitiveness of developing country," *International Journal of Public Sector Management*, vol. 11, no. 4, pp. 281-299, 1998.

[35] A. Yee-Loong Chong, K. B. Ooi, B. Lin, and B. I. Tan, "Online banking adoption: an empirical analysis," *International Journal of Bank Marketing*, vol. 28, no. 4, pp. 267-287, 2010, doi: 10.1108/02652321011054963.

[36] T. M. Heckert *et al.*, "Creation of a New Needs Assessment Questionnaire," *Journal of Social Behavior and Personality*, vol. 15, no. 1, p. 121, 2000.

[37] V. R. Krejcie and W. D. Morgan, "Determining sample size for research activities," *Educational and Psychological Measurement*, vol. 30, pp. 607-610, 1970.

[38] T. Pikkarainen, K. Pikkarainen, H. Karjaluoto, and S. Pahnila, "Consumer acceptance of online banking: an extension of the technology acceptance model," *Internet Research*, vol. 14, no. 3, pp. 224-235, 2004, doi: 10.1108/10662240410542652.

[39] I. Ajzen, "The theory of planned behavior," *Organizational Behavior and Human Decision Processes*, vol. 50, no. 2, pp. 179-211, 1991/12/01/ 1991, doi:

https://doi.org/10.1016/0749-5978(91)90020-T.

[40] P. A. Pavlou, "Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model," *International Journal of Electronic Commerce*, vol. 7, no. 3, pp. 101-134, 2003/04/01 2003, doi: 10.1080/10864415.2003.11044275.

[41] F. J. Hair, M. C. Ringle, and M. Sarstedt, "PLS-SEM: Indeed a silver bullet," *Journal of Marketing Theory and Practice*, vol. 19, no. 2, pp. 139-151, 2011.

[42] D. Compeau, C. A. Higgins, and S. Huff, "Social cognitive theory and individual reactions to computing technology: A longitudinal-study," *MIS Quarterly*, vol. 23, no. 2, pp. 145-158, 1999.

[43] C. Fornell and D. F. Lacker, "Evaluating structural equation models with unobservable variables and measurement error," *Journal of Marketing Research*, vol. XVIII, no. February, pp. 39-50, 1981.

[44] W. W. Chin, Ed. *How to write up and report PLS analyses* (Handbook of Partial Least Squares. Texas: Springer Handbooks of Computational Statistics, 2010.

[45] Mohamad, M., Nasir, M. N. M., Ab Ghani, N. I., & Afthanorhan, A. (2019). Parallel mediators of place attachment and tourist satisfaction in destination attractiveness, destination loyalty and service quality. *International Journal of Innovation, Creativity and Change, 7*(7), 228-256.

[46] Afthanorhan, A., Foziah, H., Rusli, R., & Khalid, S. (2019). The effect of service quality on customer satisfaction in three campuses of UniSZA. *International Journal of Innovation, Creativity and Change, 7(*10), 42-56.

[47] Rahlin, N. A., Awang, Z., Afthanorhan, A., & Aimran, N. (2019). The art of covariance based analysis in behaviour-based safety performance study using confirmatory factor analysis: Evidence from SMES. *International Journal of Innovation, Creativity and Change, 7*(10), 351-370.

[48] Afthanorhan, A., Foziah, H., Rusli, R., & Khalid, S. (2019). Modeling reflective constructs in generalized structure component analysis: An application to service quality and customer satisfaction in UniSZA library. *International Journal of Innovation, Creativity and Change, 7*(10), 33-41.