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Factors impacting the intention to use digital social insurance application (VSSID) in Phan Thiet city, Binh Thuan province

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Abstract

The study aims to determine the factors affecting the intention to use digital social insurance (VssID application) in Phan Thiet City, Binh Thuan Province. The study applies a combination of qualitative and quantitative analyses. The research data were collected from a direct survey of 150 residents in Phan Thiet City. The results have proved that six factors that positively affect the intention to use the VssID application, including performance expectancy, ease of use expectancy, subjective norms, trust, innovation, and health consciousness. Among these factors, the performance expectancy factor has the most influence on the intention to use the VssID application in Phan Thiet City, Binh Thuan Province.

Keywords: VssID; Intention to use; Resident; Phan Thiet City

1. Introduction

Digital social insurance (VssID) is a mobile application developed by Vietnam Social Security. The application is a product in the information technology application ecosystem of Social Insurance to establish communication channels and create conditions for users to access information and use services conveniently. VssID application allows people to look up a range of information such as social insurance codes, social insurance agencies, and health insurance facilities. Besides, VssID also allows people to supervise the employer in making social insurance, health insurance, and accident insurance payment. In the long run, the VssID application can replace social insurance and health insurance paper cards. However, in the actual implementation process, the application has revealed inconveniences such as difficulties in some features, small font size, not connecting with administrative applications, etc.

The application VssID has been developed for two years; however, the number of participants using the application in Phan Thiet City, Binh Thuan Province has not met the expectation. There are many objective and subjective reasons for this situation. Therefore, the study of "Factors impacting the intention to use VssID application in Phan Thiet City, Binh Thuan Province" is necessary.

2. Theoretical framework and research model

According to Davis et al. (1989) [1], the intention to use technology is a person's willingness to accept the use of hi-tech services. Warshaw and Davis (1985) [2] said that the intention to use technology is the degree to which a person has made conscious plans to perform or not to perform certain behaviors in the future. Mehrad and Mohammadi (2017) [3] have defined "an individual's intention to use" as the likelihood that an individual will use technology in the future.

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2.1 Relationship between performance expectancy and the intention to use VssID

Perceived effectiveness in Technology Acceptance Model (TAM) is a measure of outcome expectations for the use of a particular system (Venkatesh, 1999) [4]. An individual's intention to use technology is influenced by their perception of the usefulness of that technology application (Davis, 1989) [5]. Many studies have demonstrated that perceived usefulness positively affects the consumers' intention to use technology applications (Tong et al., 2015 [6]; Kumar et al., 2017 [7]; Huong, 2021 [8]; Duy, 2022 [9]). Therefore, the study proposes hypothesis H1: Performance expectancy positively affects residents' intention to use the VssID application in Phan Thiet City, Binh Thuan Province.

2.2 Relationship between ease of use expectancy and the intention to use VssID

Mobile apps that are easy to use and easy to manipulate are highly accepted regardless users are technology savvy or not (Hoque et al., 2017 [10]). Perceived ease of use correlates significantly with "the intention to apply technology" through perceived usefulness (Lee and Chang, 2011 [11]). Many studies have demonstrated a positive relationship between perceived ease of use and the intention to use technology applications (Tong et al., 2015 [6]; Kumar et al., 2017 [7]; Huong, 2021 [8]). Therefore, the study suggests hypothesis H2: Ease of use expectancy positively affects people's intention to use VssID application in Phan Thiet City, Binh Thuan Province.

2.3 Relationship between subjective norms and the intention to use VssID

The intention to use technology applications is dominated by subjective norms (Kumar et al., 2017 [7]). Application providers consider that influencers, the user's friends, relatives, and the community affect the intention to use the technology application (Zhao et al., 2019 [12]). Several studies have demonstrated a positive relationship between subjective norms and the intention to use technology (Zhao et al., 2019 [12]; Duy, 2022 [9]). The study proposes hypothesis H3: Subjective norms positively affect people's intention to use the VssID application in Phan Thiet City, Binh Thuan Province.

2.4 Relationship between trust and the intention to use VssID

According to Zhou et al. (2010) [13], trust is the willingness to stay loyal to a service provider. It is associated with the expectation of the service provider's positive behavior in the future. Trust creates trust for users and it is an essential factor affecting customers' intention to use technology applications (Hoque et al., 2017 [10]). Research by Duy (2022) [9] has proven that trust is a crucial factor affecting people's intention to accept technology applications. Trust positively affects the intention to use technology (Kumar et al., 2017) [7]. Thus, the study suggests H4: Trust positively impacts the intention to use the VssID application of residents in Phan Thiet City, Binh Thuan Province.

2.5 The relationship between innovation and the intention to use VssID

According to Zhang et al. (2017) [14], innovation significantly impacts the intention to use technology applications. Zhao et al. (2019) [12] have indicated that innovation in technology applications always positively affects users' intention to use technology applications, especially in developing countries. Innovation has a beneficial effect on users' intention to use technology (Duy, 2022) [7]. Hypothesis H5 is proposed as follows: Innovation positively affects people's intention to use the VssID application in Phan Thiet City, Binh Thuan Province.

2.6 Health consciousness affects the intention to use VssID

Health risk perception and health consciousness have a positive influence on the intention to use technology (Ahadzadeh et al., 2015 [15]; Wahyuni, 2017 [16]). According to Alghamdi and Moussa (2012) [17], health consciousness is the premise of the intention to use technology. Perceived usefulness mediates the relationship between health consciousness and the intention to use technology applications. In Vietnam, research by Huong (2021) [8] and Duy (2022) [9] has proven that health consciousness positively affects the intention to accept technology. This study proposes H6: Health consciousness positively affects people's intention to use the VssID application in Phan Thiet City, Binh Thuan Province.

Based on the literature review and research hypotheses, the research model of factors affecting the intention to use the VssID application in Phan Thiet City, Binh Thuan Province is set below.

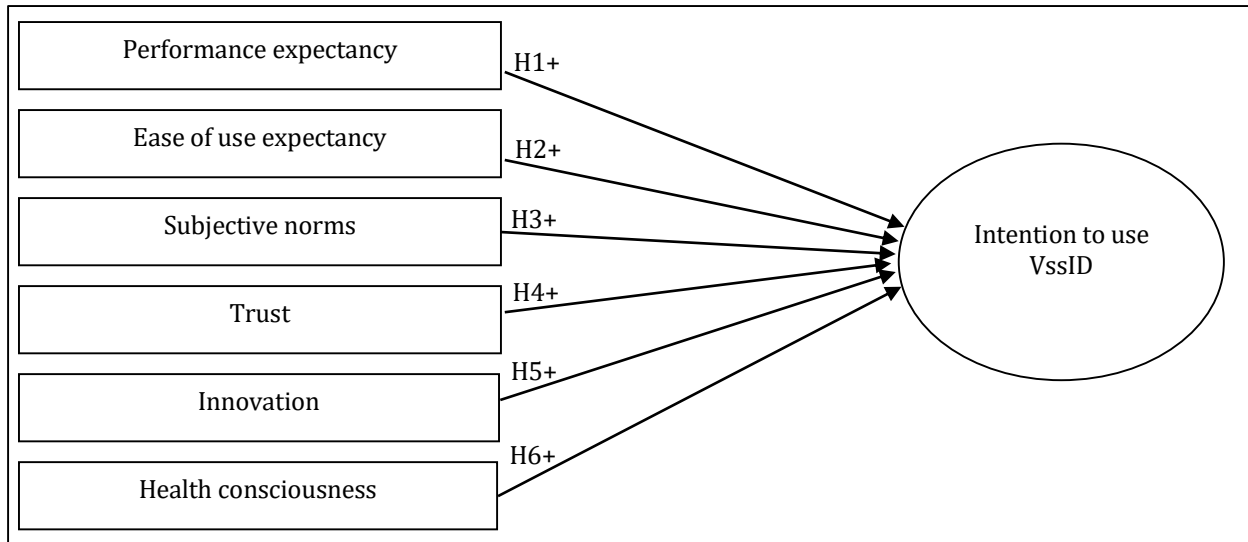


Figure 1 Proposed research model, 2022

Table 1 Interpretation of observed variables in the research model

Factor	Observed variable	Sign	Scale	Reference resources
Performance expectancy	Using VssID increases the effectiveness of social insurance policies.	PE1	Likert 1-5	Tong et al. (2015) [6], Huong (2021) [8], Duy (2022) [9]
	I manage online transactions efficiently using VssID well.	PE2	Likert 1-5	
	The VssID application can be used anytime, anywhere.	PE3	Likert 1-5	
	The VssID application is very useful.	PE4	Likert 1-5	
Ease of use expectancy	Easy to learn how to use VssID	EE1	Likert 1-5	Tong et al. (2015) [6], Kumar et al. (2017) [7], Huong (2021) [8]
	Easy to master using VssID	EE2	Likert 1-5	
	The user interface on VssID is clear and easy-to-understand	EE3	Likert 1-5	
	Easy to manipulate the VssID application	EE4	Likert 1-5	
Subjective norms	Colleagues and friends encourage me to use the VssID application.	SN1	Likert 1-5	Kumar et al. (2017) [7], Zhao et al. (2019) [12], Duy (2022) [9]
	My family members recommend me the VssID application.	SN2	Likert 1-5	
	Influencers encourage me to use the VssID application.	SN3	Likert 1-5	
	Many people around me use the VssID application.	SN4	Likert 1-5	
Trust	My account information is kept confidential.	TR1	Likert 1-5	Kumar et al. (2017) [7], Duy (2022) [9]
	My private information is kept confidential.	TR2	Likert 1-5	
	Transactions on VssID are safe.	TR3	Likert 1-5	
	I trust the application infrastructure.	TR4	Likert 1-5	
Health consciousness	Health is essential.	HC1	Likert 1-5	Ahadzadeh et al. (2015) [15], Wahyuni (2017)
	I am worried and concerned about my health.	HC2	Likert 1-5	
	I want to improve my health condition.	HC3	Likert 1-5	

Factor	Observed variable	Sign	Scale	Reference resources
	My daily activities are about staying healthy.	HC4	Likert 1-5	[16], Duy (2022) [9]
Innovation	I enjoy learning new technologies, and new features of applications.	IN1	Likert 1-5	Zhang et al. (2017) [14], Zhao et al. (2019) [12]
	I look forward to trying new technologies, and new features of applications.	IN2	Likert 1-5	
	I am often the first to try out new technology applications.	IN3	Likert 1-5	
	People come to me for advice on new technology and innovation.	IN4	Likert 1-5	
Intention to use	I plan to use the VssID application soon.	INT1	Likert 1-5	Ahadzadeh et al. (2015) [15], Zhang et al. (2017) [14], Wahyuni (2017) [16], Zhao et al. (2019) [12]
	The VssID application is a good idea.	INT2	Likert 1-5	
	I will use the VssID application instead of going directly to Social Security.	INT3	Likert 1-5	
	If there is a transaction, I plan to trade on the VssID application.	INT4	Likert 1-5	

Source: Compiled by the authors, 2022

3. Research methodology

3.1 Analytical methods

The assessment of factors affecting the intention to use the VssID application in Phan Thiet City, Binh Thuan Province is conducted in 3 steps. Step 1: Scale reliability test by Cronbach's alpha to test the internal correlation between observed variables. Step 2: Exploratory factor analysis (EFA) to test the convergent and discriminant validity of observed variables. Step 3: Multivariable linear regression to test the research hypotheses.

3.2 Data collection method

The study used convenient sampling to survey 150 people in Phan Thiet City. According to Hair et al. (1998) [18], to use exploratory factor analysis (EFA), the observation/ measurement variable ratio should be 5:1, meaning that 1 measurement variable requires at least 5 observations. According to Tabachnick and Fidell (1996) [19], the suitable sample size for regression analysis is $N \geq 50 + 5*m$ (m is the number of independent variables). Therefore, the sample size of the study meets the reliability requirements for testing the research hypothesis.

4. Research results and discussion

4.1 Test the reliability of the scales

Cronbach's alpha coefficient is used to eliminate variables with garbage value (item-total correlation less than 0.3), according to Nunnally (1978) [20] and Peterson (1994) [21]. The scale is accepted if its Cronbach's alpha value is greater than 0.6 (Slater, 1995) [22]. Based on the analysis result in table 2, all scales have high reliability (the smallest is the Innovation scale with Cronbach's alpha value reaching 0.814). Therefore, all variables are used in the next exploratory factor analysis (EFA).

4.2 Exploratory Factor Analysis (EFA)

The result of exploratory factor analysis (EFA) for the independent variables reaches the following values: Significance level (Sig) is less than 0.05 and it is less than 0.05. KMO = 0.849 (in the range of 0 to 1); the factor loading values of all observed variables are greater than 0.5. The total variance extracted reaches 71.438% > 50%. This shows that the research data are consistent. Hence, the analysis creates six factors, which are performance expectancy (PE), ease of use expectancy (EE), subjective norms (SN), trust (TR), health consciousness (HC), and innovation (IN). The observed variables included

in each scale remain the same as proposed, so there is no change in the name of factors. Similarly, the EFA result for the dependent variable gives satisfactory results: Significance level (Sig) is less than 0.05; KMO = 0.691 (in the range of 0 to 1); the factor loading values of all variables are greater than 0.5. The total variance extracted is 68.459% > 50%. This confirms that the study data are consistent. This result creates one factor, which is the intention to use the VssID application (INT).

Table 2 Scale reliability test result

No.	Factor	Number of observed variables	Cronbach's alpha	Corrected item-total correlation
1	Performance expectancy	4	0.834	0.625
2	Ease of use expectancy	4	0.843	0.608
3	Subjective norms	4	0.822	0.530
4	Trust	4	0.817	0.555
5	Health consciousness	4	0.918	0.796
6	Innovation	4	0.814	0.566
7	Intention to use	4	0.846	0.580

Source: Survey result of 150 people in Phan Thiet City, Binh Thuan Province, 2022

4.3 Linear regression analysis

After the EFA, multivariable linear regression analysis was used to determine the factors affecting the intention to use the VssID application in Phan Thiet City, Binh Thuan Province. The results are shown in Table 3.

Table 31 Factors affecting the intention to use the VssID application

	Unstandardized		Standardized	Significance Sig.	Multicollinearity statistics	
	Estimate d value	Standard error S.E	Standardized estimated value		Tolerance value	Variance Inflation Factor (VIF)
Constant	-0.438	0.249		0.081		
Performance expectancy	0.281	0.074	0.254	0.000	0.515	1.943
Ease of use expectancy	0.215	0.079	0.181	0.007	0.522	1.915
Subjective norms	0.117	0.062	0.110	0.061	0.672	1.487
Trust	0.214	0.082	0.190	0.010	0.436	2.294
Health consciousness	0.123	0.059	0.130	0.039	0.589	1.698
Innovation	0.239	0.074	0.208	0.002	0.552	1.811

Based on the above table, the adjusted R^2 of the model reaches 65.9%. This demonstrates the intention to use VssID is well explained by the factors in the model. The Sig.F coefficient of the model is much smaller than the value of $\alpha = 5\%$, so the regression model is significant. Durbin-Watson value = 1.464 and VIF < 4, which proves that the model does not have autocorrelation and multicollinearity. Also, the result shows that all six independent variables are statistically significant. The hypothesis analysis has pointed out six factors that positively affect the intention to use the VssID application in Phan Thiet City, including performance expectancy, ease of use expectancy, subjective norms, trust, innovation, and health consciousness. Among these, performance expectancy has the most influence on the intention to use the VssID application. The research results are consistent with studies proposed by Kumar et al. (2017) [7], Zhang et al. (2017) [14], Zhao et al. (2019)[12], Huong (2021)[8], and Duy (2022) [9].

5. Conclusion

The study applied a combination of qualitative and quantitative research methods to reach the research objectives. The multivariable linear regression analysis has shown six factors that positively impact the intention to use the VssID application of people in Phan Thiet City. The influence levels of the factors in descending order as performance expectancy, ease of use expectancy, subjective norms, trust, innovation, and health consciousness. This study provides a scientific basis that helps the social insurance industry in Phan Thiet City (Binh Thuan Province) to develop appropriate solutions and improve the intention to use the VssID application.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare that there are no competing or potential conflicts of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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