The Online Technology Acceptance Model of Generation-Z People in Thailand during COVID-19 Crisis

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Abstract. *This research aims to study the acceptance of the online technology of Thai people in Generation-Z during the incidence of COVID-19 disease. During this period, Thai people must quarantine themselves at home or work from home to prevent the outbreak of this disease and must comply with the laws of the Thai government. The researchers are interested in the Generation Z population because they are highly interested in technology. Previous literature and research used multiple models of acceptance and use of technology such as the Technology Acceptance Model, Unified Theory of Acceptance and Use of Technology model. This study adapted various variables from many models in the past, including personal innovativeness, performance expectancy, effort expectancy, social influence, trust, and behavioral intention to use technology. The research uses questionnaires as a research tool. 457 usable questionnaires from online data collection were used for data analysis. Descriptive and inferential statistical analysis was performed. The researcher tested the hypothesis by assessment of the Partial Least Square-Structural Equation Model. Research findings found that the behavioral intention to use online technology during COVID-19 disease is predicted by three key factors including performance expectancy, effort expectancy, and trust. Effort expectancy positively influences performance expectancy. In addition, personal innovativeness and the trust of users directly significantly affect performance expectancy and effort expectancy. The researcher suggests that the management level can use the findings in the planning of the organization's management or marketers can utilize the results for the marketing strategy of the organization.*

Keywords: Online Technology, Technology Acceptance Model, Generation-Z, Thailand, COVID-19.

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Introduction

During the global outbreak of the COVID-19, it caused immediate changes, including social, economic, political, legal, lifestyle, communication, and technology issues. COVID-19 disease is caused by a coronavirus that has changed species. It affects the condition of human diseases, which are different from previous infections. This form of the disease greatly damages human life. Until the end of April 2020, around three million people were infected with COVID-19 worldwide (World Health Organization, 2020). Government measures to control this disease have been used in many ways, such as controlling international travel to high-risk countries, quarantine at home, working from home, social distancing, And refraining from all types of social gatherings (Centers for Disease Control and Prevention,

2020). While quarantine at home or work from home, people still need to communicate and conduct transactions through possible channels. Therefore it is unavoidable that people use online technology or mobile technology. In Thailand, there are things that are not very different from other countries. Thai people need to quarantine themselves at home according to the Thai government's COVID-19 disease control measures (Emergency Operation Center, Department of Disease Control, Ministry of Public Health of Thailand, 2020). Traveling to work and traveling to school must be disrupted. Thai people must adapt to the use of technology that can communicate with each other without having to face to face. This is considered relatively new to the Thai people, especially Thai people in the provinces that are not technologically advanced or new to Thai people who are not familiar with modern technology, especially mobile technology. However, people in Generation Z are considered a population that is always interested in new technology, and they live in the digital technology world all the time. They access information via the internet and connect to the internet via personal mobile phones (Dolot, 2018; Duzenli, et al., 2019; Farrell & Phungsoonthorn, 2020; Halasi, et al., 2016; Salleh, et al., 2017; Singh, 2014; Torocsik, et al., 2014). For them there should be a paradigm shift in business education (Bratianu et al., 2020; Fonseca et al., 2020). Although there is broad information that Generation-Z people around the world are familiar with modern technology and innovation on mobile devices. But in Thailand, it is still found that this generation in many areas of the country still uses this capability that focuses on entertainment and social media applications such as gameplay, Facebook, and LINE application. Therefore, the use of many programs or technologies for communication and work among Generation-Z Thai people during the epidemic COVID-19 outbreak is a new issue that this group of Thai people must adapt to use, change their lifestyle, and have to practice modern technology use for efficiency and daily needs.

This research aims to study the acceptance of the online technology of Thai people in Generation-Z during the incidence of COVID-19 disease. The results of this study will benefit the corporate management level or marketers that must use information about the use of technology of this group in the planning of the organization's management or the marketing strategy of the organization.

Literature review

Model of Technology acceptance

Previous research related to technology adoption often identified two important models, Technology acceptance model (TAM) and Unified theory of acceptance and use of technology (UTAUT) model. The first model that is frequently referenced and used in past research is TAM which was proposed by Davis, et al. in 1989 (Abu-Shanab & Ghaleb, 2012; Jaradat & Al-Mashaqba, 2014; Mazhar, et al., 2014; Siraye, 2014).

In this model, there are important factors that are perceived usefulness, perceived ease of use, and intention to use technology (Abu-Shanab & Ghaleb, 2012; Gao, et al., 2014; Ghani, et al., 2017). Numerous researches have applied this model to many areas of development by adding important variables to the model to be able to test factors that are important to the adoption of new technology, such as e-customer service (Ghani, et al., 2017), perceived trust (Abu-Shanab & Ghaleb, 2012; Gao, et al., 2014; Maduku, 2014; Mazhar, et al., 2014), perceived risk (Abu-Shanab & Ghaleb, 2012; Siraye, 2014), customer satisfaction (Ghani, et al., 2017), security (Lai, 2017; Mazhar, et al., 2014), context (Gao, et

al., 2014); and usage behavior (Jaradat & Al-Mashaqba, 2014). The second model, the UTAUT model, was developed from the TAM model and many other models (Abrahao, et al., 2016; Thomas, et al., 2013). It was developed by Venkatesh, Morris, Davis, and Davis in 2003 (Marchewka & Kostowa, 2007; Lai, 2017). This model, therefore, has many factors to measure the relationship in this model, including performance expectancy, effort expectancy, social influence, facilitating conditions, behavioral intention to use, and actual use behavior (Bervell & Umar, 2017; Lai, 2017; Lwoga & Lwoga, 2017; Marchewka & Kostowa, 2007; Venkatesh, et al., 2016).

Like the first model, this UTAUT model is developed to be more relevant to the current situation, with researchers adding important variables to this model. Important variables such as trust (Lwoga & Lwoga, 2017), perceived risk (Liebana-Cabanillas, et al., 2014; Lwoga & Lwoga, 2017), personal innovativeness (Lwoga & Lwoga, 2017; Rahi & Abd. Ghani, 2018), and security-related conditions (Lwoga & Lwoga, 2017; Rahi & Abd. Ghani, 2018). In this research, the researchers have used the UTAUT model as a basis and added important variables for the study of mobile technology acceptance of Generation-Z Thai people (Figure 1). The variables that the researcher is interested in studying are the personal innovativeness and the trust of the Generation-Z users as shown in Figure 1.

Figure 1. Research framework

Source: Authors' own research.

Performance expectancy

Performance expectancy refers to the perception level of a person to use something that can help to work or live more efficiently (Onaolapo & Oyewole, 2018). Some studies indicated that performance expectancy is people believe that technology usage can gain their job performance (Chao, 2019; Thomas, et al., 2013). According to Alwahaishi and Snasel (2013), performance expectancy is the key predictor of behavioral intention to use technology. The study of Onaolapo and Oyewole (2018) stated that performance expectancy is a key factor in technology acceptance and the use of new technologies. In addition, this variable is important in many studies, with many researchers studying this variable in their work related to the acceptance and use of various technologies (Chao, 2019; Im, et al., 2008; Lee & Song, 2013; Liu, et al., 2019; Thomas, et al., 2013).

Effort expectancy

Effort expectancy refers to the expectation of the individual on the ease of use of the technology they are interested in (Chao, 2019; Thomas, et al., 2013). This factor is one of the key factors that affect technology acceptance and use. The study of Bervell and Umar (2017) revealed that effort expectancy had a significant effect on behavioral intention to use the technologies. Chao (2019) also agreed and supported this finding. Catherine, et al. (2017) proved effort expectancy as the predictor of technology acceptance. They found the significant effect of effort expectancy on behavioral intention to use. According to Lwoga and Lwoga (2017) and Shafinah, et al. (2013), it found that effort expectancy had a positive influence on performance expectancy. Lee and Song (2013) confirmed this finding, it proved that effort expectancy positively affected performance expectancy. However, the study of Catherine, et al. (2017) showed no relationship between performance expectancy and effort expectancy.

Personal innovativeness

Personal innovativeness means an individual's attempt to try something new or new technology, or it may mean a person's willingness to use something new (Lwoga & Lwoga, 2017). According to Sair and Danish (2018), personal innovativeness is a psychological variable related to the behavior of technology users in accepting new technology. The study of Lwoga and Lwoga (2017) focused on the effect of personal innovativeness on performance expectancy and effort expectancy. The result found that personal innovativeness positively influenced effort expectancy but personal innovativeness did not affect performance expectancy. This study attempts to assess the effect of personal innovativeness on performance expectancy and effort expectancy of technology use in Generation-Z people. Accordingly, this research hypothesizes the following:

Hypothesis 1(H1): Personal innovativeness positively influence Performance expectancy

Hypothesis 2(H2): Personal innovativeness positively influence Effort expectancy

Hypothesis 3(H3): Effort expectancy positively influence Performance expectancy

Behavioral intention to use

Behavioral intention to use technology refers to the motivation that affects the intention to act or is the readiness of the person that will lead to the decision to use technology (Jaradat & Al-Mashaqba, 2014). As previous research's findings, the behavioral intention has influenced the actual use behavior of users in technologies (Alwahaishi & Snasel, 2013; Tan, 2013). Many studies summarized the strong influence of performance expectancy and effort expectancy on behavioral intention to use the technologies (Alwahaishi & Snasel, 2013; Chao, 2019; Im, et al., 2008; Lee & Song, 2013; Liu, et al., 2019; Tan, 2013; Thomas, et al., 2013; Zuiderwijk, et al., 2015). The study of Alraja, et al. (2016) outlined that performance expectancy and effort expectancy had a positive effect on behavioral intention to adopt the new technology. Alwahaishi and Snasel (2013) pointed out that performance expectancy positively influence user's intention in technology usage. Thomas, et al. (2013) supported

the positive effect of performance expectancy on behavioral intention to use technology. Onaolapo and Oyewole (2018) strengthen the significance of performance expectancy as a predictor of user intention to use technology. While the study of Lwoga and Lwoga (2017) found that effort expectancy positively affected the user's intention to use the technologies. Moreover, Chao (2019) and Bervell and Umar (2017) added that effort expectancy significantly influenced the user's intention to adopt the technologies. In the context of this research, it is expected that performance expectancy and effort expectancy will have a positive influence on behavioral intention to use technology. Therefore, this study hypothesizes the following:

Hypothesis 4(H4): Performance expectancy positively influence Behavioral intention to use

Hypothesis 5(H5): Effort expectancy positively influence Behavioral intention to use

Social influence

According to Thomas, et al. (2013) and Tan (2013), Social influence is the result of people being convinced by others who believe that technology is useful. That person can be of many types, such as family, friends, famous people in society. Numerous previous studies found the effect of social influence on user's intention to use the technologies (Abrahao, et al., 2016; Lee & Song, 2013; Liu, et al., 2019; Tan, 2013; Zuiderwijk, et al., 2015). The research of Catherine, et al. (2017) proved social influence as one of the key predictors in the technology acceptance model. It found that social influence significantly affected behavioral intention to use the technologies. However, some studies found that social influence did not influence behavioral intention (An, et al, 2016; Bervell & Umar, 2017). Therefore, this paper hypothesizes that:

Hypothesis 6(H6): Social influence positively influence Behavioral intention to use

Trust

Trust plays a very important role in a person's perspective (Nawaz & Yamin, 2018). This trust may mean trust in technology, trust in service, or trust in service providers (Nawaz & Yamin, 2018). Many researches studied people's trust in the technology acceptance model (Abu-Shanab & Ghaleb, 2012; Gao, et al., 2014; Maduku, 2014; Mazhar, et al., 2014). According to Lee and Song (2013), it concluded that trust positively influenced both performance expectancy and effort expectancy. The study of Lwoga and Lwoga (2017) found that trust significantly influenced effort expectancy. They pointed out that user's trust has a positive effect on the effort expectancy of technology. While the study of Nawaz and Yamin (2018) indicated that the trust of users influences the behavioral intention of technology use. This research conceptualized trust to have a positive effect on performance expectancy, effort expectancy, and behavioral intention to use online technology in generation-Z Thais. Therefore, the researcher proposed the following:

Hypothesis 7(H7): Trust positively influence Performance expectancy

Hypothesis 8(H8): Trust positively influence Effort expectancy

Hypothesis 9(H9): Trust positively influence Behavioral intention to use

3 Generations: X, Y, and Z

Executives or marketers often divide people into generations. The division of generations will use the time period as a basis. Generation X are people who were born between 1965 and 1979, Generation Y refers to those born between 1980 and 1994, and Generation Z is persons born between 1995 and 2015 (Betz, 2019). However, different generations of people are different in their attitudes, work behaviors, and use of technology (Gaidhani, et al., 2019). Generation X grew up at the beginning of modern technology while Generation Y grew up in the digital technology phase (Andrea, et al., 2016; Betz, 2019). Generation Z grew up in the age of the internet and social media. The lives of this generation are almost always connected to the online community, which can be considered a generation that is able to access information on the internet easily and quickly (Betz, 2019; Gaidhani, et al., 2019).

Methodology

Sample and data collection

This research studied with the Thai population in the Generation-Z with the use of online technology during quarantine at home. Most of this population is studying at a bachelor's degree in college or university and must confine themselves at home according to the Thai government's Covid-19 disease control policy. Since the researcher does not know the exact number of the population, the researcher uses a Cochran's formula to calculate the sample size of the unknown population (Cochran, 1977). The author calculated the sample size number at the confidence level and error term of 95% and 5 %, respectively. The result obtained from the calculation is an appropriate sample size of 385. However, the researchers expect the use of high sample sizes for advanced statistical analysis. Therefore, the researcher sent more than 400 questionnaires to collect data. The research used online data collection to be sent directly to various social media such as Facebook, LINE. Using questionnaires with Google Forms made data collection easy and quick. The researcher examined and counted the number of respondents to complete the required number. Finally, the researcher obtained a complete questionnaire for statistical analysis, a total of 457 usable questionnaires.

Measures

This research used the questionnaire as a tool to collect data from samples of research. The questionnaire has been developed from relevant literature and research. Especially research related to important models such as the UTAUT model. The details of the questionnaire and the source of various key measures in the questionnaire were shown in Table 1. Overall, the questionnaire was divided into 3 parts, which were the first part about general information of the respondents, the second part about the use of programs or technology during the respondent's quarantine-at-home period, and the third part is related to important variables of this research. There were 6 important variables, with 25 items, in the research which were personal innovativeness, performance expectancy, effort

expectancy, social influence, trust, and behavioral intention to use technologies. For Personal innovativeness variables, it used a 5-points Likert scale to measure the respondents' opinions (1 = totally disagree to 5 = totally agree), while the remaining five variables were measured with a score from 1-10 (1 = totally disagree to 10 = totally agree). The researcher tested the reliability (Cronbach's Alpha) of the questionnaires with 30 respondents before collecting data online. The result of the confidence analysis of each variable found that the value is greater than 0.7. That results as shown in Table 1 were considered that the questionnaires and research variables had a good quality and ready to be used to collect data (Hair et al., 2014).

Table 1. Details of research questionnaire and reliability test results

Variables	Items	References	Cronbach's Alpha
Personal innovativeness (INNOV)	You are usually the first in a group of friends to try new technology (Inno1), You always like to experiment with new technology (Inno2), You tend to monitor modern technology (Inno3), If there is a chance, you are welcome to try new technology (Inno4)	Rouibah and Abbas (2010); Dajani and Hegleh (2019); Sair and Danish (2018)	0.744
Performance expectancy (PERFORM)	This technology is useful for your lifestyle (Per1), This technology is effective for your lifestyle (Per2), This technology provides results that meet your needs (Per3), This technology provides more benefits than anything else has ever had in the past (Per4), This technology will benefit you in the long run (Per5)	Venkatesh, et al. (2003); Khechine, et al. (2014); Salim (2012)	0.867
Effort expectancy (EFFORT)	At first, I thought that this technology should be easy to use (Effo1), You can register or start using this technology yourself (Effo2), You can learn to use this technology by yourself (Effo3), Do you think you will be able to use this technology fluently (Effo4)	Venkatesh, et al. (2003); Khechine, et al. (2014); Salim (2012)	0.767
Social Influence (SOCIAL)	You use this technology because some friends use it (Soc1), You use this technology because your family uses it (Soc2), You use this technology because of your favorite person such as idols, stars, or leaders (Soc3), You use this technology because it has a well-known reputation (Soc4)	Venkatesh, et al. (2003); Khechine, et al. (2014); Salim (2012)	0.882
Trust (TRUST)	You trust that the technology provider will not misuse personal information (Trus1), You are confident that this technology provider is honest (Trus2), You are confident in the service and quality of this technology (Trus3), You trust in the connection between you and this technology provider (Trus4)	Chao (2019); Acharya, et al. (2019)	0.871
Behavioral intention (INTENT)	Overall, the use of this technology is interesting (Int1), Overall, you like to use this technology (Int2), Overall, you will use this technology consistently (Int3), Overall, you will use this technology more (Int4)	Venkatesh, et al. (2003); Khechine, et al. (2014); Salim (2012)	0.919

Source: Authors' own research.

Statistical method

The preliminary statistical analysis was a descriptive analysis by SPSS program version 25, consisting of frequency, percentage, mean, standard deviation, skewness, and kurtosis. After that, the researcher used the SmartPLS 3.3.0 program to analyze inferential statistics in Partial Least Square-Structural Equations Modeling (PLS-SEM). This analysis was divided into two phases. The first phase was the analysis of measurement models to assess the suitability of the research model. In this phase, the author used various statistics such as the Average Variance Estimates (AVE), Composite Reliability (CR), Cronbach's Alpha, discriminant validity, and Heterotrait-Monotrait (HTMT) test. And the second phase was the analysis of the structural model for testing the research hypothesis which tests the influence or relationship of various variables of the research (Ringle, et al., 2015). The researcher evaluated the structural model by beta coefficients, the significance of t-statistics, and coefficient of determination (R^2). This used 5000 samples of the bootstrapping procedure as recommended by Hair et al. (2017).

Research results

Descriptive analysis

The research used data from 457 questionnaires in statistical analysis. The results of the descriptive analysis as shown in Table 2 revealed that most of the respondents were female. The number of females was 383 (83.8%) and the male number was 74 (16.2%). And it found that most respondents had a monthly income of fewer than 300 USD, equal to 429 respondents (93.9%) while monthly income above 300 USD was only 28 people (6.1%). Finally, most of the respondents were 408 students (89.2%), followed by 24 owned jobs (5.3%) and 19 government staff (4.2%) respectively.

Table 2. Results of descriptive analysis

Variables		Frequencies	Percent
Gender	Male	74	16.2
	Female	383	83.8
Income per month	< 300 USD	429	93.9
	>300 USD	28	6.1
Occupation	Students	408	89.2
	Private companies	6	1.3
	Government staff	19	4.2
	Owned jobs	24	5.3

Source: Authors' own research results.

The statistical analysis of respondents regarding their lives during the COVID-19 outbreak is shown in Table 3. Respondents stated that during the period of self-detention at home or work from home, they use more online technology clearly. In which the most used technology at that time was entertainment technology. The analysis found that both men and women are the same. Overall, there is an increase in the use of entertainment technology among respondents 77.46%. The second order of use of online technology in respondents is the use of technology for interpersonal communication equal to 71.33%. For the reason of this analysis, it is possible that respondents have high levels of anxiety and stress during self-detention at home or working from home. Because the response to

questions about anxiety and stress during the COVID-19 period found that the average value of anxiety and stress is equal to 7.46 out of 10 points.

Table 3. Statistical analysis of online technology use during COVID-19 crisis

Criteria		Tech-1	Tech-2	Tech-3	Tech-4	Tech-5	Tech-6
Male (N=74)	N	43	58	31	43	33	29
	%	58.11%	78.38%	41.89%	58.11%	44.59%	39.19%
Female (N=383)	N	186	296	197	283	175	101
	%	48.56%	77.28%	51.44%	73.89%	45.69%	26.37%
Total (N=457)	N	229	354	228	326	208	130
	%	50.11%	77.46%	49.89%	71.33%	45.51%	28.45%

Notes: Tech-1 means online technology for education or working; Tech-2 means online technology for entertainment; Tech-3 means technology for online shopping; Tech-4 means online technology for interpersonal communication; Tech-5 means technology for online financial transaction; and Tech-6 means technology for online gameplay; N is frequency number of respondents.

Source: Authors' own research results.

For the descriptive analysis of the important variables of the research shown in Table 4, it is found that the average of the opinions of the respondents in every variable is at a high level. And when evaluating the distribution of data from the standard deviation, skewness, and kurtosis of the data, it is found that the data characteristics were normal curve distribution (Hair et al., 2014). Therefore, this data is appropriate for the next step in analyzing the structural equation model.

Table 4. Statistical analysis of key variables

Variables	Means	Standard Deviation	Skewness	Kurtosis
INNOV	3.99	0.59	-0.17	-0.57
PERFORM	7.71	1.59	-0.66	-0.19
EFFORT	7.60	1.62	-0.52	-0.40
SOCIAL	7.12	1.58	-0.26	-0.47
TRUST	6.82	1.69	-0.06	-0.52
INTENT	7.49	1.65	-0.48	-0.28

Source: Authors' own research results.

Assessment of measurement model

The evaluation results of the measurement model of the research were shown in Table 5. The first result was evaluating the loading weight of each item by assigning acceptable values greater than 0.7 (Hair et al., 2017). The result shows that only Inno1 found that the value equal to 0.688 was slightly lower than the acceptable value while all other values exceeded 0.7. Therefore, it was considered as a whole to pass the specified criteria. In evaluating Cronbach's Alpha, the researcher used the acceptable criteria more than 0.7 as recommended by Hair et al. (2017).

Table 5. Validity and reliability of measurement model

Construct	Item	Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
INNOV	Inno1,	0.688	0.742	0.835	0.559

	Inno2, Inno3, Inno4	0.839 0.717 0.738			
PERFORM	Per1, Per2, Per3, Per4, Per5	0.896 0.910 0.924 0.868 0.890	0.940	0.954	0.806
EFFORT	Effo1, Effo2, Effo3, Effo4	0.700 0.863 0.908 0.870	0.856	0.904	0.704
SOCIAL	Soc1, Soc2, Soc3, Soc4	0.827 0.789 0.835 0.796	0.830	0.886	0.659
TRUST	Trus1, Trus2, Trus3, Trus4	0.874 0.889 0.913 0.918	0.921	0.944	0.807
INTENT	Int1, Int2, Int3, Int4	0.915 0.923 0.934 0.926	0.943	0.959	0.854

Source: Authors' own research results.

The analysis results showed that all variables exceeded that threshold. The next evaluation was the composite reliability test. The researcher provided the acceptable standard criteria was 0.7 (Hair et al., 2017). The statistical analysis showed that all variables passed the criteria. The final analysis of this step was the Average Variance Extracted (AVE) test. The test results showed that all variables passed the criteria which exceeded the acceptable value which is more than 0.5 (Hair et al., 2017).

The test results of the discriminant validity by using the Fornell-Larcker criteria shown in Table 6. It found that all results were satisfied by the comparison between all bolded loadings in the diagonal dimension and the vertical loadings. All pairs of bolded loadings were higher than vertical loadings (Henseler, et al., 2015).

Table 6. Discriminant validity (Fornell-Larcker criterion)

Variables	EFFORT	INNOV	INTENT	PERFORM	SOCIAL	TRUST
EFFORT	0.839					
INNOV	0.384	0.748				
INTENT	0.679	0.418	0.924			
PERFORM	0.764	0.412	0.788	0.898		
SOCIAL	0.353	0.211	0.381	0.338	0.812	
TRUST	0.495	0.347	0.716	0.542	0.374	0.898

Source: Authors' own research results.

The next assessment was a robust approach of discriminant validity by the Heterotrait-Monotrait (HTMT) method. The assessment result is shown in Table 7. It

showed that all pairs had a value of less than 0.9. This means all values were acceptable (Henseler, et al., 2015).

Table 7. Heterotrait-Monotrait Ratio (HTMT)

Variables	EFFORT	INNOV	INTENT	PERFORM	SOCIAL	TRUST
EFFORT						
INNOV	0.466					
INTENT	0.756	0.483				
PERFORM	0.850	0.472	0.836			
SOCIAL	0.423	0.273	0.420	0.372		
TRUST	0.550	0.414	0.754	0.572	0.419	

Source: Authors' own research results.

The last assessment of the measurement model was the collinearity assessment for common method bias (CMB) evaluation. The assessment results shown in Table 8. It indicated that the model did not take the CMB issue seriously, because all values in the table were lower than 3.3 (Hair et al., 2017).

Table 8. Collinearity Statistics (VIF)

Variables	PERFORM	EFFORT	INTENT
INNOV	1.219	1.136	
TRUST	1.377	1.136	1.524
PERFORM			2.634
EFFORT	1.421		2.500
SOCIAL			1.218

Source: Authors' own research results.

Assessment of structural model

The statistical analysis in this step was to test the hypothesis of the research by investigating the influence of independent variables on dependent variables. The assessment results of the PLS-SEM showed in Table 9 and were graphically showed in Figure 2. From that results, it found that most of the hypotheses (H1, H2, H3, H4, H5, H7, H8, and H9) were supported, but one hypothesis was not supported, that was H6. That means personal innovativeness had positively affected performance expectancy and effort expectancy, effort expectancy significantly affected performance expectancy, and performance expectancy, effort expectancy, and trust positively influenced behavioral intention, trust positively influenced performance and effort expectancies, but the social influence did not affect behavioral intention. Another evaluation of the structural model was effect size (f^2) assessment. The effect size uses for the strength test of the relationship between the latent variables. The relationship strength can assess by 3 levels. If the effect size below 0.02, it means the relationship between focused latent variables has a small effect. The effect size between 0.03 – 0.34 is medium-level while the effect size is 0.35 or above means the relationship shows the large effect (Wong, 2013).

Table 9. Result of Structural analysis

Relationship	Standard Beta	Standard Deviation	T Statistics	P Values	f ²	Evaluation
INNOV -> EFFORT	0.241	0.045	5.375	0.000***	0.073	Supported
INNOV -> PERFORM	0.103	0.035	2.963	0.003**	0.023	Supported
EFFORT -> PERFORM	0.628	0.036	17.677	0.000***	0.747	Supported
PERFORM -> INTENT	0.488	0.044	11.001	0.000***	0.353	Supported
EFFORT -> INTENT	0.101	0.046	2.178	0.029*	0.016	Supported
SOCIAL -> INTENT	0.036	0.030	1.193	0.233	0.004	Not supported
TRUST -> EFFORT	0.412	0.041	9.965	0.000***	0.212	Supported
TRUST -> PERFORM	0.195	0.033	5.937	0.000***	0.074	Supported
TRUST -> INTENT	0.389	0.035	11.151	0.000***	0.388	Supported

Notes: ***, **, * means statistical significance at 0.001, 0.001, and 0.05 respectively

Source: Authors' own research results.

Notes: INNOV = personal innovativeness, PERFORM = Performance expectancy, EFFORT = Effort expectancy, SOCIAL = Social influence, TRUST = Trust, and INTENT = Behavioral intention to use

Figure 2. Research's PLS-SEM model

Source: Authors' own research results.

Considering the overall model performance by R square values as shown in Table 10. It indicated that overall performance for variance in performance expectancy was 62.8%, variance in effort expectancy was 29.6%, and variance in behavioral intention was 74.5%. Those means performance expectancy was predicted by 3 variables included personal innovativeness, effort expectancy, and trust at a variance of 62.8%, effort expectancy was predicted by 2 variables included personal innovativeness and trust at a variance of 29.6%, and the behavioral intention was predicted by 3 variables included performance expectancy, effort expectancy, and trust at a variance of 74.5%.

Table 10. Coefficient of Determination

Variables	R Square	R Square Adjusted
PERFORM	0.628	0.626
EFFORT	0.296	0.293
INTENT	0.745	0.742

Source: Authors' own research results.

Discussion and conclusion

Discussion

This research needs to develop the model of online technology acceptance in Generation-Z Thais during the COVID-19 crisis. There are important variables which are personal innovativeness, performance expectancy, effort expectancy, social influence, trust, and behavioral intention. From the statistical results, the final model of this research is graphically shown in Figure 3. It found that personal innovativeness had a positive effect on both performance expectancy and effort expectancy of Generation-Z people. This confirms the results of Lwoga and Lwoga (2017) who found that personal innovativeness positively influenced effort expectancy. But the new finding of this study is personal innovativeness of Generation-Z people in Thailand positively influenced performance expectancy. This finding is different from the results of Lwoga and Lwoga (2017) research. Another finding proved that effort expectancy positively influence performance expectance of online technology use. This result is confirmed by Shafinah, et al. (2013) and Lee and Song (2013) who found the significant effect of effort expectancy on performance expectancy. The hypothesis testing in the effect of four key variables included performance expectancy, effort expectancy, social influence, and trust, on behavioral intention to use the online technology of Generation-Z people. The research finding showed that performance expectancy, effort expectancy, and trust positively influence behavioral intention to use technologies in these people. The same view is confirmed by Thomas, et al. (2013) and Onaolapo and Oyewole (2018) who pointed out the significance of performance expectancy as a predictor of user behavioral intention to the use of technology. Chao (2019) and Bervell and Umar (2017) strengthen the research finding, as the authors found that effort expectancy significantly influenced the user's intention to adopt the technologies. And also, the same finding is shared by Nawaz and Yamin (2018) who confirmed that trust significantly influences the behavioral intention of technology use. Finally, the present finding revealed that trust had a significant, positive effect on performance expectancy and effort expectancy in technology acceptance of Generation-Z people. This confirmed the result of Lee and Song (2013) who

indicated that trust positively influenced both performance expectancy and effort expectancy.

Figure 3. Final research model

Source: Authors' own research findings.

Conclusion and recommendation

In summary, this research provides empirical results in the online technology adoption model in the Generation Z population. The behavioral intention to use online technology during quarantine at home or work from home caused by COVID-19 disease is predicted by three key factors including performance expectancy, effort expectancy, and user trust. In addition, personal innovativeness and the trust of users also directly affect performance expectancy and effort expectancy. Therefore, executives in both public and private organizations must pay attention to the characteristics of online technology users in Generation-Z, namely trust and innovativeness. Focusing on these issues will affect performance expectancy and effort expectancy, which will ultimately result in the intention to adopt and use the online technology of Generation-Z people. In the case of business, marketers should focus on building trust among users of the Generation-Z group in the acceptance of online technology, which will ultimately lead to online technology. Moreover, the corporate management level can use these findings in the planning of the organization's management or marketers can utilize the results for the marketing strategy of the organization. For future research, the researcher suggests that further studies of other generation groups should be conducted to test for the differentiation between generations and to identify important factors affecting the intention of online technology in the different generations. Such studies will be useful in using information for overall planning in the organization.

Limitation

This research studied Generation-Z people during the COVID-19 period. The use of research results at other times may have limitations. However, the author believes that the results can still reflect the technology usage behavior of this generation.

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