

To Study the Factors Influencing the Adoption of Innovation Technology in Organization Behaviour in Puchong

Zulkarnian Bin Ahmad ¹, Ahmad Luqman Hakim Bin A'dnan ², Arman Bin Ahmad³, Aisyah Binti Othman ⁴

^{1, 4} Akademi Laut Malaysia

^{2, 3} Universiti Kuala Lumpur Business School

Abstract:- This research studies the determinants of the factors influencing the adoption of innovation technology in organization behavior in Puchong. An understanding of potential adopters besides the factors influencing their decision of adoption is important for an organization to be successful in bringing innovation to an organization. The study uses the technology-organization-environment (TOE) and the unified theory of acceptance and use of technology (UTAUT) frameworks as the basis of the theoretical framework or the underpinning theory. Survey questionnaires were used in order to collect data from the organizations in Puchong. The data gathered has been analyzed using SPSS software and the results show that it is significantly correlated.

Keywords: Adoption, Innovation Technology, Organization Behavior.

1. Introduction

As we are living in an era where things like autonomous cars, custom made medicine, and quantum computing are becoming real as we speak, it is safe to say that technology is moving at an incredible pace. Every day, people around the globe come up with brilliant ideas and various ways to make the future brighter. For example, Artificial Intelligence (AI), crypto-currencies, cloud computing, advanced automation, deep learning, and concepts like Universal Basic Income are about to change our world, which can be considered as an exciting prospect for our future. Artificial Intelligence (AI) for example is one of the advanced technologies that mankind discovered.

According to Investopedia, artificial intelligence (AI) simulates human intelligence in robots that think and act like humans [1]. It can be applied to any computer that exhibits human traits like problem-solving and critical reasoning. The ability of artificial intelligence to justify and execute actions that are most likely to achieve a goal is its strongest characteristic. Machine learning is a kind of artificial intelligence that allows computers to learn and adapt to new data without human intervention. Deep learning absorbs enormous amounts of unstructured input including text, images, and video to enable autonomous learning.

Companies must employ innovative technologies to become more competitive. New technology adoption is difficult due to uncertainty. According to [2], technology adoption is the decision to volunteer or accept and apply innovation to solve issues. Technology adoption data is essential for competitive investment choices. Other than that, innovative technology is crucial today. Though some of its impacts are undesirable, innovation is inescapable and usually beneficial (Kylläinen, 2019). [3] noted that technology adoption is well-studied. This research aims to examine how technological, organizational, and environmental variables affect organizational adoption of innovative technologies. Based on the statements above, the objectives of this research are to study the relationship between the technological, organization, and environment context with the factors influencing the adoption of innovation technology in organization.

Problem Statement

Innovation technology has become an essential process in business or organization behavior. As mentioned by [4], innovation goes through multiple stages before it is applied by people or organizations. Individuals develop the ability to form opinions, make judgments, implement changes and decide whether the innovations should be implemented or not. This is due to the actual usage depending on how the employees utilize the innovation although the organization decide to adopt the innovation technology. Besides, there are still unutilized technologies in organizations. Cloud computing, supply chain management, enterprise resource planning, and radio-frequency identification (to track processes and things automatically) are still in their early stages of adoption by businesses, compared to broadband networks or websites [5]. There will be no benefits gained by the organization if there is no acceptance among the employees or organizations.

It is important to do thorough research on the adoption of innovative technology in an organization or they will be a waste as the organization may eventually abandon the innovation. According to [6], people will naturally reject changes except when they are sure that they can benefit from the innovation. Hence, further research is essential regarding the role of technology, organization, and environment influencing the adoption of innovation technology in an organization. In order to fill the gap of the study, the intention of this study is to investigate the factors that can influence the adoption of innovative technology in an organization in Selangor.

Research Objectives

Below are the research objectives:

- To study the relationship between Technology and the Factors Influencing the Adoption of Innovation Technology in Organization in Puchong;
- To study the relationship between Organization and the Factors Influencing the Adoption of Innovation Technology in Organization in Puchong; and
- To study the relationship between the Environment and the Factors Influencing the Adoption of Innovation Technology in Organization in Puchong.

Research Questions

Below are the research questions:

- What is the relationship between Technology and the Factors Influencing the Adoption of Innovation Technology in Organization in Puchong?
- What is the relationship between Organization and the Factors Influencing the Adoption of Innovation Technology in Organization in Puchong?
- What is the relationship between Environment and the Factors Influencing the Adoption of Innovation Technology in Organization in Puchong?

2. Underpinning Theory (Toe Framework and Utaut Framework)

The TOE theoretically describes technology adoption in an organization. The adoption and use of technical innovation are impacted by three elements. Technological, organizational, and environmental contexts [7]. According to [8], the technological environment (technology availability and characteristics) determines whether technologies are suited for organizations. The organizational context includes the firm's hierarchy, scale, structure, and business type. The third context, environment, describes government laws, customers, and competition. Multiple technology adoption studies have used the technology-organization-environment framework (TOE) to analyze the adoption and integration of different forms of innovation, notably in IT. The unified theory of acceptance and use of technology (UTAUT) model has been implemented and tested broadly for estimating system usage and making technology-adoption and technology-usage-related decision in multiple fields and near-field communication technology. Besides, this model provides a framework that explains the acceptance of information technology (IT) and information system (IS) besides interpreting the purpose of technologies and systems.

Adoption of Innovation Technology in Organization Behavior

Technology and innovation can be considered related as both terms' parallels with each other. To support the mentioned statement, companies or organization that can match the promise of new technologies with the needs of the market early on and turn this into innovative products and services have a clear competitive advantage such as their product can reach the market faster and generates greater profits [9]. According to [10], we must look at the standard definitions and create an accord description that "works" for our specific view of the market in order to translate a complex concept like "innovation adoption". Innovation adoption is a model that categorizes adopters of innovations depending on their level of acceptance of new ideas. In line with the same logic innovation adoption is also defined as a sociological model that represent the adoption or acceptance of a latest innovation depending on the demographic and psychological traits of interpreted adopter groups as mentioned by [11].

According to [12], there are various types of innovation technologies. First, the associated innovation technology. It is an innovation technology that has been implemented on the base of the initial stages acquired and examined (knowledge, system and facilities) improved combination of innovation technology. As mentioned by [13], technological innovation entails the introduction of new or improved technology, such as new types of machinery or the incorporation of technology into a product, process, or way of service delivery.

Lastly, the innovation process itself is the whole stage of duration in transformation of scientific knowledge, ideas, discoveries and inventions into innovative technology. The adoption of innovations is affected by the technological, organizational, and environmental context in an organization as mentioned by [14].

Context of Technological

As mentioned by [15] the concept of technology can be regarded as the definition of technology management. It can significantly affect individuals, business, community, and nature as cited in. The progress that happens in technology greatly affects developing the national and individual wealth besides enhancing the standard and quality of life of a person itself. Besides, technology sets oneself up to the mixture of human understanding regarding the natural laws and phenomena amassed since the old day times in order to make things that achieve our needs and wants or that to execute certain functions [15]-[16]. In short, technology must create things that assist human beings. As mentioned by [15], technology can be defined as the method by which we relate our understanding of the natural world to the solution of practical problems. It is a mixture between "hardware" (buildings, plant and equipment), "software" (the way to operate the hardware) and "know-how" (skills, knowledge and experience along with the suitable organizational and institutional arrangement). As mentioned by [14], the technological context covers all the technologies that are applicable to the organization which is both the technologies that already exist in the market but not in use and the one that already in use in the organization. Besides, the reason why the existing technologies are important in the process of adoption is because they set a wide limit on the scope and pace of technological change that organizations can accept. Furthermore, the innovations technology that already available but not utilized at the organization can also affect the innovation as by limiting the possibilities and by enabling the organization to get inspiration on how to adapt and evolve the technology.

Hence, the following hypothesis is developed:

H1: The relationship between Technology and the Adoption of Innovation Technology in Organization is positively correlated.

Context of Organizational

Organization is a social unit of individuals who are organized and managed to meet needs or goals. An organization's administration structure determines function-position linkages and fractionalizes duties, accountability, and jurisdiction to complete tasks. Organizations are open systems that affect and are affected by their surroundings [17]. [14] defines organization context as the organization's features and supplies, such as worker structures, intra-firm communication, size, and slack resources. Organizational structure has also been investigated in connection with innovation uptake. According to [18], enterprises must interpret the benefits of technology within their resources. Adoption is worthless to enterprises if the recognized advantage cannot be reached owing to limited availability, no matter how large the advantage. Successful information system (IS)

installation requires sufficient developer and user time, budget, and technical skills to motivate and continue the implementation effort. [14] states that the organizational context includes the firm's hierarchy, scale, structure, and business type.

Organizational structure has been measured to determine its impact on innovation uptake. The organic and separated organizational structures emphasize teams, provide workers some freedom in their roles, and encourage lateral contact as well as reporting line communication. Other than that, internal communication can boost creativity. Top management may accept innovation by building an organizational climate that supports changes and innovations that advance the purpose and vision.

Hence, the following hypothesis is developed:

H2: The relationship between Organization and the Adoption of Innovation Technology in Organization is positively correlated.

Context of Environmental

The environment is the space where humans dwell and Allah created nature. The 1972 Stockholm Conference on the Human Environment said that "the environment is a set of natural, social and cultural factors in which people and any other beings live, from which they acquire their living and utilize their energy". The scientific conception of environment defines the environment as "everything that encircles human beings of things that influence their health." For instance, the city, residences, streets, rivers, wells, beaches, all human food and beverages, clothing, weather, and chemicals. [14] states that the environmental context comprises industrial creation, technology service provider presence and absence, and regulation. Also, technology support infrastructure might impact innovative technology.

Companies that pay high salaries for talented people are driven to develop through labor-saving improvements, and the availability of trained workers and consultants' various technical services fosters innovation. Government laws can also help or hurt innovative technologies. Innovation is vital for organizations when the government imposes new limits on business, especially energy organizations that need pollution-control systems. The organization's involvement shows how successfully top management relates to numerous divisions to ensure that department actions contribute to firm goals. According to [19], an organization that fosters several firm-wide activities can facilitate adoption.

Hence, the following hypothesis is developed:

H3: The relationship between the Environment and the Adoption of Innovation Technology in Organization is positively correlated.

Theoretical Framework

The theoretical framework is the composition that can support and illustrate a theory of a research studies as the theories are created to explain, predict, and understand besides normally to challenge and extend the available information if it is within the restriction of critical bonding assumptions.

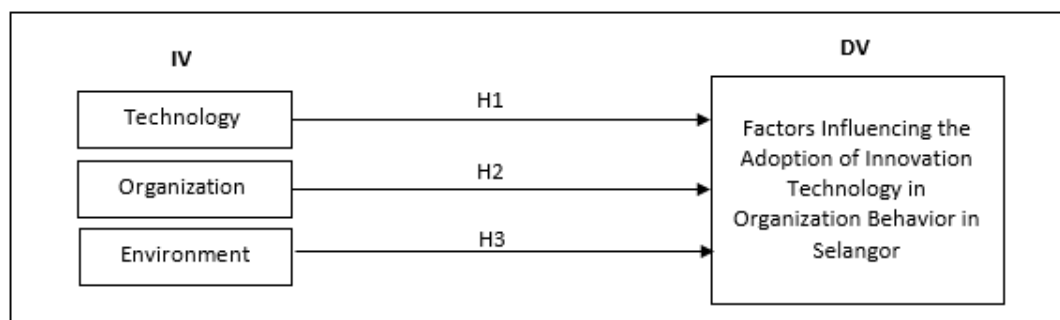


Figure 1. Proposed Theoretical Framework

Table 1. Proposed Research Hypotheses

H1	The relationship between Technology and the Adoption of Innovation Technology in Organization is positively correlated.
H2	The relationship between Organization and the Adoption of Innovation Technology in Organization is positively correlated.
H3	The relationship between Environment and the Adoption of Innovation Technology in Organization is positively correlated.

3. Methodology

This study employed quantitative research. Quantitative data and statistical, mathematical, and computer methods are used in this methodical inquiry. It samples available and potential clients by sending out online surveys, questionnaires, online polls, or other ways that allow numerical results. This research uses this strategy because its outcomes are rational, statistical, and impartial. The research must utilize a systematic procedure and a big sample to collect data from the entire community. The primary and secondary quantitative research methodologies can be utilized to undertake data-driven quantitative research. Quantitative methods were employed to measure and analyze survey questionnaire data in this study. The quantitative technique also studies demographics or groups using quantitative data. This is essential to explain the study's findings.

Survey Questionnaire

The data has been collected by using primary and secondary data. The survey questionnaire will be distributed to the target respondents which is a group of organizations and have the workers starting from the age below 18 years old to above 66 years old. In order to make the findings more accurate the demographic section also includes the educational background of the respondents involved. In the education background section consists of various levels.

Sample and Data Collection

In this study, the population of the study is the organization that adopts innovation technology. Meanwhile, the sample of this study is the organization that adopts innovation technology within the Puchong state. The data collection will be outsourced by using online surveys. Since the population of Puchong is below one (1) million, the minimal target respondent proposed in this research is 200. Furthermore, the data gathered is analyzed by using the SPSS. By using SPSS, the technique used is the cross-tabulation and descriptive statistics. The statistical analysis is used to validate the relationship on the underpinning theory which is the technology-organization-environment (TOE) and the unified theory of acceptance and use of technology (UTAUT).

Measurements and Items

The proposed survey questionnaire was constructed using structured questions which are close ended questions in order to ensure precision in the feedback received. The questionnaire consists of twenty (20) items to support the proposed research framework. The Likert Scale provided in the survey questionnaire arrange accordingly from strongly disagree to strongly agree.

Table 2. Demographic Section

Variables	No	Statements
Gender	1	Male
	2	Female
Age	1	Below than 18
	2	19-34
	3	35-50
	4	51-66
	5	Above 66
Company Location	1	Urban
	2	Suburban
	3	Rural
Education Background	1	SPM
	2	Diploma
	3	Degree
	4	Master
	5	PHD
What is your work industry?	6	Others: (Please specify):
	1	Automotive
	2	Banking
	3	Education
	4	Healthcare
	5	Others: (Please specify):

Table 3. Survey Questionnaire

Variables	Items	Statements	References	Likert Scale (Strongly disagree – Strongly agree)				
				1	2	3	4	5
Adoption of Innovation Technology in Organization Behavior	AI1	My company is committed to adopt the technology	(Oliveira et al., 2019)					
	AI2	The business process in my company needs the adoption of the technology						
	AI3	Some of my company's department need the adoption of the technology						
	AI4	I believe that the adoption of the technology will largely benefit the organization	(Chandra and Kumar, 2018)					
	AI5	I would strongly recommend my organization to use the technology						
Technology	T1	The technology provides flexibility in interaction	(Awa, Ojiabo, and Orokor, 2017)					
	T2	The technology requires less specialized skills and training in using it						
	T3	The technology can be learned with ease						
	T4	The technology is clear and understandable						
	T5	The technology improved operational efficiency						
Organization	O1	The top management support the training and development on innovations	(Awa, Ojiabo, and Orokor, 2017)					
	O2	The top management support the good arrangement to innovations						
	O3	The top management support the policies and procedures of encouragement						
	O4	The top management support the staff incentives on innovation						
	O5	The top management support the updates on enterprise's technologies						
Environment	E1	Demanded by significant business partner	(Kuan, and Chau 2001).					
	E2	Demanded by majority of business partner						
	E3	Suggested by significant business partner						
	E4	Suggested by majority of business partner						
	E5	The key competitors using or soon to be using the new technology						

4. Data Analysis and Results

The Pilot Study

A pilot test is a short preliminary study performed in research to test a planned research study before it is carried out on a larger scale. (Workplace Testing, 2016). There are 50 respondents were included in the pilot test (N=50).

Reliability Analysis

Reliability test can be defined as the degree to which a test measures without error [20].

Table 4. Reliability Analysis (Pilot Test)

Variables	No. of Items	No. of Items Deleted	Total Items	Cronbach's Alpha
AI	5	0	5	0.801
T	5	0	5	0.794
O	5	0	5	0.910
E	5	0	5	0.912

In order to construct reliability, it should be noted that Cronbach's Alpha validates the model. Cronbach's Alpha is also used to analyze the reliability of questionnaire. As mentioned by [21], Cronbach's Alpha of 0.7 was considered acceptable. The table above extrapolated that the pilot test results shows that all the measurement models' items are reliable. The research shows that the value ranges from 0.794 to 0.912 for all Cronbach's Alpha. Based on the pilot test, the environment has the highest Cronbach's Alpha with a score of 0.912. Meanwhile, adoption of innovation technology in organization behavior and organization has the score of 0.801 and 0.910, respectively. Technology has the least Cronbach's Alpha with the score of 0.794. Hence, the pilot test result for N=50 from the current research can be concluded that all the items have good reliability with a score above 0.7.

Respondent profile (Pilot Test)

In this section, the author analyzes the demographic section that consists of 50 respondents.

Demographic Section**Table 5. Gender**

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	17	34.0	34.0	34.0
	Female	33	66.0	66.0	100.0
	Total	50	100.0	100.0	

Based on the table 4.2, the variable gender gathered from 50 respondents compiled by 17 males (34%) and 33 females (66%).

Table 6. Age

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below than 18	1	2.0	2.0	2.0
	19-34	42	84.0	84.0	86.0
	35-50	4	8.0	8.0	94.0
	51-66	3	6.0	6.0	100.0
	Total	50	100.0	100.0	

Based on table 4.3 above, the variable age gathered from 50 respondents made up of the four ranges of age group. Most of the respondents are between 19-34 years old with 42 respondents (84%), followed by the range's respondents from 35-50 years old with 4 respondents (8%), 51-66 years old with 3 respondents (6%) and the least which are only 1 person (2%) coming from the range of respondents below than 18 years old.

Table 7. Company Location

Company Location					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	19	38.0	38.0	38.0
	Suburban	22	44.0	44.0	82.0
	Rural	9	18.0	18.0	100.0
	Total	50	100.0	100.0	

Company location has been ranged into three (3) groups. Suburban dominates the section with 22 respondents (44%). On the pilot test, the result shows the urban respondents consist of 19 respondents or 38%. The least number of respondents in this study came from the rural area, with only 9 respondents or 18%.

Table 8. Education Background

Education Background					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	10	20.0	20.0	20.0
	Degree	32	64.0	64.0	84.0
	Master	6	12.0	12.0	96.0
	Others	2	4.0	4.0	100.0
	Total	50	100.0	100.0	

Education background has been ranged into four (4) groups. Degree respondents dominate the section with 32 respondents (64%) followed by Diploma respondents with 10 respondents that contribute (20%) of the data in education background. Besides, the pilot test also shows that Master respondent consists of 6 respondents or 12%. According to the result of the pilot test, respondents from others are the least with only two (2) respondents or 4%.

Table 9. Work Industry

		Sectors			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Automotive	4	8.0	8.0	8.0
	Banking	6	12.0	12.0	20.0
	Education	21	42.0	42.0	62.0
	Healthcare	5	10.0	10.0	72.0
	Others	14	28.0	28.0	100.0
	Total	50	100.0	100.0	

The data regarding the work industry represented in table 4.6 above saw the education industry dominate the section with 21 respondents or 42%, followed by the industry from others which has 14 respondents or 28%. The banking and healthcare industry has 6 and 5 respondents, or 12% and 10%, respectively. The least work industry comes from automotive industry with 4 respondents or 8%.

The Analysis

In this section, the author includes the reliability and validity test. The results show whether the data is reliable and valid. The result also includes composite reliability and average variance extracted (AVE) to increase the precision of the data.

Table 10. Reliability and Validity Analysis

Variables	No. of Items	No. of Items Deleted	Total Items	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
AI	5	0	5	0.813	0.874	0.582
T	5	0	5	0.770	0.837	0.514
O	5	0	5	0.921	0.941	0.762
E	5	0	5	0.890	0.918	0.693

To construct reliability, it should be noted that Cronbach's Alpha validates the model. Cronbach's Alpha is also used to analyze the reliability of questionnaire. As mentioned by [21], Cronbach's Alpha of 0.7 was considered acceptable. Table 4.7 extrapolated the results to show that all the measurement models' items are reliable and valid. The research shows that the value ranges from 0.770 to 0.92 for all Cronbach's Alpha. Based on Table 4.7, the organization has the highest Cronbach's Alpha with a score of 0.921. Meanwhile, environment and adoption of innovation technology in organization behavior has the score of 0.890 and 0.813, respectively. Technology has the least Cronbach's Alpha with the score of 0.770. The composite reliability test was used to support the reliability test. Hence, the result for N=203 from the current research can be concluded that all the items have good reliability with a score above 0.7. To construct validity, the data has been analyzed by using SmartPLS. Thus, the author got the results of the Average Variance Extracted (AVE) based on the items from the questionnaire without including the demographic section. Based on table 4.7, the highest AVE comes from the item Organization (O) with 0.762 followed by Environment (E) and Adoption of Innovation Technology in Organization Behavior (AI) with 0.693 and 0.582, respectively. Technology (T) has the least AVE with 0.514.

Respondents Profile (Full Analysis)

In this section, the author analyzes the full respondents from the demographic section which is 203.

Demographic Section

Table 11. Gender

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	48	23.6	23.6	23.6
	Female	155	76.4	76.4	100.0
	Total	203	100.0	100.0	

Based on the table 4.8 above, the variable gender gathered from 203 respondents composed of 48 males (23%) and 155 females (76%).

Table 12. Age

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below than 18	5	2.5	2.5	2.5
	19-34	177	87.2	87.2	89.7
	35-50	12	5.9	5.9	95.6
	51-66	9	4.4	4.4	100.0
	Total	203	100.0	100.0	

Based on the table 4.9 above, the variable age gathered from 203 respondents made up of the four ranges of age group. Most of the respondents are between 19-34 years old with 177 respondents (87.2%), followed by the range's respondents from 35-50 years old with 12 respondents (5.9%), 51-66 years old with 9 respondents (4.4%) and the least which are only 5 people (2.5%) coming from the range of respondents below than 18 years old.

Table 13. Company Location

Company Location					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	126	62.1	62.1	62.1
	Suburban	51	25.1	25.1	87.2
	Rural	26	12.8	12.8	100.0
	Total	203	100.0	100.0	

Company location has been ranged into three (3) groups. Urban dominates the section with 126 respondents or 62.1%. The result shows the suburban respondents consist of 51 respondents or 25.1%. The least number of respondents in this study came from the rural area, with only 26 respondents or 12.8%.

Table 14. Education Background

Education Background					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SPM	12	5.9	5.9	5.9
	Diploma	31	15.3	15.3	21.2
	Degree	142	70.0	70.0	91.1
	Master	13	6.4	6.4	97.5
	PHD	2	1.0	1.0	98.5
	Others	3	1.5	1.5	100.0
	Total	203	100.0	100.0	

Education background has been ranged into six (6) groups. Degree respondents dominate the section with 142 respondents (70%) followed by Diploma respondents with 31 respondents that contribute (15.3%) of the data in education background. Besides, the result also shows that Master respondent consists of 13 respondents or 6.4%. Respondents from others consist of 3 respondents (1.5%). According to the result, respondents from others are the least with only 2 respondents (1%).

Table 15. Industry

Sectors					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Automotive	15	7.4	7.4	7.4
	Banking	24	11.8	11.8	19.2
	Education	56	27.6	27.6	46.8
	Healthcare	19	9.4	9.4	56.2
	Others	89	43.8	43.8	100.0
	Total	203	100.0	100.0	

The data regarding work industry represented in the table and figure above saw others industry dominate the section with 89 respondents or 43.8%, followed by the industry from education which has 56 respondents or 27.6%. The banking and healthcare industry has 24 and 19 respondents, or 11.8% and 9.4%, respectively. The automotive industry has the second least respondents with 15 respondents or 7.4%. The least work industry comes from automotive industry with 4 respondents or 8%.

Table 16. Statistic for AI

Item Statistics			
	Mean	Std. Deviation	N
My company is committed to adopt the technology	4.16	.813	203
The business process in my company needs the adoption of the technology	4.36	.740	203
Some of my company's department need the adoption of the technology	4.38	.710	203
I believe that the adoption of the technology will largely benefit the organization	4.55	.654	203
I would strongly recommend my organization to use the technology	4.58	.603	203

Table 16 above illustrates descriptive analysis for AI. Without missing data, the total observation is 203. According to the result, the highest average score for AI is “I would strongly recommend my organization to use the technology” with the mean of 4.58. Meaning to say that the respondents strongly agree with the statement while “My company is committed to adopt the technology” has the least average score of 4.16. However, the statement “My company is committed to adopt the technology” has the highest standard deviation among the others which means it spread out over a wide value than the statement “I would strongly recommend my organization to use the technology” which has the least standard deviation with 0.603. Meaning to say that it has consistent reaction towards the statement.

Table 17. Statistic for T

Item Statistics			
	Mean	Std. Deviation	N
The technology provides flexibility in interaction	4.38	.718	203
The technology requires less specialized skills and training in using it	3.73	1.005	203
The technology can be learned with ease	4.04	.886	203
The technology is clear and understandable	4.14	.758	203
The technology improved operational efficiency	4.45	.661	203

Table 17 above shows the data analysis for T. The total of the observation is 203, with no missing data. Most of the respondents agree with the statements as shown in the result. However, the statement “The technology improved operational efficiency” has the highest mean of 4.45 with the standard deviation of 0.661, which is the lowest standard deviation. Ironically, the statement “The technology requires less specialized skills and training in using it” has the least mean with 3.73 and the standard deviation of 1.005, the highest among the other items.

Table 18. Statistic for O

Item Statistics			
	Mean	Std. Deviation	N
The top management support the training and development on innovations	4.31	.793	203
The top management support the good arrangement to innovations	4.29	.722	203
The top management support the policies and procedures of encouragement	4.27	.716	203
The top management support the staff incentives on innovation	4.20	.821	203
The top management support the updates on enterprise's technologies	4.22	.793	203

As described in the above table, it is the descriptive analysis for O. With complete data, the total observation is 203. The statement that has the highest mean is “The top management supports the training and development on innovations” with 4.31 meaning that the respondents strongly agree to the statement. The statement “The top management supports the staff incentives on innovation” has the highest standard deviation with 0.821. On the contrary, the statement “The top management supports the policies and procedures of encouragement” also has the least mean with 4.20. The statement “The top management supports the updates on enterprise's technologies” has the lowest standard deviation with 0.716.

Table 19. Statistic for E

Item Statistics			
	Mean	Std. Deviation	N
Demanded by significant business partner	4.11	.757	203
Demanded by majority of business partner	4.08	.801	203
Suggested by significant business partner	4.07	.796	203
Suggested by majority of business partner	4.11	.801	203
The key competitors using or soon to be using the new technology	4.36	.734	203

The following table depicts the descriptive analysis for E. The total observant is 203 with no missing data. The highest mean comes from the statement “The key competitors using or soon to be using the new technology” with the mean of 4.36. However, the statement also has the lowest standard deviation with 0.734 which shows that the respondents react consistently towards it. In contrast, the statement “Suggested by significant business partner” has the lowest mean with 4.07 and with the standard deviation of 0.801, both statement “Demanded by majority of business partner” and “Suggested by majority of business partner” shares the highest standard deviation.

Table 20. Pearson's Correlations Study

Correlations		AI	T	O	E
AI	Pearson Correlation	1	.480**	.492**	.425**
	Sig. (2-tailed)		.000	.000	.000
	N	203	203	203	203
T	Pearson Correlation	.480**	1	.491**	.513**
	Sig. (2-tailed)	.000		.000	.000
	N	203	203	203	203
O	Pearson Correlation	.492**	.491**	1	.658**
	Sig. (2-tailed)	.000	.000		.000
	N	203	203	203	203
E	Pearson Correlation	.425**	.513**	.658**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	203	203	203	203
**. Correlation is significant at the 0.01 level (2-tailed).					

Pearson's differ from -1 to +1 as +1 is a perfect positive correlation while -1 is recorded as perfect negative correlation. It means that the presence of linear correlation is non-existent if there is 0. Additionally, 2-tailed significance value is set in this test and 0.01 is the alpha value in this case. Table 4.16 indicates the correlation between variables which has the positive and significant relation among the variables. A stronger relationship is indicated by a larger absolute value [22]. Adoption of innovation technology in organization behavior has a considerable influence on organization, according to the bivariate study shown in the table above (.492), followed by technology (.480). Adoption of innovation technology in organization behavior has the least influence on the environment (.0425). The relationship between organization and environment has the strongest relationship between variables (.658).

In this study, however, the weakest correlation can be discovered between adoption of innovation technology in organization behavior and environment (.425). Overall, the results revealed that adoption of innovation technology in organization behavior had a favorable and significant influence on technology, organization, and environment among participating respondents. As a result, hypotheses 1 (H1), 2 (H2), and 3 (H3) were found to be valid.

5. Discussion

To determine the factors influencing the adoption of innovation technology in organization behaviour in Puchong on technology, organization, and environment, a closed-ended survey was conducted. According to the descriptive statistic result, it shows that the respondents involved in this research agreed with the positive impacts on adoption of innovation technology in organization behavior on technology, organization, and environment. The research hypotheses were then examined by using Pearson correlation analysis, based on the above-mentioned statements.

The Adoption of Innovation Technology in Organization Behavior on Technology

It can be concluded that the adoption of innovation technology in organizational behavior has a significant and positive influence on technology (.480). Based on the study, the organization is advised to develop training programs in order to ease the learning process of the innovation technology by their employees. For that reason, hypothesis 1 is supported.

The Adoption of Innovation Technology in Organization Behavior on Organization

Second, adoption of innovation technology in organization behavior has been found to have a favorable and significant influence on organization (.492). The positive correlation between the variables indicates that respondents agree with the significant role of organization towards the adoption of innovation technology in organization behavior. As such, the top management is advised to support the policies and procedures of encouragement to their employees. For that reason, hypothesis 2 is supported.

The Adoption of Innovation Technology in Organization Behavior on Environment

Finally, it was disclosed that adoption of innovation technology in organization behavior has positive influence on environment (.425). In this case, environment plays a significant role as it is the external factors towards the adoption of innovation technology. Organization might adopt the technology if their competitor adopts it to avoid them being left behind. Thus, this supports hypothesis 3.

6. Conclusion

Clearly, this research studies the factors influencing the adoption of innovation technology in organizational behaviour in Puchong. The current research indicates that adoption of innovation technology positively influences technology, organization, and environment by analyzing previous literature reviews. This research highlights the organization's behaviour to adopt the innovation technology in their organization. As innovation technology can be considered as new, some struggles to adapt. In this context, the author includes the factors of technology, organization, and environment. The findings inspire businesses to build staff training programs so that they can more successfully adopt innovation technology. Besides, employees must be encouraged to accept and apply innovation technology through training and other educational programs by the organization. Management must comprehend technology, organization, and environment elements, as well as demographic characteristics, that impact organization behavior in order to adopt and manage innovation technology which can improve human capabilities and performance.

Organizations should give continuous feedback, support, and encouragement for such employees in order to acquire innovation skills in a short period of time, besides boosting the adoption rate of innovation in the business. Besides that, the environment also plays a significant role in the adoption of innovation technology. For example, if the innovation technology is demanded and suggested by a significant majority of business partners, the more the need to adopt the innovation technology in the organization. In addition, if the competitor also used innovative technology, the organization must also follow if they did not want to be left behind. Besides, technology is one of the main factors that influence the adoption of innovative technology in organizational behavior. This depends on whether the technology itself provides flexibility in interaction and can be learned with ease or not. Besides, the organization might adopt the innovation technology if it requires less specialized skills and training in using it as it might cost more to the organization to hire specialists in the technology itself. If the innovation technology can be learnt with ease and understandable beside can improve operational efficiency, organization will surely adopt it. As a conclusion, the theoretical framework created and applied in this study opens a wide and possibly lucrative field for future research and knowledge development. It has consequences for businesses, managers, administrators, and workers who are interested in implementing innovation in their workplace. Future researchers can improve this research by adding more demographic sections in the survey questionnaire which can improve the precision of this study.

Research Limitations

The research scope of this work is limited. Due to the authors' time and resource constraints, Malaysia was the only nation included in this study. The quantitative method used in the research exposed information to a misleading concentration on numbers. The survey questionnaire was employed as a tool to conduct this research, with closed-ended questions limiting respondents' ability to provide detailed responses. Further research into how variances in the specific factors can affect technology, organization, and environment towards the adoption of innovation technology in organization behavior will shed further light on the topic. Further research might broaden the scope of the study by gathering data from other nations on the factors influencing the adoption of innovation technology in organizational behaviour.

References

- [1] How Artificial Intelligence Works, Investopedia. Apr. 2021. Retrieved from: <https://www.investopedia.com/terms/a/artificial-intelligence-ai.asp>.
- [2] Awa, H. O., Ojiabo, O. U., and L. E. Orokor, "Integrated technology-organization-environment (T-O-E) taxonomies for technology adoption", *Journal of Enterprise Information Management*, vol. 30, no. 6, pp. 893–921, Aug. 2017.

- [3] Awa, H. O., Ukoha, O., & S. R. Igwe, "Revisiting technology-organization-environment (T-O-E) theory for enriched applicability", *The Bottom Line*, vol. 30, no. 1, pp. 2–22, May 2017.
- [4] M. Talukder, "Factors affecting the adoption of technological innovation by individual employees: An Australian study", *Procedia-Social and Behavioral Sciences*, 40, 52-57, Mac. 2012.
- [5] (No date) OECD compendium of Productivity Indicators 2023 | en | OECD. Available at: <https://www.oecd.org/employment/oecd-compendium-of-productivity-indicators-22252126.htm>
- [6] I. Ajzen, "The theory of planned behavior," *Organizational Behavior and Human Decision Processes*, vol. 50, no. 2, pp. 179-211, Dec. 1991.
- [7] Xu, S. X., Zhu, C., and K. X. Zhu, "Why do firms adopt innovations in bandwagons? Evidence of herd behaviour in open standards adoption", *International Journal of Technology Management*, vol. 59, no. 1, pp. 63, Aug. 2012.
- [8] Chandra, S., and K. N. Kumar, "Exploring Factors Influencing Organizational Adoption of Augmented Reality in E-Commerce: Empirical Analysis Using Technology-Organization-Environment Model", *Journal of electronic commerce research*, vol. 19, no. 3, pp. 237-265, Aug. 2018.
- [9] (No date a) Technology & Innovation Management - iTOP.PARTNERS. Available at: <https://itop-partners.com/en/technology-innovation-management/>.
- [10] F. Isbell, *Innovation Adoption: What You Need to Know*, Sept. 2015. Retrieved from: <https://www.cxotalk.com/article/innovation-adoption-what-you-need-know>.
- [11] A. Rahim (2019) What is Technology Adoption and What are its 5 Stages, <https://www.exceeders.com/blog/what-is-technology-adoption-and-what-are-its-5-stages>.
- [12] Hashimov, A. M., Rustamova, S. R., and R. B. Rustamov, "Circumstances of the Innovation and Innovation Technology Development", *International Journal on Technical and Physical Problems of Engineering*, vol. 9, no. 4, pp. 40-45, Dec. 2017.
- [13] J. Kylliäinen, "Types of Innovation – The Ultimate Guide with Definitions and Examples", 2019.
- [14] Baker, J. (2011) 'The technology–Organization–Environment Framework', *Information Systems Theory*, pp. 231–245. doi:10.1007/978-1-4419-6108-2_12.
- [15] Li-Hua, R., and T. M. Khalil, "Technology management in China: a global perspective and challenging issues". *Journal of Technology Management in China*, vol. 1, no. 1, pp. 9–26, Jan. 2006.
- [16] Li-Hua, R. and Khalil, T.M. (2007) 'Technology management in China: A global perspective and challenging issues', *IEEE Engineering Management Review*, 35(1), pp. 53–53. doi:10.1109/emr.2007.329140.
- [17] Barão, A., de Vasconcelos, J. B., Rocha, Á., and R. Pereira, "A knowledge management approach to capture organizational learning networks", *International Journal of Information Management*, vol. 37, no. 6, pp. 735-740, Dec. 2017.
- [18] Kuan, K. K. Y., and P. Y. K. Chau, "A perception-based model for EDI adoption in small businesses using a technology–organization–environment framework", *Information & Management*, vol. 38, no. 8, pp. 507–521, Oct. 2001.
- [19] Eze, S. C., Chinedu-Eze, V. C., Bello, A. O., Inegbedion, H., Nwanji, T., and F. Asamu, "Mobile marketing technology adoption in service SMEs: a multi-perspective framework", *Journal of Science and Technology Policy Management*, vol. 25, no. 6, pp. 2053-4620, Apr. 2019.
- [20] Franzen, M. D. 'Test Reliability', in *Encyclopaedia of Clinical Neuropsychology*, pp. 2496–2497, 2011.
- [21] Ariffin, M. A. M., Ishak, R., Ahmad, S. A., and Z. Kasiran, "Network Traffic Profiling Using Data Mining Technique in Campus Environment", *International Journal of Advanced Trends in Computer Science and Engineering*, vol. 9, no. 1, pp. 422-428, June 2020.