Research in Management of Technology and Business Vol. 4 No. 1 (2023) 623–636

RMTB

Homepage: http://publisher.uthm.edu.my/periodicals/index.php/rmtb
e-ISSN : 2773-5044

Factors Influencing Intention to Use Blockchain Technology among Textile Manufacturing Sectors in Johor

Sim Hong Liang[1] **& Nor Kamariah Kamaruddin**[1,*]

[1]Department of Management and Technology, Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia, 86400 Batu Pahat, Johor, MALAYSIA

*Corresponding Author

DOI: https://doi.org/10.30880/rmtb.2023.04.01.043
Received 31 March 2023; Accepted 30 April 2023; Available online 01 June 2023

Abstract: Manufacturing sectors have become increasingly complicated, with numerous layers of suppliers located all over the world. As a result, visibility and traceability are difficult to achieve as items move through the supply chain. Blockchain technology have the ability to simplify supply chain operations and increase transparency in business and industrial processes. It has the ability to advance various facets of the industrial sector and make it quicker, more dependable, and more affordable. In this study, the researcher aims to identify the level of intention to use blockchain technology among textile manufacturing sectors and to determine the relationship between attitude, perceived behavior control, subjective norms and intention to use blockchain technology among textile manufacturing sectors in Johor, utilizing the Theory of Planned Behavior (TPB). Quantitative approaches focus on this study and the sample collect based on the sample who answer the questionnaires. The response rate was 70.27% which was 104 out of 148 and all of the questionnaires collected were usable. Data have been analyzed using SPSS statistical software. The results of Spearman's Correlation Coefficient, r is 0.604 which was a strong relationship between attitude and intention to use blockchain technology. Therefore, H1 is supported. Next, r is 0.547 which was a moderate relationship between perceived behavioral control and intention to use blockchain technology. Therefore, H2 is supported. There is a very strong relationship between subjective norms and intention to use blockchain technology where the r is 0.827. Therefore, H3 is supported. This finding may be a reference for textile manufacturing sectors know factors that influencing the level of intention to use blockchain technology.

Keywords: Blockchain technology, Textile manufacturing, Theory of planned behavior

Corresponding author: nkamariah@uthm.edu.my

1. Introduction

Fast Manufacturing sectors have become increasingly complicated, with numerous layers of suppliers located all over the world. As a result, visibility and traceability are difficult to achieve as items move through the supply chain. Blockchain technology has the ability to simplify supply chain operations and increase transparency in business and industrial processes (Hastig & Sodhi, 2020). It has the ability to enhance several facets of the industrial sector and make it quicker, more dependable, and more economical. However, not many business owners immediately accept it. Most crucially, artificial intelligence, the internet of things, and 3D printing can all be utilised in conjunction with blockchain. Combining them could improve product customization choices, streamline the supply chain management, and lessen counterfeiting.

Many manufacturers are in the process of converting their business models to be more service-oriented. This poses constraints in terms of gathering and analysing product usage data in order to build performance-based solutions for its customers. Simultaneously, manufacturers are undergoing significant transformations as a result of their adoption of digitization as their long-term strategy. Will manufacturers take blockchain into account as part of their digitization strategy? If relevant applications are found and many partners agree to participate in such efforts, blockchain has the ability to address important difficulties in the manufacturing industry. However, Consumers' intentions to embrace blockchain technology in the textile manufacturing sectors and the factors influencing such aspirations have received very little attention. To overcome that information gaps, this paper will determine the level of intention to use blockchain technology among textile manufacturing sectors in Johor, utilizing the theory of planned behavior (TPB).

Typically, blockchain and its numerous implementations are linked to cryptocurrencies, digital currency, and financial applications (Guo & Liang, 2016). The fundamental concept behind blockchain technology is that all transactions are dispersed and categorised into database systems, eliminating the need for a middleman or third party. It is also an uncorruptible digital ledger of economic transactions that can set up to record anything of value in addition to financial transactions (Don & Alex, 2016). Although behavioural intention has been identified as an indication of real behaviour among technology users and assesses a person's propensity to engage in a particular action (Venkatesh, 2003).

Additionally, blockchain technology has been around for over a decade. According to the Harvard Business Review (2017), “virtually everyone has heard the claim that blockchain will revolutionize business and redefine companies and economies”. Yet the intention to adopt this technology has proven to be much slower than all the publicity would have suggested (FMI Industry Report, 2020). Blockchain is a young technology that both academics and professionals are attempting to understand. The implementation of blockchain technology in the manufacturing industry is still in its early stages.

The first issue is that many companies without adequate knowledge on how exactly to implement the technology. Blockchain technology is still new for everyone, and the reluctance of many to put trust in the system contributes greatly to lesser intention to use. Most are wary of the unknown (Cabianca, 2018). This could be related with the Theory of Planned Behavior (TPB) which is perceived behavior control. This has to do with how someone perceives the simplicity or complexity of using blockchain technology. Because perceived behavioural control differs between contexts and behaviours, a person's views of behavioural control change depending on the circumstance. The reason for this is that manufacturers who are interested in blockchain technology should have strong perceptions of controls in the external world, such as for their everyday transactions and internal conditions. Compared to earlier systems, blockchain technology is a relatively young system (Hau & Kang, 2016).

The technology has stimulated the interest of blockchain pioneers, but one important point that must be remembered is the public will choose the simplest and cheapest solution available. When blockchain becomes as easy to use as, if not easier than, present centralised solutions, the prospect of universal

adoption will rise in the way that many people desire. While the notion of decentralisation may be very motivating for some, it is simply not a priority for many others. Most people struggle with blockchain account keys, which are lengthy sequences of apparently random characters and numbers. The possibility of losing the contents of a blockchain account if the key is misplaced or recorded incorrectly is also present (Cabianca, 2018). Therefore, this could be related with the Theory of Planned Behavior which is attitude. This is the degree to which a person views the conduct of interest in a positive or negative attitude. It requires thinking about the consequences of executing the activity. If a manufacturer has positive thoughts and plans for blockchain technology, it is likely that they will adopt blockchain in their company.

Based on Cabianca (2018), most manufacturers just seem to disapprove or have less intention to adopt blockchain technology because it turns out that the technology isn't quite there yet. Existing blockchain solutions have major scalability concerns, and those that don't have traded off other critical features like decentralisation for scalability. As the quantity of transactions rises, the architecture of some blockchains causes a bottleneck. Therefore, this could be related with the Theory of Planned Behavior which is subjective norms. This is the belief that the majority of people either approve or disapprove of the activity. It has to do with a person's opinions about whether peers and significant others believe the individual should indulge in the behavior. This premise can be used to explain blockchain adoption and usage patterns. A manufacturer is more likely to sense social pressures and aim to adopt blockchain technology if they are aware that other employees, friends, and businesses believe the consumer need to adapt and use blockchain in their businesses.

Thus, to fulfil the objectives of the research are to identify the level of intention to use blockchain technology and also to determine the relationship between attitude, perceived behavioral control and subjective norms among textile manufacturing sectors in Johor.

This research was conducted to determine the factors influencing intention to use blockchain technology among textile manufacturing sectors in Johor. This research is conducted to increase the knowledge of researchers about the topics studied, they will more understand about the use of blockchain technology. Future researchers will benefit from this research as it provides evidence of the factors influencing intention to use blockchain technology among textile manufacturing sectors in Johor. In addition, this study findings may serve as a guidance for future researchers.

2. Literature Review

The goal of this chapter is to use the Theory of Planned Behavior to demonstrate evidence from selected literature reviews on the level of intention to use blockchain technology and the relationship between attitude, perceived behavioural control, and subjective norms as an intention to use blockchain technology among sectors of the textile manufacturing industry (TPB).

2.1 Blockchain Technology

A specific type of distributed shared database that continuously grows and records transactions chronologically is known as a blockchain. In other words, the data structure is a ledger that may contain executables, data records, and digital transactions. The grouping of transactions into larger formations known as blocks that are time-stamped and cryptographically coupled to preceding blocks determines the sequencing order of occurrences, or the "blockchain." In addition to characterising the data structure itself, the term is commonly used in the literature to describe digital consensus structures, algorithms, or domains of applications developed on top of such architectures (Mattila, Seppala, Naucler, Stahl, Tikkanen & Bdenlid, 2016).

Blockchain technology can improve security and efficiency across various industries, including finance, logistics, and the public sector. It is projected that in the future, SOC would use open source blockchain technology to create private blockchains with better scalability and efficiency (Mao, Wang, Hao & Li, 2018). The strength and position of the network's administrators, suppliers, and users (nodes) all have an effect on how the blockchain functions. Blockchain networks are categorised as public, consortium, or private depending on whether they feature a transaction validation mechanism (Zhang & Lin, 2018).

2.2 Intention to Use Blockchain Technology

The user's willingness to use the system can be interpreted as their intention to use blockchain technology (Mardiana, Tjakraatmadja, & Aprianingsih, 2015). Although to varied degrees, an organization's technological aptitude has a significant impact on how quickly new technologies are adopted (Chan & Chong, 2013). Additionally, social psychologists identified user knowledge and intent to use blockchain technology to carry out future behaviours (Dabholkar, 1996). The intention of a user or an organisation to choose a technology for their benefit can be described as technology adoption, (Carr, 1999). Thus, adoption of technology will result in its dispersion, which will then lead to the general public's acceptance and use of it.

The individual's purpose to carry out a specific conduct is a key element in the theory of planned behavior, just like it was in the original theory of reasoned action. Intentions, which also serve as indicators of how much effort a person is prepared to put forth to carry out the behaviour, are regarded to convey the driving factors that drive an activity. In general, an activity should be more likely to be performed the stronger the intention to engage in it.

2.3 Determinants of Intention to Use Blockchain Technology

(a) Attitude

Attitude is defined as “a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object” (Fishbein & Ajzen, 1975;6). In other words, attitude in this context refers to the present, educated viewpoint on a technology. On the other hand, as subjective norm also influences this choice, an attitude is not always equivalent with behavior intention. Behavioral beliefs have an impact on a person's attitude. These beliefs are by Fishbein & Ajzen (1975;131) referred to as “a person’s subjective probability judgments concerning some discriminable aspect of his world”. According to Fishbein and Ajzens (1975), attitude towards an object is connected to ideas about the object, which is in line with Fishbein (1963) justification for the multiattribute model. This refers to the degree to which manufacturing companies has a favorable or unfavorable evaluation of blockchain technology. Therefore, it is hypothesized:

H1: There is a positive relationship between attitude and intention to use blockchain technology among textile manufacturing sectors in Johor.

(b) Perceived Behavioral Control

In the TPB-model, Ajzen introduced perceived behavioural control, which includes both internal and external restraints on behaviour. Ajzen (1991;183) defines perceived behavioral control as “people's perceptions of the ease or difficulty of performing the behavior of interest”. This is closely compatible with Bandura’s (Bandura, 1977; Bandura, 1982) concept of perceived self-efficacy, which “is concerned with assessments of how well one can carry out strategies necessary to address potential scenarios,” (Bandura, 1982;122). According to the model, a person's intention alone can predict behavior when they have total control over each of their individual actions (Ajzen, 1991). On the other hand, if an individual has less control over their own conduct, perceived behavioral control will have a significant impact on their intention and their confidence will have an impact on their actual behavior.

The goal behind the conduct, subjective norm, and attitude toward the activity will all be impacted by the perceived behavioral control in addition to the actual behavior. This refers to how most manufacturing organizations believe implementing blockchain technology in their business will be easy or challenging. Therefore, it is hypothesized:

H2: There is a positive relationship between perceived behavioral control and intention to use blockchain technology among textile manufacturing sectors in Johor.

(c) Subjective Norms

According to Fishbein & Ajzen (1975) defined subjective norms as "other beliefs significant for a behavioural intention," Fishbein & Ajzen (1975) mean "beliefs of a normative kind, i.e., beliefs that particular referents think the individual should or should not undertake the activity in question. "The individual may or may not be driven to follow any certain referent. Normative views and the desire to fit in contribute to normative pressures. The phrase “subjective norm” may be used to describe all of these forces. (Fishbein & Ajzen, 1975;16). The focus of subjective norm is on the social repercussions of action and how the individual responds to outside forces that affect behavior. Finally, the model asserts that intention results in a certain, actual behavior. This refers to most manufacturing companies’ belief about whether most people approve or disapprove to adopt blockchain technology in their company. Therefore, it is hypothesized:

H3: There is a positive relationship between subjective norms and intention to use blockchain technology among textile manufacturing sectors in Johor.

2.4 Conceptual Framework

The idea outlined in this chapter serves as the fundamental framework for comprehending the aim behind the use of Blockchain in textile manufacturing enterprises. The TPB framework (Ajzen, 1991), which is a fully validated model, provides the framework for the theoretical model employed in this investigation. The TPB architecture has been used and tested throughout time and provides important use cases for the adoption of technologies that are similar to blockchain. The conceptual framework of this study is shown in Figure 1.

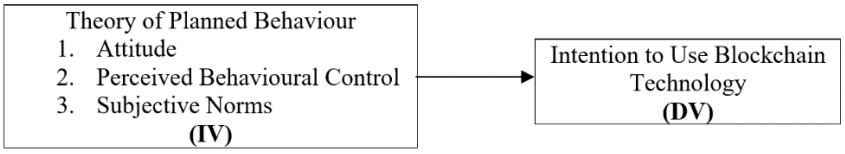

Figure 1: Conceptual framework

3. Research Methodology

3.1 Research Design

According to Andrew (2018) defines a research design as "the set of methods and procedures used in assembling and analyzing measures of the variables laid out in the problem downside." The design of this analysis influences the sort of information to be gathered and, consequently, its results. Research design also establishes all other study-related elements, including variables, hypotheses, experiments, methods, and statistical analysis (Creswell *et al*., 2018).

Statistical methods used to look at the relationships between dependent and independent variables of the research and expressing the patterns with numbers. It also helps the researcher to make decisions

on whether to accept or reject those hypotheses of the study which determine the relationship between both variables. Quantitative methods are normally used for multiple regression which rely on questionnaires, surveys or scales and relationship between both variables. The purpose of quantitative research is to isolate the independent variable and manipulate it to observe the effect of the dependent variable.

A quantitative strategy was applicable and used in this investigation to collect data. Questionnaires were chosen as a technique to help the researcher collect data. The responders were selected randomly from a population of textile manufacturing companies in Johor. In order to meet the study objectives, the data were then analyzed using the SPSS software system for a variety of analyses, including reliability analysis, descriptive analysis, normality check, and correlation.

3.2 Population

The population is the set or cluster of all the units to which the results of the analysis will be applied (Shukla, S.,2020). Referring to the definition of "population," consists of all the units to which the findings of the analysis will be applied. In other words, a population could be a set of all the units that possess the variable characteristics under study and that the findings of research will be generalized.

The target population consists of Textile Manufacturing in Johor. The sampling frame for textile manufacturing companies in Johor is obtained from the website of Dun & Bradstreet. Based on Dun & Bradstreet (2022), there are a total of 235 Textile Manufacturing in Johor.

3.3 Sampling Technique

Sampling is associated to the procedure for counting population to serve as respondents or to decide on the sample size for the target population. According to Kumar (2011), sampling techniques can be classified into three which are probability sampling, non-probability sampling and ‘mixed’ sampling. Probability (random) sampling is the best approach for this investigation because it is interested in generalizing the findings to the entire population.

Three classification of random sampling which were simple random sampling, stratified random sampling and cluster sampling. Random sampling may be costly and long. However, this approach to gathering data for analysis will give the simplest probability of generating an unbiased sample that’s really representative of a whole group as an entire (Kendra Cherry, 2021). Random selection from the population as a sample to be distributed and welcome to answer the questionnaires.

Data from the survey were gathered using a straightforward random sampling method. Sample will be randomly selected from a textile manufacturing company in Johor. Every textile organization in Johor has the same opportunity and is free to be selected as a respondent.

3.4 Sample Size

A sample is a portion of the population that has been chosen in order to be observed and analysed (Best & Kahn, 2006). Based on Krejcie and Morgan (1970), a sample needs to be collected to show the whole population. Based on Krejcie and Morgan (1970) table, there are approximately 148 respondents as a sample size for the population of 235 Textile Manufacturing in Johor in this research.

3.5 Data Collection

There were two categories of data which were primary data and secondary data was used in this research to gathering information about the topic.

(a) Primary Data

The primary sources used were questionnaires, interviews, and observation. That is direct knowledge from the respondent. Primary data is more trustworthy and reliable since it has not been updated, published, or changed by people (Kabir, 2016). The researcher distributed questionnaire to collect the primary data from respondents in this research.

(b) Secondary Data

Secondary data refers to the source that had already been published in other form. This is useful for the study design of subsequent primary data and can provide a baseline that can be compared to the primary data results collected (Kabir, 2016). Government or semi-government publications, personal records, earlier research, and mass media were the four categories into which secondary data were divided. Books, journal articles, newspapers, statistics from official websites, and other common sources of secondary data were employed in the study.

3.6 Data Analysis

The quantitative statistical SPSS was utilized to address the research objectives which include the reliability analysis, descriptive analysis, normality analysis and correlation analysis.

(a) Descriptive Analysis

Descriptive analysis is the first step for the whole data analysis. It is used to present the data get in a more descriptions and manageable forms. There are two categories of descriptive analysis which are measures of variability and measure of central tendency. Measure of central tendency was used in this research where to measure the mean or average of the data. The average mean values between 1.00 to 2.33 represent weak where between 2.34 to 3.67 is moderate and the values between 3.68 to 5.00 represents high. In this research, descriptive analysis is used to describe the profile of respondent which included gender, education level, age, department, position and length of service. And also the profile of organization included years of establish, number of full time workers and company ownership.

(b) Reliability Analysis

The reliability analysis was used to offer a unique assessment of the internal consistency and reliability of the variables under consideration. The goal of the reliability test is to examine the consistency of the pilot and actual studies. A reliability coefficient, or Cronbach's alpha, of 1.00 indicates total reliability; values of 0.00 or less reveal that the questionnaires are untrustworthy; and the range of 0.80 to 0.90 is typically used in most investigations.

(c) Normality Analysis

Normality analysis was used to assess if the data set was correctly modelled and to calculate the likelihood that the data will have a regular distribution for random variables. The Shapiro-Wilk Test and the Kolmogorov-Smirnov Test are two popular methods for determining normality. Kolmogorov-Smirnov was chosen since the sample size was larger than 50, whereas Shapiro Wilk was used because it was less than 50.

(d) Correlation Analysis

For the correlation analysis, the link between a dependent variable and a number of independent variables is determined. The dependent variable is employee productivity, whereas the independent variables are the influences of the work environment, such as the physical work environment, working conditions, and workplace layout. In study correlation analysis, Pearson and Spearman correlations were frequently used. If the data follows a normal distribution, the Pearson correlation is used; otherwise, the Spearman correlation is applied. By calculating the ratio of the sample of the two

variables to the product of their standard deviations, the Pearson correlation measures the strength of linear connections. Pearson correlation lacks a robust correlation coefficient due to the absence of strong linear connections between variables. The correlation coefficient is not resistant to outliers since it is sensitive to them (Dudovskiy, 2018). According to Dudovskiy (2018), Spearman Rank Correlation requires sorting the data and assigning each value a different rank, with 1 representing the lowest value. In addition, if the same data value appears several times, its average rank will be displayed.

4. Results and Discussion

4.1 Response Rate

The respondents of this study were focused on the textile manufacturing sectors in Johor. The population was 235 textile manufacturing company in Johor, there were 148 sample size based on Krejcie and Morgan (1970). The response rate was 70.27% which was 104 out of 148 and all of the questionnaires collected were usable. Table 1 below shown the responses rate from the questionnaires collected.

Table 1: Response rate

Item	Description
Population	235
Sample size	148
Questionnaires distributed	148
Questionnaires form that collected	104
Percentage (%) of respondent's feedback	70.27%

4.2 Reliability Analysis

Reliability analysis was used to determine the internal consistency which the same data can be obtain in the same statement more than one time (Mohajan, 2017). Cronbach's alpha (α) is the most common measurement for the reliability analysis.

(a) Reliability of Pilot Study

A total of 15 questionnaires has been used which was random distributed from the sample size of the research conduct this pilot test. The result of the questionnaire was analysed using SPSS software.

Table 2: Reliability for pilot study result

	Cronbach's Alpha	N-item in scale	Interpretation
Independent Variables			
Attitude	0.910	6	Very Good
Perceived Behavioral Control	0.953	6	Very Good
Subjective Norms	0.880	4	Good
Dependent Variable			
Intention to Use Blockchain Technology	0.809	4	Good

(b) Reliability of Actual Study

Actual study was conducted after the result of pilot study that the questionnaires were reliable and valid. Table 3 shown the result of reliability test conducted for the actual study. The respondents were 104 employees represented from textile manufacturing company.

Table 3: Reliability for actual study result

	Cronbach's Alpha	N-item in scale	Interpretation
Independent Variables			
Attitude	0.846	6	Good

Perceived Behavioral Control	0.933	6	Very Good
Subjective Norms	0.863	4	Good
Dependent Variable			
Intention to Use Blockchain Technology	0.754	4	Good

4.3 Demographic Analysis

Table 4 showed that question designed in part A which is demographic information of the respondent. In general, question related to gender, age, ethnicity, education level, department, job tenure, years of company's establishment, number of full-time workers and company ownership. All the data from questionnaire answered has been analyse and the result were summarized in the table and pie chart as well that contains frequency and percentage.

Table 4: Demographic information of respondents

Demographic	Details	Frequency	Percentage (%)
Gender	Male	47	45.2
	Female	57	54.8
Age	18-23 years old	6	5.8
	24-29 years old	12	11.5
	30-34 years old	52	50.0
	Above 35 years old	34	32.7
Ethnicity	Malay	30	28.8
	Chinese	65	62.5
	Indian	9	8.7
Education Level	PhD	1	1.0
	Master	4	3.8
	Degree	37	35.6
	Diploma	34	32.7
	O-level / SPM	28	26.9
Department	Human Resource	30	28.8
	Production	11	10.6
	Operation	23	22.1
	Financial	21	20.2
	Marketing	18	17.3
	Other	1	1.0
Job Tenure	Less than 4 years	16	15.4
	5 to 10 years	67	64.4
	More than 10 years	21	20.2
Years of Company's Establishment	Less than 3 years	4	3.8
	4 to 10 years	17	16.3
	More than 10 years	83	79.8
Number of Full-Time Workers	5 to 75	40	38.5
	75 to 200	50	48.1
	201 and above	14	13.5
Company Ownership	Malaysia Owned	96	92.3
	Foreign Owned	8	7.7

4.4 Descriptive Analysis

(a) Descriptive Data for Level of Factors Influencing Intention to Use Blockchain Technology

Table 5: Attitude influencing intention to use blockchain technology descriptive analysis

	Statement	Mean	Interpretation
1.	I will be happy if my organization adopt blockchain technology.	3.93	High
2.	In my opinion, it is right for my organization to use blockchain technology.	3.63	Moderate
3.	I think, it is good for the future of my organization to use the blockchain technology.	3.85	High
4.	Overall, my attitude towards adoption of blockchain technology is favorable.	4.00	High

5.	Getting product tracking information through blockchain technology is time-saving and genuine.	4.15	High
6.	With the help of blockchain technology, data transparency related to financial transaction is a good idea.	4.27	High
Total Average		3.97	High

According to Table 5, with the help of blockchain technology, data transparency related to financial transaction is a good idea is the highest mean in attitude influencing which is 4.27 while the second highest mean is getting product tracking information through blockchain technology is time-saving and genuine which is 4.15. The next come with the mean in 4.00 which the respondents agreed that the overall, my attitude towards adoption of blockchain technology is favorable. The mean for I will be happy if my organization adopt blockchain technology is 3.93. The next come with the mean in 3.85 which is I think, it is good for the future of my organization to use the blockchain technology. The lowest mean is 3.63 which is in my opinion, it is right for my organization to use blockchain technology. Thus, attitude influencing intention to use blockchain technology still has a high central tendency level of range.

Table 6: Perceived behavioral control influencing intention to use blockchain technology descriptive analysis

	Statement	Mean	Interpretation
1.	It will be easy to find or obtain the information on blockchain technology.	3.80	High
2.	I will be confident that I will find or obtain the information on blockchain technology.	3.71	High
3.	I will be able to find or obtain the information on blockchain technology without help from others.	3.62	Moderate
4.	It will be easy to understand the information of blockchain technology.	3.84	High
5.	I will be confident that I will understand the information of blockchain technology.	3.77	High
6.	I will be able to understand the information of blockchain technology without help from others.	3.59	Moderate
Total Average		3.72	High

Table 6 shows the highest mean of perceived behavioral control influencing intention to use blockchain technology where it will be easy to understand the information of blockchain technology with the mean at 3.84. Next, it will be easy to find or obtain the information on blockchain technology is the second highest mean which is 3.80. I will be confident that I will understand the information of blockchain technology has the mean at 3.77. I will be confident that I will find or obtain the information on blockchain technology has the mean at 3.71. The next come with the mean in 3.63 which is I will be able to find or obtain the information on blockchain technology without help from others. While the lowest mean is 3.59 which is I will be able to understand the information of blockchain technology without help from others. Overall, the total average of perceived behavioral control is 3.72, which is still within the high central tendency level of range.

Table 7: Subjective norms influencing intention to use blockchain technology descriptive analysis

	Statement	Mean	Interpretation
1.	Most of my organization employees believe adoption of blockchain technology is a good decision.	3.28	Moderate
2.	Most of my organization partners expect my organization will adopt blockchain technology.	3.26	Moderate
3.	Competitors can get competitive advantage if they adopt blockchain technology earlier than my organization.	3.69	High
4.	People important to my organization will support using blockchain technology.	4.13	High
Total Average		3.59	Moderate

Based on Table 7, the highest mean in subjective norms influencing intention to use blockchain technology as one of the factors influencing intention to use blockchain technology is 4.13 which the respondents answered for people important to my organization will support using blockchain technology.

Besides that, the second higher mean is 3.69 which is competitors can get competitive advantage if they adopt blockchain technology earlier than my organization. Next, most of my organization employees believe adoption of blockchain technology is a good decision has the mean at 3.28 while most of my organization partners expect my organization will adopt blockchain technology has the mean 3.26. The result of analysis indicates that they have a moderate central tendency level of range.

(b) Descriptive Data for Level of Intention to Use Blockchain Technology

Table 8: Intention to use blockchain technology descriptive analysis

Statement	Mean	Interpretation
1. If my organization have access to this blockchain technology, I intend to use it.	4.27	High
2. If my organization have access to this blockchain technology, I would use it.	4.22	High
3. My organization plan to use this blockchain technology within the next three years.	2.95	Moderate
4. My organization intent to use blockchain technology in checking the status of shipment for products as much as possible.	3.34	Moderate
Total Average	3.70	High

Table 8 showed that 4.27 is the highest mean of intention to use blockchain technology which respondents agreed that if my organization have access to this blockchain technology, I intend to use it. Besides that, the second higher mean is 4.22 which is if my organization have access to this blockchain technology, I would use it. Next, my organization intent to use blockchain technology in checking the status of shipment for products as much as possible has the mean at 3.34. While the lowest mean in this variable is 2.95 which is my organization plan to use this blockchain technology within the next three years. The result shows that the intention to use blockchain technology has the high average mean score of 3.70. This indicated that they have high central tendency level of range.

4.5 Normality Test

Table 9: Result of normality test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig
Dependent Variable						
Intention to Use Blockchain Technology	.160	104	.000	.964	104	.007

a. Lilliefors Significance Correlation

Based on the Table 9, the p-value for the intention to use blockchain technology dependent variable is 0.000. The result of the test for normality shows that the dependent variable is less than 0.05. So, because the data is not normally distributed, the research will proceed with Spearman correlation analysis.

4.6 Correlation Analysis

Table 10: Result of spearman's correlation

	A	PBC	SN	ITUBT
A	1.000			
PBC	.396**	1.000		
SN	.542**	.552**	1.000	
ITUBT	.604**	.547**	.827**	1.000

** Correlation is significant at the 0.01 level (2-tailed).

Note: ITUBT: Intention to Use Blockchain Technology
A: Attitude
PBC: Perceived Behavioral Control
SN: Subjective Norms

The results of Spearman's correlation coefficient are shown in Table 10, and the value of r (0.604) indicates a significant correlation between attitude and desire to utilize blockchain technology. An important positive association between attitude and intention to use blockchain technology is supported by the correlation study. Therefore, H_1 is supported. The next finding from Spearman's correlation coefficient indicates that there is a moderate correlation between perceived behavioral control and intention to use blockchain technology, with a r value of 0.547. An important positive association between perceived behavioral control and intention to embrace blockchain technology is supported by the correlation study. Therefore, H_2 is supported. There is a very strong relationship between subjective norms and intention to use blockchain technology where the r is 0.827. The correlation analysis supports a significant positive relationship between subjective norms and intention to use blockchain technology. Therefore, H_3 is supported.

4.7 Summary of Hypothesis

Table 11: Summary of hypotheses

Hypothesis	Result
H_1: There is a relationship between attitude and intention to use blockchain technology among textile manufacturing sectors in Johor.	Supported
H_2: There is a relationship between perceived behavioral control and intention to use blockchain technology among textile manufacturing sectors in Johor.	Supported
H_3: There is a relationship between subjective norms and intention to use blockchain technology among textile manufacturing sectors in Johor.	Supported

5. Conclusion

In conclusion, this study demonstrates a strong relationship between the factors influencing intention to use blockchain technology and intention to use blockchain technology using the Theory of Planned Behavior (TPB). It demonstrates how the attitude towards a technology in this situation is the current, informed view. where perceptions about a thing are linked to attitudes towards that object. In addition, it has become abundantly evident from the research that perceptions of behavioral control have a big impact on people's intentions to adopt blockchain technology.

5.1 Limitation of Study

The completion of this research is subject to some difficulties and constraints. First of all, time consideration had limited the number of respondents. For this study, data were only gathered for roughly three months. Next, limited data collection which the target respondents should be managerial level employees from each manufacturing company. It is only limited organization willing to cooperate on answering the questionnaires especially the elder or senior employees. They are given some excuse about busy and they are not familiar in using google form. Besides that, limitation of geographical which research only focus on the southern region which is textile manufacturing sectors in Johor. In addition, limitation on getting the precise information where only quantitative strategy was applicable and used in this investigation to collect data. Questionnaires were chosen as a technique to help the researcher for collecting data.

5.2 Recommendations

(a) Recommendation for Organization

Based on the results in this research shows the intention to use blockchain technology still low. Researchers advise that the textile manufacturing industries look into various cutting-edge strategies to reduce costs, get rid of manual errors, speed up current operations, and boost the effectiveness of production processes with recently developing blockchain technologies. One of the cutting-edge technologies with the potential to completely change the manufacturing sector is blockchain.

(b) Recommendation for Future Researchers

Based on the results obtained in this research shows the intention to use blockchain technology still low due to this technology still newly. This study focuses on the relationship between the factors influencing intention to use blockchain technology among textile manufacturing sectors in Johor. Therefore, it is recommended to develop topics with the same objective to develop more relevant questions in the questionnaire. Besides that, for future research the researcher may focus on more wide geographical area other than southern region such as Kuala Lumpur area. For the research methodology, researcher may combine quantitative and qualitative method in the research design. In addition, for getting the precise information, interview method will more suitable than distribute survey form. That is because, the researcher can get more idea and asking any question their want to know during interview.

Acknowledgement

The authors would also like to thank the Technology Management Focus Group and Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia for its support.

References

Agi, M. A. N., & Jha, A. K. (2022). Blockchain technology in the supply chain: An integrated theoretical perspective of organizational adoption. International Journal of Production Economics, 247(June 2021), 108458.

Ahmad, N., & Zaidi, Z. M. (2020). Total Quality Management (TQM) Practices and Operational Performance in Manufacturing Company. Research In Management Of Technology And Business, 1(1), 13–27.

Akhtar, P., Azima, N., Ghafar, A., & Din, S. U. (2021). Barricades in the Adoption of Block-Chain Technology in Supply Chain Management: Challenges and Benefits. Transnational Marketing Journal, 9(1), 3–16.

Alaklabi, S., & Kang, K. (2018). Factors influencing behavioural intention to adopt blockchain technology. Proceedings of the 32nd International Business Information Management Association Conference, IBIMA 2018 - Vision 2020: Sustainable Economic Development and Application of Innovation Management from Regional Expansion to Global Growth, 5170–5174.

Al-ashmori, A., Basri, S. Bin, Dominic, P. D. D., Capretz, L. F., Muneer, A., Balogun, A. O., Gilal, A. R., & Ali, R. F. (2022). Classifications of Sustainable Factors in Blockchain Adoption: A Literature Review and Bibliometric Analysis.

Albayati, H., Kim, S. K., & Rho, J. J. (2020). Accepting financial transactions using blockchain technology and cryptocurrency: A customer perspective approach. Technology in Society, 62(July), 101320.

Alshamsi, M., & Al-emran, M. (2022). A Systematic Review on Blockchain Adoption. Applied Sciences. 12(4245) Retrieved from:

Asare M. (2015). Using The Theory Of Planned Behavior To Determine The Condom Use Behavior Among College Students. American journal of health studies, 30(1), 43–50.

Ding, L., Liu, M., Yang, Y., & Ma, W. (2022). Understanding Chinese consumers' purchase intention towards traceable seafood using an extended Theory of Planned Behavior model. Marine Policy, 137(January), 104973.

Dionysis, S., Chesney, T., & McAuley, D. (2022). Examining the influential factors of consumer purchase intentions for blockchain traceable coffee using the theory of planned behaviour. British Food Journal.

Ghode, D., Yadav, V., Jain, R., & Soni, G. (2020). Adoption of blockchain in supply chain: an analysis of influencing factors. Journal of Enterprise Information Management, 33(3), 437–456.

Guo, M., Tan, C. L., Wu, L., Peng, J., Ren, R., & Chiu, C. H. (2021). Determinants of intention to purchase bottled water based on business online strategy in china: The role of perceived risk in the theory of planned behavior. International Journal of Environmental Research and Public Health, 18(20).

Hader, M., Elmhamedi, A., & Abouabdellah, A. (2020). Blockchain technology in supply chain management and loyalty programs: Toward blockchain implementation in retail market. 2020 13th International Colloquium of Logistics and Supply Chain Management, LOGISTIQUA 2020, 2–4.

Jain, G., Singh, H., Chaturvedi, K. R., & Rakesh, S. (2020). Blockchain in logistics industry: in fizz customer trust or not. Journal of Enterprise Information Management, 33(3), 541–558.

Johng, H., Kim, D., Hill, T., & Chung, L. (2018). Using blockchain to enhance the trustworthiness of business processes: A goal-oriented approach. Proceedings - 2018 IEEE International Conference on Services Computing, SCC 2018 - Part of the 2018 IEEE World Congress on Services, Ic, 249–252.

Keil, J., 2019. Blockchain in Manufacturing: Challenges of Adoption and Use Cases. Infopulse.

Lee, C. C. (2019). An Empirical Study Of Behavioral Intention To Use Blockchain Technology. Over-The-Top (OTT) View project. August.

Lin, X., Chang, S. C., Chou, T. H., Chen, S. C., & Ruangkanjanases, A. (2021). Consumers' intention to adopt blockchain food traceability technology towards organic food products. International Journal of Environmental Research and Public Health, 18(3), 1–19.

Miraz, M. H., Hassan, M. G., & Mohd Sharif, K. I. (2020). Factors affecting implementation of blockchain in retail market in Malaysia. International Journal of Supply Chain Management, 9(1), 385–391.

MIRAZ, M. H., HASAN, M. T., & SUMI, F. R. (2020). the Innovation of Blockchain Transparency & Traceability in Logistic Food Chain. International Journal of Mechanical and Production Engineering Research and Development, 10(3), 9155–9170.

Park, K. O. (2020). A study on sustainable usage intention of blockchain in the big data era: Logistics and supply chain management companies. Sustainability (Switzerland), 12(24), 1–15.

Salah, K., Alfalasi, A., & Alfalasi, M. (2019). A Blockchain-based System for Online Consumer Reviews. INFOCOM 2019 - IEEE Conference on Computer Communications Workshops, INFOCOM WKSHPS 2019, 853–858.

Schaupp, L. C., Festa, M., Knotts, K. G., & Vitullo, E. A. (2022). Regulation as a pathway to individual adoption of cryptocurrency. Digital Policy, Regulation and Governance, 24(2), 199–219.

Spence, M., Stancu, V., Elliott, C. T., & Dean, M. (2018). Exploring consumer purchase intentions towards traceable minced beef and beef steak using the theory of planned behavior. Food Control, 91, 138–147.

Subramanian, N., Chaudhuri, A., & Kayıkcı, Y. (2020). Blockchain and Supply Chain Logistics. Blockchain and Supply Chain Logistics, January 2021.

Taherdoost, H. (2022). A Critical Review of Blockchain Acceptance Models—Blockchain Technology Adoption Frameworks and Applications. Computers, 11(2).

Teo, T., & Zhou, M. (2014). Explaining the intention to use technology among university students: A structural equation modeling approach. Journal of Computing in Higher Education, 26(2), 124–142.

Wong, L. W., Leong, L. Y., Hew, J. J., Tan, G. W. H., & Ooi, K. B. (2020). Time to seize the digital evolution: Adoption of blockchain in operations and supply chain management among Malaysian SMEs. International Journal of Information Management, 52(August 2019), 101997.

Yang, C. N., Chen, Y. C., Chen, S. Y., & Wu, S. Y. (2019). A Reliable E-commerce Business Model Using Blockchain Based Product Grading System. 2019 4th IEEE International Conference on Big Data Analytics, ICBDA 2019, i, 341–344.

Yeh, J.-Y., Liao, S.-C., Wang, Y.-T., & Chen, Y.-J. (2019). Understanding Consumer Purchase Intention in a Blockchain Technology for Food Traceability and Transparency context. 1–6.

Yoo, K., Bae, K., Park, E., & Yang, T. (2020). Understanding the diffusion and adoption of Bitcoin transaction services: The integrated approach. Telematics and Informatics, 53(October 2019).