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Factors Influencing Users Trust in Social Networking Services (SNS) of Facebook

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Abstract: ***A social network acts as main connector among people and makes the bonding stronger among people. The objective of this study is to identify the factors that influence users' trust in social networking services (SNS) of Facebook. Data were collected from 770 higher education students in Malaysia using semantic scaled questionnaire. This research applied the method of exploratory factor analysis to analyze the information collected. The result showed that four factors that influence users' trust in SNS of Facebook have determined, namely; effort expectancy, social influence; privacy concerns and perceived risks.***
Keyword: Social Networking Services, effort expectancy, social influence, perceived risks, privacy concerns

I. INTRODUCTION

Recently, social networking services (SNS) has become trending in our daily life. A social network plays the role as a connector among people. It acts as a bond between family, friends, colleagues and others [1]. For an example, [2] has identified some popular services such as Facebook, LinkedIn and others. In using these SNS, users are needed to create profiles that comprise of individual details such as photos, contact information and personal interests. Although users have the option to restrict these details to confirmed contacts, some of them may choose to public their individual information to retain relationship, looking for new friends with similar field of interest and obtaining knowledge through SNS [3]. Some users may share their activities through the network and their friends would be notified once a new post is updated. A notification would appear when there is a new relation being created. An individual's network can be expanded by exchanging contacts and groups with existing friends. This indicates that every relation created has the potential to generate new node since new users signify the increase of the network. Besides, the usage of SNS such as Twitter, Instagram, Zoom is experiencing significant increment especially during the latest crisis pandemic [4]. This implies that there is more interaction among people through SNS. Thus, in this study, we intend to focus on the SNS of Facebook. This is because Facebook is the biggest social media in 2020 [5].

A. Statement of the Problem

There is several applicability of social media such as connecting with people that we know or intend to know. We can also employ it to catch up the industry news and imperative source of data. In addition, the social media could also work as a platform to generate income for business, recruiting mechanism, customer support channel and promoting agent. Yet trust and privacy are another important items that need to be considered when we're posting information that hope will resonate with the audience, or looking for information that we can rely on.

According to [6], prior researches showed that tensions exist among users in terms of confidential information revelation. Methods of exchanging personal information via SNS pose questions about privacy problems and risks. To be sure, researchers have concentrated on the features of user behavior trust to know better the causes of these forces. For example, technology was viewed as a Facebook's trust and related individual trust that moderated the privacy concerns of the user [7], [8]. As a result, [9] added that as companies use Facebook as a platform to promote their business growth, they should focus on the trust issues. The success of SNS has resulted in its own share of frauds and misuse.

Fraud is an unethical activity that has purposes to harm other parties [10]. Frauds in the SNS refer to the activities that result in abuse, financial loss, loss of credibility of a person or an entity, loss of confidence in the system or an individual and others. The apparent importance of this knowledge makes SNS to be judge as one of the most sought-after online tools by hackers. The sites of SNS have created major strides to discourage identity theft and preserve the privacy of consumers.

For instance, Facebook tracks the consistent devices and IP addresses applied in each account. When an unusual device or IP address tried to sign in to an account, the users may be prompted to respond to any of the confidential questions [11] or enter the authentication code that sent to the mobile device of account owner [12] to verify and ensure that the account owner logs into the correct account.

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B. Objective of the Study

Given all these problems, it is important to find the factors that influence users' trust in social networking services (SNS) especially for Facebook. Therefore, the objective of this study is to identify the factors that influence users' trust in SNS of Facebook using the method of Exploratory Factor Analysis (EFA).

II. LITERATURE REVIEW

This part of paper consists of empirical literature for factors influencing users' trust in social networking services and exploratory factor analysis method.

A. Effort Expectancy (EE)

Effort expectancy indicates the awareness in terms of the simplicity and intricacy to use a product [13]. The easiness to play on Facebook is an important factor to develop enjoyers' trust and the intention in the continuation to use [8]. In this study, it refers to the users' opinion in the ease or complication to use the Social Networking Service (SNS) of Facebook.

Users' trustworthiness in Facebook is built by the social interaction such as identifying the profile, sustaining connection, social browsing and searching. Thus, Facebook has to provide the enjoyers effective exploration, continuous connection and delightful experience [3].

B. Social Influence (SI)

Research done by [14] indicates that the social influence is the surrounding determinants that influence the intention to react and express the users' conception.

This expressed that social influence is about the same to subjective norms in numerous approaches of technology recognition. It was added that social influence comprised of subjective norms, social determinants and images that affect intention to perform. In this study, the subjective norm illustrates that family members, friends or colleagues affect the Facebook users' trust.

The enjoyers' trust in SNS were stimulated through the viewpoints, advices and judgments by social communities [3]. Therefore, social influence refers to how deep the users' trust in the viewpoints of their important friends want them to continue believe and use the SNS of Facebook.

C. Privacy Concerns (PC)

According to [15], privacy concerns refers to the consumers thought about the protection and collection of the consumer personal information.

This includes the unlawful access, errors and the alertness of sensitive or personal data [16]. The personal privacy exists pervasively around us such as the location privacy, personal record of communications, private information and physical privacy [17].

In other words, [15] stated that privacy concerns expressed the concerns of enjoyers about the revealing of their personal information.

Research done by [18] added that previous studies showed that SNS users with privacy concerns would affect their trust and acceptance to continue use of Facebook.

D. Perceived Risks

According to [19], individual with thought of perceived risks would alert with the adverse effect in conducting a reaction or behavior.

There were numerous aspects of perceived risks such as social, financial, time, privacy and psychological which may affect the utilization and application in any technology [20], [21]. A previous research expressed that perceived risk have higher adverse effect in the use of e-commerce compared to the dimension of time and social [20].

This includes the production risk, service risk and transaction risk which caused the time loss, functional loss, financial loss and opportunity loss [22].

In this study, perceived risks here refer to the risk of revelation in terms of personal information and the unlawful sharing and misuse of such information to carry out social activities [3].

E. Exploratory Factor Analysis

Factor analysis is conducted with the aim to reduce the measurable and observable variables to fewer latent variables that share a common variance. This also known as dimension reduction [23]. Exploratory factor analysis is conducted when a researcher intends to figure out variables that are group together [24].

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III. METHODOLOGY

The method used in this study is explained under this section. This includes the research design and process, data collection, questionnaire design and data analysis.

A. Research Design and Process

In this research, the researcher applied the quantitative method which is experimental research design. This study aimed to identify the factors influencing user's trust in SNS of Facebook using Exploratory Factor Analysis (EFA). Thus, data were collected by using questionnaires and then analyzed using SPSS. The process of this study can be seen in Fig. 1. This flowchart tells how this study began till end. For the initial phase, the researcher needs to find out the problem of research and implement literature review (LR). Then, the next step is to construct the questionnaires based on the factors mentioned in Section II. The questionnaires were adopted from the study of [3]. Thereafter, data were collected to conduct analysis in the following step. Finally, all the analysis was performed and reported.

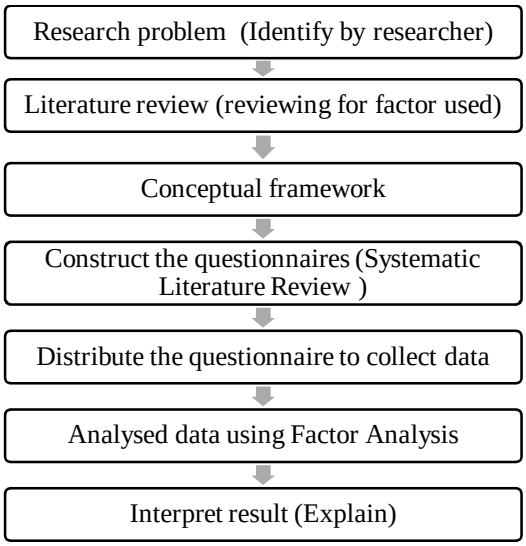

Fig. 1 Flowchart of Research Process

B. Data Collection

In order to collect the data from respondents due to Covid-19 situation, the online survey platform (i.e. Google Form) was used. The link of Google Form was shared through the application of WhatsApp and Facebook. A timespan of five weeks was spent in collecting data from the universities' students in Malaysia. The targeted respondents are students from public and private universities in Malaysia. The total responses obtained during this period are 770.

C. Questionnaire Design

Based on the literature review (LR), the questionnaires that were developed consist of three section and have thirty-three items. In section A, the demographic questions were asked about the respondent personal information such as race, age, education and gender. For section B, the questionnaires were designed to measure four factors including Effort Expectancy (EE) (5-items), Social Influence (SI) (5-items), Perceived Risk (PR) (4-items), Privacy Concerns (PR) (4-items) and two more variables such as intention to use (INT) (behavioral – 4-items) and trust (TR) (5-items) based on the SNS apps of Facebook. The literature review was used in this research because the researcher wanted to make sure the content was valid and modify the items to fit the SNS context in order to make sure the items were related to the objective of this research. This research has adopted the quantitative measurement scale such as semantic scale (label). The seven-digit semantic scale were used in this research and the range were from "Strongly-Disagree" to "Strongly-Agree". The validity test was used in order to determine which items in the questionnaire were among the best to explain each of the constructs in this research.

D. Data Analysis

For the analysis, the researcher uses Factor Analysis to identify the factors influencing users' trust in SNS of Facebook. In this study, 18 items about factors that influencing the users' trust in social networking services for Facebook were analyzed. To run this analysis, the Statistical Package for Social Science-(SPSS) was used for 770 respondents.

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IV. RESULT AND FINDINGS

This section includes two sub-sections which are reliability analysis and exploratory factor analysis.

A. Reliability Analysis

Based on the reliability test for overall data, the Cronbach's Alpha value obtained in Table 1 was 0.841 indicated that the data was good for the research [25].

TABLE 1
Reliability Test For Overall Data

Cronbach's-Alpha	Cronbach's-Alpha Based on Standardized Items	No of Items
.841	.844	27

The values of Kaiser-Meyer-Olkin Measure (KMO) of Sampling Adequacy is greater than 0.5 which is acceptable values to proceed with Factor Analysis [26]. Based on Table 2, KMO of sampling adequacy is 0.732. Bartlett's test of sphericity tests the null hypothesis where the correlation matrix is an identifying matrix. Bartlett's test is highly significant in this study. From the value of KMO and Bartlett's test, we can conclude that factor analysis is appropriate for this data.

TABLE 2
KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.732
Bartlett's Test of Sphericity Approx. Chi-Square	5023.272
df	153
Sig.	.000

To run the factor analysis, the dependent variable (DV) and independent variable in this study was separated. This is because it is inappropriate to support the relationship between this both variable. Thus, this study intends to set four factors and it was separated with DV. Table 3 shows the list of all variables for the factors such as effort expectancy, social influence, privacy concerns and perceived risks.

TABLE 3
LIST OF ALL VARIABLES

Code	Items
EE1	Understanding how to use Facebook would be simple for me.
EE2	My interaction with Facebook would have been understandable and clear.
EE3	It would be easy for me to use Facebook to communicate with friends.
EE4	Becoming familiar with using Facebook should not be complicated for me.
EE5	Use of Facebook is appropriate for me and suits well with my life.
SI6	I'm using Facebook because my peers have already accepted it.
SI7	Friends that are valuable to me assume that to communicate together, I should use Facebook.
SI8	Friends who affect my actions believe I should use Facebook to grasp their lives.
SI9	Overall, my peers and families are very encouraging of the use of Facebook in my life.
SI10	I consider like using Facebook is a status mark
PC11	I'm worried that services I use can share my personal information with others.
PC12	I'm afraid that a person might find private information about me on the Internet.
PC13	I am worried with the transfer of sensitive information to the service provider as it could be used in a manner that I couldn't expect.
PC14	I am worried with posting material to the Internet regardless of what someone could do to it.
PR15	Using Facebook may involve some unexpected problems.
PR16	I feel like I could be targeted by other people on Facebook.
PR17	Based on my past experience, my account on Facebook (FB) cannot be protected by the security mechanisms provided by FB.
PR18	I am mindful of the dangers of using Facebook.

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B. Exploratory Factor Analysis

Factor analysis using the principal component with varimax rotation attempts to discover the unobserved and unexplained factors that influencing co-variation among multiple observations [27]. The factor analysis has been used in this study to reduce 18 items measuring the factors of influencing users' trust in SNS on Facebook. It is used in data reduction to identifying factors that has a small number that explain the most of observed variance in a large number of real variables.

To identify factor dimensions, principal component and varimax rotation procedures have been used in this study. Principal component factors with four factors to extract has been rotated by the varimax analysis. All items have communalities of above 0.40, therefore, they are related to the other items [28]. Variables with factor loadings greater or equal to than 0.457 has been chosen in the factor groupings to which they belong. A total of 18 items from factor analysis results in group of four factors and has explained 56.65% of the variance. The results of total variance explained are presented in Table 4.

TABLE 4
Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.147	23.039	23.039	4.147	23.039	23.039	2.821	15.670	15.670
2	2.530	14.054	37.093	2.530	14.054	37.093	2.774	15.411	31.080
3	1.996	11.087	48.180	1.996	11.087	48.180	2.553	14.184	45.265
4	1.524	8.466	56.646	1.524	8.466	56.646	2.049	11.381	56.646
5	1.048	5.824	62.470						

Table 4 lists Eigen-values for each factor that show the proportion of variance that accounted for each factor [29]. All the components with Eigenvalues greater than 1 are extracted, which leaves us with five factors. But only four factors to extract in this study. The scree test consists of factors and eigenvalues [30]. The scree plot mainly shows the Eigenvalues for each factor and by plotting scree plot, we can see more clearly in detail about the factors as shown in Fig. 2. The Fig. 2 shown the numbers of factor to be retained is the data point that are above the point of inflexion before the vertical line is starting.

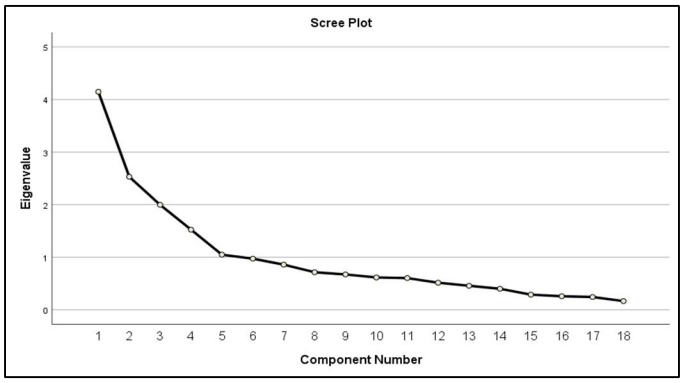

Fig. 2 Scree Plot

Table 5 shows the factor loading values for each item in the named factor and it is selected based on the higher values of the factor loading. [31] explained that the factor loadings 0.3 or 0.4 are accepted in order to access significance and the factor loadings below 0.4 should be eliminated. In this study, the criterion value of factor loadings has been selected as 0.4. The four factors for influencing users' trust in Social Networking Services-(SNS) on Facebook, that obtained through factor analysis are named as, Effect Expectancy-(EE), Social Influence-(SI), Privacy Concerns-(PC) and Perceived Risk-(PR). These statistical results support the questionnaires' validity and reliability and signifying goodness of data for this study.

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In this study, we intended to identify the factors that influence users' trust in social networking services (SNS) for Facebook. A total of 18 items were accounted for analysis. These items were used to develop a semantic scaled questionnaire and distributed to higher education students in Malaysia. A total of 770 students were involved in this survey. The result showed that all the items were retain and four constructs were identified. These four constructs are namely effort expectancy (EE), social influence (SI), privacy concerns (PC) and perceived risks (PR). This has supported by a previous study outlined that the four factors that influence users' trust in SNS are EE, SI, PC and PR [3].

TABLE 5
Rotated Component Matrix

Construct	Component	1	2	3	4
Effect Expectancy	EE1	.869			
	EE2	.750			
	EE3	.537			
	EE4	.541			
	EE5	.797			
Social Influence	SI6		.457		
	SI7		.890		
	SI8		.834		
	SI9		.760		
	SI10		.644		
Privacy Concerns	PC11			.687	
	PC12			.682	
	PC13			.759	
	PC14			.873	
Perceived Risk	PR15				.645
	PR16				.812
	PR17				.725
	PR18				.529
5 iterations.					

V. CONCLUSION

As a conclusion, the objective of this research has achieved. The findings are supported by the reliability test which showed that the data is good for the study. The KMO of sampling adequacy illustrates that sampling for this research is adequate. Thus, four factors that influence users' trust in social networking services (SNS) of Facebook are effort expectancy-(EE), social influence-(SI), privacy concerns-(PC) and perceived risks-(PR). However, these four factors are only applicable to students who involved in this research as the convenience sampling method was applied.

Nevertheless, there is a limitation existed in this research. The limitations in this study was the result of this study could not represent the viewpoint of all students from Malaysia. This is because the sampling method adopted was convenience sampling as there were no specific list of students from public and private universities to involve in this survey.

VI. ACKNOWLEDGEMENT

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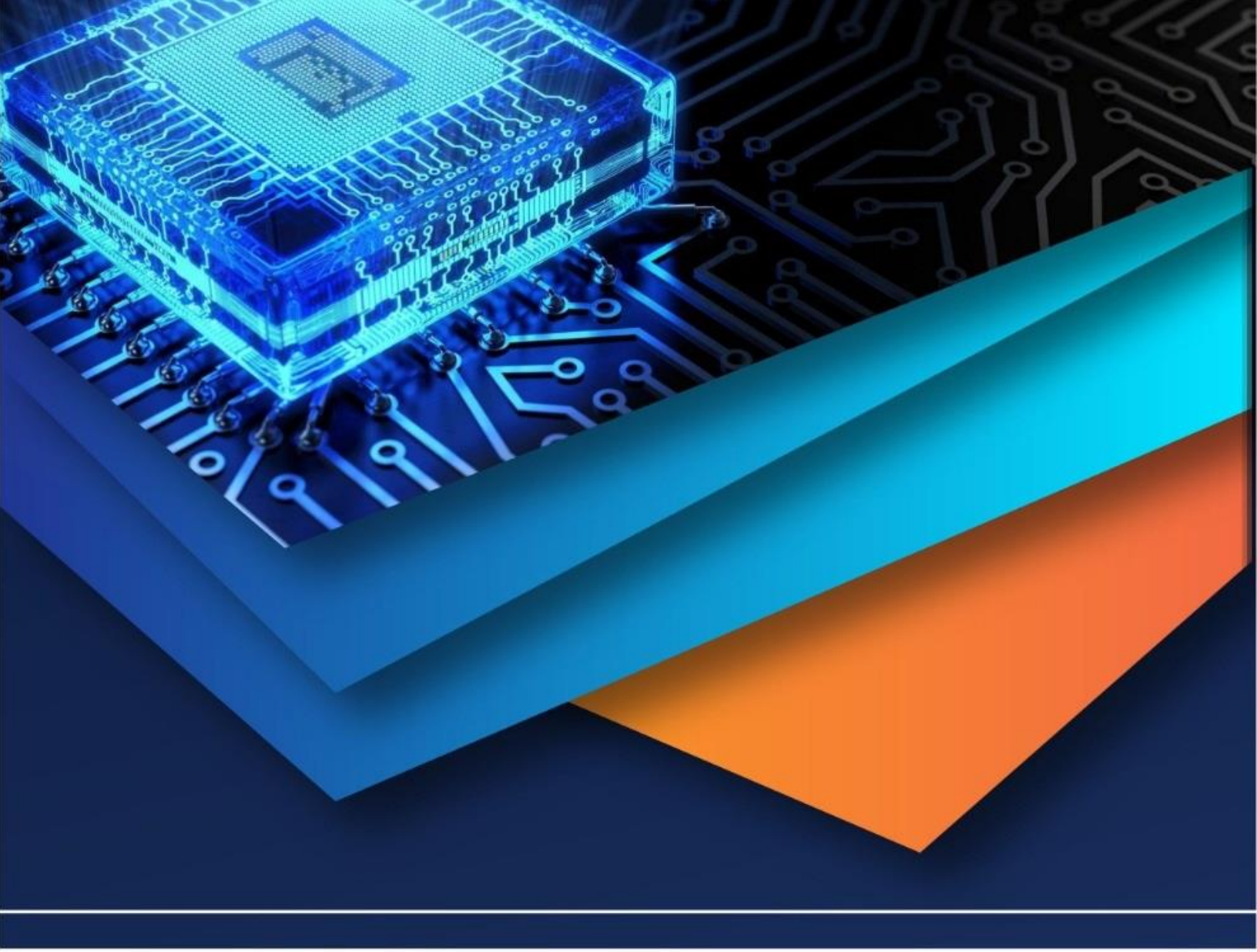

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