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User Satisfaction Affecting Factors in the Online Trading Systems

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Abstract— The purpose of this paper is to show how to find a new factor model that affects the satisfaction of online trading system users which is done by analyzing the factors in finding the factors that most influence the online user satisfaction system trading. of the 8 variables that have been determined namely System Quality, Service Quality, Information Quality, Intended use, User Satisfaction, Interface Quality, Performance Quality, and Function Quality which are the basic concepts of the underlying theory. The technique for processing data begins with building a research instrument by constructing and following up on existing concepts and breaking them down into factors that exist in the theory. Through the distribution of questionnaires to obtain primary data, then the data is processed using factor analysis and a number of new factors are obtained, namely application system features, information and knowledge, and comfortable to use that affect the satisfaction of users of online trading systems. It is hoped that this model can help organizational management to improve services better and find out what is desired from users of online trading systems.

Keywords : factor analysis, online trading system, application systems feature, user satisfaction.

I. INTRODUCTION

Many investors change investment behavior after learning the generic patterns found in most parts of the world with specific patterns. The results show that investment management institutions learn to adjust their investment behavior to take into account the unique features of the global market. and ternya Better than following a diversified portfolio approach, they follow an investment strategy that focuses on the number of features the company determines [1]. Figure 1. provides information about the A-share portfolio from QFII. The number of QFII with A-stock investments rose during our sampling period from 3 to 82. The percentage of global companies confirmed by QFII investment also indirectly changed from <2% in 2003 to more than 26% in 2007. After that, the percentage has decreased. Some of these decreases reflect a steady increase in the number of companies registered globally. Picture. 1 also shows that QFII has become more focused in their equity investment over time, despite an increase in investment opportunities [2].

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Starting in 2011, the average number of different shares in the QFII portfolio remained stable at around seven. QFII portfolio observations on a quarterly basis with the largest number of A-shares consisting of 57 different companies. Given that the total number of listed companies exceeded 2000 during this period, it is clear that QFII was very selective in investing investment decisions.

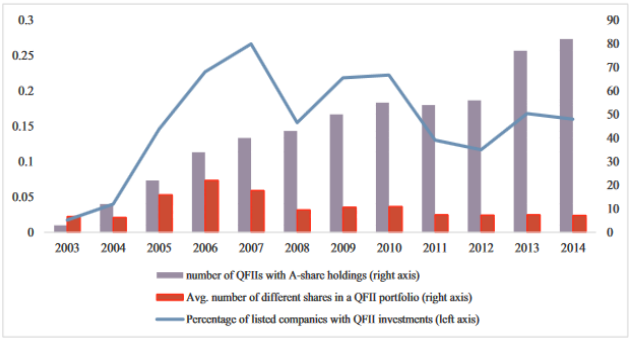

Figure 1. QFII holdings relative to the A-share market

So related to the graph above shows the number of complaints that occur related to the use of systems that exceed expectations. With the online trading facility allows investors to invest in stocks so as to increase the number of investors in the capital market. Therefore it needs to be analyzed against the factors that affect the satisfaction of investors in using online trading system that facilitates them in the sale and purchase of shares so that no more complaints against the above graph [3].

To perform the analysis of these factors one of the methods used by using factor analysis. In this variable there are several dimensions that are used are System Quality Factor, Service Quality Factor, Information Quality Factor, Intent To Use Factor, User Satisfication Factor, Quality Interface Factor, Performance Quality Factor, Function Quality Factor. This framework can be used to look for factors that affect online users' online system satisfaction by using factor analysis [4]. So that after measured it can be known to influence investor satisfaction in using the system, which aspects should be improved and innovated associated with the above graph so that to achieve the success of existing information systems, especially online trading system discussed in this paper.

In this paper will be discussed the analysis of factors that affect the satisfaction of the use of online trading system at Corporation in Jakarta, analyze the relationship between the variables measurement of the online trading information system implemented and whether it is in accordance with user needs so as to increase the number of user satisfaction associated with the graph above.

Based on the above background it can be formulated as follows :

1. How successful is the current use of online trading information system?
2. What factors affect the satisfaction of online trading system usage?
3. What things need to be innovated in online trading system?
4. How to model online trading system factors to user satisfaction?
5. How is the evaluation of online user satisfaction system trading?

II. METHODOLOGY

Factor analysis aims to define and analyze the relationship or correlation between a number of variables by defining the similarity of variables that are often referred to as factors. Through factor analysis, the researcher will identify the dimensions of a structure and determine the extent to which the variables can be explained by each dimension. After an explanation of the dimensions and variables is obtained, factor analysis in the form of data summarization and data reduction can be done [21].

Through factor analysis, the information contained in the original variable can be summarized so that it becomes a new set of dimensions through structural determination with data summarization and data reduction. Factor analysis is used to identify the structure of relationships between variables by considering the correlation that exists between each variable [21].

According to [22] there are steps that need to be taken to get a number of common factors. The first step is to calculate the correlation matrix in factor analysis as a condition for the adequacy of the data so that the researcher knows that the data are sufficient for the factor analysis. Measuring instruments that can be used to measure adequacy are as follows:

1. Kaiser-Meyer Olkin (KMO)
   This method measures the adequacy of sampling as a whole and measures the adequacy of sampling for each indicator. This method measures the homogeneity of the indicator.

Table 2.2 Size of KMO

KMO	Recommendation
≥ 0.90	Very good
0.80-0.89	Useful
0.70-0.79	Ordinary
0.60-0.69	Enough
0.50-0.59	Poor
≤ 0.50	Not accepted

Source: [22].

In general, the higher the KMO value, the better. From table 2.2 it is recommended to be at least above 0.80. However, KMO values above 0.5 can still be used as a basis for factor analysis.

2. Barlett's test of sphericity.

This method is used as a statistical test to measure the overall significance of all correlations in the correlation matrix. In this case we test the null hypothesis that the data observed is a sample of a multivariate normal population distribution in which all correlation coefficients are of zero magnitude.

3. Measure of sampling adequacy

According to [21] measure of sampling adequacy (MSA) is used as a test tool to see the inter correlation between each variable and whether or not factor analysis can be done. If the MSA value < 0.50 then factor analysis cannot be done.

After all the data sufficiency requirements have been fulfilled, the next step is to extract the factors where factor extraction is a method for reducing data from various indicators so that it can produce fewer factors that can be explained by the correlation between the observed indicators. The method that can be used is the principal component analysis method which is a simple method for factor extraction. The main analytical method forms a linear combination of the observed indicators. The first main component is a combination that is able to explain the largest number of variants of the existing sambal. The second component is a component that has no relationship with the first component and is able to explain the number of the second largest variants. While the other components explain the smaller portion of the total sample variant which also has no relationship with other components [22].

The next step is to look for factors that can optimize the correlation between independent indicators using factor rotation. Factor rotation is used when the results of factor extraction still cannot identify a clear main component. To facilitate the interpretation of factors, factor rotation is used so as to obtain a simple factor structure. One rotation method that can be used is varimax rotation. The varimax method is an orthogonal rotation method to minimize the number of indicators that have a factor loading on each factor [22].

Next According to [22] Regression is a study to find out how the influence of one or more independent variables on the dependent variable which aims to estimate the mean value of the dependent variable based on the value of the independent variable. Therefore, regression has the main objective to estimate the value of the dependent variable on one or more independent variables. While multiple regression is a regression method with more than one independent variable. The multiple regression equation model can be written as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + e$$

From the process of processing questionnaire data using factor analysis methods, an eigenvalue greater than 1 (one) is produced in grouping a number of independent variables and forming 3 (three) new factors out of the total components ranging from 1 to 25 representing the number of independent variables. The cumulative result of extracting the overall variant component is 8.726%

First Factor (X_1) consists of US3, SQ3, IQ3, PQ2, IU1, and 1Q2 which can be interpreted as Feature System with Six variables

1. US3 - The use of online trading system so far is quite satisfied [5].
2. SQ3 - Views online trading system is very user friendly easy to understand by the user [6].

3. IQ3 - Information generated by online trading system is very real time [7].
4. PQ2 - System has a very high performance [8].
5. IU1 - Online trading system improves performance in stock transactions [9].
6. IQ2 - Information generated by online trading system is very complete [10].

Second Factor (X_2) consists of SQ4, IF1, IU2, IQ4, and PQ3 which can be interpreted as Information & Knowledge with Five variables

1. SQ4 - Online trading system is easily accessible and very secure in privacy [11].
2. IF1 - Output issued by the system as desired [12].
3. IU2 - Using the system every day [13].
4. IQ4 - Information generated by the online trading system is well understood [14].
5. PQ3 - Security and Quality owned by the system [15].

Third Factor (X_3) consists of SR1, SQ1, IU3, SQ5, and US1 which can be interpreted as Comfortable To Use with Five variables

1. SR1 – Education about used online trading system must be do [16].
2. SQ1 - How fast the online trading system works [17].
3. IU3 - Online trading system makes it easy to make transactions [18].
4. SQ5 - Online trading system has complete features [19].
5. US1 - With technology owned online trading system makes satisfied in the transaction [20].

to measure the level of the problem caused by the KMO variable value which shows the correlation of each variable dl. The results of data processing using factor analysis methods are then obtained by KMO from the Bartlett test as a measure of the feasibility of the process and factor analysis mechanism, and the KMO value is 0.707. If this value is compared with the value of the table, then the process is of moderate value and feasible. Significant value on the results of data processing is 0 where a value below 0.05 indicates that the data collected can be processed using factor analysis.

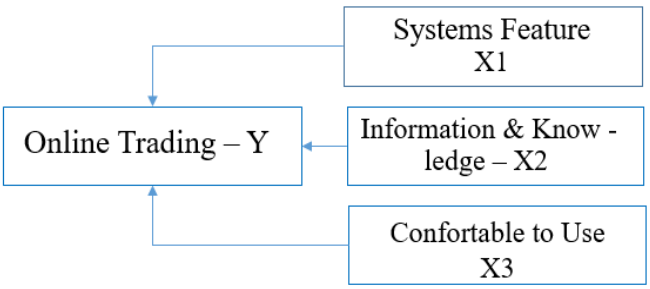

Figure 2. New Factors Affecting User Satisfication on Online Trading System.

The results of the study found three new factors that affect online user satisfaction system trading, while the factors are System Feature, Information & Knowledge, and Comfortable To Use.

$$Y(x) = 7.62 + 0.38\ X_1 - 0.27\ X_2 - 0.19\ X_3$$

With the Range of Factor Scores are:

$$-1.86 \leq X_1 \leq 2.00$$
$$-2.26 \leq X_2 \leq 1.39$$
$$-2.77 \leq X_3 \leq 1.73$$

So the result of these three factors need to be seen the significance obtained from the statistical test and statistical test results can be as follows:

1. Siq. $X_1 = 0.510$
2. Sig. $X_2 = 0.636$
3. Sig. $X_3 = 0.380$

Based on statistical test results indicate that the error rate on both new factors has been found below 10%. So the final result of the factors that need to be considered to improve user satisfaction on the equation below. From the questionnaire results obtained value that increases online user satisfaction system trading today is 7.62 so that the value is in a good position.

The result of factor score and formula that have been obtained so can know the satisfaction of user of online trading system by looking at the regression factor, so that obtained minimum and maximum value as shown in table 2

In the results of research can be obtained that according to their respondents less know more deeply against online trading system and features owned. To overcome this can be done by providing socialization and education on the use of online trading system whose purpose is to provide information and knowledge to users so that they are more understanding and easy to use online trading system. It should be added that education conducted by IT staff / Marketing System is very beneficial for users who are new to online trading system this is seen from the demographic data of most respondents new to the online trading system is under <1 month, this makes the user must be educated and given training for users of this online trading system.

Table 2. Simulation Model using Regression Equation

Condition	*Y*	*C*	X_1	X_2	X_3
Current	7.62	7.62	0	0	0
Un-Expected	6.20	7.62	-1.86	1.39	1.73
Expected	**9.52**	7.62	2.00	-2.26	-2.77

With the Range of Factor Scores are:

$$-1.86 \leq X_1 \leq 2.00$$
$$-2.26 \leq X_2 \leq 1.39$$
$$-2.77 \leq X_3 \leq 1.73$$

Things to note also that the look of the system should be very made very user friendly once the goal for new users can understand more easily understand. Actually there are many ways that can be done to provide education to the user especially in the digital era of technology utilization is very easy at all. Can by making a video tutorial on the use of online trading system and Can also conduct seminars either face to face or virtual. Judging from the data of respondents that the average age of 20-40 years that most dominate this can be a reference that education and training needs to be done. By increasing the new factors that have been found this is expected to help improve user satisfaction online trading system at the Corporation.

In the end, this research resulted in 3 (Three) New Factors that provide input and suggestions for the management of organization to pay more attention to the resulting factors that are useful to improve online user satisfaction trading system.

By increasing the new factors generated this expected online trading system users are more active in using the system at any time.

III. CONCLUSION

From the results of the process with the factor analysis method that has been carried out in this study, there is a grouping of 3 (three) new factors that influence user satisfaction of the online trading system in the company. The three factors are System Features, Information & Knowledge, and Comfortable in Use.

The most influential indicators on online user satisfaction of online trading system are

1. Information generated by the online trading system is easy to understand
2. Output Output issued by the system as desired
3. Security and privacy of the system is guaranteed

Furthermore, the user satisfaction model of the online trading system can be described in the form of mathematic equations:

$$Y(x) = 7.62 + 0.38\ X_1 - 0.27\ X_2 - 0.19\ X_3$$

With the Range of Factor Scores are:

$$-1.86 \leq X_1 \leq 2.00$$
$$-2.26 \leq X_2 \leq 1.39$$
$$-2.77 \leq X_3 \leq 1.73$$

From the results of the model can be concluded that the value of online trading system user satisfaction at the company is affected by the values of System Feature, Information & Knowledge, and Comfortable To Use. If the 3 new factors give a positive value then the value of online trading system user satisfaction will be increased but otherwise if the 3 new factors are negative then the value of online trading system user satisfaction will decrease.

Referring to the questionnaire result, it is found that the value that influences the online trading system's current user satisfaction is 7,62 from the value of 10 which is said to be good. However, the value can be increased if it increases the value of 3 (three) new factors namely System Feature (0.38), Information & Knowledge (-0.27), and Comfortable To Use (-0.19).

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