Analyze the Effect of Usability, Information Quality and Interaction Quality on User Satisfaction Website "traveloka.com" using the Webqual 4.0 Method

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Abstract:- Judging from the current development of the internet where almost every community activity has been supported by internet technology, which can connect each individual to the global network. Therefore, business people use this internet technology to run their business, making it easier for business people to market and develop their businesses the increasingly high use of the internet, it opens up opportunities for entrepreneurs to develop their business in the virtual world or what is commonly called e-commerce. In this study, the analysis of the influence of website quality aims to find out whether usability, information quality and interaction quality affect user satisfaction partially and simultaneously. In this study, the object of research is PT Trinusa Travelindo or better known as traveloka. The data used is primary data collected from respondents using a questionnaire instrument created using the webqual method. Webqual is one of the methods or techniques for measuring website quality based on the perception of the end user. Website quality can be assessed by three dimensions of WebQual 4.0 which consists of user quality, information quality and interaction quality From the results of this study, it can be concluded that usability, information quality and interaction quality partially affect the user satisfaction of the Traveloka website. And simultaneously (together) usability, information quality and interaction quality affect the user satisfaction of the Traveloka website.

Keywords:- E-commerce; Webqual, Usability; User satisfaction; Quality of Information; Quality of Interaction.

I. INTRODUCTION

E-commerce is the use of communication networks and computers to carry out business processes to buy and sell products. The high interest of people to shop via the internet is due to technological advances so *e-commerce*sites have increased. *E-commerce* is in great demand by the public because it is not limited by time and space, so it can provide convenience in shopping and transactions. As well as security in transactions needs to be considered so that consumers feel satisfied with the services provided by producers (McLeod, 2008).

A website is said to be good if it has information that can meet user needs (Roz, 2020). Website quality (*WebQual)* is one of the methods or techniques for measuring *website*quality based on user perception (Sanjaya, 2012).

User perception of a good information system is a system where users are satisfied with the quality of *the website*. According to (Barnes and Vidgen, 2003) The quality of a *website* can be judged by the three dimensions of *WebQual* 4.0 which consists of user quality which includes ease of operation, easy navigation, having an attractive appearance, appropriate design and creating a positive experience for users. Then the quality of information (*information quality*) includes information that is accurate, reliable, actual, relevant, easy to understand, precise in detail, and appropriate design.

The most visited travel agent in Indonesia is traveloka.com. Traveloka.com is an internet company engaged in providing online flight ticket booking services to meet the need for information about ticket prices as well as facilities for purchasing tickets online from various airlines. Traveloka was initiated in March 2012.

The following comparison of travel agent websites in Indonesia is shown in figure 1:

Graphic 1: Comparation Website Grapic Travel Agent

II. MATERIALS AND METODHS

*E-Commerc*e is a *website* that provides online buying and selling transactions or *direct selling* that utilizes Internet facilities where there are *websites* that can provide "*get and deliver*" services. (Nugroho,2016:5). To understand more about *e-Commerce*, there are several characteristics, including:
- Transcise indefinitely.
- Anonymous transactions
- Digital and non-digital products. By using *e-commerce* , the products offered can be more diverse.
- Intangible goods products. Such as data, *software* or ideas can be sold online.

E-commerce can be classified according to several aspects. The following is the classification of *e-commerce* based on the nature of its transactions (Turban, 2012) namely:
- *Business-to-business (B2B)*
- *Business-to-Consumer (B2C).*
- *Consumer-to-business (C2B).*
- *Consumer-to-consumer (C2C).*

The following are the principles of e-commerce are as follows:
- Security,
- Confidentiality,
- Integrity,
- Authentication,
- Authorization,
- Assurance,

In terminology, the definition of a *website*is a collection of pages of sites/links, which are usually summarized in a domain or subdomain, which is located within the *World Wide Web* (WWW) on the internet. *Websites* can also be chosen as a way to display a thing, self, or company on the Internet.

Website *elements in e-commerce* are very important in building a good website. The following are some of the elements on the website, namely as follows:
- *Domain* Name
- Web Hosting
- *Program* Language (*Script Program*)
- *Website Design*
- *Website Publications*

The functions of the *website* are as follows:
- Communication Function
- Information Function
- Entertainment Function

According to Hidayat (2010), there are several types of websites reviewed based on the nature, purpose, programming language, and domain type of a *website*.

W*ebsite* in terms of its nature, is as follows :
- Dynamic website
- Static websites

The website is reviewed from the programming language used, consisting of:
- Server Side Website
- Client Side Website

The main principle of a design is the innate qualities or characterisitics in various art forms, such as balance, contrast, consistency, empty space, and so on. Using these principles the *website* is expected to have a good and effective design so that it is easy to read and quick to understand
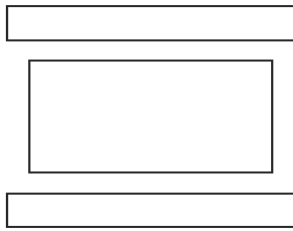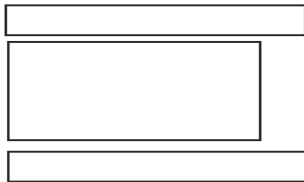
Fig. 1: Symmetrical (formal)
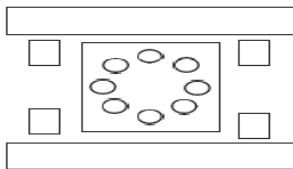

Fig. 2: Asymmetric (Informal)

Fig. 3: *Radial equilibrium*

Color is how light can be felt. Light may reflect, transmit or emit. *The color range* can be produced 19 using certain colors, such as RGB or CMYK which is a *color space*. Other color models are HSL, HSB, LAB and XYZ. A color model determines the relationship between values, while *color space* is defined as the absoluteness of the meaning of those values as colors.

Typography is the art of letters, including the selection of letters, the determination of the exact size, where the text can be broken, the spacing of the distance, and how the text can be easily read. Letters on the *web* can be created as part of a graphic (*image*), or HTML, or with *a style sheet.*

Layout is the process of structuring and arranging text or graphics on a page, layout includes composing, division of places in a page, spacing of spaces, grouping of text and graphics, and emphasis on a particular part.

A good website is a website whose main focus is the content of the website, where it is the main factor that causes its users to revisit a *website* (Rosen, 2004).

Webqual is a method to measure the quality of a *website* based on the perception of its end user (Barnes & Vidgen, 2002). *Webqual* was first developed by Stuart J. Barnes and Richard T. Vidgen. This method is a development of SERVQUAL which was previously widely used to measure the quality of services or *service quality*. The research instrument on Webqual was developed based on the concept of *Quality Function Development* (QFD), which is a process based on the "*voice of customer*" in the development and implementation process.

Webqual assesses a *website* based on the perception of its users. Webqual has undergone several iterations, namely (Barnes & Vidgen, 2002):

➢ Webqual 1.0
Webqual 1.0 is the first version of *Webqual* developed on the UK *Business School* domain following the standards of QFD (Barnes & Vidgen, 2000). The results of the development of Webqual 1.0 resulted in five dimensions, namely *ease of use, experience, information, communication,* and *integration* and 24 questions.

➢ Webqual 2.0
In Webqual 2.0, improvements were made by adding *interaction quality* aspects adapted from SERVQUAL. This instrument is tried to be applied to the internet *bookshop domain.*

➢ Webqual 3.0
When Webqual 1.0 focuses on the quality of information and *Webqual 2.0*focuses on the quality of interaction, the two instruments discuss the quality of a website, where the website is viewed from the point of view of the *website* as an *artifact software.*

Quality dimension	Indicative content
Web information quality	Accurate, timely, reliable information
Web interaction quality	Good reputation; safe to transact; personal data security; will deliver as promised
Site design quality	Easy to navigate; attractive appearance; projects a sense of competency

Table 1: Quality dimensions in Webqual 3.0

➤ 4. Webqual 4.0

The results of the analysis from *Webqual 3.0* lead to the identification of three dimensions of *website* quality, namely: *usability, information quality,* and *service interaction quality.* The usability dimension replaces the *site quality* dimension from *Webqual 3.0.*This is because *usability* emphasizes more on the user's point of view, namely:

- *Usability*
- Information Quality
- Interaction Quality

Customer satisfaction or dissatisfaction is the customer's response to the evaluation of the perceived mismatch between previous expectations and the product felt after use. Which means that consumers will feel satisfied if the results are as expected or vice versa consumers will not feel satisfied if the results are below their expectations (Tjiptono, 2017).

According to Parasuraman et al. in (Putri & Nurcaya, 2013) the quality of service can be seen from five dimensions, including:

- Direct Evidence (Tangibles) is the ability of a company to show its existence to external parties.
- Reliability (Reliability) of the company's ability to provide services as promised accurately and reliably.
- Responsiveness is a policy to help and provide fast (responsive) and appropriate service to customers with clear information delivery.
- Assurance is the knowledge of courtesy, and the ability of company employees to foster customer trust in the company.
- Empathy is the provision of sincere and individual or personal attention given to customers by trying to understand consumer desires

III.   RESEARCH AND METODHS

In this study, the object of research is PT Trinusa Travelindo or better known as Traveloka is a company that makes*online*travel in South east Asia which was founded in 2012 by Ferry Unardi, Deniarto Kusuma, and Albert.

➤ *Measurement of Research Variables*

User satisfaction (*satisfaction)* is intended as follows:

No	Indikator
1	Mudah dipelajari
2	*Website* diakses dengan cepat
3	Kebermanfaatkan informasi
4	Kemudahan mengakses

Table 2: User Satisfaction Variables

Usability is a quality attribute that describes or measures how easy it is to use an interface. The following is the design of questionnaire questions for user convenience variables as follows:

No	Indikator
1	Interaksi jelas dan dapat dimengerti
2	Mudah melakukan navigasi
3	Memilik tampilan website yang menarik
4	Desain website yang cocok dengan jenis website
5	Mudah dipelajari dan dioperasikan
6	Website menciptakan pengalaman positif bagi pengguna

Table 3: User Convenience Variables

Information Quality is created to measure the level of quality of information displayed on the *website*. The quality of information depends on three main things, namely: information must be accurate, timely, and relevant. Here is the design of questionnaire questions for information quality variables

According to Barki and Nikos in Tarigan (2008), user satisfaction is a term used in business. In the context of an Information system (IS) environment, IS uses "user satisfaction" to evaluate the performance of more specific IS applications. In information systems, user satisfaction is considered as the key to assessing system performance. In

addition, user satisfaction is also used by IS professionals in evaluating the performance of information system applications more specifically and thoroughly in an organization.

The Dependent variable in this study is user satisfaction. This variable measures the level of user satisfaction in accessing the *website* as a whole from various aspects. The following is the design of questionnaire questions for the user satisfaction variable:

No	Indikator
1	Mudah dipelajari
2	*Website* diakses dengan cepat
3	Kebermanfaatkan informasi
4	Kemudahan mengakses

Table 4: User Satisfaction Variables

Usability is a quality attribute that describes or measures how easy it is to use an interface. The following is the design of questionnaire questions for user convenience variables as follows:

No	Indikator
1	Interaksi jelas dan dapat dimengerti
2	Mudah melakukan navigasi
3	Memilik tampilan website yang menarik
4	Desain website yang cocok dengan jenis website
5	Mudah dipelajari dan dioperasikan
6	Website menciptakan pengalaman positif bagi pengguna

Table 5: User Convenience Variables

Quality Information is created to measure the level of quality of information displayed on the *website*. The quality of information depends on three main things, namely: information must be accurate, timely, and relevant. Here is the design of the questionnaire questions for information quality variables:

No	Indikator
1	Website menyediakan Informasi yang akurat
2	Website menyediakan Informasi yang dapat dipercaya
3	Website memberikan Informasi yang aktual
4	Website menyediakan Informasi relevan
5	Website menyediakan Informasi yang mudah dimengerti
6	Website menyediakan Informasi dengan tingkat detail yang tepat
7	Website menyajikan Informasi dengan detail format yang sesuai

Table 6: Information Quality Variables

The quality of interaction is the extent to which the system can interact with users, either organizations or other users so that the relationship to the system can run continuously. The following is the design of questionnaire questions for interaction quality variables:

No	Indikator
1	Website memiliki Reputasi yang baik
2	Kepercayaan menyimpan informasi
3	Komunitas yang spesifik
4	Dapat dengan mudah berkomunkasi

Table 7: Interaction Quality Variables

The scale used for measurement in this study is the likert scale. The likert scale is used to measure the attitudes, opinions, and perceptions of a person or group of people about social phenomena. With a Likert scale, the measured variables are described as variable indicators, then the indicators are used as a benchmark to compile question items. The answer to each question item using a Likert scale is in the form of words:

Jawaban	Nilai
Sangat Setuju (SS)	5
Setuju (S)	4
Netral (N)	3
Tidak Setuju (TS)	2
Sangat Tidak Setuju (STS)	1

Table 8: Assessment of the respondent statement

IV. RESULT AND DISCUSSIONS

Respondent Profile By Age, Gender, Respondent's Education and Income.
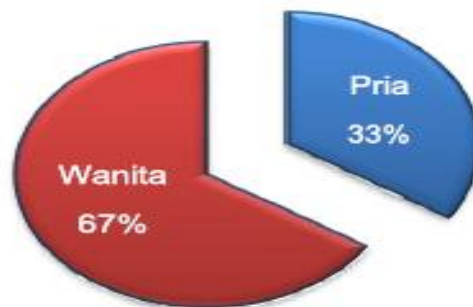

Diagram 1: Gender

The respondents to this study were 84 respondents, consisting of 57 respondents (67%) were women and 27 respondents (33%) were men.
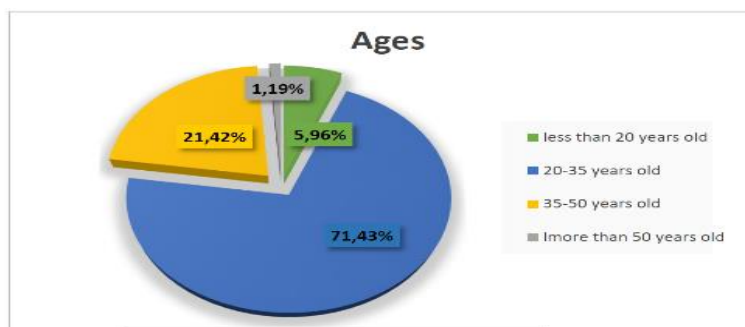

Diagram 2: Ages

The respondents to this study were 84 respondents, consisting of 5 respondents (5.96%) were those aged less than 20 years, 60 respondents (71.43%) were those aged 20- 35 years, 18 respondents (21.42%) were those aged 35-50 years and 1 respondent (1.19%) were those aged more than 50 years.
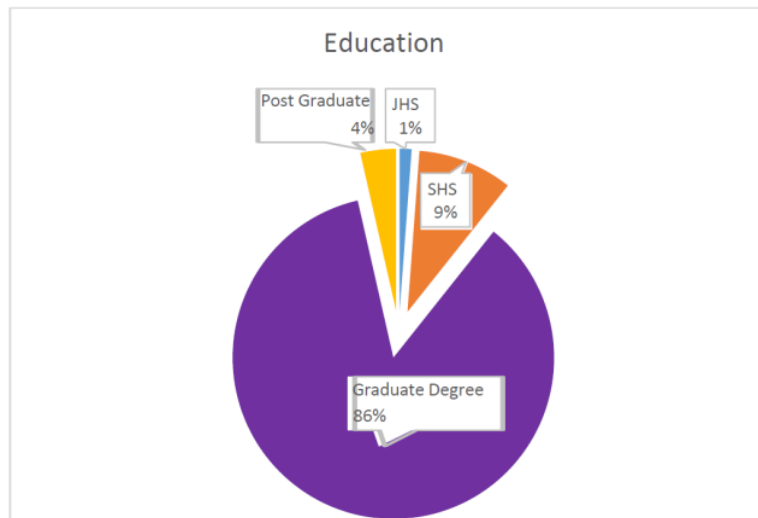

Diagram 3: Education

The respondents to this study were 84 respondents, consisting of 1 respondent (1.19%) was the last education of junior high school, 8 respondents (9.52%) were the last education of high school, 72 respondents (85.72%) were the last education of S1 and 3 respondents (3.57%) were the last education of high school.
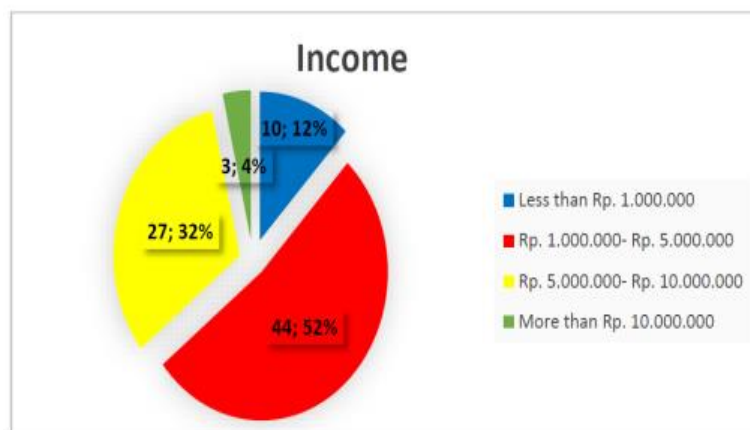

Diagram 4: Income

The respondents of this study amounted to 84 respondents, consisting of 10 respondents (11.90%) were income less than Rp. 1,000,000, 44 respondents (52.39%) were income of around Rp. 1,000,000-Rp. 5,000,000, 27 respondents (32.14%) were income of around Rp. 5,000,000-Rp. 10,000,000 and 3 respondents (3.57%) were income of more than Rp. 10,000,000.

DESCRIPTIVE ANALYSIS

Statistik Deskriptif

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Usability	84	2.83	4.83	3.96	.427
Information Quality	84	2.14	5.00	3.90	.478
Interaction Quality	84	2.75	4.75	3.71	.389
User Satisfaction	84	3.00	5.00	3.89	.430
Valid N (listwise)	84				

Sumber : Data diolah, 2021

Table 9: Descriptive Statistics

V.   DATA QUALITY TEST

A.   Validity Test

Item	rhitung	rtabel	Keterangan
X1.1	0,631	0,214	Valid
X1.2	0,719	0,214	Valid
X1.3	0,605	0,214	Valid
X1.4	0,582	0,214	Valid
X1.5	0,758	0,214	Valid
X1.6	0,620	0,214	Valid

Table 10: Validaty Test of Usability Variabel (X1)

Item	rhitung	rtabel	Keterangan
X2.1	0,764	0,214	Valid
X2.2	0,778	0,214	Valid
X2.3	0,783	0,214	Valid
X2.4	0,827	0,214	Valid
X2.5	0,826	0,214	Valid
X2.6	0,841	0,214	Valid
X2.7	0,704	0,214	Valid

Table 11: Validity Test of Information Quality Variabel (X2)

Item	rhitung	rtabel	Keterangan
X3.1	0,468	0,214	Valid
X3.2	0,642	0,214	Valid
X3.3	0,630	0,214	Valid
X3.4	0,720	0,214	Valid

Table 12: Validity Test of Interaction Quality (X3)

Item	rhitung	rtabel	Keterangan
Y.1	0,650	0,214	Valid
Y.2	0,812	0,214	Valid
Y.3	0,784	0,214	Valid
Y.4	0,798	0,214	Valid

Table 13: Validity Test of User Satisfaction (Y)

B.   Reliability Test

No	Dimensi	Nilai Cronbach Alpha	Kriteria	Keterangan
1	Usability	0.746	> 0,6	Reliabel/ Konsisten
2	Information Quality	0,898	> 0,6	Reliabel/ Konsisten
3	Interaction Quality	0,688	> 0,6	Reliabel/ Konsisten
4	User Satisfction	0,750	> 0,6	Reliabel/ Konsisten

Table 14: Reability Test

VI. CLASSICAL ASSUMPTION TEST RESULTS

A. Normality Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		84
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.24379417
Most Extreme Differences	Absolute	.090
	Positive	.081
	Negative	-.090
Test Statistic		.090
Asymp. Sig. (2-tailed)		.091[c]

Table 15: Normality Test

B. Multicoleniarity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Usability	.577	1.733
	Information Quality	.564	1.774
	Interaction Quality	.783	1.277

Table 16: Multicoleniarity Test

Linearity Usability Test against User Satisfaction

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
User Satisfiction * Usability	Between Groups	(Combined)	103.203	9	11.467	5.925	.000
		Linearity	91.911	1	91.911	47.491	.000
		Deviation from Linearity	11.292	8	1.411	.729	.665
	Within Groups		143.214	74	1.935		
	Total		246.417	83			

Sumber : Data diolah, 2021

Table 17: Annova Table

VII. DISCUSSION

➢ **Partial Significance Test (t-test)**

The t-test is used to test whether or not individual variables (*usability, information* quality,and *interaction quality*) have an effect on dependent variables (*user satisfaction*). This t-test is carried out provided that:

Coefficientsᵃ

Model	t	Sig.
(Constant)	1.298	.198
Usability	3.432	.001
Information Quality	2.041	.045
Interaction Quality	2.873	.005

Table 18: Partial Regression Test

Based on table 4.15 the results of the partial regression coefficient test show that *usability, information*quality and *interaction quality* have a significant value of ≤ 0.05 (0.001 ≤ 0.05). This indicates based on those values that **H1 is accepted**. So it can be concluded that partially the*variables of usability, information*quality and *interaction quality* affect the *user satisfaction* of the Traveloka website.

Based on the results of *website* analysis, traveloka.com data has been processed using the SPSS 25 statistical data processor. Where the respondents in this study were dominated by female respondents with a percentage of 67% or as many as 57 respondents, dominated by the age of 20-35 years as many as 60 respondents or 71.43%, then dominated by respondents with S1 education, namely 72 respondents or 85.72% and respondents who had incomes of Rp. 1,000,000 – Rp. 5,000,000 as many as 44 respondents or 44.52%.

The following is an explanation of the effect of *usability*, *information* quality and *interaction quality* on *user satisfaction* partially and simultaneously:

➢ **Effect of Usability, Information Quality and Interaction Quality Partially on User Satisfaction**

Usability as a user experience in interacting with an application or website until the user can operate it easily and quickly. A website must provide convenience for users in interacting withthe *website*, in addition to the interaction between humans and computers, reusability or also called "usability"is related to the ease and readability of information as well as a *user-friendly* navigation experience. A *user-friendly* interface is usually used for *website* pages or software to be used more efficiently, easily, and provide a pleasant experience. These things that make user convenience play a very important role in a website, without user convenience, the website will not provide satisfaction to users in accessing the website and will make users not want to visit the website again, and will eventually make the website's ranking decrease if the *website* is not easy to use and not easy for users to understand. In this study, users assessed thatthe traveloka website already has good usability which can affect the satisfaction of traveloka *website*users. The results of this test are supported by the results of respondents' answers in accordance with the usability quality indicators, namely on X1.1 "interaction with the website is clear and understandable" with a percentage of 41.07% agreeing that the quality of website usability that is clear and understandable is good, then on X1.5 "ease to operate" with a percentage of 40.36% agreeing that the quality of ease of operation is good. So that overall it is stated that the quality of usability has a significant effect on user satisfaction.

Information quality in a website must be good because it greatly affects the level of visitors and the ranking ofthe *website.* In this day and age, almost everyone in the world uses the internet. This is what makes the website must meet the quality of appropriate information from all aspects, ranging from the suitability of the information provided according to or not with user needs such as accurate information, having the right and trustworthy detailed information so that users can easily and trust shopping on the *website* because the information provided is accurate. In this study, users assessed that the traveloka website has provided good quality information because the information provided is accurate, trustworthy and easy to understand, which means that the quality of the information provided has given confidence to respondents because the information contained on the website is in accordance with what website users want,which can later affect user satisfaction the website. The results of this test are supported by the results of respondents' answers in accordance with information quality indicators, namely on X2.2 "providing reliable information" and X2.5 "providing information that is easy to understand" with a percentage of 39.60% agreeing that the quality of information provided by the website traveloka.com trustworthy. So that overall it is stated that the quality of information has a significant effect on user satisfaction. (Ahmad Aditiya, 2017) states that the perception of information quality affects the satisfaction of company *profile website* users.

Interaction Quality includes the ability to provide personal information security, have a good reputation, facilitate communication, have trust in providing personal information and be able to create a specific community. Most website users think about the reputation of the website

because website userswill feel safe if they shop at a *website* with a good reputation. Thus the user will feel that the website will guarantee the confidentiality of his personal information, then the website means that it has provided good quality interaction and can provide satisfaction for users in accessing the *website* . In this study, users assessed that the traveloka website has provided a good quality of interaction because on the *website* anyone can communicate or interact both as a seller and as a buyer as well as the delivery of clear and fast information response between users and sellers. This is what makes the quality of traveloka website interaction good in providing space to interact in terms of community and company and the website still provides restrictions so that user confidentiality is maintained, and users will later get satisfaction in accessing *the website* . These test results are supported by the results respondents' answers were in accordance with the interaction quality indicators, namely on X3.1 "has a good reputation" with a percentage of 40.80% stating that service interactions from traveloka.com website have a good reputation, then on X3.2 "trust in storing information" with a percentage of 37.60% stating that service interactions have confidence in storing information. So that overall it is stated that the quality of interaction affects user satisfaction. The results of this study are in accordance with research (Syaifullah and Dicky, 2016) which states that information quality variables have a positive and significant effect on user satisfaction.

Usability on the Traveloka *website*, ease of use will foster satisfaction for users because it does not make it difficult for users to operate a system to obtain information and make transactions. The ease of use on the Traveloka website is the ease of buying tickets, the ease of making ticket purchase transactions *online*, being able to learn the website easily, easily finding products according to needs, being skilled in using *the website* without any difficulties, providing ease of navigation, having an attractive appearance, appropriate design and an easy and fast process, of course. Will make Traveloka website users can save more time and energy so as to create a positive experience for users, so that users are satisfied with the quality *of usability* provided on the Traveloka *website*.

Information quality on the Traveloka *website*, provides information that is accurate, reliable, actual, relevant, and easy to understand. There is a *customer service* that is available 24 hours in the local language so that traveloka website usersare facilitated to ask about the obstacles experienced, there is an explanation of the steps to use the traveloka ticket itself, traveloka will also provide reminder information about the user's departure date, as well as provide complete information about the product products on the *website* traveloka. So that users are satisfied with the quality of information provided on the Traveloka *website*.

Interaction quality on the traveloka website, traveloka website users do not need to be afraid of providing personal information and making transactions because the traveloka website has a *private* connection feature using an encrypted https network where all personal information and transactions made will be protected by this feature, have a

good reputation becausethe traveloka *website* is *The* most popular booking website in the Southeast Asian region, gives the impression of attracting interest and attention and easy to communicate with the company (seller). This means that users get a positive impression and feel satisfied with the quality of interaction on the Traveloka website, because with good interaction between users and management, it provides a positive relationship so that consumers feel cared for their needs in using or handling complaints after consumers make transactions on the Traveloka *website*.

VIII. CONCLUSIONS

Usability, information quality and *interaction quality* partially affect the *user satisfaction* of traveloka.com website. This is evidenced by the fact that user variables assess that the traveloka website already has good usability in ease of operation and interaction with *the website* is clear and easy to understand.

Information quality traveloka website has provided good quality information, namely the information provided is accurate, trustworthy and easy to understand, which means that the quality of the information provided has given confidence to respondents because the information contained on the website is in accordance with what website users want.

Interaction quality traveloka website has provided good quality interaction in providing space to interact in terms of community and company and *the website* still provides restrictions so that user confidentiality is maintained.

Usability, information quality and *interaction quality* simultaneously affect the *user satisfaction* of the Traveloka website. *Usability* on the Traveloka *website*, ease of use will foster satisfaction for users because it does not make it difficult for users to operate a system to obtain information and make transactions. The ease of use on the Traveloka website is the ease of buying tickets, the ease of making ticket purchase transactions *online*, being able to learn *the website* easily, and easily finding products according to your needs. *Information quality* traveloka website provides *customer service* that is available 24 hours in the local language so that traveloka *website* users are facilitated to ask about the obstacles experienced, there is an explanation of the steps to use the traveloka ticket itself, traveloka will also provide reminder information about the user's departure date, as well as provide complete information about product products which is on the Traveloka *website*. *Interaction quality* on the traveloka *website*, traveloka website users do not need to be afraid of providing personal information and making transactions because the traveloka website has a *private* connection featureusing an encrypted https network where all personal information and transactions made will be protected by these features, have a good reputation because the *website* traveloka is the most popular booking website in the Southeast Asia region, giving the impression of attracting interest and attention and easy to communicate with companies (sellers).

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