Use of Ecommerce Websites in Developing Countries

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Abstract—The purpose of this study is to investiagte the use of the ecommerce website in Indonesia as a developing country. The ecommerce website has been identified having the significant impact on business activities in particular solving the geographical problem for islanded countries likes Indonesia. Again, website is identified as a crucial marketing tool. This study presents the effect of quality and features on the use and user satisfaction employing ecommerce websites. Survey method for 115 undergraduate students of Management Department in Andalas University who are attending Management Information Systems (SIM) class have been undertaken. The data obtained is analyzed using Structural Equation Modeling (SEM) using SmartPLS program. This result found that quality of system and information, feature as well satisfaction influencing the use ecommerce website in Indonesia contexts.

Keywords—Use,Developing Country,Satisfaction, Website

I. INTRODUCTION

WEBSITE is a useful tool employing electronic commerce (e-commerce) activities. The success of ecommerce should be supported by website design which determine the ability of business to catch the benefits of commerce sales [12]. In Developing Countries likes Indonesia, the utilisation of e-commerce and websites is still underdeveloped. Various e-commerce constraints such as under-sophisticated information technology (IT) infrastructures, lack of financial support, the limitations of educational levels and English language capabilities are identified as major problems in Indonesia –[15]. The dissemination of the internet use in Indonesia is supported by internet cafes in the entire country about 40% increased at the end of 2006 or 2500 units [19]. Indonesia is categorized as a *early adopter* for adopting ecommerce and the majority of internet users is fairly educated people with company's readiness is pretty high [2]. Nevertheless, some information communication technology (ICT) indicators have shown a significant improvement. In Indonesia, the total number of Indonesian internet domains has grown from 1,479 in 1998 to 21,762 in 2004 [1]. Furthermore, Indonesia has the rapidest growth of number of internet users among ASEAN countries for instance Philipina, Thailand dan Malaysia. The latest data of Internet World Stats in 2007 show the extent of the business internet use in Indonesia using a 1-7 scala was in range 4,00 point, after south Korea (6,10), Singapore (5,00), Malaysia (4,80), and Thailand (4,70), however, the Indonesian position is over than Philipine (3,90) and Vietnam (2,80). The population in Indonesia is unevenly spread. Over 200 million Indonesian people are living across approximately 12,000 islands, with 60% of them on Java

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Island. Also, as most Indonesian regions are separated by ocean, Indonesian development is slow, which leads to an unbalanced economic growth. Therefore, geographical problems are the main issues in performing business activities in Indonesia. Given the preceding consideratons, the following research questions are proposed:

How the factors of website quality and feature influence the use and user satisfaction of ecommerce websites?

This paper is organized as follows. In the beginning, the review of ecommere websites and the use website are presented. The research hypoyhesis are proposed and continued by research methodology and results to answer the research questions. The last section, the conclusion and implication are discussed.

II. LITERATURE REVIEWS

A. Website Overviews

The website is the critical needs in obtaining a competitive advantage in the cyber business. The meaning of the website such as homepage, hyperlink, image map, web browser, webpage, or www is often interchangeable. The website has been defined as the e-commerce application of network systems and as an important phenomenon over the past decade [23]. In spite of the failure of dot.com activities during 2000-2001 [17], world wide web activities are still booming, in particular as a hunt for new customers [13], a virtual market and as a marketing communication tool [11]. Accordingly, websites as a hypermedia information system may be explained as: (1) 'many-to-many communication' which incorporates interactivity with people and computers; (2) 'flow' which represents network navigation; and (3) 'experiential and goal-directed behaviours' which refers to extrinsic and intrinsic motivation.

B. The Use of Website Ecommerce

A seminal study by DeLone and McLean [5]-[6] is as the fundamental framework to identify the model of website success employing a multidimensional construct and combining technological, behaviour and organisational perspectives in this study. There are the website quality, features, use and user satisfaction. *Website quality* is seen as a necessary measure for success, when assessing and evaluating website used. Two valid instruments to measure website quality have been generated. DeLone & McLean's studies [5]-[6] found quality to be a measure of success for e-commerce. They offered three types of quality, *system, information and services*. *System quality* refers to how good the system is in terms of its operational characteristics [10]-[9], *Information quality* refers to how good the system is in terms of its output [10] or information system output [4], in the meantime, *Service quality* refers to how good the service supplied by an

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information service provider is, in terms of the internal organization, external vendor and third party [7].*Features* have been identified as factors in the success of website uses [3]-[14]-[18]-[21]. Website features provide a medium for functionalities which are able to convey messages from text-based to multimedia and provide a richness of product information and responsiveness to the user (e.g. FAQ or feedback). The multimedia interactive format should provide medium richness and can utilise the 'frame' to access multiple pages simultaneously [14], such the website has been identified as a market space which creates innovative ways for companies to do business and interact with customers [18]. *The use* has also been applied in a number of studies as a main measure of the model of website success. Website use is defined as 'everything involved in a visit to a website, to navigation within the site, to information retrieval, to execution of a transaction' [6]. These factors are represented as the nature of the use, navigational pattern, number of site visits, and number of transactions executedor traffic is one of the most essential performance indicators of e-commerce success [8], and is a good surrogate for other measures of website success such as page views or visits which cannot determine the ultimate success of a website. Wang, Tang and Tang [22] named *user satisfaction* as customer information satisfaction in digital marketing and defined it as summary affective response of varying intensity that follows consumption, and is stimulated by focal aspects of sales activities, information systems (websites), digital products/services, customer support, after-sales service, and company culture. The user satisfaction in the e-commerce and website context describes feelings and attitudes or desires and expectations of users who perceive that they have received good service using an e-commerce application and are likely to repeat visit and purchase on a continuous basis (brand loyalty). Unlike most prior studies which measure user satisfaction from user feelings and attitudes, the current study, which is company-based, measures user satisfaction as a response of user experiences while browsing within a website. In brief, the above literature review has related to the models of website success which were used to guide the development of the conceptual framework for the current research and to develop the research questions. Four main constructs were derived from these prior studies and used to identify the model of website success using quality, feature, user satisfaction and use. Finally, nine hypothesis are developed for this research.

Hypothesis 1: System quality influence user satisfaction of ecommerce website

Hypothesis 2: System quality influence usefulness using ecommrec website

Hypothesis 3: Information quality influence user satisfaction of ecommerce website

Hypothesis 4: information quality influence usefulness using ecommrec website

Hypothesis 5: Service quality influence user satisfaction of ecommerce website

Hypothesis 6: Service quality influence usefulness using ecommrec website

Hypothesis 7: feature facilities influence user satisfaction of ecommerce website

Hypothesis 8: feature facilities influence usefulness using ecommrec website

Hypothesis 9: usefulness influence user satisfaction using ecommerce website

III. RESEARCH METHODOLOGY

This study made use of the deductive approach and an explanatory study indicated by the quantitative method. The data obtained was derived from individual or student perspectives. The undergraduate students in Management Department of Economics Faculty in Andalas University, Padang were invited. Undergraduate students were belived that they were very familiar with internet/ecommerce uses in particular. The research sample as a respondent is all students who are attending MIS class. The students were directed to access several ecommerce website for a week hence fulfills the questionnaires' freely and confidently. During fulfill the questionnaires, they images to purchase a certain thing of the mother gift [12]. Finally, the 115 research respondents were gained.The data analysis is conducted by employing Structural Equation Modeling (SEM) using SmartPLS program (Partial Least Square). In SEM process, Model and Structural Measurement was conducted as validity and reliability test also significant relationships for hypothesis.

IV. RESULTS

A. Characteristic Respondents

Questionnaires were distributed to totally 115 students of Regular, Non-Regular and International Programs. *Respondents by gender*, the respondents were shows the number of female and male respondents are quite similar which are around 54 and 45 percen. *Respondents by Age,* the majority of respondents aged between 20-25 years (89.03%). *Respondents Based on Parent Employment,* concluded that the majority of their parent works as government employes and entrepreneur using the internet more intensive.

B. Respondents by Website Uses

Respondents by lenght of Internet used, is presented. The average of the respondents had used the internet for five years, with *length of Internet uses* showed the majority of respondents used the Internet during an average three hours per day (83.22%). In the mean time, respondents uses internet were using *google.com* for study purposes (51%). The most frequently respondents prefer to access internet in the internet cafe (69.68%) to access the site/website google (24,46%), facebook (24,46%), and yahoo (24,03%). The majority of respondents are interested for shopping online but has not make an online purshase (61%). The data presented that music, videos, books and magazines (47.89%) often seen on the internet / website. According to respondents, the good website is the interesting, completed and up to date website. In the contrary, websites with boring, useless, slow loading and untractive are identified as poor websites.

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TABLE I
THE MODEL MEASUREMENT (CROSS LOADING)

Code	Feature (F)	Satisfaction (St)	Information Quality (IQ)	Service Quality (SvQ)	System Quality (SQ)	Uselfull (U)
F1	**0,904021**	0,187716	0,529328	0,560927	0,468668	0,470770
F2	**0,864181**	0,233739	0,436526	0,556721	0,447800	0,504763
F3	**0,848122**	0,210197	0,435221	0,498021	0,377134	0,369244
St1	0,225980	**0,881711**	0,263309	0,248925	0,286169	0,338376
St2	0,200595	**0,895641**	0,259838	0,263052	0,318202	0,296272
St3	0,219736	**0,893937**	0,276580	0,294734	0,320098	0,308760
IQ1	0,443447	0,261886	**0,818682**	0,522028	0,508052	0,391636
IQ2	0,369499	0,258249	**0,759585**	0,452219	0,406196	0,326121
IQ3	0,416713	0,225498	**0,819947**	0,516960	0,473648	0,419433
IQ4	0,368049	0,224010	**0,861919**	0,550204	0,456077	0,374859
IQ5	0,468897	0,271887	**0,875989**	0,552440	0,495717	0,413293
IQ6	0,458308	0,167446	**0,755992**	0,571517	0,480897	0,356504
IQ7	0,459625	0,250088	**0,634229**	0,530755	0,444057	0,276994
SvQ2	0,433553	0,262826	0,508871	**0,803349**	0,539258	0,377851
SvQ3	0,544385	0,297415	0,541766	**0,778976**	0,521596	0,343862
SvQ4	0,452475	0,256680	0,502876	**0,692989**	0,418995	0,343228
SvQ5	0,445950	0,314732	0,658808	**0,752206**	0,508062	0,383771
SvQ6	0,427444	0,234141	0,592704	**0,775335**	0,501210	0,388698
SvQ7	0,466418	0,119736	0,483936	**0,817395**	0,457747	0,309974
SvQ8	0,445497	0,150248	0,470899	**0,781065**	0,439806	0,305859
SvQ9	0,477649	0,220515	0,440353	**0,820667**	0,475917	0,313808
SvQ10	0,542307	0,242417	0,528432	**0,835919**	0,514664	0,312553
SvQ11	0,540553	0,228800	0,466582	**0,800129**	0,467370	0,273072
SvQ12	0,520129	0,197238	0,431731	**0,758879**	0,439194	0,294497
SQ1	0,354004	0,242685	0,428166	0,518197	**0,762223**	0,380164
SQ2	0,423300	0,292454	0,344108	0,455479	**0,708370**	0,306017
SQ3	0,359741	0,213122	0,559297	0,482333	**0,789965**	0,345796
SQ4	0,342506	0,301614	0,407176	0,374013	**0,721792**	0,361912
SQ5	0,376191	0,227295	0,459497	0,479674	**0,737519**	0,291294
U1	0,412277	0,283195	0,290215	0,339498	0,368903	**0,717628**
U2	0,384712	0,281533	0,326070	0,409341	0,378188	**0,736280**
U3	0,275680	0,139290	0,179895	0,197378	0,160549	**0,601479**
U4	0,367386	0,298161	0,419644	0,341439	0,371221	**0,799754**
U5	0,473799	0,276805	0,418828	0,341278	0,383726	**0,851055**
U6	0,439005	0,285769	0,391604	0,361150	0,378507	**0,889993**
U7	0,436868	0,314823	0,405043	0,354858	0,378893	**0,870553**
U8	0,466213	0,312156	0,437119	0,344357	0,403109	**0,826776**

D.1. *Model Measurement*

The analysis using standard PLS procedure is presented. This involves analyzing the data in two stages. In the first stage the model measurement is tested for validity and reliability and

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the second stage the structural model is run to test the hypotheses.

Validity test

The convergent and descriminant validity were presented. To test the convergent validity of this study, can be seen from the correlation between the score of the indicator with its constructs. Individual indicators were considered valid a correlation value above 0.70. However, for loading from 0.50 to 0.60 are still acceptable. In this study, researchers took loading value 0.60. In the beginning of test validity, there is one invalid data since the values less than 0.60 (SvQ1), hence re-estimate the model was conducted. The results of PLS output after a revised have met convergent validity because all the loading factor is above 0.60 (cross loading Table I).

Discriminant validity is to compare the Square Root of Average (AVE) for each construct and as the correlations between constructs with other constructs in the research model.The model has sufficient discriminant validity if the root of AVE for each construct is greater than the correlation between the constructs and other constructs in the model. If the value is the root of AVE is higher than the correlations between other constructs, so it can infer constructs have a good level of validity. Therefore, it can conclude that each construct has a high validity. It can be seen from the root of AVE is higher than the value of the correlation between other constructs (Table II).

TABLE II
CORRELATION MATRIX OF LATENT VARIABLES
(SQUARE ROOT OF AVE IN DIAGONAL)

Variables	AVE	Feature	Satisfaction	Information Quality	Service Quality	System Quality	Usefulness
Feature	0,761124	0,872424					
Satisfaction	0,792904	0,242053	0,890451				
Information Quality	0,629080	0,535703	0,299503	0,793145			
Service Quality	0,615084	0,620064	0,302268	0,663431	0,784273		
System Quality	0,554347	0,497916	0,346144	0,588193	0,618752	0,744545	
Usefulness	0,627036	0,520585	0,353188	0,464598	0,429927	0,456295	0,791856

Reliability Test

The method to assess reliability is employing a cronbach value (Table III). The construct can be identified as good reliability if its value more than 0.70. In Table 3, shown each construct contains a good reliability because it is more than 0.70, indicating that the constructs are internally consistent and hence reliable.

TABLE III
CRONBACHS ALPHA

Variables	Cronbachs Alpha
Feature	0,844095
Satisfaction	0,869395
Information Quality	0,899583
Service Quality	0,937324
System Quality	0,798957
Usefulness	0,913125

TABLE IV
STRUCTURAL MEASUREMENT AND HYPOTHESIS TESTING

D.2.*Structural Measurement*

The structural measurement shows in Table IV and Appendix 1. It is observed that among hypotheses H4, H5, H6, and H8 are not supported (insignificant t-values) while the hypotheses H1, H2, H3, H7 and H9 are supported (significant t-values). The test relationships between constructs indicate the construct affect the use of quality systems, quality of information and feature provided affect the use, again the system quality and the use influence on user satisfaction using ecommerce websites with significances at 0.05 (T count greater than 1.3).

Hypothesis	Observed t-value	Sig. Level (1-tail)
System Quality => Satisfaction (H1)	1,489699	Supported
System Quality => Uselfulness (H2)	1,426270	Supported
Information Quality => Satisfaction (H3)	1,404867	Supported
Information Quality =>Usefulness (H4)	0,435619	Not Supported
Service Quality => Satisfaction (H5)	0,139275	Not Supported
Service Quality =>Usefulness (H6)	0,523735	Not Supported
Feature => Satisfaction (H7)	2,012943	Supported
Feature => Usefulness (H8)	0,336854	Not Supported
Usefulness => Satisfaction (H9)	1,655677	Supported

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This result gives an initial picture toward the perception using ecommerce website among university students in Indonesia as one of developing country. There are perceive that using website ecommerce would be effective when is facilitated by qualities of system and information in its websites. Hence, these qualities fulfilled, website users would have good experiences using ecommerce websites and getting satisfied. These results are in line with research conducted by DeLone and McLean [6].

V. CONCLUSION

This study examined the influence of the quality of system, information and services on the use and satisfaction of e-commerce website. The 115 university students employing questionnaire survey and SEM/PLS, this research was undertaken. Four of nine hypotheses were insignificant influences and the rest were significant. This means, the respondent has accepted the use of IT, particularly system and information quality of e-commerce website and getting satisfied in its use. Respondents who already use the Internet more than 5 years, this explains that the respondents accept the use of IT seen from the ease of using the internet that has more than 5 years. It can be concluded that service quality and feature facilitated were not affects the use of e-commerce website in Indonesia context. For the future research, other factors may be added in this website model especially related to believe and behavior of website users.

.Appendix I
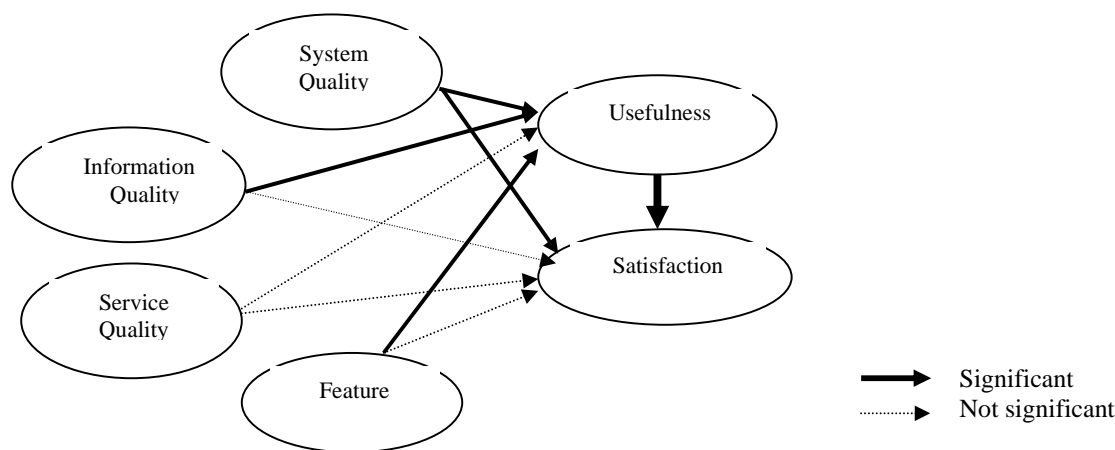
Picture 1.The SmartPLS Graph

Appendix II

System quality
  Easy of use (SQ1)
  Customization (SQ2)
  Speed (SQ3)
  Playfulness (SQ4)
  Usability (SQ5)
Information Quality
  Completeness (IQ1)
  Up-to date (IQ2)
  Reliable (IQ3)
  Accuracy (IQ4)
  Meaningful (IQ5)
  Structured (IQ6)
  Personalized (IQ7)
Service Quality
  24/7 services (SvQ1)
  Responsiveness (SvQ2)
  Interactive procedure (SvQ3)
  After sales services (SvQ4)
  Delivery options (SvQ5)
  Control shipping process (SvQ6)

Shipping insurance (SvQ7)
Time delivery provided (SvQ8)
Product sample provided (SvQ9)
Guarantee for reducing uncertainty (SvQ10)
Professional image (SvQ11)
Friendly workers (SvQ12)
Feature
  Provide communication contact (F1)
  Provide customer servcie (F2)
  Provide company's profile (F3)
Usefulness
  The good decision in shopping (U1)
  Finding the product wanted (U2)
  Efficient in expenditure (U3)
  Quick in browshing (U4)
  Increase browshing productivity (U5)
  Increase browhing quality (U6)
  Simplicity during browshing (U7)
User Satisfaction
  In whole, satisfy in browshing experience (St1)
  Encourage friend browshing via websites (St2)
  Continue browshing in future (St3)

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