

Soft Modeling of Online Consumer Behavior on E-Business: Marketing Mix, Social Culture, Information Technology and Humanism as a Moderator

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Abstract— Today many banking institutions have implemented e-business in business activities. Nevertheless, there are still very limited consumers who optimize e-business for business. The purpose of this study is to examine the online consumer purchasing decision model in e-business and the role of external factors (marketing mix, socio-culture, information technology, humanism) on online consumer decision making. This study uses the population of managers of banking institutions in the province of Central Java. The research used the survey method. Instrument data collection with questionnaires sent by post. The number of respondents obtained is 100 people. Technique of collecting data with random sampling is method of collecting data which done by random. Instrument testing uses validity and reliability. Statistical analysis with SEM PLS because the amount of data is small and not normally distributed. This study uses the approach of Engel's theory (2006). The results show that (1) The concept of "Consumer Decision Journey " is still applicable in the context of online consumer behavior in e-business because every step of the online consumer decision making process has significant influence (2) The results showed that marketing mix, social culture, information technology, humanism has no significant effect on the process of online consumer purchasing decision making (online consumer behavior).

Keywords: *e-business, external factors, consumer behavior online*

I. INTRODUCTION

E-business covers all things that must be done using information and communication technology to conduct business activities between organizations and from organizations to consumers [1]. The growth of e-business in Indonesia has continued to increase since 2001. The development of e-business has changed the face of business in Indonesia. The prospect of e-business in Indonesia is getting bigger, such as the value of online shopping transactions in Indonesia, in 2012 and in 2014, has reached 266 million US Dollars and 736 million US Dollars (about 7.2 trillion rupiah). In 2015 internet users in Indonesia reached 139 million users. (www.apjii.or.id accessed March 23, 2012). E-business includes e-commerce that includes transactions (purchases and sales), marketing and service of

products, services, and information via the Internet or other networks.

The successful implementation of e-business is strongly influenced by many factors, both internal and external factors. Previous research has partially explored internal factors that influence online consumer behavior especially in purchasing decisions. Psychological / psychological factors of consumers such as: (1) trust plays an important role affecting consumer behavior in e-business [2], (2) utilitarian and hedonic motivation [3], (3) extrinsic and intrinsic motivation, cognitive experience on the web [4]. Online consumer confidence in a web vendor on e-business is significantly influenced by the post-purchase factors of familiarity, perceived security, product quality and especially quality of service not due to reputation, ease offered on its web vendor [5]. The quality of site design, service quality has a significantly stronger effect on consumer confidence and satisfaction, both of which lead to online consumer purchase intentions [6]. Perceived benefits, perceived risk and psychological factors are significant variables and perceived profits and psychological factors have a positive impact on consumer attitudes and purchasing behavior. Psychological factors have the highest correlation with online shopping behavior, it can be concluded that the trust of online vendors and security issues is the most important in determining the online purchasing patterns of Pakistani consumers [7].

Personality factors such as age, income, consumer education and marital status, and their perceived usefulness are predictor factors that significantly influence online shopping decisions [8], innovative and subjective norms positively affect online shopping behavior [9], likewise, entertainment satisfaction factors, surfacing irritation experience (mass media), perceptions of benefits and ease of use of the Web are important predictors of online shopping intentions [10]. The security, privacy and risk factors of consumer perception affect to shop online, where the privacy of online business transactions on trust is mediated by perceived security, and consumers believe in online transactions is significantly related to the trust of Web vendors [11]. Experience with brand factors significantly affects consumer confidence, about the importance of trust,

security and comfort in the online environment [12]. Trust brand factors affect online intentions, and may be necessary to increase online sales. The influence of confidence in the seller's beliefs online varies with brand trust, confidence for products and services coupled with brand trust beliefs [13]. In the process of consumer buying decision, known as Engel *et al.* in [14] theory or also known as McKinsey in Court [15] concept introduces the concept of "Consumer Decision Journey", where consumer decision travel through 4 stages: (1) consider, (2) evaluate, (4) buy, and (4) enjoy, advocacy, bonds [15].

Much of the previous researches has explained the internal factors of online consumers that influence purchasing decisions, however, there is no clear measure of prior research showing the contribution of external factors to consumers such as socio-cultural. And, the results of previous research on the contribution of the social and cultural environment to online consumer behavior is still very varied. For example, there is an earlier study, from Hasan *et al.* in [16] which shows that culture has no significant effect on online consumer behavior, while other researchers claim that social culture has a significant influence on consumer behavior in purchasing decisions. Indonesian society is a society that is strongly influenced by social life, culture and customs. Indonesian society is very unique because it has a very diverse culture and social life and this is very different from another world community. The dynamics of socio-cultural development of Indonesian consumers are closely related to the development of science and technology. The development of the marketing strategy of the mix, the development of information technology, the development of philosophy of humanism has great influence in socio-cultural dynamics in Indonesia [17], [18], [19]. Thus, in discussing the behavior of online consumers in e-business in Indonesia, this research relates factors that are: marketing mix, socio-culture, information technology, humanism as a factor of moderation affecting consumer buying behavior online.

In this research approach, Consumer behavior theory [20] and Consumer Decision Journey theory [14]; [15] are explored. Meanwhile, the conceptual framework developed based on these two theoretical approaches as described in Figure 1:

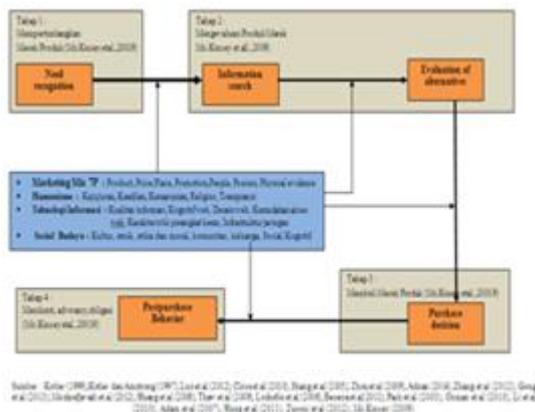


Fig 1. The conceptual framework developed based on these two theoretical

The rest of this paper is organized as follow: Section II describes the proposed method. Section III presents the obtained results and following by discussion. Finally, Section IV concludes this work.

II. PROPOSED METHOD

Banking institutions were chosen as research objects because many banking institutions in Indonesia have implemented e-business in running their business. The population of this study was chosen by the banking consumer i.e. the customers who have a lot of experience in e-business, therefore selected respondents' managers and banking staff. Technique of collecting data by random sampling method (random) because banking customer counted about 15 million, then random sampling. Data collection instruments in the form of open and closed questionnaires, Likert scale, 5 points. Research respondents were selected 100 online consumers. After the data is collected, then the reliability and validity testing are performed. Reliability with Cronbach Alpha method and Validity with product moment method. This analysis aims to ensure valid and consistent data quality [21]. This study uses SEM (Structural Equation Modeling) data analysis to test the hypothesis concerning the relationship between latent variables in the study. SEM analysis in this study uses WarpPIS because it amounts to more than 30 people (as per SEM requirements with WarpPLS).

This descriptive statistic describes the characteristics of respondents, which are seen from several variables such as: gender, age, online transaction satisfaction as described in Table I.

TABLE I. BACKGROUND RESPONDENT SUMMARY

Information	Sum	Percentage
Gender		
• Male	30	30%
• Female	70	70%
Age		
• < 30 years	46	46%
• >= 30 years	54	54%
Status		
• Staff	54	54%
• Manager	46	46%
Online Transaction Satisfaction		
• Satisfied	85	85%
• Not satisfied	13	13%
• Neutral	2	2%

TABLE II. RELIABILITY TEST RESULTS FROM THE RESEARCH MODEL

	Cronbach Alpha	Sum of item valid
Marketing Strategy 7P Mix (X1)	0.7694	21
Socio-cultural (X2)	0.5740	4
Information Technology (X3)	0.6602	5
Humanism (X4)	0.7684	5
Recognition of Needs (X5)	0.8866	5
Search Information (X6)	0.8661	5
Evaluation of the Alternative (X7)	0.8365	5
purchasing decisions (X8)	0.7611	5
post-sponsorship (X9)	0.7616	5

From the Table II above, the reliability test shows that the data quality is good, the data meet the criteria reliable and

valid, because all Cronbach Alpha values greater than 0.6. The data that has met the test of reliability and validity have a good quality and can be used for further analysis.

III. RESULTS AND DISCUSSION

Data analysis technique using structural model with Partial Least Square (PLS) method. The structural model in this study will be analyzed using the WarpPLS 3 program. In this study using SEM (Structural Equation Modeling) because SEM is a type of multivariate analysis in social science, where multivariate analysis is the application of statistical methods to analyze several research variables simultaneously or simultaneously. The purpose of using multivariate analysis is (1) to confirm, and (2) explore. Multivariate confirmatory analysis is used to test hypotheses developed based on existing theories or concepts. Warpls program can consider the non-linear and linear relationship at once. Kock (2010) states that the Warpls program can identify nonlinear relationships between latent variables and correct path coefficient values based on these relationships. By considering the highest validity coefficient for each latent variable, the results of data analysis with SEM-PLS with WarpPLS provide the following structural models (see Figure 2):

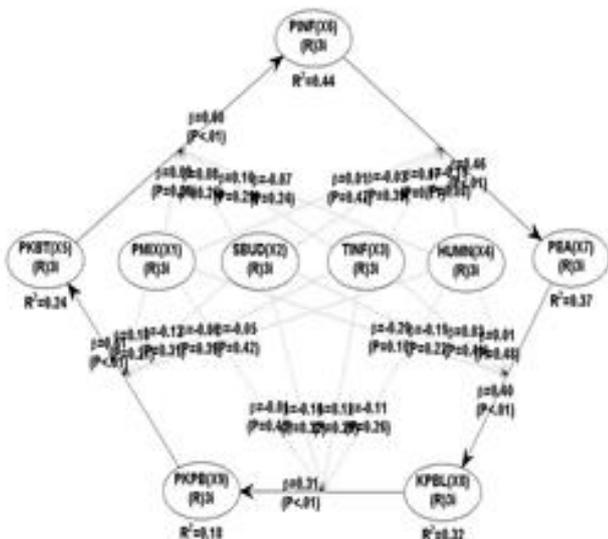


Fig. 2. Soft Modeling with WarpPLS structural

The fit model of the structural model is determined based on the fit indices and P values model to show the results of three fit indicators, Average Path Coefficient (APC), Average R-Squared (ARS) and Average Variance Inflation Factor (AVIF). The p value given for APC and ARS is calculated by estimating resampling. The fit model of the WarpPLS 5.0 program can be seen from the general output: 1) Average path coefficient (APC) has P <0.05, 2) Average R-Squared (ARS) has P <0.05, 3) Average Adjusted R-Squared (AARS) has a value of P <0.05, 4) Average Block Variance Inflation Factor (AVIF) has a value <5 and ideally 3.3. Based on the calculation of the WarpPLS program, the value of the fit model is given in Table III as follow.

TABLE III. MODEL FIT INDICES DAN P-VALUES

	Indicator	P-values	Criteria	Resume
1	APC	0.002	< 0.05	good
2	ARS	0.015	< 0.05	good
3	AVIF	1,680	< 5	good

Based on the three indicator (Model fit indices and P-values) it can be concluded that the model is good (fit), has the meaning that the model can be used as a confirmation theory. Effect of moderation variable based on P-Values, if P-Value value count smaller than 0.01 (significant level 0.01) then it is said that the influence is significant and vice versa.

TABLE IV. HIPOTHESIS TESTING

Effect	Path	Coefficient (β)	P-value	Criteria	Resume
H1	X5 → X6 moderated X1	0.08	0.30	> 0.01	Not Significant
H2	X6 → X7 moderated X1	0.01	0.47	> 0.01	Not Significant
H3	X7 → X8 moderated X1	0.20	0.10	> 0.01	Not Significant
H4	X8 → X9 moderated X1	0.03	0.46	> 0.01	Not Significant
H5	X5 → X6 moderated X2	0.08	0.26	> 0.01	Not Significant
H6	X6 → X7 moderated X2	0.03	0.39	> 0.01	Not Significant
H7	X7 → X8 moderated X2	0.19	0.41	> 0.01	Not Significant
H8	X8 → X9 moderated X2	0.17	0.32	> 0.01	Not Significant
H9	X5 → X6 moderated X3	0.10	0.29	> 0.01	Not Significant
H10	X6 → X7 moderated X3	0.17	0.11	> 0.01	Not Significant
H11	X7 → X8 moderated X3	0.03	0.41	> 0.01	Not Significant
H12	X8 → X9 moderated X3	0.18	0.21	> 0.01	Not Significant
H13	X5 → X6 moderated X4	0.01	0.24	> 0.01	Not Significant
H14	X6 → X7 moderated X4	0.19	0.08	> 0.01	Not Significant
H15	X7 → X8 moderated X4	0.01	0.48	> 0.01	Not Significant
H16	X8 → X9 moderated X4	0.11	0.26	> 0.01	Not Significant

Based on the results of these tests as described in Table IV above, it is shown that marketing mix, social culture, information technology and humanism have no significant effect as a factor that moderate the process / stages of consumer online travel decisions. Meanwhile, based on the big coefficient of influence of moderation (β) then there are three major moderation influencing online consumer decision that is: (1) influence of moderation marketing mix to relation of evaluation of alternative (X7) and purchasing decision (X8), (2) influence of social culture moderation to relationship of alterative evaluation (X7) and purchasing decision (X8), 3) the effect of moderating humanism on

information seeking relations (X6) and alternative evaluations (X7).

The Determination Coefficient or R² (R square) shows the contribution of the independent variable and the moderating variable to the dependent variable can be presented in Table V as follows.

TABLE V. COEFFICIENT DETERMINATION OR R² (R SQUARE)

	Relationship with variable	R ²
1	Influence X5 to X6 moderated X1, X2, X3, X4	0.44
2	Influence X6 to X7 moderated X1, X2, X3, X4	0.37
3	Influence X7 to X8 moderated X1, X2, X3, X4	0.32
4	Influence X8 to X9 moderated X1, X2, X3, X4	0.18
5	Influence X6 to X5 moderated X1, X2, X3, X4	0.24

The most influential R² is the influence of recognition (X5) on information search (X6) moderated by mix marketing (X1), Social Culture (X2), Information Technology (X3) and humanism (X4). This shows that the contribution of the largest moderating variable occurs at the stage of need recognition and information seeking by online consumers. In the introduction phase of the need to search for information of mix marketing factor (X1), Social Culture (X2), Information Technology (X3) and humanism (X4) give a big influence. R² of 0.44 means that information search (X6) is influenced by 44% by the introduction of needs (X5) which is moderated by mix marketing (X1), Socio-Culture (X2), Information Technology (X3) and humanism (X4), and 56 % is influenced by other variables not examined in this study. Another bigger factor could be the internal online consumer factors such as personality, psychology, motivation or something else.

A. Discussion

The results of this study indicate that the effect of moderation on the process of online consumer purchasing decision making is not significant. Marketing mix, socio-culture, information technology and humanism have no significant effect on the online consumer decision process, this is acceptable because some previous research also explains it. Tjahjono in [22] states that the marketing mix and the socio-cultural environment affect the buying decision. Setiawan in [23] and Sukotjo & Radix in [24] stated that marketing mix (zipper mix) has no significant effect on purchasing decisions. Past research on sociocultural influences on online purchasing decisions is still very limited. Jarvenpaa, *et al.*, in [25] stated that culture has no effect on online consumer confidence. De Mooij in [26] stated that consumer culture and behavior are two important aspects in global marketing. Koufaris in [27] also states that information technology presented on the web has an impact on online consumer behavior. Widiiana, *et al.*, [28] mentioned that internet technology influences sales and purchasing decisions. Many previous studies have discussed the influence of marketing mix, socio-culture, information technology and humanism (philosophy) on purchasing decisions, but almost no previous studies have explained the influence of these variables on the online travel decision process of consumers. So that this study gives results that are different from previous studies, that it turns out that in

the context of online consumer behavior, marketing mix, socio-cultural, information technology and humanism philosophy variables do not have a moderating effect (the effect that strengthens and weakens the relationship between variables) which is significant.

Meanwhile, the contribution of marketing variables to mix, socio-cultural, information technology and humanism philosophy in the consumer decision-making process is still very low, which can be seen from R² (R Square). R² is the biggest influence on the need to identify information that is moderated by marketing mix, socio-culture, information technology and humanism by 44%, while the influence of other factors not examined in this study of the consumer decision process is 56%. Other factors that are not examined have a greater influence on the process of consumer decision travel in the form of internal factors that exist in consumers such as personality, consumer psychology / psychology. This study measures and proves that external factors are not a dominant factor influencing online consumer decisions, but individual internal factors are the main factors influencing online consumer decisions.

The results of this study certainly provide a phenomenon that is contrary to consumer behavior theory of Kotler in [20] which states that social factors, culture, technology greatly affect consumer behavior in general. The general consumer behavior theory of Kotler in [20] is not applicable to the online consumer decision process, which means that offline consumer behavior and online consumer behavior are very different, and each has different characteristics. Offline consumer behavior has been formulated with various theories, but online consumer behavior is still a lot that cannot be formulated theoretically [20]. This study shows that consumer theory of consumer theory has not been enough to explain the behavior of online consumers, but research can prove that online consumer behavior is not significantly influenced by social-cultural factors, humanism value, marketing strategy and information technology. And the results of this study as well as referring to future research to examine again what factors affect consumer behavior online.

IV. CONCLUSION

This study aims to measure the influence of the external environment of online consumers such as social culture, information technology, marketing mix and humanism value to online consumer decision process with empirical study on banking institutions running e-business. The results of this study indicate that the marketing mix, socio-cultural, information technology and humanism as a moderation variable has no significant effect on the process of making online consumer decisions. The contribution of marketing mix, socio-cultural, information technology and humanism variables as a moderating variable in consumer decision making process is still small around 44%, which means that the external factors have less impact on the online consumer decision, and 60% may be influenced by other factors researched as the internal factors of the consumer i.e. personality and psychology / psychology. Therefore, further research recommendation is to examine internal factors of

online consumer such as personality and psychology / psychology.

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