Discernible Impact of Fashion's Online Shopping With Mobile - Augmented Reality (AR) Application on the Consumer's Perspective in Indonesia

Daniel Ilham[1], Dr.-phil. Deborah Simorangkir[2]

Daniel.ilhamm@gmail.com[1], Deborah.simorangkir@sgu.ac.id[2]

Swiss German University, Prominence Tower Alam Sutera, 15143, Banten, Indonesia [1, 2]

Abstract

To see the impact of Augmented Reality (AR) technology in fashion's online shopping on the consumer's perspective in Indonesia, a quantitative survey was distributed online to Indonesia young generation which born between 1981 and 2000. Non-probability sampling was conducted in order to collect primary data by making use of convenience sampling. A total amount of 147 valid responses were collected which were analyzed by correlation, linear regression and multivariate analyses. The variables related to acceptance and behavior through Augmented Reality technology (TAM: perceived ease of use, perceived usefulness, perceived enjoyment; DTPB: perceived self-efficacy) were found to be significantly related to the perspective of purchase intention, continuance intention and referral intention by the Indonesia young generation. Augmented reality can be used as a tool to enhance the consumers' perception of the offered product in the Indonesia young generation. Therefore, this study can recommend online retailers to introduce an augmented reality strategy in order to raise Indonesia young generation purchase-, continuance-, referral intention of shopping goods and therewith increase the sales numbers.

Keywords: Augmented reality, online fashion retail, e-commerce, Indonesia young generation.

I. INTRODUCTION

Augmented Reality (AR) is an immersive device that can transform shoppers' retail experience. AR is a type of human computer interaction, overlaying information, images and sounds produced by machine into the physical and real-time world [1]. Technology such as AR can enable fashion retailers to create unforgettable shopping experiences, which this kind of experiences could not be provide by online shopping. Due to the technology which provides an interface 'before you purchase,' AR exhibits tremendous potential for fashion retailers to increase conversion rates online and reduce rates of return. However, how exactly users are drawn into this new form of reality and what effects it has on them has not yet been exploited in consumer behaviour literature.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

A. Literature Review

Technology Acceptance Model (TAM). The original Davis (1989) model which explored the usage of computer related jobs notes that user acceptance is mainly affected by the perceived ease of use and usability of technology. This opportunity will affect the consumers ' ability to use the program. The fundamental (hedonistic) impulse of introducing emerging technologies was eventually extended to the TAM, which allows the concept, in both functional and hedonic technologies, to be implemented implemented [4],[9],[13],[14]. To its oversimplified understanding of technological acceptance, TAM was potentially critized. Thus, human behavior and experience variables were integrated by TAM2 [30]. TAM2 [30] describe perceived enjoyment as "the practice of using an individual program that is pleasant, in addition to any effect on results induced by the use of the program.

Decomposed Theory of Planned Behaviour (DTPB). Taylor & Todd presented in June 1995 the Decomposed TPB (DTPB) which explores more deeply the dimensions of belief, normative norms and presumed behavioural. DTPB is a robust paradigm that has been used in various works on the information structure [20],[25]. The decomposed TPB (DTPB), which has a higher predictive performance than the original TPB, is superior to the original TPB. Through making new conclusions, DTPB improves explanation strength and accuracy in interpreting action context [7]. The DTPB suggests that the main direct force of acts is behavioural intention, which is "Perceived Self-Efficacy". PSE regulates the confidence level that they will carry out to perform a task [29].

Online Purchase Intention. Purchase intention measures a combination of market interest and the ability to purchase a product and is closely linked to the customer's potential purchasing activity [8], [15]. The purchasing intent was found to affect different variables, including behaviours [5] and predictors of happiness [18], [26].

Referral Intention.. There are many concepts (word of the mouth) based on a variety of experts' exposures. Tjiptono [28] describes an intention of submitting a message (personally or not) which a non-organization person would deliver to the client. The purpose of the reference is to offer incentives for people using electronic media and the goal of the reference is also the consumers voluntary access either because they are happy with the product or service output, or because they are not comfortable with it.

Continuance Intention. The willingness to continue is an example of the general customer appraisal of the use of a specific product [11]. Though technical advancement has proved to be an important success for companies, ongoing ambitions are a crucial determinant of the high market share and significant sales for companies that contribute to the long-term continued existence and growth of this advancement [2], [3].

B. Hypothesis Development

Technology Acceptance Model (Perceived Ease of Use, Perceived Usefulness, Perceived Enjoyment) and Purchase Intention.

Hypothesis	Author	Result
Hypothesis 1a: There is a correlation between TAM (Perceived Ease of Use) and purchase intention. Hypothesis 1b: There is an influenced between TAM (Perceived Ease of Use) and purchase intention.	Shah, Aziz, Jaffari, Waris and Ejaz, 2012	Perceived ease of use has an effect on the buying decisions, and the explanation why a customer buys a brand
Hypothesis 2a: There is a correlation between TAM (Perceived Usefulness) and purchase intention. Hypothesis 2b: There is an influenced between TAM (Perceived Usefulness) and purchase intention.	Pavlou, 2003; Koufaris, 2002	confirmed the relationship between PU and purchase intention by testing the model using two different empirical studies
Hypothesis 3a: There is a correlation between TAM (Perceived Enjoyment) and purchase intention. Hypothesis 3b: There is an influenced between TAM (Perceived Enjoyment) and purchase intention.	Fiore, Jin & Kim, 2005	Hedonic enjoyment of augmented reality increases mentally and emotionally the user's participation, allowing users to participate in the drug and thereby influencing the buying cycle

Technology Acceptance Model (Perceived Ease of Use, Perceived Usefulness, Perceived Enjoyment) and Continuance Intention.

Hypothesis	Author	Result
Hypothesis 4a: There is a correlation between TAM (Perceived Ease of Use) and continuance intention. Hypothesis 4b: There is an influenced between TAM (Perceived Ease of Use) and continuance intention.	Roca, Chiu, and Martinez 2006; Thong, Hong, and Tam 2006	The rationale is that when a system is perceived to be easy to use, users are more likely to have a higher intention to use/continue to use it.
Hypothesis 5a: There is a correlation between TAM (Perceived Usefulness) and continuance intention. Hypothesis 5b: There is an influenced between TAM (Perceived Usefulness) and continuance intention.	Davis, Bagozzi, & Warshaw, 1989; Venkatesh & Davis, 2000	Previous research regarding user intention has confirmed that perceived usefulness is one of the most crucial determinants of intention to adapt or continue behavior
Hypothesis 6a: There is a correlation between TAM (Perceived Enjoyment) and continuance intention. Hypothesis 6b: There is an influenced between TAM (Perceived Enjoyment) and continuance intention.	Koufaris, 2002; Shin, 2007; Liao, 2007	Claimed that people who find the system fun to use should continue to use it

Technology Acceptance Model (Perceived Ease of Use, Perceived Usefulness, Perceived Enjoyment) and Referral Intention.

Hypothesis	Author	Result
Hypothesis 7a: There is a correlation between TAM (Perceived Ease of Use) and referral intention. Hypothesis 7b: There is an influenced between TAM (Perceived Ease of Use) and referral intention.	Roca, Chiu, and Martinez 2006; Thong, Hong, and Tam 2006	The rationale is that when a system is perceived to be easy to use, users are more likely to have a higher intention to use/continue to use it.
Hypothesis 8a: There is a correlation between TAM (Perceived Usefulness) and referral intention. Hypothesis 8b: There is an influenced between TAM (Perceived Usefulness) and referral intention.	Davis, Bagozzi, & Warshaw, 1989; Venkatesh & Davis, 2000	Previous research regarding user intention has confirmed that perceived usefulness is one of the most crucial determinants of intention to adapt or continue behavior
Hypothesis 9a: There is a correlation between TAM (Perceived Enjoyment) and referral intention. Hypothesis 9b: There is an influenced between TAM (Perceived Enjoyment) and referral intention.	Koufaris, 2002; Shin, 2007; Liao, 2007	Claimed that people who find the system fun to use should continue to use it

Decomposed Theory of Planned Behaviour (Perceived Self-Efficacy) and Purchase Intention.

Hypothesis	Author	Result
Hypothesis 11a: There is a correlation between DTPB (Perceived Self-Efficacy) and purchase intention. Hypothesis 11b: There is an influenced between DTPB (Perceived Self-Efficacy) and purchase	Yi & Gong, 2008	Consumers with high self-efficacy have confidence in their ability and will try hard to complete the purchase
Hypothesis 12a: There is a correlation between DTPB (Perceived Self-Efficacy) and continuance intention. Hypothesis 12b: There is an influenced between DTPB (Perceived Self-Efficacy) and continuance	Delian, Lingling, & Hock Chuan, 2014; Igabria & Livari, 1995	Suggested that greater flexibility improves the user's ability to use system / technology
Hypothesis 13a: There is a correlation between DTPB (Perceived Self-Efficacy) and referral intention. Hypothesis 13b: There is an influenced between DTPB (Perceived Self-Efficacy) and referral	Palka, 2009; Cheng, 2006	Suggested that self-efficacy perceived had an effect on the purpose of WOM

III.   RESEARCH METHODOLOGY

Sample and Procedure. The target population for this study consist of the Indonesian millennial generation, which was born between 1981-2000 and have never experienced augmented reality in their online shopping experiences. A total number of 152 responses were collected with the online survey tool Google Forms during a time period of 14 days. In the online survey, an AR-demo video was presented in order to see the perspective on how millennials Indonesia perceived AR-technology in enhancing their online shopping experience. All answer of respondents which did not have the age of interest (20-39) and have not been shopped fashion online, were removed from data set. Consequently 147 valid responses were included in the statistical calculations SPSS.

Measurement. Technology Acceptance Model (Perceived ease of use) was measured using 3 measurement items adopted from [4]. Technology Acceptance Model (Perceived Usefulness) was measured using 4 measurement items adopted from [4]. Techonology Acceptance Model (Perceived Enjoyment) was measured using 3 measurement items from [4],[30]. Decomposed Theory of Planned Behaviour was measured using 3 measurement items adopted from [27]. All of the variables were measured using 5-point Likert-type scales ranging from "1" being "strongly disagree" to "5" being "strongly agree".

IV.   RESULT

Data analysis for this study was done using SPSS: for descriptive analysis, for hypothesis testing using correlation and regression analysis. The descriptive & inferential statistics are displayed in Table 1 below. Table 2 shows the hypotheses testing results indicated that all hypotheses are supported. Table 3 shows the multivariate analysis between socio-demographic with the dependent variable.

Table 1. Result of Descriptive & Inferential Statistic

Items	Result					
Construct	N	Mean	SD	Validity	Reliability	Normality Test
Total PEU	147	3,89	0,737	.000	.928	
Total PU	147	3,71	0,837	.000	.930	
Total PE	147	3,89	0,810	.000	.929	
Total PSE	147	4,26	0,678	.000	.927	.200
Total PI	147	4,03	0,825	.000	.927	
Total CI	147	3,91	0,793	.000	.929	
Total RI	147	4,25	0,649	.000	.930	

Table 2. Correlation & Regression Test result

Construct	Correlation (Pearson Correlation)	Regression (Unstandardized B Coefficients)	Result
PEU -> PI	.531**	.729	Supported
PU -> PI	.454**	.437	Supported
PE -> PI	.655**	.551	Supported
PEU -> CI	.320**	.399	Supported
PU -> CI	.416**	.352	Supported
PE -> CI	.526**	.389	Supported
PEU -> RI	.326**	.324	Supported
PU -> RI	.331**	.223	Supported
PE -> RI	.379**	.223	Supported
PSE -> PI	.635**	.863	Supported
PSE -> CI	.404**	.483	Supported
PSE -> RI	.511**	.484	Supported

Table 3. Socio-demographic and Dependent Variable result

Effect	Sig.	Partial Eta Squared
Gender	.386	.022
Domicile	.932	.003
Age	.302	.026
Gender*Domicile	.351	.024
Gender*Age	.135	.040
Domicile*Age	.402	.021
Gender*Domicile*Age	.892	.004

V.   DISCUSSIONS

In this study, an augmented reality demo video was used to test participants' response to a fashion item The results showed that overall TAM model has a positive correlation and relationship with the perspective of millennials Indonesia towards AR- technology, which is online purchase-, continuance- and referral intention. Furthermore, this study confirms that behaviour such as self-efficacy has a significance influence with the perspective of millennials Indonesia towards AR-technology. Surprisingly, neither of the sociodemographic variables investigated demonstrated a significant impact on the perspective of online purchase intention, intention to continue and referral intention by the millenialls Indonesia. These could be explained by the fact, that the millenial generation has been exposed to technological innovation from the early stages of life. The practical implications for E-Fashion retailers are seen in the key outcome of this study which is that companies need to focus primarily on

Discernible Impact Of Fashion's …

meeting customer needs and technology orientations strategies as this can make the company agile and improve the company's performance.

VI. CONCLUSIONS

Based on the findings and analysis of research that has been stated in the chapter before, then some conclusions can be drawn as follows:

The millennials Indonesia perceived acceptance and behaviour under the influence of AR-technology as very positive. Therefore, the implementation of an augmented reality strategy for an Indonesian millennials target market and shopping goods can be suggested.

The millennials Indonesia needs AR-technology easier to use & fun in order to enhance the attitude of purchase intention, continuance intention and referral intention. It can be assumed that Millennials generation is already prepared to adopt AR technology on their smart devices. Therefore, retailers should view AR as a form of persuasive technology that elicits and delivers experiential values rather than as only a functional technology

The millennials Indonesia has a higher self-efficacy and therefore lead to technological openness and lowered help-seeking propensity to completed their task, therefore this kind of generation is really potential users for such new technology like augmented reality.

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Discernible Impact Of Fashion's …