

## Are Fashion Consumers Willing to Take Risks to Purchase A New Fashion Technology Product?

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*Background and Purpose:* Artificial Intelligence (AI) has emerged as an important frontier of technological innovation (Hager et al., 2017). AI has been used in new applications in the fashion industry, such as Amazon's Echo Look (Amazon Fashion, 2017), a virtual style consultant and the latest addition to Amazon's Echo-branded products (Tillman, 2018). Echo Look is a product with an embedded hands-free camera so that users can take photos and videos via voice commands. Moreover, it offers a style-check function whereby consumers can send photos to Amazon through an application on the smartphone to get professional styling suggestions (Amazon Fashion, 2017). In addition, the built-in lighting and depth-sensing camera can provide users with high-quality photos. Similar to other Amazon Echo-branded products, Echo Look brings up concerns for users: must they sacrifice privacy, security, and trust to Amazon's algorithms to gain professional suggestions for their fashion styles (Applin, 2017; Barrett, 2017). *The purpose of this study* was to examine how perceived risks will affect consumers' purchase intention toward a fashion AI product and how consumer characteristics such as age will affect consumers' estimation of perceived risks.

*Conceptual Framework:* A research model and hypotheses were developed with perceived risk theory as the theoretical framework. Perceived risk theory proposes that consumers focus on minimizing mistakes instead of emphasizing function when making risky decisions. This theory has been widely used for understanding consumers' purchase intention such as willingness to purchase grey-market smartphones (Liao & Hsieh, 2013), and purchase intention towards counterfeit luxury goods (Koay, 2018). Based on a literature review, four types of risks were selected for this study: financial, performance, emotional, and security. Scales were obtained from established research (Lee & Moon, 2015; Cho & Fiorito, 2009). Five hypotheses were proposed: H1: Perceived financial risk will negatively influence consumers' purchase intention toward Echo Look. H2: Perceived performance risk will negatively influence consumers' purchase intention toward Echo Look. H3: Perceived emotional risk will negatively influence consumers' purchase intention toward Echo Look. H4: Perceived security risk will negatively influence consumers' purchase intention toward Echo Look. H5: Consumers of different age groups will differ in their estimation of perceived risks.

*Method:* This research was conducted in the top 10 metropolitan areas in the US. An online self-administered questionnaire was created using Qualtrics and a subject pool was recruited via Qualtrics Panel services. Echo Look was used as the stimulus. Participants viewed a 30-second commercial video advertising Amazon's Echo Look and provided answers to the items in the questionnaire, which included measures of financial risk, performance risk, emotional risk, security risk, and purchase intention. Items were accompanied by 7-point scales.

A total of 313 valid responses was obtained over a one-week period. The majority of respondents were female (61%) and 8.9% ranged between 18-24 years old, 28.1% ranged between 25-34 years old, 22.7% ranged between 35-44 years old, 15.7% ranged between 45-54 years old, 23.6% ranged between 55-64, and 1% 65 years old and above. Data analysis included descriptive statistics, reliability, multiple regression M/ANOVA, and LSD post hoc test.

*Results:* Cronbach's alpha for each scale ranged from .76 to .95. Standard multiple regression was conducted to determine the accuracy of independent variables predicting purchase intention. Regression results indicate that the overall model significantly predicts purchase intention [ $R^2 = .524$ ,  $R^2_{adj} = .518$ ,  $F(4, 308) = 84.729$ ,  $p < .001$ ]. This model accounts for 52.4% of variance in purchase intention. A summary of regression coefficients is presented in Table 1 and indicates that three variables (financial risk, performance risk, and security risk) significantly contributed to the model.

Table 1 Coefficients for Model Variables

|                  | <i>B</i> | $\beta$ | <i>t</i> | <i>p</i> | Bivariate <i>r</i> | Partial <i>r</i> |
|------------------|----------|---------|----------|----------|--------------------|------------------|
| Financial risk   | -0.645   | 0.097   | -6.632   | <.001    | -0.416             | -0.353           |
| Performance risk | 0.192    | 0.07    | 2.741    | 0.006    | -0.12              | 0.154            |
| Emotional risk   | 0.088    | 0.063   | 1.404    | 0.161    | -0.166             | 0.08             |
| Security risk    | 0.834    | 0.057   | 14.744   | <.001    | 0.674              | 0.643            |

MANOVA was conducted with age groups and gender as independent variables and financial risk, performance risk, emotional risk, and security risk as dependent variables. There was a significant effect for age group ( $p < .05$ ) on security risk. The 25-34 group scored significantly higher than 35-44 group, 55-64 group, and 65 and above. The 45-54 group scored higher than with 55-64 group and 65 and above. H5 was supported.

*Discussion/implications:* Hypotheses H1, H2, H4, and H5 were supported; H3 was not supported. Findings suggested that financial risk negatively influenced purchase intention. It is reasonable to assume that financial risk would negatively influence purchase intention for an innovative new product with which they were unfamiliar. Participants were not informed about the purchase price for the fashion AI product so they were left to decide what they thought the price might be. The results indicated that they would pay from 0 to \$888 ( $M = \$90.48$ ; median = \$70). When price is unknown and consumers estimate it might be expensive, many consumers would be concerned about spending that amount of money for what is decidedly not a necessity.

Performance risk, which positively affected purchase intention, contained such items as "I am concerned that the product advertised in the video is different from the actual product." Perhaps consumer caution is a natural reaction to many innovative products; indeed, consumers are usually cautious about truth in advertising. So maybe they were concerned but it did not negatively affect their intention to purchase; they were still willing to try it. This result might be explained by perceived risk theory, which presumes that consumers do not emphasize functionality when making risky decisions (i.e., deciding to purchase a newly introduced AI product) but instead focus on minimizing mistakes. Based on prior studies, we expected that when consumers perceived high levels of performance risk, they would be less likely to buy the

fashion AI product. However, the quality of Amazon products is validated or certified by the company. Companies such as Amazon, that have a track record of allowing return of unsatisfactory products, may have curtailed the performance risk so that consumers reasoned that they would be able to return the product if it did not perform as advertised.

Security risk items were stated in a positive manner; higher scores denoted lower risk perception, for example, “Using this device is safe.” Results showed that the youngest age group (25-34) group perceived less security risk than the older three age groups; the next youngest group (45-54) perceived less security risk than the two oldest groups. Younger people, who have grown up with, and are more comfortable with, computer technology are more likely to perceive the device as safe to use and as a result, more likely to purchase.

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