

## DOES MORE MEAN BETTER? AN EXAMINATION OF VISUAL PRODUCT PRESENTATION IN E-RETAILING

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### ABSTRACT

Because of the intangible nature of online shopping, consumers perceive online shopping as being risky. This study examined how this risk can be reduced specifically by using a more effective online product presentation method. A combination of the number of product views (one and four) and size (small and large) of the product image were used to examine their influence on consumer's mental intangibility and perceived amount of information, in which the two constructs ultimately influence perceived risk and patronage intentions. The results from the study showed that both product displays influenced mental intangibility even though an interaction effect did not exist. Comparatively, the number of product views and size had an interaction effect on perceived amount of information. These findings indicate how multiple product presentations can be used differently in reducing mental intangibility and perceived amount of information in an online shopping environment. Furthermore, perceived risk was found to be a partial mediator for both mental intangibility and patronage intentions, and perceived amount of information and patronage intentions. These findings provide useful information for e-retailers to consider for effective online product presentation.

Keywords: Online Shopping, Product Presentation, Mental Intangibility, Perceived Amount of Information, Perceived Risk

### 1. Introduction

Online shopping has grown drastically over the last decade with more potential for continual growth [Nielsen Global 2008; US Census Bureau 2008]. However, because of the intangible nature of online shopping (i.e. inability to touch or interact with the product), there are still major limitations in consumer experience when shopping online [Featherman & Wells 2010]. This is especially the case for experience goods (i.e. apparel and accessories) where the full information on dominant attributes cannot be known without direct experience, contrary to search goods (i.e. computer software and electronics) where the full information for the dominant attributes can be obtained prior to purchase without any direct interaction [Klein 1998]. Consequently, when shopping online for experience goods like apparel and accessories, consumers tend to engage in sensory experience through mental imagery to figure out how the product looks or fits on them [Bebko 2000; E-tailing group 2011; Then & DeLong 1999]. However, because of the lack of tangibility in an online setting, consumers perceive high risks in purchasing apparel online. This high risk is posited to be the reason only 8% of all clothing purchases are made on the internet compared to 41% of all computer purchases and 21% of all book purchases made on the internet according to Shop.org report (as reported in Barbaro 2007).

Intangibility of products in online shopping further leads to higher return rates for experience products like apparel. According to Shop.org report (as reported in Barbaro 2007), return rates for apparel purchased online are at 14%, which is approximately twice as high as return rates for other product categories purchased online. Other industry sources quote higher return rates ranging from 17% to 25% for apparel products purchased online [Fasanella 2011] or an average of 25% [Phillips 2011]. Given that higher return rates cost retailers for restocking and reselling merchandise ultimately reducing financial profitability, intangibility of products in online apparel shopping is a critical issue that e-retailers need to address.

Past efforts have been made to improve online product presentation to help consumers overcome this product intangibility. Some of these methods include enhancing product visualization such as zooming, video, and alternative views. An increasing number of e-retailers have adopted new visualization technologies such as zooming and panning to improve their conversion rates by facilitating an online product experience [E-tailing group 2011; Jiang & Benbisat 2007]. Yet efficacies of new visualization techniques are still largely anecdotal. There is the assumption that larger and more is better, but there is no sufficient empirical research evidence to support for the effectiveness of various online product presentation techniques. Because of this lack of evidence and direction, there is incongruence in the online presentation methods used by e-retailers today.

To improve an understanding of effective online product presentation especially for experience goods, this study aims to examine the concepts of mental intangibility and perceived amount of information as key explanatory variables impacting consumer risk perception and patronage intentions as a response to online product presentation. Mental intangibility reflects how much information one perceives to grasp [McDouggall & Snetsinger 1990]. Laroche et al. [2005] suggests that although a consumer need not see or touch the actual product (physical tangibility), he or she has to be able to at least mentally picture what it looks like (mental tangibility) in order to alleviate the perception of risk in online shopping. Perceived amount of information is how much information one perceives to have received [Kim & Lennon 2000]. In this study, mental intangibility and perceived amount of information are treated as distinguishable but equally important constructs. For example, although the consumers may perceive to have adequate information about a product (i.e. details on dress), they may still have a difficult time imagining how the product may look and fit on them physically (mental intangibility). It is posited that these two similar but different constructs, in response to online product presentations, can influence perceived risk and patronage intentions associated with online apparel purchases.

From several available visualization tools, this study focuses on the most basic visual tools available, namely product photos in terms of picture size and the number of product views. Product photo was chosen for the study because almost all websites use product photos on their websites and is also an economical means to enhance mental tangibility of products. Despite common beliefs from advertising that the bigger is the better, empirical research found that detailed verbal product descriptions were more powerful in terms of positively influencing consumer decision-making than picture sizes [Kim & Lennon 2008]. Large pictures were effective in terms of evoking more positive attitudes toward products, but did not increase purchase intentions, whereas more detailed product descriptions evoked positive attitudes and led to higher purchase intentions. This finding may imply that large pictures are not necessarily more effective in reducing mental intangibility than concrete product descriptions. Thus, more research is warranted to examine the effectiveness of large pictures.

Another aspect of online product presentation is the number of product views. Generally e-retailers offer one product view for a product. In their content analysis of 111 apparel websites, Kim et al. [2006] found that nearly 1 out of 5 websites provided only one picture of a product with no alternative views, less than half the websites provided 2 product views, and about one third of the websites provided more than 3 product views. Over 80% of the websites did not provide back view of products and over 97% of the websites analyzed did not offer side views. Although more companies are now adding views and the industry advocates for more product views [E-tailing group 2011], existing empirical research findings failed to support the efficacy of the number of product views [Jai & Kim 2009]. Thus, more research is needed to understand how the number of product views influence consumer product experience in online shopping. Does more mean better in e-retailing?

The purposes of this research are (1) to investigate the effect of online product presentation in terms of picture size and the number of product views on mental intangibility and perceived amount of information; (2) to uncover the process by which mental intangibility and perceived amount of information impacts perceived risk and; (3) to examine how perceived risk influences patronage intentions.

## **2. Conceptual Framework and Hypothesis**

### **2.1. Theoretical Framework**

The Stimulus-Organism-Response (S-O-R) model based on environmental psychology was first introduced by Mehrabian and Russell [1974], which was later applied in retail context by Donovan and Rossiter [1982]. Donovan and Rossiter [1982] operationalized atmospheric cues as the “stimuli,” shoppers’ reactions to store atmospheric cues as the “organism” and approach/avoidance behaviors as the “response.” Since then, the S-O-R has been widely used in a variety of traditional retailing contexts [Chebat & Morrin 2007; Wright et al. 2009].

Furthermore, with the rise of e-retailing, the S-O-R model was adopted and modified to cater to e-retail atmospherics as well [Eroglu et al. 2001]. In e-retailing settings, atmospheric stimuli such as scent that were important in a traditional retail setting was less relevant, while other stimuli such as product images and product

descriptions were emerged as highly relevant atmospheric cues in e-retailing [Eroglu et al. 2001; Jiang & Benbisat 2007; Kim & Lennon, 2010].

In the context of this study, the S-O-R model was used to explain the process by which online visual product presentations in terms of picture size and the number of product views (S) influence consumers' internal states in terms of mental intangibility, perceived amount of information, and perceived risk (O), ultimately influencing patronage intentions (R) (See Figure 1).

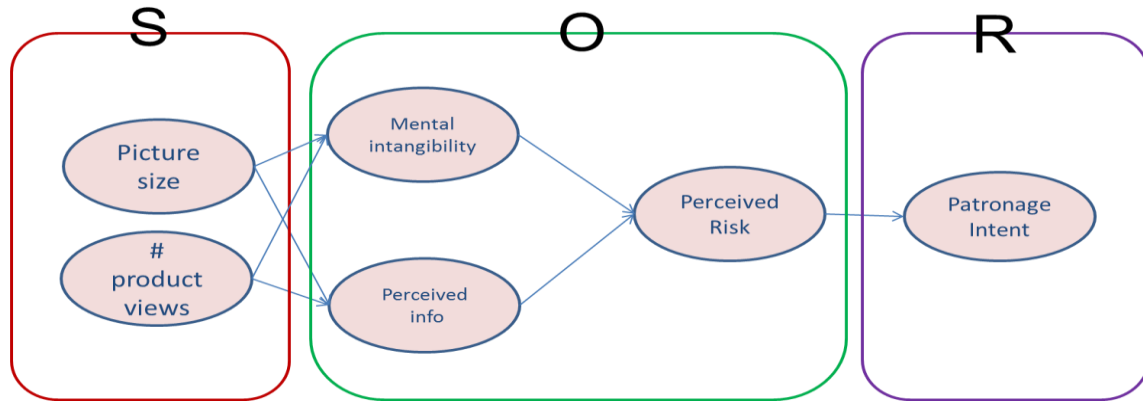


Figure 1: Proposed Model

## 2.2. Visual Product Presentation and Mental Intangibility

Product presentation is defined as the consciously designed display of chosen merchandise in a specified area [Fiore et al. 2000]. It is one aspect of store atmospherics (e.g., display, music, scent, color and lighting), which has been found crucial in helping consumers to make an informative decision on their purchases [Fiore et al. 2000; Karimov et al. 2011; Kotler 1973-4]. It has also been found that the more appealing and interesting the product display is, the higher the purchase intentions [Bhatti et al. 2000; Then et al. 1999]. In e-retailing, Kim & Lennon [2010] found that apparel displayed on human models evoked more positive emotional, cognitive, and conative responses than apparel items displayed as flat. In another study, Kim and Forsythe [2008] found that sensory enabling technologies such as 2D views, 3D rotation and virtual try-ons evoked positive attitude toward the use of the retail website. Likewise, online product presentations can play an important role in influencing consumers' shopping experience for experienced goods in e-retailing.

In the current study, picture size and product views were posited to impact mental intangibility. Mental intangibility reflects that a product can be physically tangible, but difficult to grasp mentally when physical tangibility does not ensure a clear, mentally tangible representation of an object [McDougal & Snetsinger 1990]. For example, an observer can see a picture of a car, but may perceive it to be mentally intangible in how it may look in a real setting. This is moreover the case with unfamiliar products compared to everyday objects like a car; for instance, a person living in a tropical area may have a hard time mentally picturing what snow looks like just by looking at pictures of the snow. This logic is analogous to the retail industry where mental intangibility is heightened in uncertain situations such as e-retailing, where the consumer is unable to physically interact with the unfamiliar products. Mental intangibility is likely to be magnified when shopping for experience goods like apparel in e-retailing due to a need for greater sensory experience.

Prior research findings suggest that using imagery or vivid information cues is particularly desirable when services (or goods) are highly intangible [Berry & Clark 1986; Detlor et al. 2003; Zeithaml & Bitner 2000]. In line with the need for vivid cues to mitigate mental intangibility, MacInnis and Price [1987] found that product presentation such as large picture facilitates imagery processing than a small picture. A large picture attracts more attention to the product and stimulates more consumption imagery than a small picture [Percy & Rossiter 1983]. Similarly, a large picture is posited to increase (reduce) mental (in)tangibility.

Additionally, the number of views of a product can facilitate mental imagery because the consumers have the ability to combine the different views to form a three-dimensional picture of the actual product in their minds. This enhanced mental imagery can further mitigate mental intangibility. Based on the S-O-R model and review of relevant literature, the following hypotheses were developed.

H1: Consumers experience less mental intangibility when they view a large size product view in comparison to a small size product view.

H2: Consumers experience less mental intangibility when they view more product views in comparison to less product views.

H3: There is an interaction effect between picture size and product views on mental intangibility.

### 2.3. Visual Product Presentation and Perceived Amount of Information

Perceived amount of information is the amount of information a consumer perceives to have received from the given information [Kim & Lennon 2000]. Perceived amount of information and mental intangibility are similar in that both do not deal with the actual, but the perceptual information provided. However, the main difference is that mental intangibility is how much information one perceives to grasp while perceived amount of information is how much information one perceives to have received. Hence, just because a consumer is able to mentally grasp the product in her mind (i.e. how the dress fits on her) does not necessarily imply that she perceived adequate information about a product (i.e. details on dress). For example, in context of this study, the consumer may perceive the picture size to reduce mental intangibility, but may not necessarily think that it provides essential information for them.

With this logic, it is further posited that visual product presentation will also influence perceived amount of product information. For example, it is easier for consumers to gather product information from a large picture than a small picture because of the easier visibility of the details in a large picture. Analogously, with the number of product views, consumers can collect more well-rounded information about the entire product, and thus, are able to gather more information about a product, increasing their perceived amount of product information. With this, the following hypotheses are proposed:

H4: Consumers perceive more information when they view a large product view in comparison to a small product view.

H5: Consumers perceive more information when they view more product views in comparison to less product views.

H6: There is an interaction effect between view size and product views on perceived information.

### 2.4. Mental Intangibility and Perceived Risk

Perceived risk is viewed as a subjective expectation of loss (Peter & Ryan 1976), which stems from uncertainty about the possible outcomes of a behavior. Cox and Rich (1964) have argued that certain forms of shopping may be riskier for consumers than others, especially those that do not offer visual or tangible cues because of consumer fear of not getting what was desired. For example, consumers perceive telephone or mail ordering services to be of higher risks because of the lack of ability to examine the products before purchase and the difficulties involved in returning the unwanted product. Analogous to these same intangibility aspects of the phone or mail order, online purchases are perceived to be riskier than off line purchases [Forsythe & Shi 2003]. In e-retailing, consumers have a difficult time evaluating products due to the inability to physically examine them, and consequently perceive higher risks with shopping online, especially for experience goods like apparel [Bebko 2000; Sautter et al. 2004; Yoo & Kim 2010]. Numerous studies have also examined this relationship between mental intangibility and perceived risk in which consumers perceive their shopping to be risky when they cannot mentally picture the item they are purchasing [Featherman & Wells 2010; Laroche et al. 2005; McDoubgall & Snetsinger 1990]. With this support, the following hypothesis was developed:

H7: Mental intangibility positively influences perceived risk.

### 2.5. Perceived Amount of Information and Perceived Risk

Although the relationship between mental intangibility and perceived risk has been extensively studied [McDoubgall & Snetsinger 1990; Laroche et al. 2005; Featherman & Wells 2010], there is a scarcity of research conducted on perceived information relative to perceived risk [Kim & Lennon 2000]. However, the researchers posit that these two latter constructs have a similar relationship to mental intangibility and perceived risk; if the consumer does not feel that she has adequate information in order to make a purchase, she may feel that there is more risk involved with the purchase. Thus, an examination of the possible influences of perceived amount of information on perceived risk is also warranted.

H8: Consumer's perceived amount of information reduces perceived risk.

### 2.6. Patronage Intentions

Patronage intentions reflect whether a consumer is willing to shop at the store again, or recommend it to her friends. It is generally expressed as a consumer's intention to be loyal to a retail store relative to the product (i.e. handbag), market (i.e. store-related attributes), and personal attributes (style preference) [Dodds et al. 1991; Pan & Zinkhan 2006]. Of these three relevant factors, this study observes patronage intentions as a response to market-relevant factors, specifically product presentations with support from previous body of literature on the relationship

between product presentation and patronage intentions [Forsythe & Shi 2003; Grewal et al. 2003; Kim & Damhorst 2010; Pan & Zinkhan 2006]. Furthermore, past research has found that improving the tangibility of products or services (via product presentation) for consumers shopping online not only creates higher patronage, but ultimately has the potential to influence loyalty intentions [Koernig 2003]. Conversely, when consumers experience difficulty in evaluating products due to a lack of sensory experience, their patronage intentions decrease as a result of a higher risk perception [Forsythe & Shi 2003; Yoo & Kim 2010]. Thus, in conjunction with these past studies and a grounded support in the negative relationship between perceived risk and patronage intentions [Forsythe & Shi 2003; Summers & Wozniak 1990], this study aims to investigate both direct and indirect roles of perceived risk in influencing patronage intentions.

H9: Perceived risk negatively influences consumer patronage intentions.

H10: Perceived risk mediates the relationship between mental intangibility and consumer patronage intentions.

H11: Perceived risk mediates the relationship between perceived amount of information and consumer patronage intentions.

### 3. Method

This study employed a Web experiment simulating apparel e-retailing. The design of the study was a 2 (picture size: small vs. large) by 2 (the number of views: one vs. four) between-subjects factorial design. Handbag was the examined product in this study because they are part of the booming rise of online clothing and accessories sales reported by US Census Bureau [2008]. They are also considered one of the strongest categories in sales among department stores such as Bloomingdales [WWD 2011] and “the most important part of the outfit because it doesn't have to do with your body type” [Bloomberg Business Week 2011].

#### 3.1. Stimulus Development

In order to develop a realistic mock website, a preliminary content analysis of the top 20 US online apparel retailers [Internet Retailer 2010] was conducted with a focus on handbag presentation. The findings showed that number of product views ranged from one (front view) to four (front view, side, inside, and back) with most websites having only one product view (front view) regardless of price points (less than \$100 to over \$5,000).

The preliminary content analysis guided the development of the mock websites for handbags. For the handbag views, one front view was used as the control because in many of the websites examined during the preliminary content analysis, the front view was the basic view that the retailers offer for handbags on their product page. For the condition with four views, front, inside, side, and back view of handbags were included. Product photo was chosen for the study because almost all websites use product photos on their websites. It is also an economical means to enhance mental tangibility of products.

A pretest was further conducted to determine the product picture size. The size of the handbag pictures (small and large) were measured by a 7-point Likert-type scale from small (1) to large (7). For product photo size, a large picture was 2.5 times bigger than a small picture, which was significantly perceived as larger than the smaller picture ( $F = 58.75, p < 0.001$ ) with mean of 3.98 ( $SD = 1.44$ ) for small and 5.45 ( $SD = 1.11$ ) for large picture.

The pretest was also conducted to select handbags for the mock website. A neutral style and color of the handbag (black) were used where the brand name could not be identified from the photograph. Ten college students rated the ten different types of handbags downloaded from commercial websites in terms of attractiveness, fashionability, likeability, and likeliness to purchase on a 7-point Likert scale. The top 3 rated handbag were chosen for the main experiment for stimulus sampling purpose [Wells & Windschitl 1999]. For the mock website, a background and the amount of text included were consistent across experimental conditions.

#### 3.2. Instrument Development

All items came from the existing literature, had appropriate reported reliabilities, were adapted to reflect online handbag shopping, and used 7-point Likert-type scales.

##### 3.2.1. Mental Intangibility

Four items were adopted from Laroche et al.'s [2001] mental intangibility scale (Cronbach's alpha = .86), which was originally extracted from McDougall and Snetsinger's [1990] study. A higher score indicated greater difficulty in grasping how the handbag looks mentally (e.g. This is a difficult item to imagine myself with). Scores on three of the five items were reverse-coded before data analysis so that a higher score indicated greater intangibility.

##### 3.2.2. Perceived Amount of Information

Five items were adopted from Kim & Lennon's study [2000], which used 7-point Likert-type scales (Cronbach's alpha = .94). Questions such as “The website I viewed today contained very much information” and “After browsing the website, I know enough to make an informed purchase decision” were asked.

### 3.2.3. Perceived Risk

Four items adapted from Kwon and Lennon [2009] (Cronbach's alpha = .97), which was originally adopted from Choi and Lee's [2003] uncertainty toward online purchasing scale, were used to assess perceived risk of purchasing from the e-retailer in the experiment. This scale was used to address financial and performance risks related to purchasing the commodity. A higher score indicates less certainty or confidence (increased perceived risk) about using the internet when shopping for handbags (e.g., I will incur some risk if I buy this item in the next twelve months).

### 3.2.4. Patronage Intentions

Three items were modified from Grewal et al. [2003] which had a Cronbach's alpha of .88, originally adopted from Dodds et al. [1991]. A higher score indicates a greater willingness to shop, purchase and recommend the retail store.

### 3.3. Procedure

The data were collected from a convenience sample of college women at a large U.S. university. College women comprise almost two thirds of online shoppers at apparel and accessories websites [Internet Retailer 2004] and thus were deemed as the appropriate participants for the current study. Invitation emails with a URL link to a mock website were sent to potential participants who were randomly assigned to one of the four treatment conditions as they click the link. Participants first viewed three handbags in the same condition for stimulus sampling purposes [Wells & Windschitl 1999] and then answered a set of dependent measures followed by demographic questions including their past experiences in shopping for and purchasing general products and handbags.

## 4. Result

### 4.1. Sample Characteristics

A total of 186 female students with a mean age of 21 participated in the Web experiment. The majority of the participants were White/European American (81%). Almost all participants have shopped on the web. Close to half the participants reported shopping for handbags on the web and about a quarter of the participants reported purchasing handbags online.

### 4.2. Preliminary Analysis

The internal reliability of the scale items was analyzed using Cronbach's Alpha. All items had adequate reliabilities: .83 for mental intangibility, .87 for perceived amount of information, .91 for perceived risk, and .93 for patronage intentions.

### 4.3. Hypotheses testing

#### 4.3.1. Product Presentation and Mental Intangibility

ANOVA was conducted in order to test the main effects for product presentation on mental intangibility. ANOVA revealed a significant main effect for both the product view size  $F(1, 179) = 4.40, p < .05$  and the number of product views on mental intangibility,  $F(1, 179) = 5.83, p < .05$ . Smaller handbag size was perceived to be more mentally intangible ( $M = 3.05; SD = 1.21$ ) than the larger handbag size ( $M = 2.74; SD = 1.04$ ) while one product view ( $M = 3.09; SD = 1.15$ ) was perceived to be more mentally intangible than four product views ( $M = 2.72; SD = 1.10$ ). When exposed to four product views, respondents experienced higher mental tangibility than when exposed to one product view. Thus, H1 and H2 were both supported. No interaction effect between the handbag size and the number of views at was found ( $p = .68$ ), failing to support H3.

#### 4.3.2. Product Presentation and Perceived Amount of Information

ANOVA was conducted to test the main effects for product presentation on the perceived amount of information. No main effect for both the product view size ( $p = .18$ ) and the number of product views ( $p = .98$ ) were found, failing to support H4 and H5. However, there was a significant interaction effect between the handbag size and the number of views on the perceived amount of information,  $F(1, 179) = 3.97, p < .05$ , supporting H6. Simple main effect test showed that perceived information was significant when the participants viewed four handbag views (instead of one handbag view) [ $F(1,176) = 5.83, p < .05$ ]. When picture size was small, participants who viewed four pictures perceived more information than those who viewed one picture of handbag. However, when picture size was large, participants who viewed one picture perceived more product information than those who viewed four pictures of handbags (See Figure 2).

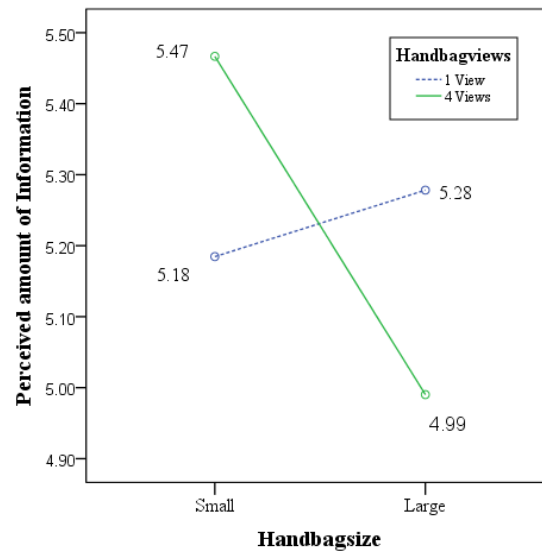


Figure 2: Picture Size by the Number of Views Interaction

#### 4.3.3. Mental Intangibility, Perceived Amount of Information, and Perceived Risk

Multiple regression analyses revealed a significant positive relationship between mental intangibility and perceived risk,  $\beta = .35$ ,  $t = 4.12$ ;  $p < .001$  and a significant negative relationship between perceived amount of information and perceived risk,  $\beta = -.52$ ,  $t = -5.10$ ;  $p < .001$ . Mental intangibility and perceived amount of information together accounted for 32.0 % of the variation in perceived risk. These findings support H7 and H8.

#### 4.3.4. Perceived Risk and Patronage Intentions

A simple regression analysis revealed a negative relationship between perceived risk and patronage intentions,  $\beta = -.51$ ,  $t = -7.25$ ;  $p < .001$ , supporting H9. Perceived risk accounted for 23% of the variation in patronage intentions.

#### 4.3.5. Mediating Analysis for H10 and H11

Baron & Kenny's [1986] method of three regression analyses was conducted for this mediation analysis. The results indicate that mental intangibility (independent variables) was shown to have a significant relationship with patronage intentions (dependent variable) with  $\beta = -.48$ ,  $t = -5.57$ ,  $p < .001$  in the first stage. Mental intangibility (independent variables) also had a significant relationship with perceived risk (mediator) ( $\beta = -.55$ ,  $t = 6.66$ ;  $p < .001$ ) in the second stage. The results of the third stage indicated that perceived risk (mediator) had a significant influence on the patronage intentions (dependent variable) with  $\beta = .39$ ,  $t = -5.06$ ,  $p < .001$ . In addition, the impact of mental intangibility on patronage intentions (dependent variable) substantially decreased when the perceived risk was controlled in the third step. Even though the coefficients were decreased, the values were still statistically significant with  $\beta = -.27$ ,  $t = -2.89$ ,  $p < .01$ . While mental intangibility was able to explain 15% of variance in patronage intentions, mental intangibility and perceived risk together were able to explain 27% of variance, which is almost twice the percentage in variance. Based on these results, perceived risk is also a partial mediator between mental intangibility and patronage intentions supporting H10.

There is also a partial mediation of perceived risk in the relationship between perceived amount of information and patronage intentions. The results indicate that perceived amount of information (independent variables) was shown to have a significant relationship with patronage intentions (dependent variable) with  $\beta = .58$ ,  $t = 5.73$ ,  $p < .001$  in the first stage. Perceived amount of information (independent variables) also had a significant relationship with perceived risk (mediator) ( $\beta = -.38$ ,  $t = -6.71$ ;  $p < .001$ ) in the second stage. The results of the third stage indicated that perceived risk (mediator) had a significant influence on patronage intentions (dependent variable) with  $\beta = .31$ ,  $t = 2.82$ ,  $p < .001$ . In addition, the impact of perceived amount of information on patronage intentions (dependent variable) substantially decreased when the perceived risk was controlled in the third step. Even though the coefficient decreased, the values were still statistically significant with  $\beta = -.43$ ,  $t = -5.30$ ,  $p < .001$ . Based on these results, H11 is also supported.

## 5. Discussion, Limitations and Implications

There are few topics of discussion from the results. First, the findings of the study show that both the picture size and the number of product views have a significant effect on mental intangibility. These results are consistent with past findings that product presentation helps consumers to make more informed decisions [Kim & Lennon 2008], and add to the current literature that a use of mixed product presentation can further help reduce perceived mental intangibility. However, there was no interaction effect of the product presentations on mental intangibility, which shows that each presentation independently influenced mental intangibility. The study further found that these product presentations did not have a main effect on the amount of information perceived by the consumer, but an interaction effect. When there were four handbag views, participants who viewed them in small size perceived that the number of product views provided significantly more information about the handbag compared to those who viewed them in large size. This result demonstrates that in the presence of small size pictures, more views were more effective in leading higher perceived amount of product information. However in the presence of large pictures, more were not better. People who viewed four large pictures perceived less product information than those who viewed one large product. This counterintuitive finding may be explained using visual fluency. In an online shopping context, Kim, Malkewitz, and Orth [2009] found that small thumbnails with minimum texts were more visually fluent than large thumbnails with minimum texts. They postulated that when large thumbnails are used, consumers are unable to see all images in one page and have to scroll down to see them all. This makes visual processing of information harder, perhaps leading to less perceived amount of information. In the current study, when four small pictures were used, participants were able to see them all in one page, whereas they had to scroll down to see individual ones when four large pictures were used. Visual fluency may explain why participants perceived less information when exposed to four large pictures –because they were unable to easily process the information available.

Overall, the findings suggest that using a combination of both product presentations is an effective method in increasing mental tangibility, but not perceived information. Thus, more is not necessarily better, but depends on the context of the online product presentation. The findings of the study suggest practitioners to place visual fluency into account when using product presentation. Simply adding more and bigger product pictures may not help facilitate consumer decision-making in online apparel shopping. Although using a combination of different product presentations is effective in reducing mental intangibility and enhancing perceived amount of product information, an appropriate mix of presentation to cater to both needs should be used taking visual fluency into consideration. In this study, using both the large pictures and multiple product views was not the best method in enhancing perceived amount of information. Zooming and panning options may be a more parsimonious method of product presentation for practitioners. Additionally, as supported in previous research [Kim & Lennon 2008], practitioners would want to complement fewer number of large product views with concrete product descriptions to enhance mental tangibility.

Another crucial finding in this study is the influence of mental intangibility and the amount of perceived information on perceived risk. Both constructs were found to influence perceived risk in online setting. However, the amount of perceived information had a stronger influence on perceived risk ( $\beta = .52$ ) than mental intangibility ( $\beta = .35$ ). This demonstrates that consumers grasping the product in their minds can alleviate risk associated in online setting, but more information about the product can alleviate this perceived risk even more effectively. Even though past studies show that search goods such as electronics are prone to require more information about the product than experience goods [Klein 1998], this study suggests that in an e-retail setting, experience goods also need more information about the product whether it is through visual or verbal presentations. Future studies can observe if these findings are consistent across the two product categories. As for e-retailers of experience goods, they should intentionally invest in developing visual presentation methods in which the perceived amount of information can be enhanced online to alleviate perceived risk. Furthermore, although past studies have already found a positive relationship between perceived amount of information and perceived risk [Kim & Lennon 2000], and perceived risk and patronage behavior [Summers & Wozniak 1990; Forsythe & Shi 2003], this study advances findings in perceived risk as a partial mediator for perceived amount of information and patronage intentions. By reducing perceived risk, perceived amount of information increased patronage intentions.

The results further demonstrate that mental intangibility and perceived information are two different but important constructs, which should be collectively studied in their relation to perceived risk in an online setting. Product presentations may help the consumer mentally grasp the product better, but it does not necessarily provide more product information, and vice versa. Thus, further research on the relationship between mental intangibility and perceived amount of information is recommended.

Future studies may expand into other visualization techniques such as zooming and panning and other features on product pages such as consumer reviews (given the findings on perceived amount of information) to examine how mental intangibility plays a role in such environment. Furthermore, visual fluency of various online product



presentation methods and the relationship between visual fluency and mental intangibility need further investigations to optimize the effectiveness of online product presentation. Lastly, given the category limitations of studying only fashion goods, future studies may compare other categories for generalizability in the variable relationships.

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