

Psychological Effect of Personalized Services on Customer's Website Loyalty in Fashion -Focusing on Cognitive Efficiency, Website Socialness, and Perceived Enjoyment-

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Abstract

Prior research highlighted personalized services as a crucial antecedent to website loyalty, yet little has been discussed on the underlying mechanism. The current study explores the intervening effects of the three psychological constructs in the personalization-loyalty relationship: cognitive efficiency, perceived enjoyment, and socialness. An experiment was conducted with a total of 414 U.S. shoppers on a fictitious e-tail site for jeans that employed different levels of personalized content. The results found that the participants exposed to the high-level personalization condition reported a higher cognitive efficiency and higher socialness perception regarding the fashion e-tail site; however, no direct effect of intensity of e-personalization was found on perceived enjoyment. Cognitive efficiency and enjoyment perceptions on the site significantly increased customers' loyalty intentions regarding the site, while website socialness perception had no direct effect on loyalty intentions. Website socialness showed indirect effects on website loyalty intentions only through cognitive efficiency and perceived enjoyment; however, no direct effect from website socialness was found. Implications and limitations of the study were discussed.

Key words: e-personalization, Website loyalty intentions, Cognitive efficiency, Perceived enjoyment, Website socialness

I. Introduction

Once logging into a e-tail site, or browsing in a shopping application, consumers are no longer surprised to see promotional web contents tailored to their own individual interest. Such personalized e-tail items are drawn from advanced technology of data mining. It aims at company-driven marketing programs better serving customer's demands (Choi et al., 2011). *Personalization* in virtual retail contexts is defined as a specific communication flow providing each recipient with distinct content tailored to the individual (Arora et al., 2008). Its *intensity* is the degree to which the person-

alized content uniquely identifies or characterizes its recipients (White et al., 2008); relevant services may reflect demographics, individual preferences, and/or purchase histories of a customer that are collected from a e-tail site generally upon an agreement of information share. The more intense a personalized content gets, the more relevant the resulting information becomes to the individual customer (Srinivasan et al., 2002).

Personalization is certainly a growing phenomenon - an industry report estimates that half of the largest U.S. e-tailers utilized some personalization techniques in 2011, compared with about 33% the year before (Singer, 2012). Benefits of personalization should be amplified with web-based selling for fashion. The reason is that the product attributes of fashion items should match customer's personal tastes, and even

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within the virtual contexts, most fashion shoppers demand quality shopping experiences (Luo, 2005). Accordingly, companies like Amazon and Barneys New York have been active in employing personalization on their websites, while research has anticipated personalization of marketing as an important upcoming trend in the U.S. industry (e.g., Kim & Johnson, 2007). Particularly, a great value of personalization is found in relation to customer loyalty towards a e-tail site (Srinivasan et al., 2002); synergy will come from combining suggestive selling and customer-company relationship management (Kwon & Rudd, 2007). The role of personalized services has become highly crucial in virtual marketplaces. Comparatively however, research has been scant regarding its effects from the customer's perspective. Particularly, research has yet to examine the mechanism underlying the effect of personalization; this research gap demands a further exploration.

In this research, therefore, the author attempts to explore customer-perceived benefits of personalized services impacting their patronage regarding the website. The theoretical framework draws upon the relevant principles and includes three core benefits: cognitive efficiency (Hornik & Miniero, 2009), perceived enjoyment (Childers et al., 2001), and website socialness (Wang et al., 2007). The three variables are chosen as they are most often indicated to be relevant to virtual settings using company-driven services (Childers et al., 2001; Hornik & Miniero, 2009; Luce et al., 2001; Taylor & Fiske, 1978; Wang et al., 2007). Investigating how customers perceive and respond to personalized contents should expand the current understanding of the services' potentials in various virtual contexts, leading to better strategies for customer-company relationship management (Choi et al., 2011; Halepete et al., 2009).

II. Literature Review

1. Psychological Effects of Personalized Services

1) *Personalized Services to Cognitive Efficiency*

Using personalized services helps customers save cognitive efforts in finding information they want. This

would be one of the most crucial benefits of personalization from the customer's perspective. *Cognitive efficiency* refers to the qualitative increases in knowledge obtained in relation to the effort and time invested in knowledge acquisition (Hornik & Miniero, 2009); within the literature of psychology, the concept explains the specific purpose of relaying the capability of a certain application of cognitive effort to produce a specific outcome effectively, with a minimum amount of waste, expense, or unnecessary effort (Payne, 1982; Taylor & Fiske, 1978). As cognitive misers (Taylor & Fiske, 1978), people typically do not want to engage in more extensive cognitive processing than necessary to achieve their purpose (Kruger et al., 2004), yet their decision-making processes and evaluation of outcomes are determined by the balance between cognitive costs and perceived benefits (e.g., utility) from their efforts (Natale et al., 2003).

The amount of cognitive effort spent on a purchase decision becomes extremely crucial in contexts involving a large variety of choice options for the customer (Shugan, 1980); a vast amount of information easily results in a cognitively unfavorable situation by overwhelming customers (Srinivasan et al., 2002). When shoppers perceive information overload in making a decision, this may lead to their negative psychological states such as increased mental stress (e.g., Payne, 1982). In addition, information overload likely lowers perceived level of satisfaction with the situation (Heitmann et al., 2007), by activating a heuristic thinking process whereby decisions are made based on an incomplete consideration of the possible options (Luce et al., 2001). This heuristic thinking process, or a 'short-cut' of decision-making from the shopper's perspective, often increases the level of anticipated regret and decreases expected utility of the decision itself. As a result, this negative mental dynamics subsequently lead to a low level of satisfaction with the resulting decision (Heitmann et al., 2007).

In e-commerce contexts, shoppers are often facing an excessive amount of information regarding making choices. Information overload likely increases shoppers' negative psychological states like perceived risk (Ansari et al., 2000) and decreases positive attitudes such as choice confidence (Luce et al., 2001). Here,

personalized messages may help individuals reduce the time and effort spent in making a decision. According to Ansari et al. (2000), individualized communication efforts initiated by a company would reduce perceived information overload from a customer's view, and this results in a stronger customer-company relationship. By tailoring contents to shoppers' individual preferences, services for personalization online can be an effective marketing tactic that helps shoppers in making a faster and smarter choice (Huang & Lin, 2005) with less cognitive effort spent (Nasr Bechwati & Xia, 2003). This combination of increased decision quality and decreased cognitive effort should increase perceived levels of cognitive efficiency. Accordingly, the following is hypothesized:

H₁: The perceived intensity of e-personalization in virtual retail environments will increase perceived cognitive efficiency.

2) Personalized Services to Perceived Enjoyment

Shopping in a virtual environment should be fun, in order for a company to continue intriguing the shoppers for revisit and repurchase. Personalized web content should help the company in enhancing such enjoyable factors of the website by performing as positive in-store stimuli reflecting good customer care and services - within the stimulus-lacking context on the web (Ganesh et al., 2010). *Enjoyment* is defined as the extent the experience is perceived to provide reinforcement in its own right, apart from any other consequences that may be anticipated (Childers et al., 2001; Davis et al., 1989; Wakefield et al., 2011). Prior research documented that perceived enjoyment is an important emotional organism that explains individuals' reactions to technology-aided services in various virtual contexts (e.g., Ganesh et al., 2010; Lee et al., 2010). According to Frank et al. (1993), enjoyment is a moderately positive emotional state in which the individual is interested, contented, and to some degree, happy with their circumstances as a human being. Kim et al. (2007) found that perceived enjoyment was directly increased by the engagement in image interactivity technology, resulting in positive consumer attitudes towards the website.

Personalized contents build positive characteristics for the website, like interactivity, control, or media richness, and this increases perceived quality of virtual experiences and subsequently perceived level of enjoyment. Personalization is based on advanced technology and consumers are fully aware of it (Nasr Bechwati & Xia, 2003). Song and Zinkhan (2008) reported that personalized information on a e-tail site likely increases consumer-perceived website interactivity which may significantly increase perceived enjoyment (Hoffman & Novak, 2009). Anandarajan et al. (2010) indicated a positive relationship between perceived enjoyment and media richness in instant messaging contexts. Perceived control in online gaming can increase perceived enjoyment of the users (Klimmet et al., 2007; Wu et al., 2008). In a study by Mathwick et al. (2010), need for control determined participation in personalization. Merging the findings suggested in the relevant literature, the following is hypothesized:

H₂: The perceived intensity of e-personalization in virtual retail environments will increase perceived enjoyment.

3) Personalized Services to Website Socialness

Because the services are delivered through computer interfaces, personalized contents in a e-tail site provide individualized information in a highly 'impersonal' manner (Nasr Bechwati & Xia, 2003). At a glance, therefore, personalization may seem highly irrelevant to interpersonal benefits. However, from a mediated communication perspective (e.g., Choi et al., 2011), a personalized content in e-commerce may perform as a sort of quasi social interaction between a shopper and the company that occurs without actual physical interactions. The social interface theory (Fogg & Nass, 1997; Nass et al., 1997) suggests that humanizing cues in a computer interface. The theory indicates the possibility that context can become a socially rich, and thus, psychologically fulfilling environment. The central argument here is that people treat computers as social actors, not as inanimate tools, and that relatively subtle cues in a computer interface can evoke reactions similar to those produced by a human (Couper et al., 2001). Research by Nass et al.

(1997) indicated that even the words and expressions used in a text-based tutoring task may engender reactions from participants similar to those evoked by interaction with other people. Their findings were further confirmed by subsequent studies; for instance, Cui et al. (2010) found that the use of emoticons improved the perceived control, responsiveness, and synchronicity of the website.

Website socialness is a positive humanlike characteristic of a website that encompasses the perceived intelligence, helpfulness, informativeness, and interactivity (Wang et al., 2007). Wang et al. (2007) found that the perceived socialness can be improved when customers were exposed to a fictitious e-tail site containing rich social dynamics. The possibility that customers may perceive personalization as a source of social dynamics has been suggested in the extant literature; research by Choi et al. (2011) illustrated that personalization is a source of social influence in e-commerce, improving the level of social presence within an online shopping context. Nasr Bechwati and Xia (2003) reported that even though the participants were aware that the personalized recommendations were based on programmed software, they still valued the suggested output (i.e., recommended product information) and the subsequent effort-saving, as they would with the recommendation proposed by actual sales agents. In a similar vein, other studies (e.g., Yoon et al., 2008) reported that, by online shoppers, a company's marketing program can be viewed as an indication of the company's investment in building relationships with their customers. Appreciation of company's relationship-building effort likely increases shoppers' evaluation of the company itself (Yoon et al., 2008). Because it is initiated by the company but not by the customer, web contents for personalization can be viewed by shoppers as a type of company-initiated benevolent effort for a more individualized communication with each customer. Therefore, this should increase shoppers' favorable interpersonal evaluations regarding the company itself. Building on the literature, the following is hypothesized:

H₃: The perceived intensity of e-personalization in virtual retail environments will increase web-

site socialness.

4) Cognitive Efficiency to Perceived Enjoyment

Cognitive efficiency from personalized content should increase perceived enjoyment in the website. Studies suggested that cognitive experiences like usefulness perception (Childers et al., 2001) affect emotional experiences within the context. According to Hoffman and Novak (2009) a mental state of flow is a positive cognitive state that individuals can experience during their navigation on the web. Moreover, they suggest that flow may subsequently lead to a positive emotional state. For instance, Klimmt et al. (2007) reported that perceived effectiveness in video gaming significantly increases perceived enjoyment of the game. Wu et al. (2008) suggested that the length and story of an online game can be highly related to perceived level of enjoyment which significantly affects individuals' behavioral intentions. Cyr et al. (2009) also proposed the positive link between efficiency and affective elements. Accordingly, the following is hypothesized:

H₄: Cognitive efficiency from personalized web contents in virtual retail environments will increase perceived enjoyment.

5) Website Socialness to Perceived Enjoyment

Prior research indicates that social stimuli should affect shoppers' emotional reactions to brick-and-mortar as well as web-based retail settings (e.g., Choi et al., 2011; Wang et al., 2007). Social entities like salespeople are a crucial characteristic of the physical environment in retail and service organizations. A helpful and friendly store employee likely increases customers' positive attitudes towards the store. According to Berry et al. (2002), interpersonal signals emitted by other individuals in the context can be a crucial antecedent to their emotional states. Interpersonal dynamics initiated from human-to-computer interactions may create positive emotional states in consumers' minds (Nass et al., 1997). Similarly, the para-social interaction theory (Rubin & McHugh, 1987) posits that shoppers exposed to humanlike characteristics of a website likely interact to with the website in a way that

they interact with other individuals. Wang et al. (2007) demonstrated that the perceived socialness positively influences perceived pleasantness. Therefore, the following is hypothesized:

- H₅: Website socialness from personalized web contents in virtual retail environments will increase perceived enjoyment.

2. Psychological Effects of Personalized Services to Website Loyalty

1) Cognitive Efficiency to Website Loyalty

Furthermore, we expect that cognitive efficiency, perceived enjoyment, and perceived socialness from personalization will improve loyalty intention towards companies. The motivation studies have been actively documenting the possible effect of cognitive efficiency on loyalty in consumption contexts (e.g., Luce et al., 2001). Individuals intrinsically prefer situations that allow them to make good decisions while expending minimal cognitive effort (Payne, 1982). More specifically, the amount of cognitive effort consumed during decision making positively correlates to their evaluation of the decision. Assuming consumers are rational decision makers, when consumers realize they may reduce cognitive effort and arrive at the same quality decision, their satisfaction with the decision increases, and their intention to patronize increases as well (Luce et al., 2001). Conversely, if individuals think that they have put too much effort in a decision, their patronization regarding the decision (or regarding the decision-making process) would become significantly low (Taylor & Fiske, 1978). Accordingly, a high level cognitive efficiency perceived through personalized messages online likely increases shoppers' intention to patronize the site itself. From a broader perspective, utilitarian value derived from efficient e-shopping environments is a crucial determinant of website loyalty intention (e.g., Cyr et al., 2009). Cognitive efficiency should increase the perceived level of utilitarian value (Luce et al., 2001), and thus would become fundamental in fostering positive customer responses regarding the online company. Hence, the following is hypothesized:

- H₆: Cognitive efficiency from personalized web contents in virtual retail environments will increase website loyalty.

2) Perceived Enjoyment to Website Loyalty

Past research highlighted that perceived enjoyment can perform a crucial individual motivation that increases intention to engage in a technology-aided activity on the web (e.g., Kim et al., 2007; Lee et al., 2010). Lee et al. (2010) indicated perceived enjoyment as an 'experiential value' perceived by shoppers and it can be yielded from a positive e-shopping experience. They reported that perceived enjoyment from virtual e-shopping site employing image-interactivity technology increases shoppers' intention to patronize the site. Given that these variables of customer attitudes (e.g., purchase and patronage intention) are the determinants of website loyalty (Cyr et al., 2009; Srinivasan et al., 2002), the perceived enjoyment from personalization likely increases customers' website loyalty intention towards the website. Hence, the following is hypothesized:

- H₇: Perceived enjoyment from personalized web contents in virtual retail environments will increase website loyalty.

3) Website Socialness to Website Loyalty

Scan research exists regarding the effect of perceived socialness on website loyalty in e-commerce contexts. However, the possibility has been indicated in the relevant literature of marketing communication. Walker et al. (1994), for instance, demonstrated that visual expression of a 'talking interface' on a website increased perceived social quality of the context which in turn influenced their judgments of the website itself. Indeed, Wang et al. (2007) documented that customers' perceived socialness on a e-tail site positively correlates to their patronage and purchase intentions toward the site. Likewise, Wakefield et al. (2011) reported that perceived socialness of a website strongly increases user intentions to revisit the site. Grounded in the literature, it is highly likely that a perceived socialness yielded from personalization serves as a crucial determinant of customer website loyalty. Accord-

ingly the following is hypothesized:

- H_g: Website socialness from personalized web contents in virtual retail environments will increase website loyalty.

III. Methods

1. Study Design

An online survey was developed along with an experiment using a fictitious website. A scenario method was employed to test the hypotheses. First jeans were chosen because it had been indicated in a pretest ($n=22$, 50% male, aged 21-39 years) to be the fashion product type that can be most commonly purchased online across different age and gender. Meanwhile, a scenario method was employed for the experiment. The scenario was about a fictitious shopper named Kim and read as follows: "Kim is a 21-year-old college student who lives in Chicago. While Kim was browsing on the web, she found a retail website selling jeans: MJJeans.com. Last time she visited the site, Kim revealed in the voluntary customer survey her preferred jeans styles as follows: 'Riviera (Color); High (Rise); Flare (Leg); Slim (Fit); Under \$100 (Price)'. She also agreed that she would accept information about promotional events of the site reflecting her preferred styles. Kim is now on the website, shopping for a pair of jeans for herself. Use the URL below to visit the site. Browse its items and choose jeans that may best match with Kim's needs. Express your opinion and evaluation regarding the site by answering the subsequent online survey." The scenario and introduction to the main experiment were drawn from those of prior research on virtual shopping (e.g., Luo, 2005; White et al., 2008).

Sample for the main experiment (and the accompanied online survey) was acquired through a U.S. national research company specialized in online surveys. An invitation email was sent to the 4,000 randomly-chosen pre-registered consumer panels of the research firm. The invitation email asked for a voluntary participation in the main experiment and the accompanied online survey. The participants who had no online shopping experience during past six months had been

screened out from the main experiment. The *intensity of personalization* (IP) reflected in the contents (i.e., promotional messages) was manipulated by the amount of personal information that the message contains (White et al., 2008). Each participant was randomly assigned to one of the two experimental conditions (low-IP versus high-IP conditions). The e-tail site developed for low-IP condition provided participants with standardized promotional messages reflecting standardized shopping information only. Contrastingly, the site developed for high-IP condition provided participants with personalized promotional messages reflecting Kim's personal information (as indicated in the aforementioned scenario). The participants were asked to carefully browse each webpage of the fictitious e-tail site, imagining as if they were Kim. Having finished the browsing, the participants were then guided to the main online survey tapping questions of interest (i.e., cognitive efficiency, perceived enjoyment, website socialness, website loyalty intentions). In addition, some items asking basic demographic information were included in the survey. During a week, a total of 431 female U.S. consumers participated in the experiment. After excluding 17 incompletes, 414 useful responses remained and used for the analysis ($N_{\text{low-IP}}=211$, $N_{\text{high-IP}}=203$).

2. Measures

The current study employed established items to measure participants' perception of cognitive efficiency (hereafter CE), perceived enjoyment (PE), perceived website socialness (WS), and website loyalty intention (WLI). All responses for CE, PE, WS, and WLI were made on a multiple-item Likert type scale (ranged from 1="strongly disagree" to 7="strongly agree"). The established measures of CE were tested and modified in pretest interviews ($n=22$, 50% male, aged 21-39 years) as well as an online survey ($n=62$, 50% male, aged 21-38 years) to reflect the current context. As a result, a set of five items were finally developed and employed to measure CE (Table 1). The measures of SE, WS, and WLI were from extant literature: SE was measured with a set of three items developed by Davis et al. (1989) and purified by Chil-

Table 1. Validity and reliability of measures

Latent variables and indicators	CFA factor loadings ^a	CR	AVE	Cronbach's α
Cognitive Efficiency (CE)				
If the website were available in reality, shopping at the website will:				
Improve my shopping productivity.	.73	.76	.60	.88
Enhance my shopping ability.	.85			
Be useful in finding what I want in an efficient manner.	.74			
Make it easy for me to find what I want.	.73			
Make my choice a smart one. ^c	-			
Perceived Enjoyment (PE)				
If the website were available in reality, shopping at the website will be:				
Enjoyable	.80	.78	.65	.90
Boring ^b	.77			
Exciting	.78			
Website Socialness (WS)				
If the website were available in reality, shopping at the website will be:				
Helpful ^c	-	.80	.64	.85
Intelligent	.83			
Polite	.86			
Informative	.78			
Interactive	.74			
Website Loyalty Intentions (WLI)				
If the website were available in reality, I will:				
Encourage friends and relatives to do business with the website.	.76	.77	.68	.92
Say positive things about the website to other people.	.87			
Do more business with the website in the next few years.	.89			
Recommend the website to those who seek my advice.	.88			

a: CFA = Confirmatory Factor Analysis

b: Reversed item

c: Item excluded due to low factor loading

ders et al. (2001). Meanwhile, PS was measured using a set of five items (Wakefield et al., 2011; Wang et al., 2007). Finally, WSI was measured with a set of four items validated in the extant literature (Song & Zinkhan, 2008; Zeithaml et al., 1996). <Fig. 1> summarizes the conceptual framework and hypotheses of this study.

IV. Results and Analysis

1. Participants' Profile

The participants ranged in age from 21 to 58. Of all respondents, 33.8% were between the ages of 21 and

29, 26.1% were between 30 and 39, 23.5% were between 40 and 49, and 16.6% were 50 or older ($M_{\text{age}}=37.64$ years, $S.D.=12.64$). Sixty-four percent of the respondents were female. Those who earned less than \$30,000 per year accounted for 14% of the sample, while those who earned between \$30,000 and \$49,999, between \$50,000 and \$69,999, between \$70,000 and \$89,999, between \$90,000 and \$109,999, between \$110,000 and \$129,999, between \$130,000 and \$149,999, and \$150,000 per year or more constituted 18%, 18%, 17%, 8%, 5%, 6%, and 14% of the sample, respectively. Over 22% of participants had earned college degrees, and 4% had earned graduate degrees. Thirty-four percent of the participants responded that

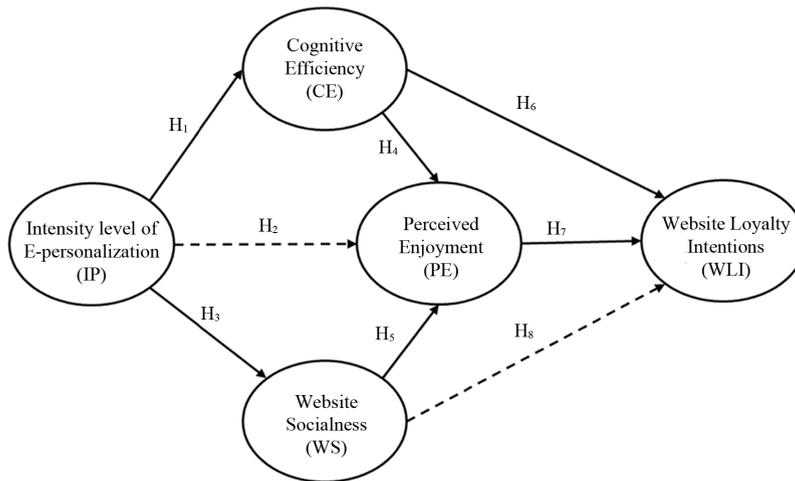


Fig. 1. Conceptual framework.

their terminal degree in education was high school, while 36% of them were university students. The sample was more educated and more affluent as compared to the general U.S. population (“The 2012 statistical abstract”, 2013). Of the respondents, 43.7% reported that they had more than 5 years' online shopping experience for fashion (Mean=7.48, S.D.=2.92). Over 13% of the participants reported that they shop online for fashion items five times or more per month, while 2.7 times was the average of fashion online shopping purchases per month.

2. Validity and Reliability

We employed exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to test construct validity of the factor structure (Fornell & Larcker, 1981). First, EFA was performed for the 17 items and yielded the four multi-item constructs (i.e., CE, PE, WS, WLI). Based on the results, we excluded two items (one item for CE and one item for SS) due to low factor loadings (<.60) (Table 1). Next, confirmatory factor analysis (CFA) was conducted. For an acceptable model, the literature of sociology recommends an insignificant χ^2 value with model fit indices - other than parsimony fit indices - higher than the threshold value of .90 (Byrne, 1998; Hair et al., 2006;

Kline, 2004). While the χ^2 value was significant ($\chi^2=202.635$, $df=74$, $\chi^2/df=2.74$, $p<.001$), it is somewhat mandatory with a sample size over 200, since larger samples produce larger chi-squares that are significant even with very small discrepancies between implied and obtained covariance matrices (Kline, 2004). Alternatively, a model can be determined by the statistic adjusted by its degrees of freedom (χ^2/df); χ^2/df was 2.74 and it was under the threshold level (3) (Hair et al., 2006; Kline, 2004). Moreover, the analysis revealed the Bentler's Comparative Fit Index (CFI) of .95, Goodness-of-Fit Index of .95. Adjusted Goodness-of-Fit Index of .90, Parsimony Goodness-of-Fit Index (PGFI) of .57, Bentler-Bonett Normed Fit Index (NFI) of .94, Relative Fit Index (RFI) of .97, and Bollen's Incremental Fit Index (IFI) as .94, all except for PGFI exceeding the standards of .90 recommended by Byrne (1998). Relatively low PGFI was acceptable since there is no commonly agreed-upon cutoff value of parsimony fit indices for an acceptable model; “a PGFI taken alone is not a useful indicator of a single model's fit. Like other parsimony fit indices, PGFI value is meant only to be used in comparing it to another model's PGFI value (Hair et al., 2006, p. 750)”. The Root Mean Square Error of Approximation (RMSEA) was .073, falling within the suggested range (<.08) (Byrne, 1998; Hair et al., 2006).

Convergent validity across the constructs was estimated by finding average variance extracted (AVE), which ranged from .60 to .68, all exceeding the threshold level of .50 (Fornell & Larcker, 1981). Discriminant validity was measured by composite reliability (CR). All the figures exceeded the threshold level of .70 (Hair et al., 2006) (Table 1). Cronbach's alphas for the constructs ranged from .85 to .92, confirming reliability of each construct (Fornell & Larcker, 1981). Taken together, the result provided strong evidence of convergent and discriminant validity of the measures.

3. Manipulation Check

Manipulation of IP levels were tested using the three 7-point Likert-type items (1="strongly disagree", 7="strongly agree") suggested by Srinivasan et al. (2002): "This website makes purchase recommendation matching customers' individual taste"; "This website provides promotional offers matching customers' individual situation"; and "This website makes its customers feel uniquely treated". The result of an analysis of variance showed that the participants perceived the high-IP website as significantly more personalized than the low-IP website ($M_{\text{high-IP}}=5.22 > M_{\text{low-IP}}=2.57$, $p<.001$).

4. Hypothesis Testing

In testing H₁-H₃, a set of ANOVAs were used to check the difference in cognitive efficiency (CE), website, perceived enjoyment (PE), and website socialness (WS) across the two personalization conditions (Low-IP versus High-IP). The results showed a significant difference in perceived CE between Low-IP and High-IP conditions ($M_{\text{low-IP}}=3.97$, $M_{\text{high-IP}}=$

5.04, $p<.001$). This supports H₁. However, no significant difference was indicated between Low-IP and High-IP in PE ($M_{\text{low-IP}}=4.04$, $M_{\text{high-IP}}=4.30$, $p>.10$). This fails to support H₂. The results showed a significant difference in perceived WS between Low-IP and High-IP conditions ($M_{\text{low-IP}}=2.59$, $M_{\text{high-IP}}=3.78$, $p<.001$), supporting H₃. The results of ANOVA appear in <Table 2>.

H₄-H₈ were tested using Structure Equation Modeling (SEM) with a maximum likelihood-estimation procedure. The model includes data for high-IP condition ($n=203$) only, since low-IP data do not reflect consumers' psychological responses to personalized web contents. The research model consists four latent (three exogenous and one endogenous). The fit indices exceeded the threshold levels ($\chi^2=126.81$, $df=87$, $p<.001$, $\chi^2/df=1.46$; CFI=.98; GFI=.94; AGFI=.92; NFI=.95; RFI=.92; IFI=.98; RMSEA=.048), indicating that the model showed a fair fit (Byrne, 1998; Hair et al., 2006). Means, standard deviations, and correlations among the constructs for the model appear in <Table 3>.

H₄ and H₅ contended correlations among the three psychological benefits of personalization. Specifically, H₄ expected that CE would increase PE. The positive effect of CE on PE was also statistically proven, providing support for H₄ ($\beta=.48$, C.R.=6.40, $p<.001$). The positive link from WS to PE was also statistically proven, providing support for H₅ ($\beta=.24$, $t=3.64$, $p<.001$).

H₆-H₈ predicted the positive influence of the three psychological benefits (i.e., CE, PE, and WS) on WLI. Supporting H₆, a positive effect of PE on WLI was found ($\beta=.61$, $t=6.40$, $p<.001$). H₇ was also supported, revealing a positive relationship between PE and WLI ($\beta=.23$, $t=3.23$, $p<.01$). However, the proposed positive effect of WS on WLI was not confirmed ($\beta=.08$,

Table 2. ANOVA results

Variables	Low-IP (n=217)		High-IP (n=203)		F
	Mean	S.D.	Mean	S.D.	
Cognitive Efficiency (CE)	3.97	1.41	5.04	1.45	10.98**
Perceived Enjoyment (PE)	4.04	1.69	4.30	1.58	.62
Website Socialness (WS)	2.59	1.65	3.78	1.35	13.18**

** $p<.001$

Table 3. Descriptive statistics and correlation coefficients of model constructs

Model Construct (n=203)	Mean ^a	S.D.	Correlations			
			1	2	3	4
1. Cognitive Efficiency (CE)	4.52	1.94	-			
2. Perceived Enjoyment (PE)	4.26	1.81	.31**	-		
3. Website Socialness (WS)	4.44	1.65	.14*	.32**	-	
4. Website Loyalty Intention (WLI)	3.24	1.51	.42**	.32**	.21*	-

* $p < .01$, ** $p < .001$

a: Measures for construct 2 through 5 are based on a seven-point scale where 1="strongly disagree" and 7="strongly agree"

$t=1.14, p>.10$). This failed to support H_8 . The Squared Multiple Correlation (SMC) of PE explained by CE and WS was .37, and the SMC of WLI explained by three benefits was .64, indicating that a substantial amount of variance in website loyalty intention was explained by the three psychological benefits of personalization suggested. Dashed lines in <Fig. 1> indicate that the hypothesis is not supported in this study.

V. Discussion and Implications

While services for personalized content have become dominant in fashion online retailing, little academic research exists on its psychological effects on customers' patronage regarding the service provider, or the company. To fill the research gap, the current research attempts to explore the effect of personalization on website loyalty, and the underlying cognitive, emotional, and social mechanisms in online shopping. In sum, among eight hypotheses (H_1 - H_8), all were accepted except H_2 (effect of IP on PE) and H_8 (effect of WS on WLI). The result of ANOVA revealed a direct effect of intensity of personalization (IP) on perceived cognitive efficiency (CE) and website socialness (WS). Furthermore, these two variables were positively linked to the participants' website loyalty intentions (WLI), directly as well as through perceived enjoyment (PE). The only path that was not proved by the results was the positive effect of intensity of personalization (IP) on perceived enjoyment (PE). Only the indirect effect of intensity of personalization (IP) was found on website socialness (WE), through cognitive efficiency (CE) and website socialness (WS). Meanwhile, the result of SEM revealed a significant effects of cognitive efficiency (CE) and perceived en-

joyment (PE) on website loyalty intention (WLI). Comparatively, website socialness (WS) revealed no direct effect on website loyalty intention (WLI).

The results did not confirm the hypothesized direct effect of intensity of e-personalization (IP) on perceived enjoyment (PE). This is somewhat contradictory to prior studies that found a direct, strong effect of technology-aided services on the enjoyment perceptions (e.g., Childers et al., 2001; Lee et al., 2010). One possible explanation is that perceived enjoyment (PE) may not be directly retrieved from e-tail stimuli; rather, it is a perception that only exists subsequent to other psychological responses. Or, unlike other technology-aided services examined in the prior studies like 3D visualization, using personalization in virtual settings may not be perceived as new technology and thus, from the consumers' perspective, personalization cannot perform as a crucial positive sensory stimulus that evokes perceived enjoyment. Rather, perceived enjoyment (PE) is a perception subsequent to other psychological responses to the e-tail stimuli. Meanwhile, the study design can be assumed to affect the results; This study used a scenario method with fictitious web-based shopping context. Because of this limited chances of actual experiences in the experiment, the responded PE within the results could reveal somewhat lower (than it would have been in a more realistic shopping situation).

The direct effect of website socialness (WS) was hypothesized based upon prior literature where a strong, positive effect of socialness was documented on individuals' attitudes regarding a mediated communication context (e.g., Wakefield et al., 2011). However, the result of this study did not provide a statistical support for the hypothesized effect of website socialness

(WS) on website loyalty intentions (WLI). It may be that the effect of website socialness is not strong enough to directly affect consumers' attitudes regarding the company. Rather, it may perform as a variable that can evoke other types of psychological dynamics that can have a strong impact on consumers' attitudes. In line with this, Wang et al. (2007) found a direct effect of website socialness on the participants' purchase intentions regarding an e-tail site for furniture.

An essential aspect of this research is that it first addresses the mechanisms underlying the value of e-personalization. In so doing, a multi-disciplinary theoretical framework is suggested, referring to communication (e.g., Nass et al., 1997) and social psychology (e.g., Wang et al., 2007), choice (e.g., Luce et al., 2001) and motivation theories (Payne, 1982; Taylor & Fiske, 1978), and the principles of virtual experiences (e.g., Lee et al., 2010; Luo, 2005). The three psychological variables were first introduced in the literature of personalization and warrant further usage in exploring consumer behavior in similar contexts of online shopping.

Drawing upon motivation studies (Payne, 1982; Taylor & Fiske, 1978), this study employed the concept of cognitive efficiency (CE) as a cognitive benefit of personalization in understanding consumer behaviors in fashion online shopping. The result confirmed that shoppers who perceive a high level of CE in personalization contexts are likely to show a high level of loyalty intention to the e-tail company. The strong cognitive benefit of personalization is in line with prior studies proposing utilitarian value of e-shopping as the strongest driver of customer engagement in the e-shopping experiences (e.g., Childers et al., 2001; Hoffman & Novak, 2009; Lee et al., 2010). This result supported the wide-spread conceptual notion in the academia that the core value of personalization lies in its cognitive aspect (Ansari et al., 2000). While the cognitive benefits were the most important mechanism of personalization, our results also first illuminated the crucial emotional and social benefits of personalization. This research first applied SE (Childers et al., 2001; Davis et al., 1989) to the context of e-personalization. Moreover, we first addressed social benefits of personalization, by extending the social

interface theory (Nass et al., 1997) and the concept of socialness (Wang et al., 2007) to an e-commerce context.

From a broader perspective, the results contributed to the extant literature of consumer behavior regarding personalization that has yielded mixed results; while some research found implementation of personalization initiatives improving customer attitudes (e.g., service satisfaction; Ho et al., 2011) and/or behaviors (e.g., click-through rates; Ansari et al., 2000), others illustrated that personalized promotions may backfire as it increases perceived risk (e.g., White et al., 2008). The result of the current study, therefore, re-illuminated the positive value of personalization, which has recently been somewhat outweighed by the negative perspectives. As mobile shopping and familiarity with online shopping has increased, consumers' attitudes towards personalization may have changed (Ho et al., 2011). The result also expanded the current understanding of personalization in the literature of e-commerce (Halepete et al., 2009; Lee & Park, 2009) by empirically testing its value within an experimental setting, and providing an explanation of *how* personalization affects shoppers. Also, the study first addressed the effect of intensity of personalization not the presence or absence of it, and confirmed that more personalized content is effective in improving website loyalty intentions than less personalized one is.

The findings provide managerial insights for companies, suggesting that personalization would be an effective as well as essential strategy improving quality of their e-tail environments. Due to the lack of opportunities for direct interactions on the Web, creating a long-term customer-company relationship has been highly difficult for most retailers in e-commerce (Yoon et al., 2008). Yet the value of solid relationship with the customers is increasing for a e-tail site, given their positive influence on the company's profitability (Singer, 2012). Given the increasing importance of loyal customers in e-commerce, for the companies seeking for a cost-effective way to improve their quality of services, personalization is a must.

The result may illuminate the crucial psychological benefits of personalization, which interestingly, are usually found as the role of a competent salesperson

in a brick-and-mortar retail setting: increased efficiency, positive affects (Ligas, 2004) and interpersonal dynamics (Surprenant & Solomon, 1987). This suggests the possibility that personalization should be an essential service configuration substituting for the lack of social entities in e-tail settings. It is essential that managers change their perspective on the value of personalization from a technology to an essential service feature on the web. Meanwhile, the crucial role of social and emotional dynamics in personalization can inspire managers to find creative methods to fully benefit from their investment in tailored offers. For instance, the positive social effects of personalization can be further amplified, if managers can find a method incorporating the extant ideas on social cues in managing personalized content in virtual environments (e.g., Walker et al., 1994). Also, the recent findings in the literature of virtual experience reported website's aesthetic characteristics as positive environmental stimuli. This may provide some managerial insight relevant to the current results, as to how to improve consumer-perceived quality of emotional dynamics in e-tailing which would subsequently increases personalization's positive effects on website loyalty. For instance, small changes in color, font, or front size of personalized content may alter the resulting psychological responses (e.g., Walther et al., 2011). Such effort will help companies maximize the positive effects of personalization on their improved customer relationship management.

The current theoretical framework suggests a customer-centering method estimating the value of personalization. As there exists a large gap between customer and company views of the service's effect, gauging the impact of personalization as customers perceive is highly important for companies to gain a true understanding of the potential of personalization (Simonson, 2005). Previously however, the most dominant method in estimating the effect of personalization was to calculate click-through rates or traffic after employing personalization strategies. While providing an instant snapshot of the effect of personalization, such mechanical calculation cannot provide an in-depth insight capturing the true potential of personalization. Managers can ponder ways to incorporate

measures of the three benefits suggested here (i.e., CE, SE, and WS) in their personalization framework for more accurate understanding of the effect of tailored offers provided on their websites.

This study has some limitations. First, the study design used a scenario method reflecting a fictitious shopper and e-tail site. Accordingly, the participants were exposed to the fictitious site but they did not have an opportunity to actually shop at the site. Since the survey was asked them to evaluate the site for the fictitious shopper, their responses might differ from what they would have actually evaluated regarding the site. For example, the perceived enjoyment might have increased if it had been a real shopping situation using the actual personalized contents. Indeed, it is likely that participants in their 30s-50s might feel less relevant to the fictitious shopping situation (since the fictitious shopper was in her 20s) and this might affect their responses. Therefore, using a real site reflecting participants' own personal information can be an assuring next step following this exploratory study. Second, this study employed jeans as the stimulus in experiment. Although jeans were chosen as the most appropriate items that can be a gender-neutral fashion item sold online, limiting the stimulus as jeans only lacks the external validity of the results found in this study. Further research should investigate whether the use of other products yields similar results. It is likely that the effect of personalization and its mechanism will be different for other items. For instance, consumers may be less confident of their decisions when buying more complex or formal fashion items with stronger symbolic attributes (Damhorst et al., 2005).

Third, contextual characteristics are also likely to reveal certain moderating influences on this personalization-benefits-website loyalty dynamic, as web service features should have a more crucial impact on consumers when they are in a situation that demands the firm's help, such as in the event of service failure requiring recovery. In this context, the effect of socialness on website loyalty is expected to become more significant, as consumers tend to depend more on interpersonal rapport (Ligas, 2004). Fourth, next study should further explore the dynamics/hierarchy amongst the three psychological variables (CE, PE, and WS).

This may provide an explanation as to why IP has no direct impact on PE, and why WS does not directly affect WLI. Lastly, the participants of this research do not represent the general U.S. population, as we chose female participants to respond to our scenario that was about a fictitious female shopper and her shopping context. Further study may observe gender difference in responses towards personalization in online shopping (e.g., Nass et al., 1997).

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