



# The influence of hedonic and utilitarian motivations on user engagement: The case of online shopping experiences

Heather Lynn O'Brien \*

School of Library, Archival and Information Studies, University of British Columbia, Irving K. Barber Learning Centre, Suite 470, 1961 East Mall, Vancouver, Canada BC V6T 1Z1

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## ABSTRACT

User experience seeks to promote rich, engaging interactions between users and systems. In order for this experience to unfold, the user must be motivated to initiate an interaction with the technology. This study explored hedonic and utilitarian motivations in the context of user engagement with online shopping. Factor analysis was performed to identify a parsimonious set of factors from the Hedonic and Utilitarian Shopping Motivation Scale and the User Engagement Scale based on responses from 802 shoppers. Multiple linear regression was used to test hypotheses with hedonic and utilitarian motivations (Idea, Social, Adventure/Gratification, Value and Achievement Shopping) and attributes of user engagement (Aesthetics, Focused Attention, Perceived Usability, and Endurability). Results demonstrate the salience of Adventure/Gratification Shopping and Achievement Shopping Motivations to specific variables of user engagement in the e-commerce environment and provide considerations for the inclusion of different types of motivation into models of engaging user experiences.

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## 1. Introduction

User experience is an increasingly pervasive theme in Human-Computer Interaction (HCI) research and evaluation (Finneran and Zhang, 2003; Kourouthanassis et al., 2008). Experience has become a product attribute in the economical sense, a value added element used to differentiate goods and services (Pine and Gilmore, 1999). Another view of experience focuses on enhancing technology design and outcomes. For instance, the Threads of Experience – compositional, emotional, sensual, and spatio-temporal – situate experience in a place and time, incorporate affect, and emphasize sensory engagement (Wright et al., 2003). This perspective views experience as moving “beyond the instrumental” (Hassenzahl and Tractinsky, 2006) and into the realm of the holistic, the aesthetic, and the hedonic.

Shopping researcher has demonstrated that consumers are motivated by utilitarian factors, including efficiency and cost, (Babin et al., 1994; Kim, 2006) but also by the desire to satisfy hedonic needs, such as affect, social interaction and/or entertainment (Arnold and Reynolds, 2003). While these motivations are well documented in marketing and information systems literatures, the relationship between hedonic and utilitarian motivations and user experience has yet to be explored extensively in other domains (Zhou et al., 2007). However, HCI research has been exam-

ining hedonic and utilitarian features of systems. This work has emphasized that both qualities are essential and can support each other in situations where utilitarian components are low, but hedonic qualities are high, and vice versa (Hassenzahl et al., 2000). Thus shopping research shows that hedonic and utilitarian motivations influence system use, and HCI research demonstrates the need to design systems that incorporate both hedonic and utilitarian components. However, these two paths have yet to merge. Many interactive searching, browsing, and learning systems, for example, would benefit from a greater understanding of how to design for system engagement precipitated by distinct motivations.

Engagement has been defined as a quality of user experience that is comprised of: Focused Attention, Perceived Usability, Endurability, Novelty, Aesthetics, and Felt Involvement (O'Brien and Toms, 2010). This view of engagement recognizes usability as an essential variable for an endurable outcome, one that allows users to perceive the experience as worthwhile, successful, and one they would seek again in future. It also acknowledges the role of hedonic factors, such as aesthetics and novelty, in focusing users' attention and making them feel involved in the interaction. Utilitarian, or functionality, and hedonic elements are infused throughout system engagement, manifested in aesthetic appeal, novelty, and appropriate challenge and feedback, for instance. However, it is not clear how the motivations of users, which may be formulated prior to the interaction, fit into this model. The aim of this study was to explore the impact of Hedonic and Utilitarian Shopping Motivations on attributes of user engagement. The outcomes of this research may be used to inform system design, specifically

\* Tel.: +1 604 822 6365; fax: +1 604 822 6006.  
E-mail address: [hlobrien@interchange.ubc.ca](mailto:hlobrien@interchange.ubc.ca)

customizable interfaces responsive to these motivations, and to expanding models of user experience.

### 1.1. Prior research

#### 1.1.1. Engagement and user experience

User experience research focuses on the need to go beyond usability in system design and evaluation. It aims to create meaningful interactions between users and technologies by accounting for users (i.e., affective), system (i.e., aesthetic), and situational (i.e., dynamic) elements of experience (Hassenzahl and Tractinsky, 2006; Mahlke, 2005).

Engagement has been defined as both the act of emotionally involving users (Jacques et al., 1995) and the state of being in gear and interacting directly with a system (Hutchins et al., 1986). The consensus that engagement contains behavioural (i.e. visible actions (Kappelman, 1995), experimental, cognitive (Laurel, 1993), and affective (Jacques et al., 1995; Jones, 2005) components situates it within user experience frameworks, such as the Threads of Experience (Wright et al., 2003). O'Brien and Toms (O'Brien and Toms, 2008) used this framework to propose a process-based model of engagement consisting of a point of engagement, a period of sustained engagement, disengagement, and re-engagement. They viewed the entire process as following the compositional thread, with the narrative of engagement unfolding as users progress through these stages. The stages of engagement were deconstructed to explore the sensual, emotional, and spatiotemporal threads of the experience, whereby aspects of the interface (e.g., novel presentation of the interface), users' perceptions of the system (e.g., lack of/ too much challenge in using the system), and users' assessment of the interaction (e.g., interest, positive or negative affect) were plotted. The attributes of engagement that arose from this research were focused attention, affect, aesthetic and sensory appeal, ease of use, challenge, control, feedback, motivation, novelty, and social involvement; this work united and articulated the behavioural, experimental, cognitive, and affective elements of engagement together in an all-encompassing model (O'Brien and Toms, 2008).

One of the attributes of engagement discussed by O'Brien and Toms (2008) was motivation. Previous work in the area of educational multimedia (Chapman et al., 1997) emphasized intrinsic motivation, the feeling of satisfaction and pleasure one derives from an activity, where the reward is the activity itself, independent of external reinforcements (Jennings, 2000). O'Brien and Toms (2008) focused on intrinsic motivation and extrinsic motivations, which are contingent upon external punishments and rewards. They found that motivation was most poignant at the point of engagement and was expressed as users' desire to accomplish a task, to have an experience that was – for instance – fun, educational, or to socialize with others. Subsequent research (O'Brien and Toms, 2010) used motivation as an attribute to develop a multidimensional scale of engagement. However, in a large-scale study with 440 shoppers, motivation items did not form a reliable sub-scale, but merged with interest items to form one sub-scale. Furthermore, motivation as intrinsic and extrinsic is only one way of conceptualizing motivation. Utilitarian and Hedonic Motivations are another means of thinking about motivation, and these have not been explored in conjunction with engagement.

### 1.2. Utilitarian and hedonic motivation

Shopping research on hedonic and utilitarian motivation has fundamentally sought to understand why people shop. Studies have examined motivations with respect to the design of physical and online shopping environments (Kourouthanassis et al., 2008), and users' perceptions of trust (Zhou et al., 2007), flow (Mathwick and Rigdon, 2004; Novak et al., 2000), and playfulness (Ahn et al.,

2007) with respect to purchasing intentions. According to Arnold and Reynolds (2003), who examined shopping in physical stores, there are six dimensions of hedonic shopping: (1) Adventure (shopping for stimulation, adventure, and the feeling of being in another world); (2) Social (socializing with friends and family); (3) Gratification (stress relief, alleviating negative mood, treating oneself); (4) Idea (keeping up with trends, seeing new products and innovations); (5) Role (enjoyment derived from shopping for others); and (6) Value (seeking sales, discounts, bargains). Other hedonic dimensions, namely pleasure, arousal, and escapism (Monsuéré et al., 2004) have been identified as facets of shopping enjoyment. With regard to utilitarian motivations, Babin et al. (1994) note that people are concerned with efficiency and achieving a specific end when they shop.

The terms “hedonic” and “utilitarian” are applied not only to motivations, but to systems and aspects of experience. Flow, “the state in which people are so involved in an activity that nothing else seems to matter” (Csikszentmihalyi, 1990, p. 4), has been used to explore users' responses to technology, as well as task and situational factors that motivate use (Finneran and Zhang, 2003; Konradt and Sulz, 2001). Playfulness has been associated with system satisfaction, frequency of use (Webster and Martocchio, 1992) and decision-making on the web (Atkinson and Kydd, 1997). Aesthetics, the visual appearance of the interface, has been studied in the context of usability, users' skills and needs, sensory components of the interface and application format (Karvonen, 2000; Laurel, 1993; Lavie and Tractinsky, 2004; Overbeeke et al., 2003), as well as an influence on engagement (Chapman et al., 1997).

Some researchers have sought to examine Utilitarian and Hedonic Motivations in concert. For e.g., Shang et al. (2005) found that perceived usefulness of a shopping website and economic variables were not as significant as entertainment and escapism in predicting shopping behaviour. Babin et al. (1994) focused on utilitarian aspects of shopping, as well as enjoyment. Kim (2006) built on Babin et al. (1994) and Arnold and Reynolds (2003) to explore hedonic (Adventure, Gratification, Value, Social, and Idea Shopping) and Utilitarian (Achievement and Efficiency) dimensions of motivation in the context of inner city and non-inner city populations. Kim's results demonstrated that inner city consumers were similar to non-inner city shoppers in that both groups were motivated by utilitarian aspects of shopping and value, but inner city shoppers placed more emphasis on Hedonic Motivations, namely social, entertaining experiences that offered a range of products. HCI research has also looked at the co-existence of utilitarian and hedonic aspects of systems. For e.g., Hassenzahl et al. (2000) demonstrated that users' evaluation of seven software prototypes was dependent on both hedonic and ergonomic (utilitarian) perceptions.

### 1.3. User experience and motivation

While motivation has been investigated in the context of engagement, its study has been confined to intrinsic and extrinsic motivation. According to Lowry et al. (2008), hedonic systems are associated with intrinsically motivated intentions, such as to have fun, whereas utilitarian systems are used for extrinsic purposes, such as to complete a work task. This definition is problematic because it merges the source of the motivation (internal versus extrinsic to the individual) with the desired outcome of an activity (to make a purchase or to have fun). It may be best to focus on the ability to accomplish any task – regardless of whether the motivation is intrinsic or extrinsic to the individual – as a utilitarian aspect of system use, and the value added, experiential features of aesthetics, interactivity, ability to evoke positive emotions, for e.g., as characteristics of hedonic systems (Childers et al., 2001; Fiore et al., 2005). Another difficulty with the association of intrinsic/extrinsic motivation and hedonic/utilitarian technologies (Lowry et al., 2008) is that

there is such a convergence between “fun” and “work” systems and applications and a range of individual factors expressed in users that labelling the system as “hedonic” or “utilitarian” is limiting. Nonetheless, hedonic and utilitarian motivations, which have established measurement instruments, could be used to better understand engagement and the purposeful and pleasurable motivations that bring people to the interface. Overall, hedonic and utilitarian motivations and engagement both aim to incorporate the functional and pleasurable into users’ experiences and keep users emotionally, cognitively, and physically involved in the interaction. Understanding the relationships between motivation and engagement may be used to inform the design and evaluation processes of interactive technologies.

#### 1.4. Current study

The current study builds upon work that developed and evaluated a scale to evaluate engagement in e-commerce environments (O'Brien and Toms, 2010). The scale was the result of two large-scale studies and contained six sub-scales: (1) Focused Attention; (2) Perceived Usability; (3) Endurability of the experience as worthwhile, rewarding, worth the effort, for e.g., (4) Aesthetics of the website; (5) Felt Involvement in the shopping experience; and (6) Novelty, the curiosity evoked or satisfied by the experience. The current paper focuses on the second study with 802 shoppers. In addition to soliciting users’ perceptions of their engagement with the shopping experience, respondents were asked about their general Hedonic and Utilitarian Shopping Motivations. Customers of a specific online retailer were surveyed. Two scales, The Hedonic and Utilitarian Shopping Motivation Scale (Kim, 2006) and The Engagement Scale (O'Brien and Toms, 2010) were used. The result is an examination of how pleasure and functionality-driven motivations influence aspects of engagement.

## 2. Method

An online survey was used to gather data on user's online shopping experiences.

#### 2.1. Instruments

The Shopping Motivation Scale (Kim, 2006) was adopted for the current study (Appendix A). The scale consists of seven sub-scales categorized as either Utilitarian or Hedonic. The utilitarian motivation sub-scales, Achievement (four items) and Efficiency (two items), are derived from Babin et al. (1994); the hedonic motivation sub-scales are derived from Arnold and Reynolds (2003) and are labelled Adventure (three items), Gratification (three items), Value (three items), Social (three items), Role (two items) and Idea (three items) Shopping. The Engagement Scale (O'Brien and Toms, 2010) (Appendix B) contained 31-items and six sub-scales: Perceived Usability (eight items), Aesthetics (five items), Focused Attention (seven items), Felt Involvement (three items), Novelty (three items), and Endurability (five items). For both scales a five-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5) was used; a “not applicable” option was included. Participants were asked to respond to Engagement Scale items based on their last purchase with the retailer, and to answer the Hedonic and Utilitarian Shopping Motivation items based on their typical online shopping behaviours.

#### 2.2. Online survey

This survey was created using Perseus Survey Software and consisted of ten screens. The first screen introduced the survey and the

researchers, and provided the affiliation of the online retailer, instructions for completing the survey, and an explanation of the purpose of the study. Subsequent screens contained the User Engagement Scale, demographic questions, and Hedonic and Utilitarian Motivation items. Questions were randomized to minimize order effects. The concluding page thanked respondents for participating.

#### 2.3. Procedure

This survey was administered in cooperation with an online book retailer. The online survey link was active for three weeks. A recruitment email was sent to 10,000 customers who purchased an item from the company's website between March 1 and June 4, 2007. The email invited them to participate in the study and contained the link to the online survey. The survey data were stored on a secure server at the researcher's university. The bulk of the data was collected within the first week; a few responses trickled in during the second and third weeks. No reminders were sent out. Data were analyzed using SPSS statistical software package. Negatively worded items were reverse coded.

#### 2.4. Participant demographics

The response rate ( $n = 802$ ) was less than 10%; however the total number of responses was adequate to proceed with data analysis. The sample consisted of 562 (70.2%) females and 208 (26%) males; 3.9% did not respond to the gender question. Approximately 90% of the sample indicated their age: 14–20 ( $n = 27$ , 3.37%); 21–30 ( $n = 109$ , 13.6%); 31–40 ( $n = 176$ , 21.97%); 41–50 ( $n = 195$ , 24.34%); 51–60 ( $n = 154$ , 19.3%); and 61–83 ( $n = 123$ , 15.36%). Those who specified their occupation were managers ( $n = 170$ , 21.2%), administrators ( $n = 91$ , 11.4%), students ( $n = 49$ , 6.1%), researchers ( $n = 26$ , 3.3%), or technical support personnel ( $n = 61$ , 0.6%). With regards to respondents' educational background, participants' highest levels of education achieved were: doctorate ( $n = 60$ , 9.68%), masters ( $n = 16$ , 2.58%), undergraduate degree ( $n = 70$ , 11.29%), professional degree ( $n = 68$ , 10.97%), community college diploma ( $n = 197$ , 31.77%), technical diploma ( $n = 171$ , 27.58%) or high school diploma ( $n = 38$ , 6.13%). Some participants ( $n = 376$ ) indicated “other” and it was not possible to classify these responses.

## 3. Results

#### 3.1. Reliability estimates of the sub-scales

The Engagement Scale and the Utilitarian and Hedonic Motivation Scales were examined for reliability. In both cases, De Vellis' (2003) guidelines were followed for interpreting Cronbach's alpha: below 0.60: unacceptable; between 0.60 and 0.65: undesirable; between 0.65 and 0.70: minimally acceptable; between 0.70 and 0.80: respectable; between 0.80 and 0.90: very good; much above 0.90: attempt to reduce the number of items (p. 95). The means and standard deviations for each sub-scale, and the correlations amongst the sub-scales were examined.

In examining the reliability estimates of the six user engagement sub-scales (Table 1), the alpha value of Novelty was 0.58, which De Vellis (2003) deems “unacceptable.” This may be due to the fact that this sub-scale contained three items. To determine whether to retain or eliminate the factor, the inter-item correlations of the three novelty items were examined using Principal Components Analysis (PCA) (Cortina, 1993). The inter-item correlations were significant ( $p < 0.001$ ). The three novelty items formed a unidimensional construct and did not overlap with other

**Table 1**  
Descriptive statistics and reliability co-efficient for Engagement sub-scales.

Sub-scale	No. items	No. valid responses	Mean	Standard deviation	Alpha value
Focused Attention	5	738	2.75	0.80	0.88
Perceived Usability	7	756	3.99	0.65	0.89
Novelty	3	738	3.26	0.62	0.58
Aesthetics	5	761	3.69	0.61	0.89
Felt Involvement	3	767	3.47	0.63	0.70
Endurability	5	762	4.05	0.59	0.86

**Table 2**  
Inter-item correlations between Engagement sub-scales.

	Endurability	Perceived Usability	Aesthetics	Novelty	Focused Attention
Perceived Usability	0.68*				
Aesthetics	0.51*	0.53*			
Novelty	0.46*	0.33*	0.46*		
Focused Attention	0.43*	0.24*	0.42*	0.56*	
Felt Involvement	0.62*	0.43*	0.55*	0.63*	0.71*

\*  $p < 0.01$  (2-tailed).

**Table 3**  
Descriptive statistics and reliability co-efficient for Utilitarian and Hedonic Shopping Motivation sub-scales.

Sub-scale	No. items	No. valid responses	Mean	Standard deviation	Alpha value
Efficiency	2	772	3.54	0.87	0.38
Achievement	4	760	4.11	0.73	0.87
Adventure	3	752	2.65	0.93	0.79
Gratification	3	763	2.75	1.02	0.83
Idea	3	766	2.66	0.99	0.82
Role	2	768	3.37	0.91	0.63
Social	3	768	2.55	1.03	0.89
Value	3	769	3.82	0.88	0.82

sub-scales (item loadings were 0.57–0.75) and were therefore retained for further analysis.

Two of the sub-scales, Focused Attention and Perceived Usability, originally resulted in alpha values above 0.9 (0.92 and 0.91, respectively). Alpha values above 0.9 may indicate that there is too much overlap amongst items on the sub-scale; thus one item was eliminated from the Perceived Usability sub-scale (PUS1, Appendix B) and two from the Focused Attention sub-scale (FA1, FA3, Appendix B) iteratively by examining the item-total statistics (De Vellis, 2003). This reduced the total number of items from 31 to 28.

The inter-item correlations (Table 2) showed associations amongst the engagement sub-scales in the low (less than 0.4) to moderate (0.4–0.6) range. The correlation between Endurability

and Perceived Usability and between Involvement and Focused Attention was between 0.6 and 0.71.

Each of the utilitarian and hedonic (Table 3) sub-scales was evaluated for reliability. Most of the alpha values were in the respectable to very good range (De Vellis, 2003). The exceptions to this were the Efficiency (0.38) and Role (0.63) sub-scales. These sub-scales contained two items, which may account for these results. The inter-item correlations for these two sub-scales were examined. The correlations amongst Role items (0.46) and Efficiency items (0.23) were statistically significant ( $p < 0.01$ ) and, at this stage, were retained in subsequent analysis.

The inter-item correlations amongst the motivation sub-scales are shown in Table 4. With the exception of the correlation of Achievement with Social and Idea, all were significant at  $p < 0.01$ . The highest correlation was between Gratification and Adventure items, while the remaining correlations between the hedonic sub-scales of Adventure, Gratification, Idea, and Social were in the moderate range (0.4–0.6). As may be expected, the correlation between the utilitarian sub-scale of Achievement, and Adventure, Gratification, Idea, and Social were low. However, the Value sub-scale, which (Kim, 2006) categorized as hedonic, was more strongly correlated with Achievement, the Utilitarian sub-scale, than the other hedonic sub-scales.

The results of the reliability and correlation analyses of the hedonic and utilitarian motivation scale were not consistent with Kim (2006). The strong correlations between Value and Achievement (Utilitarian) and Value and Role (hedonic) were perplexing. Specifically, should Value be viewed as a hedonic or a utilitarian sub-scale? To explore the underlying structures of the hedonic and utilitarian sub-scales, and the engagement sub-scales, the next step was factor analysis.

### 3.2. Factor analysis

#### 3.2.1. The hedonic/utilitarian motivation scale

Principal components factor analysis with varimax rotation was used to examine the hedonic and utilitarian motivation items. Using Comfrey and Lee's (1992) criteria, factor loadings of 0.55 (30% overlapping variance) were used as the minimum cut-off, as this was an established scale. Over two iterations the Efficiency and Role items were removed. The rotated factor matrix demonstrated a five-factor model (Table 5). The Kaiser–Meyer–Olkin Measure of Sampling Adequacy was calculated ( $KMO = 0.86$ ) and Bartlett's Test of Sphericity verified that there were relationships among the items ( $\chi^2 = 19341.23$ ,  $df = 171$ ,  $p < 0.001$ ).

Through factor analysis, the Efficiency and Role sub-scales were eliminated, while the Adventure and Gratification items merged to form one factor. The five factors explained 74.7% of the variance: Adventure/Gratification (35.3%), Achievement (19.59%), Social (7.62%), Value (6.64%), and Idea (5.56%).

#### 3.2.2. The User Engagement Scale

Principal components factor analysis with varimax rotation was performed. As the User Engagement Scale is not well established, a

**Table 4**  
Inter-item correlations between Hedonic and Utilitarian sub-scales.

	Value	Achievement	Social	Idea	Adventure	Gratification	Role
Achievement	0.46*						
Social	0.23*	0.01					
Idea	0.21*	0.06	0.48*				
Adventure	0.32*	0.10*	0.54*	0.59*			
Gratification	0.27*	0.11*	0.46*	0.56*	0.78*		
Role	0.40*	0.31*	0.37*	0.31*	0.42*	0.45*	
Efficiency	0.11*	0.38*	−0.25*	−0.16*	−0.25*	−0.20*	0.00

\*  $p < 0.01$  (2-tailed).



**Table 5**

Rotated component matrix for Utilitarian and Hedonic Motivation Scale.

Components	F1	F2	F3	F4	F5
GR2 ("relieve stress")	0.87	−0.05	0.19	0.06	0.16
GR1 ("make myself feel better")	0.84	−0.03	0.16	0.03	0.19
AD2 ("adventure")	0.76	0.11	0.21	0.13	0.13
AD1 ("stimulating")	0.73	0.08	0.25	0.15	0.17
GR3 ("treat myself")	0.66	0.25	0.05	0.12	0.18
AD3 ("own universe")	0.65	−0.11	0.23	0.12	0.26
AC3 ("find items I am looking for")	−0.01	0.90	−0.04	0.10	−0.00
AC4 ("accomplish what I had planned")	−0.02	0.89	−0.02	0.06	−0.00
AC2 ("successful")	0.06	0.82	0.00	0.25	0.00
AC1 ("feel smart")	0.13	0.66	0.03	0.34	0.03
SO3 ("enjoy socializing")	0.21	0.05	0.86	0.08	0.17
SC2 ("bonding experience")	0.33	0.01	0.85	0.09	0.14
SO1 ("friends and family")	0.24	−0.08	0.84	0.08	0.14
VA3 ("sales")	0.15	0.07	0.10	0.82	0.03
VA2 ("discounts")	0.11	0.32	0.07	0.80	0.10
VA1 ("bargains")	0.13	0.29	0.06	0.79	0.02
ID2 ("new fashions")	0.32	−0.07	0.25	−0.00	0.84
ID1 ("trends")	0.34	−0.11	0.31	0.00	0.80
ID3 ("new products")	0.30	0.24	0.01	0.21	0.65

more conservative estimate of 0.45 (20% overlapping variance) (Comfrey and Lee, 1992) was used to assess the factor loadings. Through three rounds, NO1 and NO2 were eliminated, resulting in a four-factor model (Table 6). The KMO Measure of Sampling Adequacy ( $KMO = 0.95$ ) and Bartlett's Test of Sphericity ( $\chi^2 = 11061.60$ ,  $df = 325$ ,  $p < 0.001$ ) were significant.

The model accounted for 66% of the total variance. Factor 1 contained most of the items from the Perceived Usability sub-scale and one item from the Endurability sub-scale (47.8% of the total variance). Factor 2 consisted of the Focused Attention items and one Felt Involvement item; it accounted for 13.16% of the variance. Factor 3, which accounted for 7.31% of the variance, was comprised of items from the Endurability, Novelty, Felt Involvement, and Perceived Usability sub-scales. Lastly, Factor 4, the Aesthetic sub-scale items, accounted for 4.65% of the variance. The result was a more parsimonious set of factors and 26 items.

Examining the content of the items, the Endurability item that loaded with Perceived Usability items on Factor 1 pertained to the overall shopping experience (like other Endurability items) rather than the website (like other Perceived Usability items). However, all of the Factor 1 items are similar in that they assess how well users were able to accomplish an interaction. Factor 2 consisted of a Felt Involvement item that gauged users' feelings of being drawn into the experience, and Focused Attention items that pertained to being absorbed or losing track of time. Only one Novelty item (NO3) remained after factor analysis. This item, two of the Felt Involvement items, and the Perceived Usability item about feeling in control of the interaction loaded with the remaining Endurability items on Factor 3. All of the items on Factor 3 pertained to users' overall assessment of the shopping interaction. Although the items did not all load on their predicted sub-scales, the existing labels of the predominant sub-scales were retained. In further analysis, the factors are referred to as: Perceived Usability (Factor 1), Focused Attention (Factor 2), Endurability (Factor 3) and Aesthetics (Factor 4).

The results of the factor analysis eliminated items from the Hedonic/Utilitarian Motivation and User Engagement Scales. In addition, the Hedonic/Utilitarian Motivation Scale items comprised a five-factor model and the User Engagement Scale resulted in a four-factor model. The findings of this exploratory stage were used to construct hypotheses about relationships between variables from the two scales.

### 3.3. Hypotheses

Subsequent analyses focused on the relationships between the five factors of Hedonic and Utilitarian Shopping Motivations – Adventure/Gratification, Social, Value, Achievement, and Idea Shopping – and the four factors of engagement – Perceived Usability, Focused Attention, Endurability, and Aesthetics. Because the reliability and factor analyses produced different results from previous research, multiple linear regression (an exploratory rather than confirmatory technique) was used to examine the predictive relationships between motivation and engagement variables.

Affect, a construct often associated with motivation, has been called "the driver" of online shopping experiences and an influence on exploratory behaviour (Menon and Kahn, 2002; Monsuéré et al., 2004). Monsuéré et al. (2004) found that enjoyment, i.e., escapism, pleasure and arousal, and the functional aspects of systems (i.e., usefulness and ease of use) predicted attitudes about online shopping, which in turn influenced intentions to shop. Endurability pertains to individual's assessment of a shopping encounter as worthwhile, successful, and rewarding. As such, there should be congruence between this overall evaluation and the motivations that led the individual to initiate the experience. Thus, it is hypothesized that utilitarian (Achievement and Value) and hedonic (Social, Idea, Adventure/Gratification) Shopping Motivations predicts Endurability.

**Hypothesis 1.** Hedonic and Utilitarian Shopping Motivations predict Endurability.

Hassenzahl and Tractinsky (2006) conceptualized user experience as having three distinct but overlapping facets: (1) emotional and affective; (2) experiential; and (3) "beyond the instrumental." They used the terms holistic, aesthetic, and hedonic as a group to illustrate the latter category. Mahlke (2002) determined that Hedonics and Aesthetics were distinct qualities of web search experiences, though both predicted users' intention to use systems. Since previous models of user experience have shown associations between Aesthetics and Hedonics, yet maintained their distinctiveness, it is hypothesized that the hedonic and aesthetic variables are predictors in the model. Researchers have posited that Aesthetics is related to garnering users' attention (Jennings, 2000). This has been described by Jacques et al. (1995) as the technology's propensity to "catch and captivate user interests". Studies have also demonstrated the strong link between Aesthetics and usability (Tractinsky, 1997). The current study predicts that Perceived Usability and Focused Attention will be mediated by Aesthetics and Hedonic Motivations (Social, Idea, Role, Adventure/Gratification).

**Hypothesis 2.** Hedonic Motivations and Aesthetics predict Focused Attention.

**Hypothesis 3.** Hedonic Motivations and Aesthetics predict Perceived Usability.

In a comparison of menu- and metaphor-based websites, Hartmann et al. (2008) found that task scenarios deemed "serious" garnered users' preferences for usability, but not Aesthetics. Utilitarian motivations could be interpreted as more serious than hedonic, since they pertain to achieving a particular goal (e.g., finding what one is looking for in an efficient manner). Thus it is logical to associate utilitarian motivations with Perceived Usability. The Perceived Usability factor contained items relating to ease of use and negative emotions associated with sites that have poor usability, such as annoyance. Users' assessment of the usability of a shopping website may predict their sense of Achievement.

**Table 6**

Rotated factor matrix for User Engagement Scale.

Component	1	2	3	4
PUS 5 ("mentally taxing")	0.80	0.07	0.21	0.11
PUS 3 ("felt annoyed")	0.80	0.07	0.13	0.23
PUS 6 ("demanding")	0.79	0.02	0.16	0.18
PUS 2 ("confusing to use")	0.77	0.12	0.14	0.26
PUS4 ("felt discouraged")	0.76	0.07	0.27	0.19
PUS 8 ("could not do things")	0.69	0.04	0.18	0.13
EN3 ("did not work out as planned")	0.64	0.03	0.49	0.08
FA2 ("lost track of time")	0.06	0.86	0.12	0.09
FA5 ("time slipped away")	0.06	0.83	0.19	0.12
FA4 ("world around me")	0.02	0.81	0.09	0.19
FA7 ("let go")	0.08	0.81	0.13	0.15
FI1 ("drawn in")	0.08	0.73	0.29	0.15
FA6 ("absorbed")	0.05	0.64	0.22	0.15
EN2 ("success")	0.36	0.11	0.73	0.09
EN1 ("worthwhile")	0.29	0.20	0.73	0.13
EN4 ("rewarding")	0.30	0.30	0.68	0.19
EN5 ("recommend")	0.28	0.23	0.66	0.23
NO3 ("felt interested")	0.13	0.36	0.60	0.24
FI2 ("felt involved")	0.07	0.41	0.50	0.23
FI3 ("fun")	0.17	0.34	0.48	0.42
PUS7 ("felt in control")	0.39	0.15	0.46	0.21
AE5 ("pleasing")	0.20	0.15	0.13	0.83
AE1 ("attractive")	0.24	0.18	0.17	0.79
AE2 ("appealing")	0.27	0.15	0.16	0.77
AE3 ("graphics and images")	0.16	0.16	0.18	0.75
AE4 ("visual senses")	0.19	0.23	0.23	0.72

#### Hypothesis 4. Perceived Usability predicts Achievement.

The hypotheses were tested using multiple regression analyses. The results are summarized in Table 7.

Results of the regression analyses demonstrated that **Hypotheses 1–3** were partially supported. Achievement was the only motivation variable to influence Endurability ( $\beta = 0.23$ ,  $p < 0.001$ ) (H1). Aesthetics ( $\beta = 0.39$ ,  $p < 0.001$ ) and Adventure/Gratification Shopping ( $\beta = 0.23$ ,  $p < 0.001$ ), but not Idea and Social Shopping Aesthetics (H2) predicted Focused Attention. Only Aesthetics ( $\beta = 0.54$ ,  $p < 0.001$ ) predicted Perceived Usability (H3). **Hypothesis 4** was not supported. These findings indicate that Adventure/Gratification Shopping and Achievement Shopping were the only hedonic and utilitarian motivations to demonstrate predictive relationships with engagement variables, namely Focused Attention and Endurability.

#### 4. Discussion

The results of the factor analysis of the Hedonic and Utilitarian Shopping Motivation Scale were different from those of Kim (2006). Value items, previously equated with hedonic motivation (Arnold and Reynolds, 2003; Kim, 2006) were more proximate to Achievement, a Utilitarian variable, when correlations amongst sub-scales were examined. Although Value was not a significant predictor of Endurability in the regression analysis, the relationship between Value and other motivators warrants further exploration. Value may be central to both hedonic (the "thrill" of bargain hunting) and utilitarian (the satisfaction of purchasing a product at a good price) Shopping Motivations. This possibility demonstrates the interconnectedness of Utilitarian and Hedonic Motivations.

The Efficiency and Role sub-scales were eliminated after reliability analysis, a finding that was also not consistent with (Kim, 2006). One explanation for this may be methodological: respondents completed the utilitarian and hedonic items based on their general shopping experiences, whereas they completed the engagement items with a specific shopping experience in mind. However, it is worthy of exploring whether conceptions of Utilitar-

ian and Hedonic Motivations are changing in the minds of contemporary e-consumers. In online shopping environments, is "role shopping" the act of shopping on behalf of or for others as applicable as in the physical shopping environment? This may also be the case for "efficiency" in e-shopping. Interestingly, O'Brien and Toms (2010) noted that, in the composition of the Perceived Usability factor of engagement, items that pertained to effectiveness and satisfaction were present, but those associated with efficiency were removed during reliability and factor analyses. Efficiency is an established standard of usability, but users who are seeking an engaging experience with a technology may not be concerned about the time required to carry out a task. In the measurement of user experience, what is the role of traditional usability criteria? Future work should focus on replicating the current study, and examining the saliency of role and efficiency in other online environments.

Multiple linear regression was used to test predictive relationships between specific hedonic and utilitarian motivations and aspects of engagement. Adventure/Gratification shopping predicted Focused Attention, and Achievement predicted Endurability. In discussing Utilitarian and Hedonic Shopping Motivations, Kourouthanassis et al. (2008) state that, "in essence, a shopping experience...or towards entertainment" (p. 322). However, this study showed these motivations operating at the same time (Ahn et al., 2007) yet influencing different elements of user experience. Endurability – feelings of reward and success and the decision to recommend the online retail site to others – was linked with the need to achieve, while the desire for Adventure/Gratification related to Focused Attention. It is interesting to note that, in this study, the hedonic motivation of Adventure/Gratification influenced interaction, whereas the utilitarian motivation of Achievement was related to the outcome of the experience. Further research may reveal that Hedonic Motivations may be more salient during the interaction with the technology, whereas utilitarian motivations may be more prominent before and/or after the experience has taken place. Wright et al. (2003) incorporate spatio-temporal considerations into their Threads of Experience Model and O'Brien and Toms (2008) emphasizes the salience of different affective, cognitive, and interactive attributes at different points in time during an encounter between the user and a technology. Thus, research models of user experience should consider the overall impact of motivations on variables of experience (outcome) as demonstrated in the current study, but also the impact of motivations on engagement both prior to and as an experience is unfolding.

Research has demonstrated that aesthetics and usability are components of user experience (Lavie and Tractinsky, 2004; Mahlike, 2002). While Lavie and Tractinsky (2004) maintained that a web site's visual appeal influences its perceived functionality, Mahlike (2002) model of user experience explored visual attractiveness, perceived ease of use, perceived usefulness, and hedonic quality as independent predictors of intended system use. In the current study, Perceived Usability mediated the relationship between Aesthetics and Endurability. Survey respondents were recruited for the study because they made a recent purchase through the online shopping website; thus the e-commerce website possessed a basic level of effectiveness in that it supported the transaction. The visual appearance of websites have been linked to perceptions of trust and reliability (Karvonen, 2000). The observed link between aesthetics and usability may not be a function of beauty predicting functionality (Lavie and Tractinsky, 2004), but rather of the website's visual presentation matching users' expectations of a shopping website that supports the conduct of shopping tasks, which was confirmed by making a purchase. Results also indicated that Aesthetics and Achievement/

**Table 7**  
Multiple regression analysis.

Regression	Dependent variable	F	R <sup>2</sup> (df)	Independent variable	$\beta$	t-Value (df)
1	Endurability	84.08	0.07 (5, 671)*	Social Shopping	0.09	2.13 (676)
				Idea Shopping	0.00	0.00 (676)
				Adventure/Gratification	0.06	1.36 (676)
				Value Shopping	0.00	0.10 (676)
				Achievement Shopping	0.22	5.33 (676)*
2	Focused Attention	49.41	0.21 (4, 659)*	Social Shopping	0.00	0.09 (663)
				Idea Shopping	−0.07	−1.49 (663)
				Adventure/Gratification	0.23	5.1 (663)*
				Aesthetics	0.42	12.11 (663)*
				Social Shopping	0.01	0.14 (676)
3	Perceived Usability	67.36	0.29 (4, 672)*	Idea Shopping	0.02	0.49 (676)
				Adventure/Gratification	−0.06	−1.4 (676)
				Aesthetics	0.54	16.24 (676)*
				Perceived Usability	0.06	1.69 (722)
4	Achievement	2.87	0.00 (1, 721)			

\*  $p < 0.01$ .

Gratification, a hedonic motivator, predicted Focused Attention, a variable not examined by [Mahlke \(2002\)](#). [Novak et al. \(2000\)](#) studied Focused Attention as one of four components of Flow, where the ability of consumers to achieve a Flow state contributed to compelling online shopping experiences; aesthetics was not examined in this model. In this case, the visual appearance of the website and the hedonic motivation to seek stimulation and relieve stress predicted users' level of absorption in the shopping interaction. The concurrent investigation of Perceived Aesthetics, Focused Attention, Usability, and Hedonic Motivation brings together aspects of the interface (Perceived Aesthetics and Usability) and the user (Focused Attention and Hedonic Motivation) to demonstrate the relationship between these variables.

Hedonic and utilitarian motivations should not be limited to the shopping domain. Many of the categories encompassed by these motivations (e.g., social, achievement, value, adventure) may be salient in environments such as learning and information searching. Rewording the items of the Hedonic and Utilitarian Shopping Motivation Scale and administering it in another context would explore the generalizability of these types of motivations to other domains. For instance, social motivations may incite engagement and participation in online message boards, while gamers may find gratification and stress relief in playing a video game. It is possible that motivations will vary as a consequence of domain, application type, or individual differences, and that motivations will influence the experience trajectory at different points. Overall, attending to the motivational dimensions of experience, designers increases the likelihood that users will use an application or website in future ([Webster and Ahuja, 2006](#)), and strengthen the endurance of an experience. However, in order to use motivation as an element in design, it is necessary to determine if there are different types and patterns of motivation across domains.

## 5. Limitations

It is essential to acknowledge the limitations of this research. First, the survey garnered a 10% response rate. A shortcoming of conducting online survey research is that people who respond may be inherently different than those who are invited but choose not to participate. In this case, participants recruited for this survey had made a purchase with the online retailer, and they may be different from those who visited the website without purchasing. In addition, the majority (70%) of respondents were female. However, there were no significant differences between how males and females responded to questions and respondents were varied on other demographic variables, such as age.

The second limitation is that the Hedonic and Utilitarian Shopping Motivation and User Engagement Scales did not produce the

same results in this study as they have in the past. Regarding the Hedonic and Utilitarian Shopping Motivation Scale, the Role and Efficiency sub-scales were eliminated during factor analysis and the Adventure/Gratification sub-scale items loaded on the same factor. This was surprising given that the constructs of this scale are more established ([Arnold and Reynolds, 2003](#); [Babin et al., 1994](#); [Kim, 2006](#)). The reason for the discrepancy between current and past results cannot be absolutely determined. Replicating this research may show that these findings are an anomaly to this particular study. However, it may also force us to re-examine how we conceptualize motivation in online shopping environments, since the sub-scales were developed in the context of physical shopping. The User Engagement Scale items did not all load on their predicted factors during factor analysis, with the exception of Aesthetics. It is a new measure and requires further evaluation. Yet, this study points out an inherent dilemma with the measurement of user experience constructs in general: applying universal evaluation techniques to such a dynamic, varied, and complex construct as engagement.

Lastly, participants were given different instructions for responding to the Engagement and Hedonic and Utilitarian Scale items. Instructions for the former scale drew respondents' attention to their most recent encounter with the online retailer, while the latter scale focused on general Shopping Motivations. It is possible that completing the Engagement Scale items first influenced participants to think about their Shopping Motivations with regard to that specific experience. However, it is also possible that respondents distinguished the specific experience from their general motivation toward shopping as instructed. For this reason, and because the findings were different from previous research ([Kim, 2006](#)), findings should be interpreted as exploratory.

However, there may be some merit to studying engagement with a specific application, system or domain, such as e-commerce, in the context of more general motivations associated with the overarching task, such as shopping. It is often these general motivations that bring about the desire to interact with the technology or to initiate the experience. These general expectations may be so powerful that they override attempts made through the design of the technology (e.g., the aesthetics of a website) to influence the users' experience. For instance, if a shopper interacts with an online retailer with a strong motivation to "achieve," then features of the website, such as images containing different product views, recommendations for other materials to purchase, or attractive logos and graphics, may have a negative effect on the shopper of distraction and frustration. A shopper seeking adventure/gratification may look at these same features as interesting and inspiring, and become bored by a clean, uncluttered interface. Understanding

general motivations may be used to tailor interface design to the type of experience the user is seeking.

## 6. Conclusion

In summary, this study explored Hedonic and Utilitarian Shopping Motivations in the context of engagement, defined as a quality of user experience. The hedonic motivation of Adventure/Gratification predicted Focused Attention, and Achievement predicted Endurability, while Aesthetics predicted both Focused Attention and Perceived Usability. The results demonstrated the value of specific hedonic and utilitarian motivations for aspects of engagement with this sample of e-consumers. Future research should examine the relationships amongst hedonic and utilitarian motivations and engagement in other environments, such as online searching or virtual communities, the relationship between motivation and task, and at the power of pre-existing motivations and expectations to shape experience. Increased knowledge of what motivates technology users may lead to more robust models – and measures – of user experience.

### Appendix A. The Hedonic and Utilitarian Shopping Motivation Scale

#### Adventure (AD)

- AD1. I find shopping stimulating.
- AD2. To me, shopping is an adventure.
- AD3. Shopping makes me feel like I am in my own universe.

#### Gratification (GR)

- GR1. When I am in a down mood, I go shopping to make myself feel better.
- GR2. To me, shopping is a way to relieve stress.
- GR3. I go shopping when I want to treat myself to something special.

#### Idea (ID)

- ID1. I go shopping to keep up with trends.
- ID2. I go shopping to keep up with the new fashions.
- ID3. I go shopping to see what new products are available.

#### Role (RO)

- RO1. I like shopping for others because when they feel good I feel good.
- RO2. I enjoy shopping for my friends and family.

#### Social (SO)

- SO1. I go shopping to with my friends and family to socialize.
- SO2. Shopping with others is a bonding experience.
- SO3. I enjoy socializing with others when I shop.

#### Value (VA)

- VA1. I enjoy hunting for bargains when I shop.
- VA2. I enjoy looking for discounts when I shop.
- VA3. For the most part, I go shopping where the sales are.

#### Achievement (AC)

- AC1. I like to feel smart about my shopping trip.
- AC2. It feels good to know that my shopping trip was successful.

- AC3. On a particular shopping trip, it is important to find items I am looking for.
- AC4. It is important to accomplish what I had planned on a particular shopping trip.

#### Efficiency (EF)

- EF1. It is disappointing when I have to go to multiple stores to complete my shopping.
- EF2. A good shopping experience is one that is over very quickly.

### Appendix B. The User Engagement Scale

#### Focused Attention (FA)

- FA1. I lost myself in this shopping experience.
- FA2. I was so involved in my shopping task that I lost track of time.
- FA3. I blocked out things around me when I was shopping on this website.
- FA4. When I was shopping, I lost track of the world around me.
- FA5. The time I spent shopping just slipped away.
- FA6. I was absorbed in my shopping task.
- FA7. During this shopping experience I let myself go.

#### Perceived Usability (PUs)

- PUs1. I felt frustrated while visiting this shopping website.
- PUs2. I found this shopping website confusing to use.
- PUs3. I felt annoyed while visiting this shopping website.
- PUs4. I felt discouraged while shopping on this website.
- PUs5. Using this shopping website was mentally taxing.
- PUs6. This shopping experience was demanding.
- PUs7. I felt in control of my shopping experience.
- PUs8. I could not do some of the things I needed to do on this shopping website.

#### Aesthetics (AE)

- AE1. This shopping website is attractive.
- AE2. This shopping website was aesthetically appealing.
- AE3. I liked the graphics and images used on this shopping website.
- AE4. This shopping website appealed to my visual senses.
- AE5. The screen layout of this website was visually pleasing.

#### Endurability (EN)

- EN1. Shopping on this website was worthwhile.
- EN2. I consider my shopping experience a success.
- EN3. This shopping experience did not work out as I had planned.
- EN4. My shopping experience was rewarding.
- EN5. I would recommend shopping on this website to my friends and family.

#### Novelty (NO)

- NO1. I continued to shop on this website out of curiosity.
- NO2. The content of the shopping website incited my curiosity.
- NO3. I felt interested in my shopping task.

#### Felt Involvement (FI)

- FI1. I was really drawn into my shopping task.
- FI2. I felt involved in this shopping task.
- FI3. This shopping experience was fun.



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