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We congratulate Drs. Cyr, Hassanein, Head, and Ivanov for this great achievement.

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The role of social presence in establishing loyalty in e-Service environments

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Abstract

Compared to offline shopping, the online shopping experience may be viewed as lacking human warmth and sociability as it is more impersonal, anonymous, automated and generally devoid of face-to-face interactions. Thus, understanding how to create customer loyalty in online environments (e-Loyalty) is a complex process. In this paper a model for e-Loyalty is proposed and used to examine how varied conditions of social presence in a B2C e-Services context influence e-Loyalty and its antecedents of perceived usefulness, trust and enjoyment. This model is examined through an empirical study involving 185 subjects using structural equation modeling techniques. Further analysis is conducted to reveal gender differences concerning hedonic elements in the model on e-Loyalty.

Keywords: e-Loyalty; Social presence; Gender; Trust; e-Commerce; Technology acceptance model (TAM)

1. Introduction

In recent years, researchers have begun to explore similarities and differences between shopping for products and services in online versus traditional retail environments (for example, Burke, 2002; Eroglu et al., 2003; Koernig, 2003). Unlike traditional retail shopping, parties in an online encounter have no direct contact – in an environment with few social cues. When shopping online, the social proximity and face-to-face interaction with salespeople and other shoppers are replaced by a complex socio-technical system that is not well understood by the consumer (Riegelsberger et al., 2003).

In an online environment, transactions transcend time and space (Brynjolfsson and Smith, 2000). This separation of time and space is referred to as dis-embedding (Giddens, 1990), and is thought to create negative consequences for consumer trust, as well as hamper e-Commerce development and growth (Riegelsberger et al., 2003). To address this concern, (Riegelsberger and colleagues (2001, 2003)) recommend virtual re-embedding in the Web environment to incorporate social cues in online design (such as photos, video, text or speech). Steinbrück et al. (2002) confirm that virtual re-embedding effectively increases online trust. Specifically, they found that photographs help create social presence, and bring the virtual interaction closer to a face-to-face communication. Social presence has desirable consequences in an online context, and is described as the feeling or sense of warmth and sociability within a website (Gefen and Straub, 2003).

If vendors in either real or virtual settings are to be successful, then it is imperative that they attract and retain loyal customers (Pullman and Gross, 2004). Loyalty is a commitment by a customer to a particular brand, website or online service provider when alternate options are available (Shankar et al., 2003). Customer loyalty has a dramatic impact on a firm's financial "bottom line" (Reichheld and Schefter, 2000). Even a small increase in the percentage of loyal customers results in elevated profits and value to a firm (Heskett et al., 1997). In traditional stores, loyalty can

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be enhanced by social interactions between sales assistants and customers (Tauber, 1972). In online environments establishing a social connection between the vendor and consumer is more complicated due to physical and social distance (Schijns, 2003) and a more impersonal, anonymous and automated shopping context (Head et al., 2001).

Despite some obvious challenges of creating positive shopping experiences, instilling loyalty among online customers is an ongoing priority for vendors. Online loyalty has been described as an enduring psychological attachment by a customer to a particular online vendor or service provider (Butcher et al., 2001). Depending on the focus of the research, this loyalty has been manifest in either customer attitudes or behaviors toward the vendor (Anderson and Srinivasan, 2003). In electronic environments, loyalty (termed e-Loyalty) can also refer to a virtual shopper's intention to visit a website again, or to consider purchasing from it in the future (Cyr et al., 2005; Koernig, 2003). There is an implied "likelihood of a purchase decision", rather than a requirement for an actual purchase (Devaraj et al., 2002). Consequently, we use this definition of e-Loyalty in the current research.

In online environments, a few studies have established that loyalty is related to trust (Anderson and Srinivasan, 2003; Flavián et al., 2005; Luarn and Lin, 2003), and to the design of the website (Simon, 2001; Yoon, 2002). To date, most of the work in this realm has been in product rather than e-Services environments, as in the current work. An exception is the work by Luarn and Lin (2003), where a model for loyalty is developed within an eServices context. These authors note:

> "While the importance of brand loyalty has been recognized in the marketing literature...the conceptualization and empirical validation of a loyalty model for the e-Services context has not been addressed. e-Commerce success, especially in the business-to-consumer area, is determined in part by whether consumers show loyalty to a particular e-Services provider they cannot touch" (p. 156).

Although increased numbers of women are accessing the Internet with intentions to shop online, relatively little is known about gender differences in e-Commerce (Dittmar et al., 2004). Research in which gender-related attitudes and activities on the Internet have been examined suggests women are less satisfied than men, and less likely to purchase online than men (Garbarino and Strahilevitz, 2004; Rodgers and Harris, 2003). This may be the result of websites that are not compatible with women's design preferences (Moss and Gunn, 2005), and because women perceive websites differently from men (Cyr and Bonanni, 2005; Rodgers and Harris, 2003). Further, women may be more receptive to websites where emotive or "hedonic" elements are present (Rodgers and Harris, 2003; Van Slyke et al., 2002). To our knowledge, we know of no investigation focused on online female shoppers and loyalty.

This paper is aimed to further the understanding of e-Loyalty within an e-Services context, with emphasis on two under-explored elements: (1) social presence, and (2) gender. Some researchers have explored the impact of social presence on the antecedents to attitude (Hassanein and Head, 2006) and behavioral intention (Gefen and Straub, 2003). However, social presence has not been examined within the context of e-Loyalty. Similarly, the impact of gender on e-Loyalty antecedents is not fully understood. Hence, in this paper we seek to answer the following research questions:

> *Research Question 1*: What determines loyalty within a B2C e-Services website?
> *Research Question 2*: What role does social presence play in influencing loyalty and its antecedents within a B2C e-Services website?
> *Research Question 3*: How does gender influence the impact of hedonic elements on loyalty within a B2C e-Services website?

In the following sections we present a brief overview of traditional and online shopping, our research model and hypotheses; discuss the research methodology employed in this study; and present the results of an empirical analysis used to validate the proposed model. The paper ends with a discussion, conclusions and some directions for future research.

2. Traditional and online shopping environments

In many ways, shopping is a communication process. Shoppers gain information in a variety of forms, and make decisions as to whether a purchase is desirable. In recent years, with the introduction of e-shopping, that communication process has been dramatically altered. Face-to-face communication between a customer and vendor is supplanted by an electronic medium that replaces a real salesperson.

Bordia claims that "computers and electronic networks have revolutionized communication" (1997, p. 99). Related to this phenomenon, social psychological effects of computer communication have been compared with face-to-face communication. Findings have demonstrated that an absence of nonverbal cues to "embellish meaning or social context regarding gender, age or status" potentially hampers communication efficiency (Bordia, 1997). In turn, new capabilities for communicating content via the Web are created (Tsao and Lin, 2001). Included in the realm of computer-mediated communication are text-based communication (email or "chat") or more recently, intelligent agents that assist customers with online purchasing decisions (Steckel et al., 2005). The use of agents has the benefit of providing the consumer with an element of interactivity, which replaces in some form the exchange of information as it occurs in a face-to-face environment (Haubl and Trifts, 2000).

Additionally, for many consumers, shopping enjoyment results from proximity to other shoppers, and some researchers suggest that consumers visit stores seeking social interactions (Tauber, 1972), or even social support (Westbrook and Black, 1985). In a traditional store, it is further posited that shoppers derive pleasure from the sights, sounds or smells of the retail environment (Cox et al., 2005). Related to this, Kotler (1973–1974) refers to the "atmospherics" of shopping as the conscious designing of space to produce specific emotional effects in the buyer that enhance purchase probability. In contrast, online shopping offers large product selection, accessibility and convenience. While Internet shopping might be perceived to expand the scope of information search, comparing many alternatives on prices or product features may prove overwhelming for some consumers leading to sub-optimal decision-making or frustration (Steckel et al., 2005).

For retailing of services such as for hotels, restaurants, or banks, the physical environment plays an especially important role in determining a consumer's response (Koernig, 2003). Bitner (1992) studied ambient cues that affect the five senses and found them to be important for shoppers seeking services. Bitner found that the more intangible the product, the stronger the influence of these cues on consumer evaluations. As online shopping environments grew, questions emerged, including how demonstrated effects of in-store cues might apply in the online context (Eroglu et al., 2003). Research concerning this question supports the role of shopping cues and atmospherics in online settings – creating an interesting parallel with traditional store environments. However, exactly how such cues are created online, especially those that encourage social interaction and support to shoppers or induce them to return to a website, are ill understood.

In general, when compared to a traditional store environment, online shopping: (1) lacks physical cues that help engender trust (such as investments in physical buildings, facilities and personnel); (2) is perceived as providing less control over consumer data during and following its transfer; (3) hinders physical evaluation of products, as consumers can only rely on the senses of vision and sound; and (4) possesses lower barriers to entry and exit for vendors (Roy et al., 2001; Yoon, 2002).

3. Research model and hypotheses

To facilitate an investigation of how to better understand the online shopping experience in a service context, and to address the research questions previously outlined, a model for e-Loyalty is presented in Fig. 1. This model employs the technology acceptance model (TAM), enjoyment, and perceived social presence as antecedents to e-Loyalty. Elements of the model and support for hypothesized causal links are elaborated below.

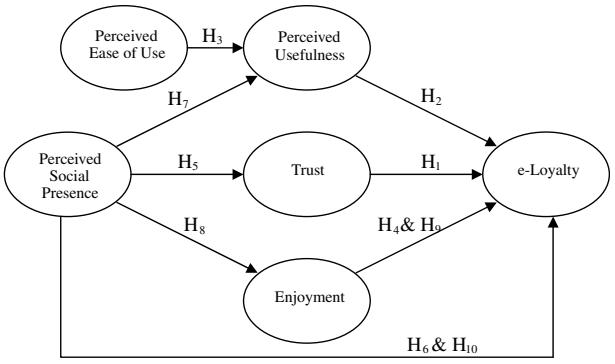


Fig. 1. Proposed research model.

3.1. e-Loyalty

Consumer loyalty has been defined by Zeithaml et al. (1996) as intention to stay with an organization. In traditional settings, this may be achieved by the physical setting or through the demeanour of sales personnel. In online settings, Luarn and Lin (2003) assert that "understanding how or why a sense of loyalty develops in customers remains one of the crucial management issues of our day" (p. 156). Delivering value-added services, with easily accessible capabilities related to information design or navigation enables online vendors to build sustaining relationships with customers (de Ruyter et al., 2001). If online shoppers like the design and capabilities of a website, then they are more likely to revisit the website (Rosen and Purinton, 2004).

Although online loyalty is often measured using behavioral indices such as the amount of time a visitor spends on the site or frequency of return visits to a website, it is difficult to determine if Web visitors are actually loyal to a site. Wind et al. (2002) observe that often shoppers will access information online but buy offline, thus making determinations of e-Loyalty problematic. Based on previous research, online loyalty or e-Loyalty has been conceived as a "consumer's intention to buy" from a website, and that consumers will not change to another website (Flavián et al., 2005). In a study in which website design was investigated as a precursor to loyalty across cultures, Cyr et al. (2004, 2005) defined e-Loyalty as intention to revisit a website or to purchase from it in the future. In the current investigation, e-Loyalty is similarly defined as perceived loyalty towards an online site, with intent to revisit the site, or to make a purchase from it in the future. Therefore, throughout this paper, e-Loyalty refers to "perceived loyalty" towards an online service provider, as opposed to actual loyalty behavior, such as repeat visits/purchases.

Luarn and Lin (2003) conceptualize e-Services as "an interactive content-centered and Internet-based customer service, driven by customers and integrated with related organizational customer support processes and technologies with the goal of strengthening the customer-service provider relationship" (p. 185). Featherman and Pavlou (2002) outline that e-Services enable electronic communica-

tion, information gathering, transaction processing and data interchange between online vendors and customers across time and space. Travel agencies, airlines, car rental companies, real estate agencies, online publishers and many other service providers are keen to enhance online capabilities to meet customer expectations and demands that will encourage visitors to return at a later date. It is within such an e-services context that we examine e-Loyalty in the current investigation.

3.2. Trust and e-Loyalty

In traditional commerce, trust is essential and may be created through direct interactions with a salesperson, or more generally through the relationship established between the consumer and the vendor (Qui and Benbasat, 2005). Moorman et al. (1993, p. 82) define trust as "a willingness to rely on an exchange partner in whom one has confidence". The establishment of trust and commitment are vital to the exchange, and are dependent on developing shared values and effective communication.

Specific to Web-enabled retail interactions, numerous researchers have pointed out that online trust is fundamental to online purchase intentions (Flavián et al., 2005; McKnight et al., 2004). Similar to traditional shopping, trust is focussed on consumer confidence in the website as part of a buyer-seller transactional exchange, and the consumer's willingness to rely on the seller and take actions in circumstances where such action makes the consumer vulnerable to the seller (Jarvenpaa et al., 1999). Corritore et al. (2003, p. 740) provide a definition of online trust for users interacting with transactional or informational websites that encompasses "an attitude of confident expectation in an online situation or risk that one's vulnerabilities will not be exploited". Further, these authors offer a comprehensive review of online trust and suggest that individual trust has both cognitive and emotional elements. However, unlike the vendor-shopper relationship established in traditional retail settings, the primary communication interface with the vendor is an information technology artefact, the website. Nohria and Eccles (1992) suggest the following conditions pose a threat to building online trust: absence of simultaneous existence in time and space, absence of human network attributes (i.e., audio, visual, and sensual), and absence of feedback and learning capability.

In research in which online trust is the primary focus, a multi-dimensional construct of trust is most appropriate. For example, trust may be viewed as resulting from a consumer's belief that an online vendor demonstrates ability, benevolence or integrity (McKnight et al., 2002). Alternately, in studies such as this one when trust is one element included to better understand a more comprehensive user reaction to a website, trust as a single construct has been used (Gefen and Straub, 2003; Koufaris and Hampton-Sosa, 2002).

Many studies have shown that if trust is present then there is a greater willingness to buy from an online vendor (Flavián et al., 2005; Gefen, 2000; Luarn and Lin, 2003). Hence we hypothesize that:

H1. Higher levels of trust will result in higher e-Loyalty toward an e-Services website.

3.3. TAM and e-Loyalty

A Web services site is a form of information technology. As such, online purchase intentions and attitude towards a website, and by extension e-Loyalty, can be partially explained by the technology acceptance model, or TAM (Davis, 1989; Davis et al., 1989). TAM has a history of use in the IS field and is considered robust in a wide variety of contexts, including e-Commerce (for example, Gefen et al., 2000; Moon and Kim, 2001). According to TAM, the intention to accept or use a new technology is determined by its perceived usefulness (PU) and perceived ease of use (PEOU) of the technology. In research examining TAM in e-Services, Gefen and Straub (2003) show a positive relationship between PEOU and PU, and PU and purchase intentions. In the current investigation, loyalty replaces attitude or purchase intention as the dependent variable in relation to TAM. Hence we hypothesize that:

H2. Higher perceived usefulness will result in higher e-Loyalty toward an e-Services website.

H3. Higher perceived ease of use will result in higher perceived usefulness toward an e-Services website.

3.4. Enjoyment and e-Loyalty

More recently, the original TAM model has been augmented to include a "hedonic" component (Childers et al., 2001; Dabholkar et al., 2002). In some research this hedonic element is referred to as "enjoyment" (van der Heijden, 2003). According to Childers et al. (2001) motivations to engage in online retail shopping have both utilitarian and hedonic dimensions. They note: "Web-shopping provides an expanded opportunity for companies to create a cognitively and aesthetically rich shopping environment ..." (p. 511). In two separate studies, the above authors found enjoyment to be positively related to attitude towards a website. Childers et al. (2001) specifically note, "enjoyment is a strong predictor of attitude in the web-shopping context" (p. 526). Similarly, van der Heijden (2003) found enjoyment positively related to attitude toward the use of websites. In the work by van der Heijden, attitude as a construct included positive attitude toward the website, as well as intention to visit the site frequently. In the current research, we expect that if users enjoy a website, they are more likely to have a positive attitude towards it and consequently visit it again or have e-Loyalty towards that site. Hence we hypothesize that:

H4. Higher levels of enjoyment will result in higher e-Loyalty toward an e-Services website.

3.5. Social presence and the web experience

As noted in the introduction, online trust can be established through the virtual re-embedding of social cues and content (Riegelsberger et al., 2001, 2003). This includes information that enables greater social presence on a website, and helps to approximate face-to-face communications. Social presence is defined as "the extent to which a medium allows users to experience others as being psychologically present" (Gefen and Straub, 2003, p. 11). Social presence is embedded in communication theory (Short et al., 1976), and is characterized by some researchers as the capability of the medium to transmit information richness (Straub and Karahanna, 1998). Social presence implies a psychological connection with the user, who perceives the website as "warm", personal, sociable, thus creating a feeling of human contact (Yoo and Alavi, 2001). Examples of website features that encourage social presence include socially rich text content, personalized greetings (Gefen and Straub, 2003), human audio (Lombard and Ditton, 1997), or human video (Kumar and Benbasat, 2002). Gefen and Straub (2003) suggest that pictures and text are able to convey personal presence in the same manner as do personal photographs or letters. Hassanein and Head (2006) showed emotive text and pictures of humans as resulting in higher perceptions of social presence within websites. In this study, social presence refers to perceptions by the user that the website has human contact, and is personal, sociable, warm, and sensitive. In the following paragraphs we explore support for relations between perceived social presence and the various constructs of the model proposed in Fig. 1 above.

Simon (2001) examined social presence of websites. Simon notes that "information richness and social presence are closely related concepts", and that "information rich, consumer oriented websites should help reduce ambiguity, increase trust/reduce risk, and encourage users to purchase with lower levels of consumer dissonance" (p. 26). Hassanein and Head (2006) showed higher user perceptions of social presence on websites selling apparel to result in higher levels of trust in the online vendor. Gefen and Straub (2003) conducted a study which confirmed that social presence resulted in trust within an e-Services application. Hence we hypothesize that:

H5. Higher perceived social presence will result in higher levels of trust in an e-Services website.

Although we know of no specific work in which social presence is tested in direct relationship to e-Loyalty, Simon (2001) as noted above, does suggest that information rich websites which exude social presence are more likely to encourage user purchases on a website than those that do not. Furthermore, Gefen and Straub (2003) and Hassanein and Head (2006) have shown social presence as having a relationship (mediated through trust) to purchase intention and attitude towards a website respectively. It is reasonable then to expect a direct relationship between perceived social presence and e-Loyalty since e-Loyalty partially overlaps with purchase intention and attitude. We therefore offer the following exploratory hypothesis:

H6. Higher perceived social presence will result in higher e-Loyalty toward an e-Services website.

We now examine the relationships between perceived social presence and the TAM constructs of PU and PEOU. The relation between social presence and PEOU has not been supported in previous research in this area (Gefen and Straub, 2003; Hassanein and Head, 2006) and as such is not included in our research model. On the other hand, Gefen and Straub (2003) tested for a relation between perceived social presence and PU for an e-Services website but found insignificant results. However, Hassanein and Head (2004b, 2006) found this relationship to be significant in two independent empirical studies involving product websites. Given the mixed results, we wish to re-examine the relationship of perceived social presence to PU in this study.

H7. Higher perceived social presence will result in higher perceived usefulness in an e-Services website.

Heeter (1995) found that users experimenting with a virtual reality entertainment system enjoyed the system more when they felt a stronger sense of social presence. Hassanein and Head (2004a, 2006) examined the impact of social presence on enjoyment on a product website selling apparel, with positive results. Here, we wish to test this relationship, but in an e-Services setting. Therefore, we hypothesize that:

H8. Higher perceived social presence will result in higher levels of enjoyment in an e-Services website.

3.6. Gender and hedonic elements

Gender differences have been explored in various information systems contexts. For example, empirical work from Venkatesh and Morris (2000) supports that PU is most important for men, while PEOU is most important for women. Similarly, Venkatesh et al. (2000) found performance expectancy stronger for men and effort expectancy stronger for women.

Relevant to the current investigation, women may be more responsive to "emotive" elements of website design than men, although many websites do not currently address this need. Rodgers and Harris (2003) note that inadequate perceived emotional benefits may be an underlying reason why women are less involved in e-Commerce activity. This is supported by research by Dittmar et al. (2004, p. 440) who write: "Men are more functional in their buying attitudes...whereas women stress social-experien-

tial and identity-related concerns, and in particular, emotional involvement''. Other researchers agree that men are more concerned with information seeking (Maltby et al., 2003), while women exceed men on socio-emotional traits (Sanchez-Franco, 2006). As such, there is enough motivation for us to explore whether the role of hedonic elements in our model (i.e., perceived social presence and enjoyment) would vary by gender.

Positive emotions toward a product or service can increase cognition toward the offering or company, and ''positive emotional states can prompt customers to return to a brand or company again in the future'' (Rodgers and Harris, 2003, p. 323), which is e-Loyalty. Related to the current investigation Rodgers and Harris (2003) outline, ''there is good reason to think that emotions will interact with gender to predict satisfaction or, more to the point, dissatisfaction with e-shopping, particularly among the female consumer'' (p. 323). Empirical data supports this claim and these researchers found that perceived absence of emotional benefits are a primary reason why women lack support for e-Commerce activity.

Van Slyke et al. (2002) examined differences in perceptions of Web-based shopping. The authors indicate that ''in general, women view some forms of shopping as more of a social activity than do men'', and that ''if women tend to gain benefit from the social aspects of traditional shopping, Web-based shopping may be viewed less favorably, thus affecting women's perceptions of the relative advantage and compatibility of Web-based shopping'' (p. 85). They continue, ''since women enjoy the social aspect of shopping, merchants may wish to consider such features as chat rooms and threaded discussions to build a shopping community and reduce the solitary nature of online shopping'' (p. 85). Based on the forgoing discussion, we hypothesize that:

H9. Higher levels of enjoyment will have a higher positive impact on e-Loyalty toward an e-Services website for females compared to males.

H10. Higher levels of perceived social presence will have a higher positive impact on e-Loyalty toward an e-Services website for females compared to males.

4. Research methodology

4.1. Participants

A total of 185 subjects successfully completed the survey. Most participants were recruited from two major Canadian Universities (McMaster University and Simon Fraser University), and consisted of undergraduate students, graduate students, faculty, and staff. Walczuch and Lundgren (2004) advocate the use of students for e-retailing research as they have the opportunity to use the Internet for communication and commercial transactions, and are a representative and appropriate sample for such studies. Table 1 summarizes the demographic profile of the study participants. All respondents were recruited by email, and were entered in a lottery draw for a $200 Amazon.com gift certificate in exchange for their participation.

Table 1
Participant demographic profile

	All ($n = 185$)	Male ($n = 85$)	Female ($n = 100$)
Average age	28	29	28
No. hours spent online	26.2	29.2	23.7
No. years shopping online	4.1	4.5	3.8
No. purchases online in last year	8.6	10.3	7.2

4.2. Task and website design

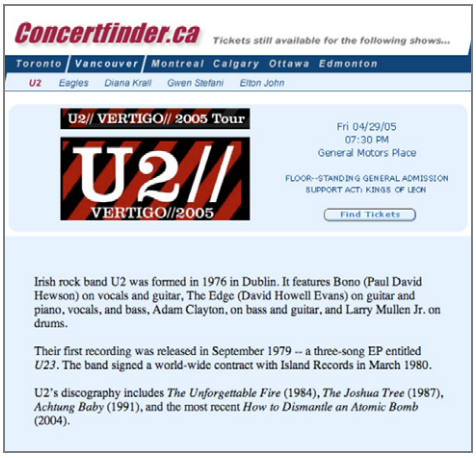
The task for the experiment consisted of browsing an e-Services website for buying concert-tickets. The study was designed as a one-factorial experiment manipulating five levels of website social presence with five independent groups. Participants were randomly assigned to the five groups, where each participant was exposed to only one level or condition. The experiment was conducted entirely online and subjects could complete the study from any computer with an Internet connection, thus increasing the online shopping task realism. Subjects were given the following task instructions:

> ''*You will be presented with the Concertfinder.ca website. This is not a real website, but has been created for use in this experiment. Note there are several concert choices indicated in the horizontal bar at the top of the page. Please view and navigate the various website choices to select a concert you would like to attend. Once you have made a decision, click on* ''***Find Tickets***'' *that takes you to a survey to complete. This is not a test of how fast you can finish the task, so take your time and explore the website.*''

Following the completion of the task (buying a concert ticket), subjects completed an online questionnaire (using a 7-point Likert scale) about their experiences on the e-Services website they just visited. In addition to questions that measured the various constructs in the proposed model, open-ended questions were posed to allow for more in-depth explanations or clarifications. The SurveyMonkey.com service was used to host the surveys, as it offers a rich set of features for questionnaire design and response tracking.

The prototype site, called Concertfinder.ca, was designed in terms of content and ''look and feel'' to resemble typical sites of this category, such as Ticketmaster.com. The features shown in the conditions are typical of features found on service websites. Each of the five websites consisted of five web pages – one for each performer or band. All conditions featured the same content (for the same five performers or bands), but differed only in terms of social presence elements.

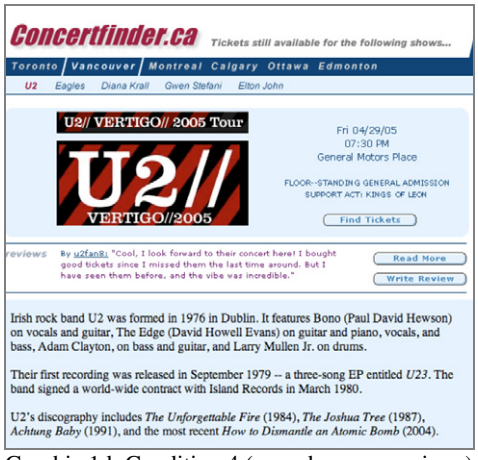
The five conditions are shown in Graphics 1a–e for an example band (U2). Although work in this area is exploratory, condition types were adapted from Burke (2002) who determined what it is that consumers value regarding online shopping features. This included: product information (i.e., text), product photographs, brand comparisons and expert ratings. With reference to a service rather than a product website as in the current investigation, the following conditions were created. ***Condition 1*** was the basic treatment that included text and the band logo. In ***Condition 2***, a photo of the band was included. Conditions 3 and 4 featured different interactive elements that allowed for discus-



Graphic 1a: Condition 1 (basic)

Graphic 1b: Condition 2 (photo)

Graphic 1c: Condition 3 (synchronous chat)



Graphic 1d: Condition 4 (asynchronous reviews)

Graphic 1e: Condition 5 (all)

sions and reviews/ratings. Specifically, ***Condition 3*** offered users the opportunity to open up a blank window and send a live chat message to other users assumed to be concurrently browsing that webpage. The number of users browsing the current page was represented by a "presence indicator", consisting of a static image of several 'smiley face' icons. ***Condition 4*** offered users the opportunity to view reviews from other users and write their own review for the performer/band. While Condition 3 was meant to simulate synchronous interaction, Condition 4 simulated asynchronous interaction with other website users. Finally, ***Condition 5*** included all of the above mentioned features (text, logo, photo, synchronous chat, asynchronous reviews).

The purpose of creating the five website conditions for this study was twofold. First, and foremost, we wished to incorporate sufficient variability in the exogenous variable, perceived social presence (as recommended by Kenny et al., 1998). If only one condition or website version is used in a structural equation modeling analysis, researchers run the risk that the exogenous variable will not exhibit adequate variability among the participants, thus weakening the analysis. In this study, the five conditions were created to generate variability in participants' perceptions of social presence. The purpose was to ensure rigour in the validation of the proposed model, rather than examine the detailed interaction effects of these five conditions. While studying the main effects and interaction effects of the various social presence elements would be interesting, it is beyond the scope of this research and is left for exploration in future work. A post hoc analysis revealed that the five conditions did generate variability in the exogenous variable, perceived social presence. Table 2 shows the sample size and mean for perceived social presence across the five conditions. A post hoc Tukey test found that the perceived social presence experienced in Condition 5 was significantly higher than the perceived social presence of any other condition ($p < 0.01$ when comparing condition 5 to each of the other conditions). Significance differences were not found between other conditions, likely due to the relatively small sub-sample sizes.

A secondary purpose of creating the five conditions for this study was to explore any interesting preferences among the social presence treatments. Some of these preferences, especially those that relate to gender differences, are outlined in the open-ended comments presented in the discussion section of this paper.

Table 2
Perceived social presence across the five conditions

Condition	Sample size	Mean*
1 (basic)	34	3.43
2 (photo)	37	3.64
3 (synchronous chat)	35	3.78
4 (asynchronous reviews)	38	4.07
5 (all)	41	4.98

* On a 7-point Likert scale.

4.3. Instrument validity and reliability

Content validity ensures that construct questions (items) are representative and drawn from a universal pool (Cronbach, 1971). In this research, definitions for perceived social presence, PEOU, PU, trust, enjoyment and loyalty came from existing literature, where they had been shown to exhibit strong content validity. In Appendix A, a list of the construct items used in the questionnaire is presented, as well as corresponding literature sources.

Construct validity ensures that there are relatively high correlations between measures of the same construct (convergent validity) and low correlations between measures of constructs that are expected to differ (discriminant validity) (Straub, 1989). To assess the convergent validity of the measurements, Fornell and Larcker (1981) propose examining three measures: (i) the item reliability of each measure; (ii) the composite (construct) reliability of each construct; and (iii) the average variance extracted for each construct. The item reliability of each measure was assessed by performing a principle components factor analysis (as recommended by Straub, 1989). Table 3 shows the complete results of the principle component analysis with varimax rotation on the original 24 items (outlined in Appendix A). As a rule of thumb, a measurement items loads highly if its loading coefficient is above 0.6 and does not load highly if the coefficient is below 0.4 (Hair et al.,

Table 3
Principle component analysis with varimax rotation

	Component					
	1	2	3	4	5	6
SP1	**0.775**	0.148	0.188	0.199	0.122	0.152
SP2	**0.753**	0.278	0.231	0.145	0.241	0.134
SP3	**0.691**	0.282	0.267	0.270	0.223	0.023
SP4	**0.782**	0.290	0.242	0.164	0.140	0.151
SP5	**0.736**	0.186	0.309	0.218	0.170	0.121
PU1	0.237	0.205	0.273	0.459	0.180	0.338
PU2	0.263	0.161	0.246	**0.808**	0.150	0.167
PU3	0.233	0.222	0.268	**0.753**	0.211	0.157
PU4	0.228	0.338	0.116	**0.761**	0.252	0.178
PEOU1	0.193	0.260	0.042	0.474	0.628	0.103
PEOU2	0.048	0.189	0.163	0.303	**0.724**	0.215
PEOU3	0.277	0.249	0.262	0.074	**0.793**	0.198
PEOU4	0.277	0.042	0.227	0.116	**0.792**	0.166
T1	0.120	0.251	0.111	0.087	0.154	**0.816**
T2	0.078	0.072	0.185	0.176	0.184	**0.864**
T3	0.203	0.271	0.193	0.226	0.175	**0.738**
E1	0.281	0.313	**0.732**	0.216	0.220	0.155
E2	0.336	0.243	**0.770**	0.188	0.160	0.190
E3	0.322	0.173	**0.803**	0.173	0.192	0.199
E4	0.311	0.214	**0.695**	0.282	0.259	0.200
L1	0.348	**0.753**	0.265	0.244	0.164	0.249
L2	0.316	**0.768**	0.238	0.241	0.156	0.250
L3	0.296	**0.808**	0.214	0.246	0.197	0.206
L4	0.262	**0.750**	0.263	0.261	0.249	0.199
α-Value	0.922	0.963	0.938	0.912	0.859	0.869
AVE	0.559	0.593	0.564	0.593	0.599	0.653

Note: Numbers in bold indicate loading coefficients for items in each construct.

Table 4
Discriminant validity[a]

	SP	PEOU	PU	Trust	Enjoy	e-Loyalty
SP	**0.748**					
PEOU	0.618	**0.774**				
PU	0.453	0.510	**0.770**			
Trust	0.720	0.623	0.536	**0.808**		
Enjoy	0.700	0.665	0.586	0.680	**0.751**	
e-Loyalty	0.559	0.562	0.515	0.598	0.564	**0.770**

[a] Diagonal elements in bold (the square root of AVE) should exceed the inter-construct correlations below and across them for adequate discriminant validity Fornell and Larcker (1981).

1995). From the original 24 items, two were eliminated (PU1 and PEOU1). PU1 was eliminated due to low loading (0.459) on the construct of interest and PEOU1 was eliminated due to a cross-loading (0.474) on the PU construct.

Construct reliability was assessed using Cronbach's α-value. As shown in Table 3, α-values ranged from 0.859 (for PEOU) to 0.963 (for e-Loyalty). Nunnally (1978) recommends that the Cronbach α of a scale should be greater than 0.7 for items to be used together as a construct. Therefore, all our constructs passed the test of construct reliability.

Fornell and Larcker (1981) suggested that the average variance extracted (AVE) from a construct should exceed 0.5. As shown in Table 3, all constructs satisfied this criterion. Thus, the proposed constructs demonstrated convergent validity on all three measures proposed by Fornell and Larcker (1981).

Discriminant validity was assessed to ensure that constructs differed from each other. As per Fornell and Larcker (1981), the correlations between items in any two constructs should be lower than the square root of the average variance shared by items within a construct. As shown in Table 4, the square root of the variance shared between a construct and its items was greater than the correlations between the construct and any other construct in the model, satisfying Fornell and Larcker's (1981) criteria for discriminant validity. The above results, therefore, confirm that our instrument encompassed satisfactory construct validity.

5. Results

A structural equation modeling (SEM) approach was adopted in our data analysis, as it can simultaneously test the structural and measurement models (Bagozzi and Yi, 1989), and it provides a more complete analysis for the inter-relationships in a model (Fornell, 1982). The variance-based Partial Least Square (PLS) method was chosen over covariance-based methods, such as LISREL, as it supports both exploratory and confirmatory research (Gefen et al., 2000) and it can be applied to relatively small sample sizes (Fornell and Bookstein, 1982). Chin (1998) and Gefen et al. (2000) advise that the minimum sample size for a PLS analysis should be the larger of (i) 10 times the number of items for the most complex construct; or (ii) 10 times the largest number of independent variables impacting a dependent variable. In our model, the most complex construct (perceived social presence) has four items and the largest number of independent variables estimated for a dependent variable is only 4 (for e-Loyalty). The total sample size for this study was 185, with 85 men and 100 women. Thus, our sample sizes are more than adequate for PLS estimation procedures used in this paper for the overall model and the individual gender models.

Since PLS does not generate an overall goodness-of-fit index (as with LISREL), model validity is primarily assessed by examining the structural paths and R^2 values (Chwelos et al., 2001). As recommended (Chin, 1998), bootstrapping (with 500 sub-samples) was performed to test the statistical significance of each path coefficient using t-tests. For the overall model (combined males and females, $n = 185$) shown in Fig. 2, all path coefficients of the hypothesized causal links are significant. Thus, hypotheses H1 through H8 are supported. Approximately 63% of the variance in the loyalty towards an e-Services website is accounted for by the variables in the model ($R^2 = 0.637$). All the R^2 of the endogenous constructs in the model exceed the 10% benchmark recommended by Falk and Miller (1992).

Fig. 3a and b show the results of the PLS analysis of our model for males ($n = 85$) and females ($n = 100$), respectively. For males, approximately 53% of the variance in the loyalty towards an e-Services website is accounted for by the variables in the model, whereas, for females, approximately 76% of the variance is accounted for.

The results show that increased perceived social presence has a positive and significant impact on PU, trust and enjoyment for both men and women. However, perceived social presence did not have a significant direct impact on loyalty of an e-Services website for men, while it did for women. Similarly enjoyment does not have a significant impact on e-Services website loyalty for men, while it does for women. Thus, hypotheses H9 and H10 are supported. Table 5 provides the t-values of path coefficients and summarizes our hypotheses testing results.

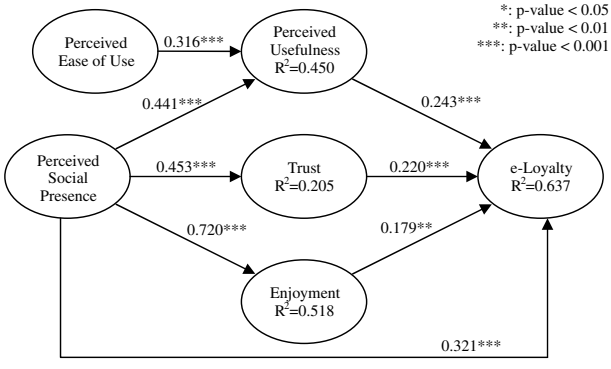


Fig. 2. PLS structural model ($n = 185$).

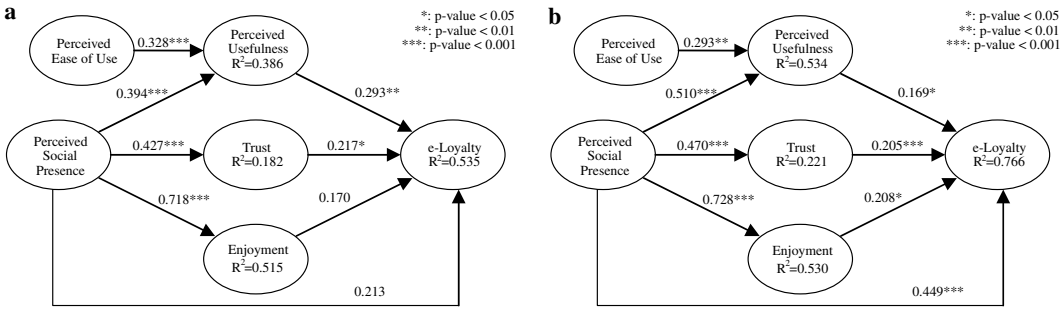


Fig. 3. (a) PLS model for males ($n = 85$); (b) PLS model for females ($n = 100$).

Table 5
Results of hypotheses testing

Hypothesis	Causal path	Path coefficient	t-Values	Supported
H1	Trust → e-Loyalty	0.220	3.513***	Yes
H2	PU → e-Loyalty	0.243	3.481***	Yes
H3	PEOU → PU	0.316	4.548***	Yes
H4	Enjoyment → e-Loyalty	0.179	2.814**	Yes
H5	PSP → Trust	0.453	7.112***	Yes
H6	PSP → e-Loyalty	0.321	4.079***	Yes
H7	PSP → PU	0.441	6.508***	Yes
H8	PSP → Enjoyment	0.720	19.372***	Yes
H9	F > M: Enjoyment → e-Loyalty	F: 0.208	F: 2.499*	Yes
		M: 0.170	M: 1.637	
H10	F > M: PSP → e-Loyalty	F: 0.449	F: 5.955***	Yes
		M: 0.213	M: 1.687	

Notes: PU, perceived usefulness; PEOU, perceived ease of use; PSP, perceived social presence; F, female; M, male.
* Denotes significance at the .05 level.
** Denotes significance at the .01 level.
*** Denotes significance at the .001 level.

6. Discussion and conclusions

As outlined in the introduction of this paper, we sought to explore three research questions. First, we found that loyalty within a B2C e-Services website is influenced by PU, trust, enjoyment as well as perceived social presence. Second, we discovered that perceived social presence does not only influence e-Loyalty directly, but also has an indirect impact by positively influencing its antecedents (i.e., PU, trust and enjoyment). Third, we uncovered some subtle differences in the above effects across gender. Females were more influenced by the impact of hedonic elements on loyalty within a B2C e-Services website than males. Enjoyment was found to have a significant impact on e-Loyalty for females, whereas this relationship was insignificant for males. Similarly, while perceived social presence has a significant impact on enjoyment for both genders, its direct impact on e-Loyalty was demonstrated for females but not males.

Further analysis of the open-ended questions revealed some interesting insights into the study's findings. Many of the males in our study centered their comments around the information provided on the websites. For example, males stressed that the websites had "very little information", focusing on specifics such as "no digital certificates", "no seating charts", and the need for "an 'about' page" and "a 'contact us' page". Interestingly, when females commented on the lack of information they used phrases such as: "what I don't like about this website is that the information provided is not enough to engage the viewers". Women sought content to 'engage' them, whereas men were more utilitarian in their comments by providing a list of missing information.

Focusing on the comments provided by women for the various website conditions, we observed that females expressed more notable differences in terms of enjoyment. For the basic treatment that only included text and the band logo (Condition 1), females commented that it was "boring, not enough pictures, no sense of vibrancy", that it had "no emotion, it does not evoke any response. A cold non-interactive site", that "visually, it is not very appealing at all... there should be more pictures", and that it was "not friendly". In contrast, when commenting on the higher social presence conditions (especially Condition 5 that incorporated all social presence elements), females noted that they "felt relaxed and enjoyed reading it", "it aroused [their] curiosity of each band, making [them] want to listen to all of their music", and it felt "more like a party chat room than a cold, impersonal website just selling stuff/tickets". These comments support our findings that females

appear to be seeking warmth/sociability and enjoyment as part of their website experience, in the context of eServices.

From a theoretical perspective, this study proposes and validates a new model for e-Loyalty. The literature has been very sparse on the important concept of loyalty in online environments. Our model validates relationships that have been shown in some previous studies (such as the influence of trust on e-Loyalty), and validates new relationships (such as the influence of enjoyment, PU and social presence on e-Loyalty). This study also extends social presence and gender research in the B2C e-Services domain. This is the first study to show that social presence has a direct and indirect impact on e-Loyalty and suggests that the impact of hedonic elements (perceived social presence and enjoyment) on e-Loyalty varies according to gender. Our results caution researchers against generalizing across genders (or other demographic variables) in their pursuit to better understand the online domain.

From a practitioner point of view, the results from this study can have immediate and direct implications for developers of B2C e-Services websites. Repeat purchases from loyal customers are what distinguish the most successful commercial ventures from the mediocre or failed endeavours. Website developers should consider infusing social presence in their website designs, as it can have a positive impact on the e-Loyalty evoked within their customers. In particular, online vendors that cater to females may experience more pronounced and positive impacts of conveying a sense of warmth and sociability on their websites. While our study showed that perceived social presence has both a direct and indirect impact on e-Loyalty for women, a male audience may also benefit from the infusion of social presence through its indirect impact on e-Loyalty (significantly influencing the antecedents to e-Loyalty). Developers of e-Services websites that cater to females are also encouraged to explore other means of increasing the enjoyment that is experienced on their sites.

There are some limitations of this research that should be noted. First, generalizability is a concern that plagues most research studies. Future work should determine the extent to which the findings presented in this paper apply to other persons, contexts and times. Most participants in this study were university students. While this group is a representative and appropriate sample for an e-Services study, other demographic samples (age, culture, education, etc.) should be explored. Similarly, only one type of e-Services was employed in this study (purchasing concert tickets). Other types of e-Services may reveal different results. Second, this study was conducted on an experimental website where observed behavior may differ from actual/natural behavior on actual (and branded) websites. Future research should explore the behavior of both loyal and non-loyal online users of actual e-Services websites. Third, only one research method was employed (survey analysis following an experimental task), potentially leading to a bias due to common method variance. Future work can employ other evaluation methods, such as formal usability testing, eye tracking, log analysis, and focus groups. This could also serve to provide a richer understanding of the effects of social presence and gender on e-Loyalty.

In the online environment, where space and time are separated between transacting parties, virtual re-embedding strategies can utilize social cues to infuse social presence through the Web interface. This can help bring the virtual interaction closer to the face-to-face communication found in traditional shopping environments, leading to an enhanced online experience and ultimately, greater e-Loyalty.

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Appendix A. Survey items and sources

Note: The survey consisted of the following statements that were ranked on a 7-point Likert scale: from 'very strongly disagree' to 'very strongly agree'.

Perceived Social Presence (Source: Gefen and Straub, 2003)
SP-1: There is a sense of human contact in the website.
SP-2: There is a sense of personalness in the website.
SP-3: There is a sense of sociability in the website.
SP-4: There is a sense of human warmth in the website.
SP-5: There is a sense of human sensitivity in the website.

Perceived Usefulness (Source: Hassanein and Head, 2006 with some adaptation for context)
U-1: The website provides good quality information.
U-2: This website improves my performance in assessing entertainment choices.
U-3: This website increases my effectiveness for entertainment choices online.
U-4: This website is useful for assessing entertainment choices online.

Perceived Ease of Use (Source: Hassanein and Head, 2006 with some adaptation for context)
EOU-1: This website is easy to use for concert assessment.
EOU-2: I can quickly find the information I need on this website.
EOU-3: This is a user-friendly website.
EOU-4: My interaction with this website is clear and understandable.

Perceived Trust (Sources: Cyr et al., 2004, 2005; Gefen and Straub, 2003)
T-1: I can trust this website.
T-2: I trust the information presented on this website.
T-3: I feel this online vendor would provide me with good service.

Perceived Enjoyment (Source: Hassanein and Head, 2006)
E-1: I found my visit to this website interesting.
E-2: I found my visit to this website entertaining.
E-3: I found my visit to this website enjoyable.
E-4: I found my visit to the website pleasant.

Perceived Loyalty (Sources: Cyr et al., 2004, 2005)
L-1: I would use this website again.
L-2: I would consider purchasing from this website in the future.
L-3: I would consider using this website in the future.

Open-ended questions

Following the survey items, three open-ended questions were presented to users in a blank text area. The questions were:

1. After viewing this website, what do you like about it, and why?
2. After viewing this website, what don't you like about it, and why?
3. How do you feel when exploring this site?

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