Online Shopping During COVID-19: A Comparison of USA and Canada

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Abstract. During the COVID-19 pandemic, many governments restricted economic activity by imposing lockdowns or requiring capacity constraints, thereby impacting brick-and-mortar businesses. Consumers responded by staying at home and turning to online shopping. Some consumers were already familiar with online shopping, whereas for others it was a new experience. As restrictions are removed or reduced, consumers may permanently change their shopping habits and continue to buy online with greater frequency than prior to the pandemic. With empirical data from a cross section of Canadian and American consumers, this study investigates the factors that influence the continuation of online shopping. The results show that there is little difference between Canadians and Americans, with perceptions of convenience significantly influencing perceived usefulness, and efficiency being a significant factor as well but only for Americans. Perceived usefulness is important for continuance intentions, with hedonic motivation having a moderating effect. Our results provide guidance to practitioners who are interested in consumers' online shopping intentions after the pandemic and factors that can foster such activities.

Keywords: Online shopping · E-S-QUAL · Hedonic motivation · PLS · COVID-19

1 Introduction

The World Health Organization (WHO) declared the COVID-19 outbreak a pandemic on 11 March 2020 [1]. In the weeks that followed, various jurisdictions around the world declared states of emergency, locking down their economies and limiting in-store shopping to essential services only. The result was an increase in online shopping with global retail e-commerce increasing 25.7% to US$4.2 trillion [2].

Canada was no exception. Since the initial declaration of the COVID-19 pandemic in 2020, various Canadian provinces imposed curfews and strict self-quarantine policies which restrained in-store shopping [3]. These restrictions altered the shopping habits of Canadian consumers, leading to increased e-commerce: in 2020, Canada's online sales

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grew by 75.0%, making it the second-fastest-growing e-commerce market worldwide [4]. E-commerce increased from $3.25 billion in 2019 (13.52% of total retail sales) to $4.21 billion in 2020 (17.83%) in 2019 [5]. Similarly in the USA, nonessential businesses were closed and retail business slowed, causing increases in e-commerce activity [6]. More specifically, the USA experienced growth in e-commerce retail trade sales to an annual volume in 2020 of US$762.68 billion, representing an increase of 31.8% [4]. According to the US Census Bureau, the electronic shopping and mail-order houses industry experienced a 35.2% increase in sales from 2019 to 2020, the most significant of any industry [7].

By the end of 2021, restrictions have started to relax. Stores are opening and consumers are returning to in-store shopping. However, because shoppers have experienced e-commerce, some for the first time and others to a greater extent, they may elect to continue shopping online. What is currently unknown is the factors that will influence consumers' intentions to continue shopping online, which is the objective of this research. Hence, the research question posed is: What factors influence consumers' intentions to continue shopping online as in-store shopping becomes available again?

Although prior studies have evaluated online shopping [8–10], little research has evaluated those factors that will influence consumers to continue their online shopping once the COVID-19 pandemic recedes. When consumers can resume in-store shopping similar to before the pandemic, it will be important for practitioners to understand the factors that will motivate consumers to continue the levels of e-commerce activity experienced during the pandemic. This study addresses this gap by studying online shopping continuance, comparing online activities prior to the pandemic with anticipated behavior after the pandemic. The theoretical foundation is E-S-QUAL [11], extended with convenience, security and the addition of hedonic motivation as a moderator.

This paper is organized as follows. The next section is the literature review which develops the hypotheses and concludes with the research model. The third section explains the methodology followed by the results. Section five details the results which are then discussed in section six.

2 Literature Review, Theoretical Foundation and Hypotheses Development

2.1 Service Quality

Many retail organizations are selling the same or similar products, whose quality characteristics can be measured by their durability and adherence to product specifications [12]. In order to attract consumers, these organizations need to differentiate themselves via the services that they offer [13]. The quality of this service can be defined as "the extent to which a service meets customers' needs or expectations" [14] In order to measure customers' perception of service, Parasuraman et al. [15] introduced SERVQUAL, comprising the dimensions of tangibility, reliability, responsiveness, assurance and empathy. This construct has been used to study the impact of service quality in various sectors of the economy, such as the airline industry [16], the auto aftersales market [17], healthcare [18], banking [19], hospitality [20] and retail [21].

Just as physical stores need to differentiate themselves through the services that they offer [22], websites must do the same [23]. In the early days of e-commerce, simply having a website with low prices was considered sufficient to drive sales, but as more retailers started to offer similar products online, service quality became a competitive factor [24]. Customers expect websites to facilitate their shopping, from the time they begin to search for products until their products are paid for and delivered [25]. Building on the research that lead to SERVQUAL, Parasuraman et al. [11] developed E-S-QUAL specifically to measure the service quality of e-commerce websites. With the aid of a random sample of Internet users of Walmart and Amazon, E-S-QUAL was measured across four dimensions: efficiency, fulfilment, system availability and privacy [11].

Because of its relevance to online shopping, E-S-QUAL forms the theoretical foundation for our research model [26], further extended with convenience, security and hedonic motivation. The following paragraphs in this section introduce our hypotheses.

2.2 Efficiency

Physical stores have their merchandise on display and, with a glance around the store, customers can quickly decide which departments to visit. The full characteristics of the product can be physically evaluated. The presentation of products within defined departments makes the consumer's visit efficient. Websites have to mimic the efficiency of the real world by focusing on the site design, ensuring it is easy to navigate and that product images are clearly and attractively displayed [23, 27]. Product information should be available with a simple click [28]. If the website is poorly organized, customers will lose patience and shop elsewhere, which they can do with the click of the mouse [29]. Hence, we hypothesize:

H1: Efficiency positively influences perceived usefulness of online shopping.

2.3 Fulfilment

Fulfilment refers to the receipt of the merchandise. In a physical store, the customer pays and walks out with the merchandise: there is no ambiguity with respect to the item and delivery is immediate. In contrast, when ordering online, the customer has to wait for delivery. Furthermore, the shipping costs may be high, the product delivered may not be what was ordered and its delivery may be later than anticipated [30]. Consumers may be discouraged to purchase because of the risk of delays and the hassle of returns [31]. Grewal et al. [32] suggested that "retailers must give more attention to fulfilment." Hence, our second hypothesis is:

H2: Fulfilment positively influences perceived usefulness of online shopping.

2.4 Security

Security refers to the perception that financial information shared through the website is safe. Consumers are familiar with using a plastic credit or debit card when paying in-store and they will have heard about security breaches via various news organizations [33]. However, when paying online, there are even more concerns because of the extra

organizations involved: the Internet provider, the retailer's website and the financial institutions. Transaction details may be falsified or the credit card details could be stolen and used by an unauthorized third party [34]. Online shoppers will need assurances of security to find online shopping useful. Hence, we hypothesize.

H3: Perceived security positively influences perceived usefulness of online shopping.

2.5 Privacy

When shopping in-store, the consumer can remain anonymous. There is no need to provide any identifying information and, if cash is paid, there is no record of who purchased the merchandise. Also, shopping experiences such as the number of items viewed or amount of time spent in store can not be readily connected with the shopper. However, websites can track the number of items viewed or the amount of time spent on a webpage. Online websites require personal information: the consumer must provide name and address for delivery and order history is maintained to assist with future purchases. An email allows the retailer to send an order acknowledgement with tracking information for the customer to follow up. Consumers may be fearful that their personal information could be shared with other organizations without their permission or exposed in a manner that they do not wish [35]. They want to be confident that their personal data is kept private [23]. Therefore, we propose:

H4: Perceived privacy perceptions positively influence perceived usefulness of online shopping.

2.6 Convenience

One advantage of online shopping is the freedom to transact at any time and any place [36]. There is no need to visit a retail store or wait until the shops are open. Furthermore, prices can be readily compared via browsing different websites or even finding a website that consolidates products and prices from various sources. Larger objects can be purchased more conveniently because online delivery is included as part of the checkout process [37]. With government regulations restricting occupancy, online shopping is more convenient than driving to a store and then having to wait outside before the easing of capacity constraints permit entry. Due to regulations, many shoppers have had to buy some goods online and, as a result, they have found e-commerce to be convenient [38]. We hypothesize:

H5: Convenience positively influences perceived usefulness of online shopping.

2.7 Perceived Usefulness

Perceived usefulness has been established as a key variable influencing adoption [39]. Perceived usefulness has also been found to significantly influence continuance intentions in contexts such as massive open online courses (Daneji, Ayub, & Khambari, 2019). By browsing websites from the comfort of one's home, many online stores can be visited without having to travel. Products can be purchased from a variety of categories, and with delivery there is no need to carry items from store to home [40]. During the pandemic,

online shopping offers an alternative especially for those who are more concerned about entering a physical store. A previous study of older adults online shopping found support for perceived usefulness influence on continuance intentions (Wu & Song, 2021). Therefore, we propose:

H6: Perceived usefulness influences intention to continue online shopping.

2.8 Hedonic Motivation

With improved communication speeds and website design, online shopping can be a pleasant experience. Consumers who find online shopping enjoyable may be more inclined to continue with e-commerce once the pandemic recedes [41] Arnold and Reynolds [42] identified six dimensions comprising hedonic motivation: the adventure, socializing, gratification, idea shopping, role shopping, and hunting for value. The prime motivation of shoppers may well be the utilitarian outcomes, but some of the shoppers will find the activity enjoyable [43]. We propose that hedonic motivation has a moderating influence on the relationship between perceived usefulness and continuance intention. Those consumers who find online shopping more enjoyable will also rate their utilitarian experience more highly and they will be more inclined to increase their online shopping. Hence, we propose hedonic motivation to have a moderating effect and hypothesize the following.

H7: Hedonic motivation moderates the influence of perceived usefulness on intention to continue with online shopping.

2.9 The Dependent Variable – Continuance Intention

Continuance intention, in an IS context, has been previously defined as "Users' intention to continue using OBD [online banking division]." (Bhattacherjee, 2001, p. 359). As in-store shopping becomes a possibility as restrictions are eased, consumers may choose to continue shopping online. The pandemic has provided motivation for shopping online due to the health concerns, restrictions (e.g., capacity), and alternate means to shop when existing options became unavailable (e.g., store closings). Even reluctant online shoppers will visit websites and place orders. Factors such as attitudes and experience may determine if they will continue to shop online when there is a semblance of normality that allows more in-store visits. Based on the context of this study, we are focused on intentions to continue shopping online and, thus, utilize continuance intentions as our dependent variable.

2.10 Research Model

The research model is presented in Fig. 1.

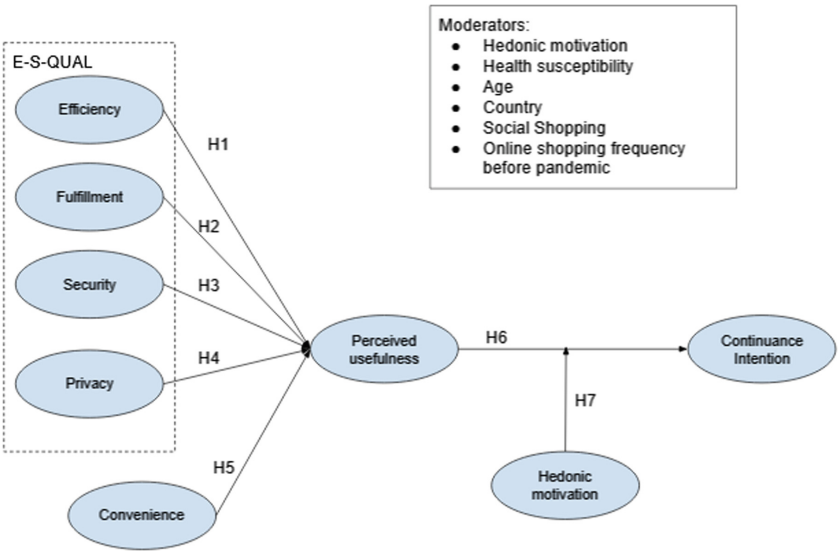

Fig. 1. Research model

3 Methodology

A survey research study was conducted to assess our research model. Construct measurement items were adapted from extant literature (see Table 1), and we utilized a 5-point Likert scale. Data was collected utilizing the services of Qualtrics [44]. Qualtrics provided panels with the distribution balanced across gender and four age groups. Only individuals 19 years of age or older were allowed to complete the survey.

The data were analyzed with SmartPLS [45]. The loadings of each indicator were calculated to ensure they were greater than 0.708, validating their convergence [46]. Discriminant validity was tested with the heterotrait-monotrait (HTMT) [47] and the Fornell-Larcker criterion [48]. Only indicators that satisfied the conditions of these tests (i.e., ratios were below .85 and the square root of the average variance extracted for each variable is greater than other correlation values, respectively) were included in further analysis.

The PLS algorithm was run for each country with a maximum of 300 iterations and the path weighting schemes to determine the path coefficients and the coefficient of determination, R^2. The next step was bootstrapping with 10,000 subsamples. Multigroup analysis was conducted to compare countries, gender, age groups and online shopping habits. Hedonic motivation was included in the model as a moderator.

Given that participants were asked to complete a single survey, there is a risk of common method bias [52]. To address this, we introduced a common marker variable [53]. Results showed that this variable was independent of the other variables.

Table 1. Source of construct measurement items.

Constructs	Source
Fulfilment	[11]
Security	[49]
Efficiency	[11]
Privacy	[11]
Convenience	[50]
Perceived usefulness	[51]
Hedonic motivation	[42]
Continuance intention	[11]

4 Results

4.1 Descriptive Statistics

The sample sizes were 535 from Canada and 509 from the USA (see Table 2). Participants were asked their age and were then divided into four groups: Gen Z from 19 to 26, Millennials or Gen Y from 27 to 44, Gen X from 45 to 56 and Baby Boomers from 57 plus.

Table 2. Sample gender and age by country

		Age group				
		19–26	27–44	45–56	57+	Total
Canada	Male	44	63	77	81	265
	Female	77	70	59	58	264
	Not specified	4	1	1		6
	Total	*125*	*134*	*137*	*139*	*535*
USA	Male	91	35	42	89	257
	Female	31	89	88	40	248
	Not specified	1	2	1		4
	Total	*123*	*126*	*131*	*129*	*509*

Participants' familiarity with online shopping prior to the pandemic was gauged by asking how frequently they had purchased goods online (see Table 3). Online shopping frequency was analyzed as a moderator.

Table 3. Online shopping frequency prior to pandemic

Online shopping frequency before the pandemic	Canada		USA	
	Count	%	Count	%
Never	28	5.2%	32	6.3%
Less than 1 time per month	177	33.1%	104	20.4%
1 time per month	106	19.8%	73	14.3%
2 times per month	90	16.8%	109	21.4%
3 times per month	49	9.2%	72	14.2%
4 times per month	28	5.2%	45	8.8%
5 times per month	23	4.4%	24	4.7%
6 times per month	6	1.1%	11	2.2%
7 + times per month	28	5.2%	39	7.7%

4.2 The Measurement Model

The PLS algorithm within SmartPLS calculated the outer loadings. One indicator for perceived usefulness was dropped because its loading was below 0.7. Subsequently, all indicators had values greater than 0.7 [46]. The reliability of the model was confirmed by showing that Cronbach's Alpha was greater than 0.6, that Composite Reliability was greater than 0.7 and Average Variance Extracted was greater than 0.5 [54]. See Table 4 for results.

Table 4. Reliability results by country

Construct	Canada			USA		
	Cr's alpha	CR	AVE	Cr's alpha	CR	AVE
Fulfilment	0.869	0.91	0.717	0.869	0.91	0.717
Convenience	0.883	0.915	0.682	0.883	0.915	0.682
Privacy	0.888	0.929	0.814	0.888	0.929	0.814
Security	0.9	0.93	0.769	0.9	0.93	0.769
Perceived usefulness	0.797	0.868	0.623	0.797	0.868	0.623
Continuance intention	0.897	0.936	0.83	0.897	0.936	0.83
Efficiency	0.92	0.939	0.756	0.92	0.939	0.756

Two tests were conducted for discriminant validity: the heterotrait-monotrait (HTMT) criterion [55] and the Fornell-Larcker criterion [48], both of which met the requisite criteria demonstrating that the constructs were discriminant.

4.3 The Inner Model

The PLS algorithm also calculated the path coefficients. The coefficient of determination (R^2) was calculated by the PLS algorithm for Perceived Usefulness and Continuance Intention. Table 5 shows the results by country.

Table 5. R-squared

	Canada	USA
Perceived usefulness	0.290	0.327
Continuance intention	0.524	0.520

Path significance was found by bootstrapping with 10,000 replacements. Each country was run separately. Path significance for each hypothesis is shown in Table 6.

Table 6. Path coefficients and significance

	Canada		USA	
Fulfilment to PU	−0.059		−0.02	
Convenience to PU	0.419	***	0.425	***
Privacy to PU	−0.03		−0.056	
Security to PU	0.231		0.137	
PU to Continuance Intention	0.345	***	0.459	***
HM to Continuance Intention	0.404	***	0.297	***
Efficiency to PU	0.095		0.198	***
Moderating effect of HM on CI	−0.12	**	−0.131	***

*** $p < 0.001$ ** $p < 0.01$

4.4 Moderating Role of Hedonic Motivation

As seen in Table 6, hedonic motivation moderated the effect of perceived usefulness on continuance intention. The path was significant for both Canada and USA. By plotting the slopes of the moderation effect for each country, the graphs showed that hedonic motivation had a stronger effect for US consumers. See Figs. 2 and 3.

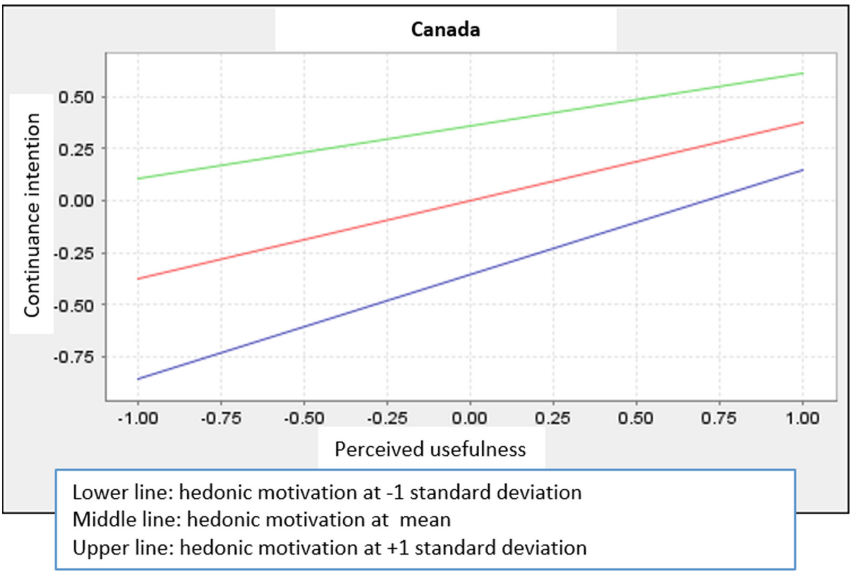

Fig. 2. Moderating effect of hedonic motivation for Canada

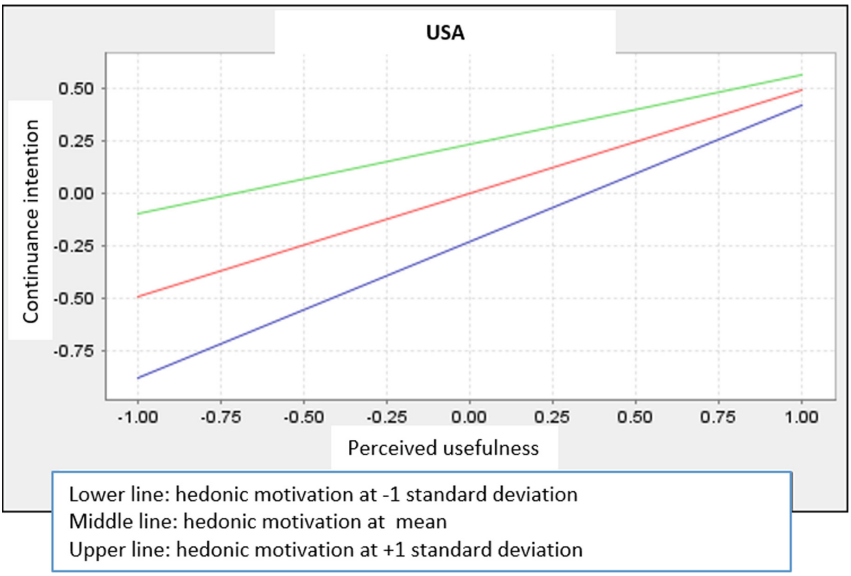

Fig. 3. Moderating effect of hedonic motivation for the USA

4.5 Multigroup Analysis

Various comparisons were made between groups based on age, gender, and online shopping experience (prior to the pandemic). The multigroup analysis feature of SmartPLS was used. In the analysis, there was no significant differences between the path coefficients of any of the respective groups.

4.6 Summary of Results

Results from testing our seven hypotheses are shown in Table 7. To summarize, only convenience (both countries) and efficiency (USA only) were found to be significant factors influencing perceived usefulness. For both countries, fulfilment, security, and privacy were not significant factors. Also, perceived usefulness significantly influenced continuance intentions, and hedonic motivation significantly moderated this effect.

Table 7. Summary of hypotheses testing results

Hyp.	*Path*	*Canada*	*USA*
H1	Efficiency -> perceived usefulness		□
H2	Fulfilment -> perceived usefulness		
H3	Security -> perceived usefulness		
H4	Privacy -> perceived usefulness		
H5	Convenience -> perceived usefulness	□	□
H6	Perceived usefulness -> continuance intention	□	□
H7	Moderating effect of hedonic motivation on perceived usefulness -> continuance intention	□	□

5 Discussion

When consumers shop in-store, they are familiar with the process. For instance, they can visit stores, see and handle the merchandise, compare prices between different stores, speak to an employee with questions or when assistance is needed, as well as pay and have the immediate gratification of taking their goods home with them. The point of contact for an online shopper is the website, which is analogous to visiting a store. For a satisfying online experience, the website must be efficient, meaning that it is available, easy to navigate and responsive.

In our study, efficiency was significant for American shoppers but not for Canadians. In previous studies, Marimon [40] found that efficiency was not significant for shoppers of a Spanish supermarket, while Lee [23] found that website design and responsiveness were significant for undergraduate students in Taiwan. Efficiency may not be considered

significant because the majority of websites today are well-organized and responsive. However, for Americans, the influence of efficiency on perceived usefulness was significant, which may be explained by the sample having more familiarity with online shopping. In our sample, 59% of Americans had shopped online two or more times per month prior to the pandemic, compared to 41% of Canadians.

Our research results suggest that online shoppers value convenience. This confirms the findings of Duarte et al. [50] who found Portuguese consumers appreciated that shopping from home saved them time and effort of going to stores. Convenience also solves the problem of time-starved people as they are able to shop 24/7. Also, our research results suggest that consumers value the usefulness of online shopping. They may have had little choice during the pandemic, but many of them stated they would increase their e-commerce activity once the pandemic was over. In a comparison of pre- and post-pandemic shopping, 78% of Americans and 63% of Canadians said they would shop more than once per month online, compared to 59% and 41% prior to the pandemic, respectively. Our results confirm that perceived usefulness is a key factor influencing adoption [39, 56].

However, neither security nor privacy concerns were significant. This is in contrast to past studies [57, 58]. One argument for these variables being nonsignificant is that Internet shopping is more common and those consumers that engage in online shopping have already overcome their misgivings [59].

A major difference between in-store and online shopping is the fulfilment of the order which refers to the final delivery of merchandise and the risk that the actual merchandise will not live up to the descriptions on the website. Pink and Djohan [60] found successful fulfilment had a positive effect on customer satisfaction. In our study, there was no significant influence. This may be due to the maturity of online retailers who have refined their processes such that deliveries are faster and more accurate. In addition, due to competition, some retailers have made returns easier, such as accepting returns without questions and often at no charge.

Hedonic motivation was found to be a significant moderating factor. Those consumers who found online shopping enjoyable engaged more frequently during the month. Kim et al. [61] found similar results when investigating wearable technology. The moderating effect for Americans was greater than that for Canadians. This could be because of the more extensive experience of US consumers with online shopping.

5.1 Theoretical Contribution

We offer a novel contribution by extending E-S-QUAL with convenience. In addition, our results suggest that the dimensions of E-S-QUAL influence perceived usefulness which then influences continuance intention, with hedonic motivation being a moderating factor. The research model is, therefore, novel and applied empirically in the context of online shopping during the time when health concerns and government regulations around COVID-19 are forcing consumers to reevaluate their attitudes towards purchases via the Internet.

5.2 Implication for Practitioners

The COVID-19 pandemic has brought about rapid changes in shopping habits. Practitioners can observe what has worked under such circumstances and then apply these lessons once the pandemic recedes and life returns to 'normal'. Consumers will continue to use online shopping so long as they judge it to be useful. Websites must be well-designed, easy to navigate and responsive. They must be available 24/7 with the means to obtain product information and price comparisons. Once all items are in the cart, checkout must be fast and straightforward. Websites must be designed with a 'fun' element so that consumers are engaged hedonically while shopping. This is important for both Canadian and American consumers, with an extra emphasis for the latter.

5.3 Limitations and Future Research

The challenge when collecting survey data is the sample selection, which in this study was via panels. Consequently, the participants are limited to those members who have listed their names on these panels and therefore do not represent a cross section of the population. Although various strategies were employed to ensure that questionnaires were answered forthrightly (e.g. attention filters and straight-line analysis), there is still the possibility that some participants answered the questions without much consideration other than to receive the reward. Further, when asking questions about future behavior (e.g. use of online shopping after the pandemic), participants may have false expectations.

Future research can adopt the same model and compare other countries. The model can be expanded to include expectation-continuation theory. Longitudinal studies will provide more accurate information about consumer habits and could be planned once the COVID-19 pandemic is nearing its end.

6 Conclusion

The COVID-19 pandemic has encouraged many consumers to engage in online shopping, some of them for the first time and others with increased frequency. When life returns to 'normal' once the pandemic is over, online shoppers may well continue to shop with greater frequency than before. For this to happen, their experience must be positive. This study extends an established model of website service quality and evaluates online shopping before, during and after the pandemic. The results can guide practitioners to ensure that their websites are responsive, well organized, easy to navigate and enjoyable to use to ensure continued success in their online presence. Customers will then be more likely to continue engaging in online shopping.

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