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Segmenting the online consumer market

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Abstract

Purpose – The internet has become mainstream in everyday communications and transactions. This research aims to provide a segmentation analysis for the online market based on the various uses of the internet.

Design/methodology/approach – A review of the online consumer segmentation literature is first conducted. Survey method and cluster analysis techniques are used in the empirical study. A sample of 407 participants that belonged to a large consumer panel adequately responded to an online survey and provided their pattern of internet use, internet experience, and psychological characteristics.

Findings – The analysis shows that the online consumers form three global segments: the basic communicators (consumers that use the internet mainly to communicate via e-mail), the lurking shoppers (consumers that employ the internet to navigate and to heavily shop), and the social thrivers (consumers that exploit more the internet interactive features to socially interact by means of chatting, blogging, video streaming, and downloading). Subsequent χ^2 and ANOVA tests illustrate that consumers from these segments exhibit significantly divergent demographic and experience profiles.

Research limitations/implications – The results indicate that online consumers differ according to their pattern of internet use. The results have external and ecological validity; however, they lack the control provided in a laboratory experiment. Future research should examine if the findings can be replicated using behavioral measures.

Practical implications – Practitioners that plan to follow a resource-based approach should consider the distinctive characteristics of the online market segments for an optimal allocation of marketing expenditure. Marketing and advertising strategies can be developed according to the customer's online segment. Further, online marketers can use the demographic and experience profiles to predict their customer's segment.

Originality/value – This paper is the first to perform a segmentation analysis to the online consumer market according to internet use pattern. The results show that usage can reliably be used as a segmentation base. Managerial and theoretical implications are furnished.

Keywords Online consumer segmentation, Internet use pattern, Online consumer profiles, Internet use, Online access, Internet, Consumer behaviour, Electronic commerce, Market segmentation

Paper type Research paper

1. Introduction

Researchers have examined the factors that lead to the adoption and use of internet in general and e-commerce web sites in particular (Chang *et al.*, 2005). Rodgers and Sheldon (2002) assert that four primary underlying motives drive internet use: acquisition of information (searching), communication, exploration (general browsing), and acquisition of goods (shopping). Research, however, is yet to consider that consumers allocate their resources in compliance with their particular pattern of internet use. As such, this paper examines the diversity of internet consumers with respect to their internet use pattern in an effort to minimize the "discrepancies between academic developments and real world practice" in market segmentation by employing a consumer-revealed approach (Wind, 1978, p. 317). The objective of this paper is to use up-to-date data to identify

the online consumer-revealed segments, their profiles, and characteristics. Studying the online market according to the consumer internet use pattern is in line with an important approach in conducting marketing research – functionalism. According to this approach, the meaning of and the need to conduct a certain behavior can be recognized only with reference to its ultimate function or utility for the consumer (Snyder and Cantor, 1998).

Consumer-revealed segmentation can be used to identify naturally occurring customer groups and to provide an understanding of each segment motives, characteristics, and needs (Swinyard, 1996). This knowledge permits companies to gain a strategic advantage over their competitors by helping them to identify the unique attitudes and needs of the divergent segments and thus to translate strategic opportunities into an actionable plan (Dibb *et al.*, 2002). Practitioners that plan to follow a resource-based approach can consider the characteristics of the online market segments revealed in this line of research for an optimal allocation of marketing expenditure. This paper is divided into the following sections. The first section reviews the literature of online consumer segmentation and internet use. The method section furnishes details on data collection and analysis. Then, a summary highlight of the findings along with the managerial and theoretical implications is presented.

2. Theory and literature review

Although scholars highlight some problems in the conceptualization and operationalization of segmentation (Dibb and Simkin, 2009; Dolcinar and Lazarevski, 2009; Quinn, 2009), it is a central topic in marketing theory and practice (Wedel and Kamakura, 2000). In fact, the "potential benefits to be gained far outweigh the resource implications required to implement a successful segmentation approach" (Quinn, 2009, p. 254). Smith (1956, p. 6), who introduced the segmentation concept, declares that it "involves viewing a heterogeneous market as a number of smaller homogeneous markets [. . .]". Hunt (1991, p. 176) underscores the importance of segmentation studies in marketing, indicating that:

Classificational schemata play fundamental roles in the development of a discipline since they are the primary means for organizing phenomena into classes or groups that are amenable to systematic investigation and theory development.

Both the academic and practice literature suggests that whereas a majority of consumers use the internet regularly, they use it for multiple, divergent purposes (Kau *et al.*, 2003; Mathwick, 2001; Pew Internet and American Life Project, 2010). That is, consumers that use the internet do not seem to form one homogenous marketing group.

First, research suggests that consumers who shop online behave differently from consumers who use the traditional shopping channel (Chatterjee, 2010; Rohm and Swaminathan, 2004; Wallace *et al.*, 2004). Nonetheless, our review of the literature provided below reveals that few studies have focused on the divergent internet uses *per se.* Therefore, this research focuses on segmenting the consumer market taking into consideration the different uses of the internet. Use frequency of the internet was found to affect product information search more than perceptual factors (perceived search cost and availability of information), whereas shopping pleasure and the preference to have personal contact with salespeople had no impact on information search (Jepsen, 2007). The influence of personality traits represented by the big five model versus cognitive styles on internet use, e-buying, and e-selling was tested (McElroy *et al.*, 2007).

These authors found a role for personality traits but not for cognitive styles on internet usage. Research has traditionally linked demographic factors to web use. Mostafa (2006), for instance, found a positive impact for educational level on internet use, while age had a negative impact. Eastman and Iyer (2004) posit that age is an important factor in explaining the attitude toward and actual use of the internet. Whereas, Gefen and Straub (1997) argue that gender affects the perceptions and meanings rather than the actual use of e-mail, some recent studies highlighted some behavioral gender differences. For instance, females were found to utilize the internet to send e-mails more than males (Mostafa, 2006). Age, gender, and income were found to have a significant influence on online shopping intent (Vijayasarathy, 2003).

Psychological and personality characteristics can be expected to have an impact on internet use. McElroy *et al.* (2007) indicate that personal differences comprise a promising topic to study consumer adoption of various web uses. In addition, the "socialization motivation" of consumers (reflected by items such as "visit my friends" and "talk to my friends") was reported to affect the internet uses that enhance socialization (Korgaonkar and Wolin, 1999). Propensity to trust was also posited to enhance internet use (Gefen, 2000). Kwak *et al.* (2002) alternatively studied four domains that would influence online purchasing: attitudes, demographics, experience, and personality traits. They found that consumers who frequently look for product information online are more likely to purchase. Hung-Pin (2004) highlighted that the perceived ease of use and usefulness drive the attitude toward e-shopping. Siu and Cheng (2001) reported that attitude toward technological development and venturesomeness are factors that are helpful in identifying potential online shoppers. Vijayasarathy (2003) examined the relationships between shopping orientations, product type, and behavioral intent. Shopping orientations (which entail convenience, enjoyment, necessity, and value) and product type are shown to have significant effects on online shopping intent (Vijayasarathy, 2003). Srinivasan *et al.* (2002) examined the antecedents and consequences of customer loyalty in an online context and identified the factors that significantly affect e-loyalty: customization, contact interactively, care community, convenience, cultivation, choice, and character. Research indicated that online shoppers are most likely to be younger males with high internet experience, greater education, and higher income (Li *et al.*, 1999; Sin and Tse, 2002; Swinyard and Smith, 2003). Elderly consumers are important shoppers though. Sorce *et al.* (2005) highlighted that whereas older shoppers search online for fewer products compared to younger shoppers, older shoppers spend as much as younger shoppers on the web.

Consumer-revealed segmentation analysis is stated to allow the segments to be identified based on natural associations observed during data analysis typically via cluster analysis techniques (Wedel and Steenkamp, 1989; Swinyard, 1996). This method occasionally was based on consumer input of the importance of product attributes or on other input (Malhotra, 1986; Tantiwong and Wilton, 1985). To date, a limited number of empirical segmentation studies have been conducted in the online consumer literature (Papastathopoulou and Avlonitis, 2009). The following provides a review of the research performed in the field of online consumer segmentation. With the aim of studying online social activities, Mathwick (2001) grouped online consumers into four segments characterized by relational norms and behavior: the transactional community member, the socializer, the personal connector, and the lurker. More studies, however, have focused on classifying online shoppers. Swinyard and Smith (2003) provided a study

of the online shopper versus non-shopper according to lifestyle and identified four segments (shopping lovers, adventuresome explorers, suspicious learners, and business users). These results were replicated by Brengman *et al.* (2005) and then by Allred *et al.* (2006), who focused on verifying the 2003 study by classifying online consumers into holiday shoppers versus non-shoppers using consumer-revealed segmentation. Interestingly, Allred *et al.* (2006) found that some consumers resist online shopping although they heavily engage in other online activities. Bhatnager and Ghose (2004) provided a latent class segmentation of e-shoppers using demographics and the benefit sought as a segmentation base. Similarly, Rohm and Swaminathan (2004) provided a typology of online shoppers based on shopping motivations.

Muthitacharoen *et al.* (2006) reported that consumers employ different sets of preferential factors (transaction cost, product, risk, and social experience) when comparing different sets of sales channels. Kau *et al.* (2003) studied the behavior of web users and identified six segments (on-off, comparative, traditional, dual, e-laggard, and information surfer). Barnes *et al.* (2007) studied online consumers according to a set of psychographic, cultural, and purchase behavior factors. Their analysis revealed three segments: risk-averse doubters, open-minded online shoppers, and reserved information seekers. Interestingly, their results showed that certain factors, namely neuroticism, willingness to buy, and shopping pleasure were among the best to discriminate among the resulting clusters (Barnes *et al.*, 2007). Alternatively, Jayawardhena *et al.* (2007) studied online users according to their purchase orientation and identified five segments: active, price sensitive, discerning, loyal, and convenience shoppers.

Whereas profiling the online consumers according to their internet use pattern is vital, the literature review shows that no work undertakes this goal so far. We found this to be a serious gap in the online segmentation literature especially that theory has underscored the importance of the usage concept in profiling consumers. For instance, Maignan and Lukas (1997) indicated that consumer behavior should be studied according to consumers' multiple views of the internet (as an information source, a communication medium, a place of consumption, and a social system). In addition, Bourdeau *et al.* (2002) empirically found that internet use is bounded by five value factors: social, utilitarian, hedonic, learning, and purchasing. Even at the organizational level, research indicated that the internet is being employed differently by firms. A recent article suggests that organizations can be reliably classified according to internet use as follows: e-merchants, information seekers, e-purchasers, e-transaction adopters, and internet experimentalists (Papastathopoulou and Avlonitis, 2009). As such, this work fills this void by providing an empirical segmentation and profile analysis of the online consumer according to their pattern of internet use.

3. Method
Data collection
Web usage data can be collected using objective or subjective measures. Objective measures such as internet navigation log files can be used in tracking the consumer's web navigation to provide unbiased assessment of web usage (Montgomery *et al.*, 2004). Nonetheless, several factors drove us to employ a self-reported measure to reflect internet uses frequency in this work. First, the current research investigated the consumer's e-mail use in addition to browsing and several other uses that could not be tracked using log files. Second, the use of log files or clickstreams data stands short from

providing complete picture for web use pattern of the user. This is because a user might send e-mails, navigate the internet, or download files from home, work, or any other place with an internet connection. Third, the use of log files or clickstreams data assumes that the internet connection is being used by only one user – the study participant. However, in reality, the internet connection might be used by several individuals at the household, friends, and visitors. Fourth, the use of log files or clickstreams usually requires recruiting and informing participants that their internet connection is being monitored beforehand. This would result in losing participants with particular privacy and security concerns. In addition, such a procedure would attenuate the consumer behavior online because of the knowledge of being monitored. Fifth, the use of objective measures such as log files and clickstreams is not accurate in measuring web use frequency because of the noise that accompanies the resulting data. For instance, a user can simultaneously open multiple pages (e-mail portal, e-commerce site, a music downloading site, etc.) making it impossible to know which page is being viewed and at what frequency. Alternatively, a user might open a certain page and leave the PC to perform another task. Finally, a user might deploy a program to automatically check e-mails or to download or upgrade an application while the user is away. These factors drove us to believe that a subjective measure in the form of a self-reported questionnaire is the most accurate alternative to reflect web use pattern.

Sample

Consumers were recruited to participant in the study using the consumer panel of a Canadian market research company. The panel comprised about 170,000 members. Panel members that enter personal and contact information have a chance to win monthly monetary prizes; and their chance to win increases when participating in a study. The use of an online consumer panel to recruit participants is ideal for this research because it ensures that the consumer is already a web user.

Sample selection was randomly performed following an iterative process. This was done to ensure a representative sample. That is, part of the randomly selected entries were deleted and replaced by a new set of randomly selected entries whenever the randomly selected sample showed high bias to a certain consumer group. When the sample was deemed representative, the e-mail list was used to send the selected panel members an invitation to participate in the study.

An invitation e-mail was sent to the 4,000 randomly chosen consumers. The opportunity window for a contacted panel member to participant was closed when the quota sample was reached. As such, a total of 407 responses were retained and used in the analysis after excluding several responses because of measure incompleteness or inadequate answering (discussed below). Participants that responded to the invitation e-mail were asked to respond to an online survey. The following provides information about the sample: 63 percent female, 67 percent began using the internet more than eight years ago and 26 percent within four to eight years. Age was distributed as follows: 38.5 percent 34 year old or younger, 41.2 percent 25-54 year old, and 20.2 percent 55 year old or more. While 16.7 percent of participants went to high school, the rest has done some university education or had a higher degree. Income was distributed as follows: 42.7 percent 49K or less, 28.5 percent 50-74K, and 28.8 percent 75K or more. The average number of items bought online during the last 12 months was 4.6 items (23 percent of the sample declared not buying any item online during this period).

Measures

To reflect their internet use pattern, participants were asked to allocate a 100 points between the major internet uses (e-mailing, general browsing, shopping, blogging, chatting, video streaming, and downloading of music and other applications) (Rodgers and Sheldon, 2002). Thus, the segmentation base used in this study can be considered an observable product-specific segmentation base (Wedel and Kamakura, 2000). We initially received 423 responses. Incomplete and inadequate responses were excluded; this resulted in the 407 responses eventually used in the analysis. Experience with the internet was measured using the item ("For how many years have you been using the internet"). The perception of internet self-efficacy was measured by the item ("How do you rate your expertise as an internet consumer? Novice, intermediate, or expert"). Purchase experience was measured using the item ("number of times you purchased an item online during the last 12 months"). Other items were dedicated to measure consumer demographics and internet connection speed (dial-up, DSL, or broadband). The survey also included scales adapted from the literature that reflected some of the consumer psychological characteristics: propensity to trust (12 items from McKnight *et al.* (2002)), propensity to trust in new technologies (two items from Kyung and Bipin (2004); "one should be very cautious when using new technologies", "it is best to avoid using new technologies for financial transactions whenever possible"), need for cognition (three items from Cacioppo and Petty (1982)). These scales' alphas were higher than 0.90 with the exception of need for cognition which had an alpha of 0.82. The mean of each of these scales was used in the profile analysis detailed below.

Analysis and results

On average, the proportion of each internet use was as follows: 39.8 percent e-mailing, 29.9 percent general browsing, 9.1 percent shopping, 2.3 percent blogging, 6.3 percent chatting, 5.2 percent video streaming, and 8.2 percent downloading activities. Transformed into time per week, the average time consumers reported spending on each use was 5.51 hours for e-mailing, 4.84 hours for general browsing, 1.35 hours for shopping, 1.17 for chatting, 1.50 for downloading activities, 0.86 for video streaming, and 0.46 for blogging. Table I shows the correlations between the internet uses using a two-tailed bivariate correlation test. This table indicates that positive and negative correlations exist among the various internet uses. Important remarks emerge from this table. First, the negative relation between the e-mailing use with the other uses suggest

	E-mailing	General browsing	Shopping	Blogging	Chatting	Video streaming
E-mailing	1					
General browsing	-0.447^{**}	1				
Shopping	-0.287^{**}	-0.041	1			
Blogging	-0.276^{**}	-0.092	-0.032	1		
Chatting	-0.222^{**}	-0.152^{**}	-0.156^{**}	0.095	1	
Video streaming	-0.249^{**}	-0.078	-0.042	0.048	0.286^{**}	1
Downloading of music and applications	-0.336^{**}	-0.161^{**}	-0.053	0.128^{**}	0.103^{*}	0.205^{**}

Notes: Significance at: $^{*}0.05$ and $^{**}0.01$ (two-tailed); $n = 407$

Table I.
Bivariate correlations between the measured internet uses

that a high use of e-mail means a reduction in using the web for other purposes and that a good portion of participants use the internet mainly for e-mail messaging. In addition, the negative relations between the online chatting with online shopping and general browsing are intriguing. That is, consumers who use the web more for chatting appear to use it less for shopping and general browsing. On the other hand, the positive relations between chatting with both video streaming and downloading activities indicates that consumers who do more chatting online are more prone to use the web to watch video and to download music and other applications. These findings are explained by the cluster analysis results discussed next.

A nonoverlapping post-hoc descriptive method (Wedel and Kamakura, 2000) was used to identify the segments according to internet use pattern. Hence, based on the consumers' various internet usages, each consumer was assigned to a single homogeneous group. We performed a two-step cluster analysis, available in the SPSS software package, to segment consumers according to their pattern of internet use (i.e. according to the seven internet uses measured above). This technique is adequate for larger samples and in situations where the researcher cannot estimate the number of segments a priori. The automatic clustering feature of SPSS was used, which resulted in three distinctive segments (Table II for Akaike's information criterion (AIC) measures). The distribution of the online consumers among the segments was satisfactory (Table III). Importantly, the three segments provide a parsimonious solution by showing indicative and significant means' differences on the segmentation variable – the pattern of internet use (see the Appendix for segments' means and confidence intervals).

Using segment membership as the independent variable, we then performed χ^2 and ANOVA tests to show potential differences in the demographic and experience profile of the segments. The analysis (summarized in Table IV) illustrates that the segments show significantly divergent demographic and experience profiles. Gender, age, income, and educational level were the demographic variables that significantly vary across the segments (Table IV). In addition, the internet self-efficacy perception, internet use

Number of clusters	AIC	AIC change[a]	Ratio of AIC changes[b]	Ratio of distance measures[c]
1	1,999.274			
2	1,670.939	− 328.335	1.000	1.435
3	1,450.628	− 220.311	0.671	*1.922*
4	1,349.458	− 101.170	0.308	1.084
5	1,258.293	− 91.165	0.278	1.447

Notes: [a]The changes are from the previous number of clusters in the table; [b]the ratios of changes are relative to the change for the two cluster solution; [c]the ratios of distance measures are based on the current number of clusters against the previous number of clusters

Table II.
Auto clustering results

	n	Percentage of total
Basic communicators	160	39.3
Lurking shoppers	159	39.1
Social thrivers	88	21.6
Total	407	100.0

Table III.
Distribution of segments

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	Basic communicators	Lurking shoppers	Social thrivers
Gender (female percentage)**	75	51.6	56.8
Education**			
High school or less (%)	13.1	14.5	27.3
Some university or higher (%)	86.9	85.5	72.7
Age*			
Younger ($<$35 years old) (%)	40.6	30.4	49.4
Mid-aged (35-54 years old) (%)	40.6	47.5	31.0
Elderly ($>$54 years old) (%)	18.8	22.2	19.5
Income**			
49K and lower (%)	38.8	40.4	54.2
50-74K (%)	34.9	23.2	26.5
75K and higher (%)	26.3	36.4	19.3
Internet self-efficacy perception*			
Novice (%)	7.6	5.1	5.8
Intermediate (%)	75.9	66.5	62.8
Expert (%)	16.5	28.5	31.4
Number of products bought last year**	3.9	6	3.9
Internet use frequency (hours per week)*	12.4	16.7	20.7
Internet connection speed**			
Dial-up (%)	6.9	3.8	9.1
DSL (%)	27.5	18.2	10.2
Broadband (%)	65.6	78.0	80.7

Notes: Significance at: *$p < 0.05$ and **$p < 0.01$; only the factors whose distribution significantly differs among the clusters are shown

frequency (hours per week), and internet connection speed vary significantly between the segments (Table IV). Further, the average number of products the second segment (the lurking shoppers) reported buying online during the last 12 months was significantly higher than the numbers of product reported by the other two segments ($p = 0.009$, multiple groups comparison was performed using Tukey adjustment; Table IV). Alternatively, dispositional factors (propensity to trust, propensity to trust new technologies, and need for cognition) did not significantly vary among the segments (all p's > 0.35; N.S.). Thus, the means of these three variables are not shown in Table IV.

4. Discussion and implications

This study provides a segmentation analysis of the online market using consumer-reported data. Results indicate that, according to internet use pattern, the online consumer market is comprised of three global segments: The basic communicators (consumers who use the internet mainly to communicate via e-mail), the lurking shoppers (consumers who employ the internet to navigate and to heavily shop), and the social thrivers (consumers who exploit more the internet interactive features to socially interact by means of chatting, blogging, video streaming, and downloading). The study further reveals the distinctive profile for each of these segments based on the demographic and experience factors (Table IV).

The basic communicators are mostly highly educated females (75 percent) that are homogenously distributed across age groups, as well as across income brackets. They tend to have an average internet self-efficacy perception and they use the internet less

frequently (12.4 hours per week) than other consumers. The basic communicators have a lower internet connection speed (dial-up or DSL) compared to the other segments. The lurking shoppers are highly educated males or females who belong mainly to the higher age groups (mid-aged and elderly consumers). The lurking shopper, however, has an average to high internet self-efficacy perception and belongs to the highest income bracket more than the basic communicator and the social thriver. Consumers forming the lurking shopper segment have a higher internet connection speed (DSL or broadband) and significantly spend more time on the internet (16.7 hours per week) than the basic communicator but less time than the social thriver. Alternatively, with females slightly outnumbering males, the social thriver segment has more consumers with lower educational level than the first two segments. The social thriver generally belongs to the youngest age group ($<$ 35 years old) and falls in the lowest income bracket more than the basic communicator and the lurking shopper. Moreover, the social thriver tends to have a high internet self-efficacy perception and to spend more time on the internet (20.7 hours per week) compared to the basic communicator and the lurking shopper. Although more people in this segment belong to the lowest income bracket, four social thrivers out of five maintain a high internet connection speed (a broadband connection).

This research has implications for academia. It contributes to the evolving research stream that investigates online consumer segmentation (Mathwick, 2001; Swinyard and Smith, 2003; Allred *et al.*, 2006; Kau *et al.*, 2003; Barnes *et al.*, 2007; Jayawardhena *et al.*, 2007) and focuses on a novel segmentation base: the different uses of the internet. The findings suggest that this segmentation base is promising because it clearly delineated three heterogeneous groups of consumers with divergent patterns of internet usage. This lends support Wedel and Kamakura's (2000) findings, who evaluated several segmentation bases and found usage to meet satisfactorily the criteria required to obtain an effective segmentation.

Some important practical implications emerged from the findings. First, some internet uses appear to enforce other uses, while some uses such as e-mailing cannibalize other uses. Second, online consumers can be considered to form three global segments according to their pattern of internet use. Surprisingly, a good proportion of consumers report deploying the internet mainly for basic communication to date. In addition, the online heavy shoppers (lurking shoppers) gave less value to online social activities and more value to general browsing. In so doing, these heavy shoppers appear to exhibit a passive tone online. Alternatively, the social thriver segment constitutes a significant portion of the online market. Whereas social thrivers excel in performing several interactive activities and envision the internet as a social interaction medium, they do not appear to be the ideal target market for e-commerce web sites. This is because the social thrivers along with the basic communicators are less important shoppers compared to the lurking shoppers.

Online marketers can use the demographic and experience profiles to predict their consumers' segment. Web sites features can be tailored according to customer characteristics and the task in hand to improve outcomes (Mathwick, 2001). Similarly, online advertisement such as banner ads promoting a message that fit the use context was reported to be more effective than advertisement that do not consider the use context (Rodgers and Sheldon, 2002). The findings entice managers to pursue an effective targeting strategy by segmenting their online consumers according to internet use pattern. Findings further indicate that the online consumer market can be seen

as comprised of global segments. The analysis provided (Table IV) offers a starting point for an effective profiling of consumers based on internet use. Interestingly, customers in the global segments show significantly divergent profiles according to demographics, experience, internet use frequency, and connection speed. Alternatively, according to the results, psychological and dispositional characteristics of the customers (propensity to trust, propensity to trust new technologies, need for cognition) appear to be less effective in predicting the consumer segment.

Practitioners that plan to follow a resource-based approach for an optimal allocation of marketing expenditure should consider the distinctive characteristics of the online market segments. For instance, according to the findings, advertisement campaigns targeting the heavy shoppers are best spent on certain web sites (e.g. news portal, search engine) than on social web sites (e.g. chatting and video-sharing sites). Alternatively, campaigns that target younger segments (e.g. social thrivers) can effectively consider the social web sites (e.g. chatting, blogging) and interactive web sites (video streaming, music and applications downloading sites). Notably, a substantial segment – the basic communicators – can be reached mainly by using e-mail advertisement (e.g. e-mail marketing campaigns, generic advertisement on e-mail portals). The findings further indicate that online services can be bundled to most suit the needs of each segment. For instance, bundling the chatting, blogging, video streaming, and downloading of music and applications would provide a suitable hub for social thrivers. Nonetheless, the same bundle service might not be ideal for the basic communicators or the lurking shoppers. As such, online services can be optimized according to the market global segment to create a competitive advantage for the cyber firm.

5. Limitation and future research

Whereas this study increases our understanding of the segments that form the online consumer market according to web use pattern, this study has limitations. Our data come from self-reported online survey. Thus, the results reflected the pattern of internet use according to the degree of participants' collaboration in the study. In addition, the focus was placed on some of the main uses of the internet (Rodgers and Sheldon, 2002). Future work should validate and elaborate the findings using objective measures of web use (e.g. longitudinal coding of log files for each consumer with suitable control measures). Further, the global segments suggested in this study might each be comprised of several sub-segments (Allred *et al.*, 2006). Nonetheless, the sample size in this work did not allow to reliably pursuing any sub-segmentation. As the data come from consumers belonging to a large consumer panel in Canada, researchers can aim to validate the findings in other countries and examine the moderating role of culture and country characteristics. Future work can alternatively elaborate the theoretical aspect of our findings. For instance, the factors that drive heavy shoppers to be less social and more passive online should be investigated. In addition, the factors that motivate consumers to transfer between the segments should be studied. The above-mentioned topics are possible extension to this line of research.

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(The Appendix follows overleaf.)

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Appendix
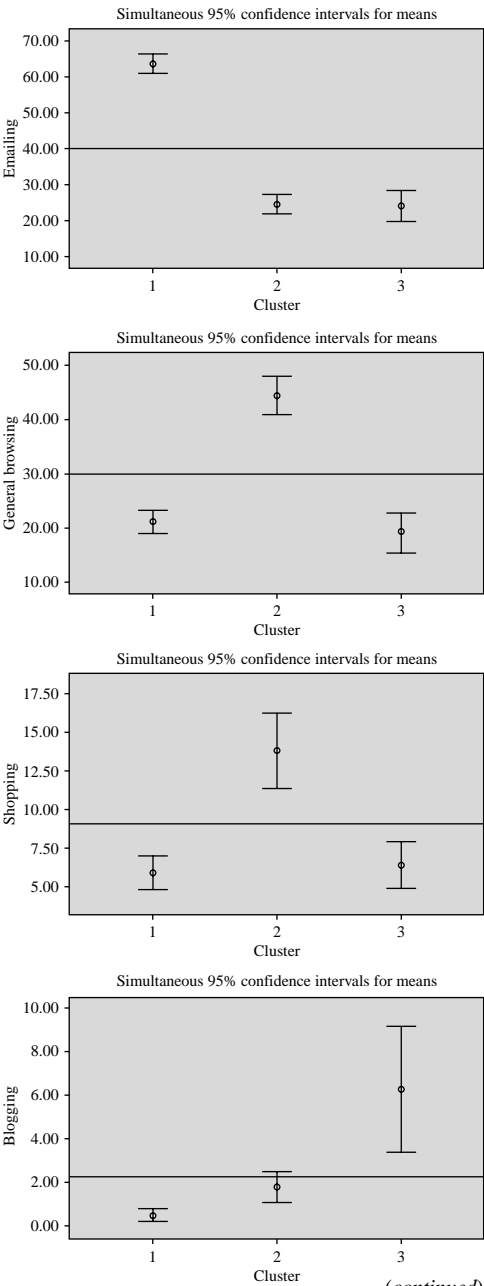
Figure A1.
Internet use means for the segments with confidence intervals (1 – basic communicators, 2 – lurking shoppers, 3 – social thrivers)
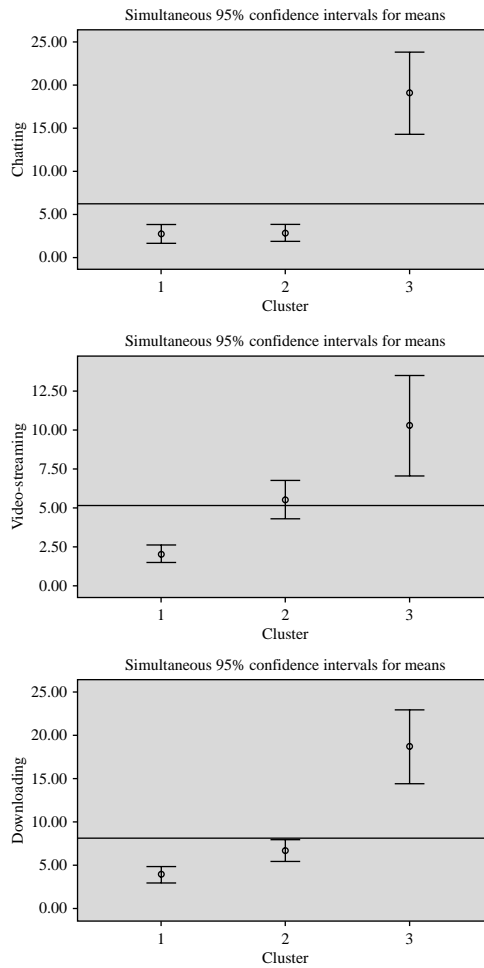
(*continued*)

Figure A1.

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