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Investigating the influence of age, social capital affinity, and flow on positive outcomes reported by e-commerce site users

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ABSTRACT

This study investigated the role of social capital affinity (the sense of community and likeness felt for people online) and the experience of flow (concentrated engagement in/enjoyment of an activity) as antecedents to a variety of positive outcomes associated with the use of e-commerce sites. Also, based on socio-emotional selectivity theory, the current study assessed the influence of age on social capital affinity and flow. As a subset of data from a telephone sample of Internet users in the USA, 282 e-commerce users responded to questions about site satisfaction, perceived focused and incidental knowledge-gains, and affirmation, in addition to flow and social capital affinity. As predicted by socio-emotional selectivity theory, there was a negative relationship between age and social capital affinity and flow. Flow, for its part, mediated the effects of age and social capital affinity on perceived focused and incidental knowledge-gain, satisfaction and affirmation among participants reporting e-commerce use. Finally, the current results indicated that satisfaction and perceived incidental learning predicted participant affirmation for their chosen e-commerce site.

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KEYWORDS

Flow; social capital affinity; satisfaction; affirmation; knowledge-gain

1. Introduction

E-commerce sites offer consumers opportunities to generate and access information such as user reviews and ratings (Hong and Park 2012; Van Der Heide, Johnson, and Vang 2013; Walther et al. 2012; Willemsen et al. 2011). A Nielsen (2012) study indicated that 70% of respondents said that they trust consumer opinions posted online either somewhat or completely. This was second only to recommendations from people that participants know offline. In another Nielsen (2013) research about Yelp, 44% of users reported using consumer reviews to choose a business. How consumers respond to e-commerce sites, then, partly depends on how they feel about other online shoppers, especially reviewers and commenters. Potentially, they feel a sense of affinity with other consumers in this virtual environment and this, in turn, influences their attitudes about and enjoyment of e-commerce sites (e.g. Shin 2013). This study investigates the role of social capital affinity (the sense of community and likeness felt for people online) and the experience of flow (concentrated engagement in/enjoyment of an activity) as antecedents to positive outcomes reported by e-commerce site users (i.e. satisfaction, focused and incidental knowledge-gain), which ultimately lead to affirmation by e-commerce site users. As well, based on socio-emotional

selectivity theory (Carstensen 1991), the study assesses the influence of age on social capital affinity and flow among e-commerce site users.

Instances of communication and interaction between e-commerce site users can be regarded as examples of weak ties (Granovetter 1973). This type of connection is known as bridging capital. Putnam (2000) described bridging social capital as created through exposure to heterogeneous networks, with the majority of connections being weak ties. Bridging social capital is very important with regard to Internet activities because it is through such connections that users acquire new information and advice, and also interact with people with whom they would not ordinarily do so (Castells 2009; Wellman et al. 2001). Thus, for both e-commerce consumers and online businesses, the salience of a sense of loose community is potentially influential. In the present study, the concept of identification or affinity with weak ties via e-commerce sites is described as social capital affinity. Thus, one focal question here concerns the level of importance attributed to social capital affinity and how that relates to another telling antecedent to positive outcomes from e-commerce – the experience of flow.

Prior research in a variety of Internet contexts (e.g. Barker et al. 2013, 2014) indicated that affinity with

unknown others can be a potent predictor of flow (Csikszentmihalyi 1975). Flow, in part, involves intense, focused concentration and enjoyment where action and awareness merge, and experience of an activity is intrinsically rewarding (Nakamura and Csikszentmihalyi 2002). Flow has been shown to result in a variety of positive outcomes in several contrasting domains (e.g. education, sports, marketing, and arts). The current study seeks to replicate such findings in the context of e-commerce. As well, age is known to impact a variety of Internet activities with the millennial cohort being in the forefront of Internet use (Nielsen 2014). Millennials are said to spend a large proportion of time multitasking via digital media and therefore, logically, would be the most likely to experience flow when doing so (Anderson and Rainie 2012). That said, marketing research suggests that older cohorts are beginning to catch up with their younger counterparts with regard to Internet usage and, in particular, in e-commerce. As well, there is a clear demand for types of e-commerce tailored to older cohorts of consumers (<http://www.nielsen.com/content/dam/niensglobal/kr/docs/global-report/2014/NielsenGlobalAgingReportFebruary2014.pdf>). Socio-emotional selectivity theory, however, suggests that as people age, they tend to prefer interactions with those closest to them who are well known and, as a result, shun interactions with new acquaintances. This suggests that affinity with others online is more likely to occur among younger rather than older e-commerce users. The present study tests a model that assesses the influence of social capital affinity and flow on a variety of positive outcomes potentially obtained in the course of e-commerce site use. Additionally, the influence of age upon these two focal variables is assessed. Given the important role that word of mouth (in both its online and offline forms) plays in guiding online consumer behaviour (e.g. Hong and Park 2012; Van Der Heide, Johnson, and Vang 2013; Walther et al. 2012; Willemsen et al. 2011), another important focus of the study is to better understand the structural mechanisms that facilitate consumer affirmation (word-of-mouth recommendation both online and offline) of e-commerce portals.

The concepts comprising the model, and research pertaining to them, are discussed next. As well, the relationships summarised in the model are formally proposed as hypotheses.

2. Literature review

Much research has detailed motivations for forms of online use, including e-commerce (e.g. Joines, Scherer, and Scheufele 2003), in addition to adoption (e.g. Einav et al. 2014); however, less research addresses the

processes that occur between motivations, and adoption, and, eventually, outcomes of adoption. This study attempts to add to the body of knowledge about how positive outcomes associated with e-commerce emerge and, further, what leads e-commerce users to express affirmation for the sites they patronise. Below is a description of each of the concepts included in the proposed structural model. These concepts are social capital affinity, flow, e-commerce site satisfaction, incidental and focused knowledge-gain, and e-commerce site affirmation. A discussion of the potential influence of age on social capital affinity and flow is also included.

2.1. Social capital affinity

The concept of affinity can be defined as feelings of closeness and sympathy based upon perceived similarity (2015, <http://www.merriam-webster.com/dictionary/affinity>). Relative to Internet-based engagement, social capital affinity therefore refers to the sense of community and likeness felt for people online with whom users share weak ties. Even though such people are strangers, their opinions may be of interest and, as such, enhance consumers' e-commerce experiences. Further, communication with fellow e-commerce users may help generate and reinforce a sense of loose, albeit influential, community. That said, social capital affinity does not entail conformity as a result of perceptions about social norms (Ajzen and Fishbein 1980; Fishbein and Ajzen 1975). Social capital affinity is conceptualised as the 'identity' dimension of social capital; however, this is not group identity in the traditional sense (Tajfel and Turner 1986), but a more fluid, virtual experience of identification with others.

Walther et al. (2011, 26) observed that weak ties may be the source of 'multiple and simultaneous social influence agents', arguing that when individuals identify with online peers who are visually anonymous and with whom they do not directly interact, such individuals could be susceptible to the opinions of online others. There is some evidence from prior research to support this contention. For example, Walther et al. (2012) discovered effects from a juxtaposition of sources and messages within an e-commerce site. The authors found effects on attitudes towards a product, towards reviewers, and towards commenters among those who observed contributions from three sources of influence: review valence, other users' aggregated helpfulness rating of the review, and another user's verbal agreement or disagreement with the review. Rodríguez Del Bosque and Herrero Crespo (2011) tested a model of e-commerce acceptance and found that influence from a relevant third party was one of the main direct determinants of

the intention to adopt virtual commerce for both Internet non-buyers and buyers. They concluded that the opinions of a third party on an individual's behaviour are highly significant. Similarly, in their study of online shopping from the perspective of habit and value, Pahnla and Warsta (2010), in part, examined the influence of participants' beliefs about a reference group's or individual's views about performing a behaviour. They found that colleagues' and peers' recommendations might enhance the strength of habitual use of online shopping. Pai-Yu and Hsien-Tung (2011) conducted a survey of consumers of online retailing stores. Their findings indicated that virtual community participation significantly enhanced loyalty intentions via community identification and via trust and satisfaction. Community identification was an important factor for enhancing customer loyalty.

With regard to commerce via social networking sites (s-commerce), Liang et al. (2011) investigated the role of social support and relationship quality in s-commerce and found that social support (informational and emotional) had a positive effect on the intention to continue using the social networking site, Plurk, and the intention to conduct s-commerce. As well, social support had positive effects on relationship quality, which in turn affected continuance intention and the intention to conduct s-commerce. Relationship quality played a partial mediating role in enhancing the intention to continue using and the intention for conducting s-commerce. Relatedly, Shin (2013) examined user experiences in s-commerce and discovered that s-commerce users are more heavily influenced by social interactions in their decision to accept s-commerce than conventional e-commerce. Enhanced feelings of social influence appeared to result in the perception of trust and social support through service use and content. The effects of trust and social support also showed strong impacts on behaviour. However, the mediating role played by social interaction implies that s-commerce users seek confirmation through social processes before making their final decision to adopt.

As mentioned, social capital affinity has been strongly associated with the experience of flow across a variety of web genres. The definition and research associated with flow are addressed next.

2.2. Flow

Csikszentmihalyi (1975) introduced the theory of flow to explain why people engage in activities that are an end in themselves (e.g. art and music). In part, flow involves play. Applying play to the consumption of media content, Stephenson (1967, 193) defined play as

'disinterested, self-sufficient, and an interlude from work. It brings no material gain'. Flow, then, is an affect-based response to types of pleasurable activity that involve intense engagement and enjoyment associated with high psychological arousal and positive valence (Mauri et al. 2011). Flow occurs when a clear goal is involved, and when the presence of feedback and the challenge of the activity are in balance with the skill involved to accomplish the goal (Mauri et al. 2011). Nakamura and Csikszentmihalyi (2002) described flow as comprising the following: Intense, focused concentration; merging of action and awareness; loss of awareness of self; a sense that one can respond to whatever happens next; a sense that time has passed faster than normal; and experience of an activity as intrinsically rewarding.

Studies have shown flow to be associated with a wide variety of Internet activities (e.g. Ghani 1995; Trevino and Webster 1992; Zaman, Rajan, and Dai 2010). Research shows that flow is related to desirable e-commerce outcomes, such as positive affect (Chen 2006), positive perceptions of and attitudes towards websites (Agarwal and Karahanna 2000; Huang 2003; Novak, Hoffman, and Yung 2000), exploratory behaviour with increased learning (Skadberg and Kimmel 2004), and future intentions to revisit and purchase (Koufaris 2002; Siekpe 2005; Wu and Chang 2005). Of special interest here are the results of a study about online shopping (Guo and Poole 2008) in which the prerequisites to flow were assessed; these included the presence of a clear goal, balance of challenge and skill, and feedback – with the latter being a particularly strong predictor of flow. Mathwick and Rigdon (2004) examined the conditions necessary to transform online information search into 'play' – as a consequence of flow. The authors found that play serves as a link between flow and online consumer attitude formation and that this relationship is moderated by product involvement.

Pahnla and Warsta (2010) investigated the effect of the hedonic value of online shopping on reported affect about online shopping. The authors described hedonic value as reflecting the latent worth found in online shopping and as similar to the flow experience – embodying aspects of fun and playfulness, the escapist and emotive dimensions of e-commerce. Hedonic value was strongly related to positive affect about online shopping, which in turn predicted behavioural intention. The authors concluded that when consumers are recreationally motivated, it engenders pleasantness and increased sales because recreational consumers appreciate rich and engaging shopping experiences.

In the current study, it was expected that social capital affinity would be an antecedent to flow because of the

enjoyment and feedback obtained via contact with others online.

H1: There will be a positive relationship between social capital affinity and flow.

In the USA, one of the biggest demographic growth areas in Internet use is among older cohorts, with 83% of people aged 50–64 years being online (Pew Research Center 2013). In particular, an eMarketer study (2013a) reported that baby boomer Internet users (76%) rival millennials (74%) when it comes to digital purchases. However, eMarketer (2013b) also reported on a survey about web users' attitudes towards e-commerce, which found that 18–34-year olds (33%) were more likely than their 35- to 64-year-old counterparts (26%) to agree that they typically shop on auction sites. In general, research has indicated that there are age differences in Internet usage and digital shopping, as well as motivations for use. That said, these findings are not always consistent. Next is a summary of research addressing age differences in uses of online genres and, also social capital and identity.

2.3. Age differences: online usage and social capital

While younger people still tend to be in the forefront of Internet use, Rainie (2013) reported that 83% of those aged between 50 and 64 years and 56% of those aged 65+ years are Internet users in the USA. These gains in Internet use among older cohorts may impact offline life and experiences. For example, Hogeom et al. (2010) investigated associations between Internet use and social networks in a large sample of adults over 50 years of age. The findings offered support for the view that Internet use strengthens social networks for adults over 50 years. However, in regard to social networking site use, an early study (Pfeil, Arjan, and Zaphiris 2009) of differences in MySpace pages among older people (over 60 years of age) compared to teenagers (between 13 and 19 years of age) showed a social capital divide. Teenagers had larger networks of friends compared to older MySpace users and the majority of teenage users' friends were in their own age range, while older people's friend networks included a more diverse age distribution. Additionally, an online survey (Barker 2012) compared social networking site use among younger (millennial: 18–29 years) and older (baby boomer: 41–64 years) subscribers focusing on the influence of group identity on motives for social networking site use. Younger participants reported higher positive group identity and social networking site use for peer communication. Additionally, the younger cohort

reported greater frequency of use and a larger network of social networking site friends. This latter finding is supported by more recent Pew research (Duggan and Smith 2014). With regard to online commerce via social networking sites, Shin (2013) found that the influence of acceptance factors differed substantially by age. Perceived ease of use was a more important factor among older than younger people in influencing attitude and intention. But when examining the effect of social influence and self-efficacy on intention, the relationships were significantly stronger for younger people than for older people.

Overall, the research suggests that younger cohorts are more frequent Internet genre users, and typically have larger networks of connections with a sense of identity online being more important compared to older cohorts. However, it might be misleading to assume that millennials are completely homogeneous in terms of their motivations for Internet use (see, for example, Nielsen [2014]). Additionally, although there is ample evidence that older age groups are bridging the technology gap, it would appear that, in comparison to younger cohorts, there remain some continued differences in usage and motivations for use. Millennials have grown up online and are accustomed to interacting on the Internet with both those personally known to them offline and those who are not. Research based on socio-emotional selectivity theory suggests that as people grow older, close interpersonal connections become more important. Thus, one might expect that weak ties typifying connections on e-commerce sites would be less influential among older cohorts than younger ones. A brief discussion of socio-emotional theory is provided next.

Socio-emotional selectivity theory suggests that as people age, the focus shifts from knowledge-related goals to emotion-related goals (Carstensen 1991, 1995, 1998). Older people are said to prioritise emotional satisfaction and this leads to a change in social goals whereby older individuals favour well-established close relationships over creating new relationships. For example, Fredrickson and Carstensen (1990) compared three age groups (nursing home residents, middle-aged people, and teens) on their priorities for choosing relationships from three possible types of connection: an immediate family member, a close friend, and a recent acquaintance with whom they seemed to have a lot in common. The findings indicated that nursing home residents were more likely to choose their social networks based on expected positive affect than younger groups. The finding that older people are more drawn to maintaining existing close relationships than seeking more tangential ones (though the number of emotionally

close relationships tends not to differ between older and younger people) has been quite widely supported by other research (e.g. Bowling, Grundy, and Farquhar 1995; Fung, Carstensen, and Lang 2001; Lang, Staudinger, and Carstensen 1998).

But in a much more recent research, Suanet, van Tilburg, and Broese van Groenou (2013) argued that, in fact, relatively recent social and cultural developments are likely to have increased the salience of more peripheral relationships for older people. In particular, the authors make the case that the Internet and information technology stimulate individuals to maintain contact with acquaintances at a distance. This is particularly the case for older adults who face health decline. The authors hypothesised that age-related decline in the proportion of non-family interpersonal networks has been delayed or is slower in late birth cohorts of older adults compared with earlier cohorts. This was supported by an analysis of the Longitudinal Aging Study in Amsterdam covering a time span of 17 years after 1992. Age-related decline in the proportion of non-family relationships was absent for cohorts born after 1922 and large for cohorts born in 1922 and before. This study suggests that for later age cohorts, peripheral relationships may be becoming more important. Thus, based on socio-emotional selectivity theory, this study assessed the influence of age on social capital affinity and flow. Although we expected identification with weak ties (social capital affinity) to predict flow, this may not necessarily be the case for older respondents. On the other hand, for younger participants, interacting with unknown peers online may, indeed, facilitate the experience of flow. Also, because older adults are less accustomed to operating online and using e-commerce in particular, it was predicted that they are less likely to report experiencing flow than are younger adults. Thus, the next two hypotheses were as follows:

H2: There will be a negative relationship between age and social capital affinity.

H3: There will be a negative relationship between age and flow.

2.4. Outcomes of flow

Prior research has indicated that flow is associated with several positive outcomes (e.g. Agarwal and Karahanna 2000; Chen 2006; Huang 2003; Novak, Hoffman, and Yung 2000; Pahlila and Warsta 2010). Among these are website satisfaction, knowledge-gain, and affirmation.

Flow is associated with enjoyment and positive affect because when an individual experiences flow, the activity involved becomes an end in itself (i.e. autotelic). Thus, to

an extent, rewards associated with the activity are irrelevant (Guo and Poole 2008; Mauri et al. 2011; Stephenson 1967). Satisfaction with an activity is one such positive emotion and an end in itself. In a study of the flow experience associated with browsing a sports team website, O'Cass and Carlson (2010) found a direct relationship between flow and website satisfaction. As well, Hernandez (2012) reported that flow predicted positive attitudes among advergammers. The present study sought to replicate these findings among e-commerce consumers.

H4: There will be a positive relationship between flow and e-commerce users' reported satisfaction.

E-commerce site consumers may visit with a clear purchasing goal in mind or simply to browse. It is also possible that in the course of seeking particular information about a product or brand, e-commerce consumers may learn about other items by chance. In the present research, both perceived focused and incidental knowledge-gain are of interest. A large number of studies have documented the relationship between flow and learning in a variety of educational settings (e.g. Black 2008; Fenton 2008; Ryu and Parsons 2012; Smith 2005). Next is a discussion of research about learning from the Internet.

Learning is defined as an activity or process of gaining knowledge or skill by studying, practising, being taught, or experiencing something (Merriam-Webster, 2015). A range of education research has shown that flow helps facilitate learning outcomes, especially among teenagers and young adults (e.g. Shernoff et al. 2003). Studies have examined the effects of flow in higher education (Kiili 2005), foreign language studies (Egbert 2003), music education (Custodero 2002), education for the gifted (Rea 2000), and instructional design using hypermedia (Konradt, Filip, and Hoffmann 2003). With regard to online learning, Rossin et al. (2009) investigated the relationship between students' experiences of flow and learning outcomes in an online management course. The findings revealed a positive relationship between flow and reported learning outcomes (perceived learning, perceived skill development, and student satisfaction, although not objective outcomes). Packiam-Alloway and Alloway (2012) investigated the effects of Facebook, Twitter, and YouTube engagement on cognitive and social skills in a group of young adults by testing their working memory, attentional skills, and reported levels of social connectedness. The findings showed that active vs. passive social networking site users had different levels of attention. Active social networking site users were more susceptible to distracters. Their engagement with social networking sites seemed to be

exploratory and they assigned similar value to varied streams of information. These findings support the view that highly involved users likely gain sought-after information and also gain information incidentally.

Investigating direct learning from a website, Skadberg and Kimmel (2004) conducted a study assessing visitors' flow experience while website browsing. The findings showed that website users experienced a sense of time distortion, enjoyment, and telepresence while browsing and that the website characteristics contributed to flow. When the participants experienced flow, they learned more about the website content, and learning was related to changes in attitudes. In the current study, two types of learning are of interest – focused and incidental. Typically, e-commerce patrons visit sites with the goal of focused knowledge-gain about specific products or brands. For example, Joines, Scherer, and Scheufele (2003) found that online shopping was, in part, predicted by information motivations and also socialisation motivations. However, in the process of browsing for potential purchases, it is possible that e-commerce patrons may obtain unlooked for knowledge which is incidental to their original motivation. Incidental knowledge-gain involves information acquired by chance. It is unexpected, random, or accidental, discovered in connection with or resulting from an activity. As prior research has shown a connection between flow and both direct and incidental learning, in the present study, it was expected that among e-commerce customers, flow would facilitate both focused and incidental knowledge-gain.

H5: There will be a positive relationship between flow and perceived focused knowledge-gain.

H6: There will be a positive relationship between flow and perceived incidental knowledge-gain.

2.5. Antecedents of consumer affirmation

Many researchers have suggested that word-of-mouth recommendations are associated with consumer loyalty (e.g. Bansal and Voyer 2000; Casaló, Flavián, and Guinaliú 2008; Chung and Darke 2006; Park and Lee 2009). However, affirmation involves more than saying positive things to friends or family members about Internet sources. Online consumers or potential consumers may seek information about products or sites and then share their knowledge, experiences, and opinions by posting links or comments. Chen, Yen, and Hwang (2012) examined Taiwanese Web 2.0 users' experiences with applications such as blogs, Facebook, iGoogle, Plurk, Twitter, and YouTube and found that consumer satisfaction and electronic word-of-mouth recommendations were positively related to intention to revisit Web 2.0 applications. Also, Chu and Choi (2011)

conducted a cross-cultural study investigating electronic word of mouth via social networking sites and focusing on differences between the USA and China. Social capital, tie strength, trust, and interpersonal influence were found to be predictors of electronic word-of-mouth communication in these online social channels. O'Casey and Carlson (2010) found a direct relationship between participants' experience of flow and word-of-mouth communication about websites. Similarly, in his study of online promotional games, Renard (2013) showed that the flow experience was positively related to the decision to spread the word about a brand. It is logical to assume then that if e-commerce patrons are satisfied with their experience, and also gain both focused and incidental knowledge about products or brands, they are more likely to show affirmation (word-of-mouth recommendation both online and offline) for their chosen e-commerce site.

H7: There will be a positive relationship between e-commerce customer satisfaction and e-commerce site affirmation.

H8: There will be a positive relationship between reported focused knowledge-gain and e-commerce site affirmation.

H9: There will be a positive relationship between reported incidental knowledge-gain and e-commerce site affirmation.

The proposed relationships are summarised in Figure 1.

3. Method

Out of a desire for external validity, data points for the present study were garnered via self-report measures (i.e. a telephone survey). It is acknowledged that these measures were perceptual in nature rather than observed, leading to potential concerns about accuracy. But garnering data from raters (observed data) in the current context is a somewhat unrealistic prospect since the vast majority of users are solitary in their interactions with e-commerce sites and the content found therein. Experience sampling method usually involves pop-up questionnaires when the study is Internet situated, and runs the risk of interrupting cognitive states and distracting participants. Clearly, experimental designs are desirable in order to show internal validity; however, depending on how they are conducted, experiments may lack ecological validity and likely involve a relatively small number of participants.

As mentioned, the main value of survey design in the current context is the ability to generalise findings. That said, the use of survey design has been critiqued on the grounds that self-report measures tend towards natural

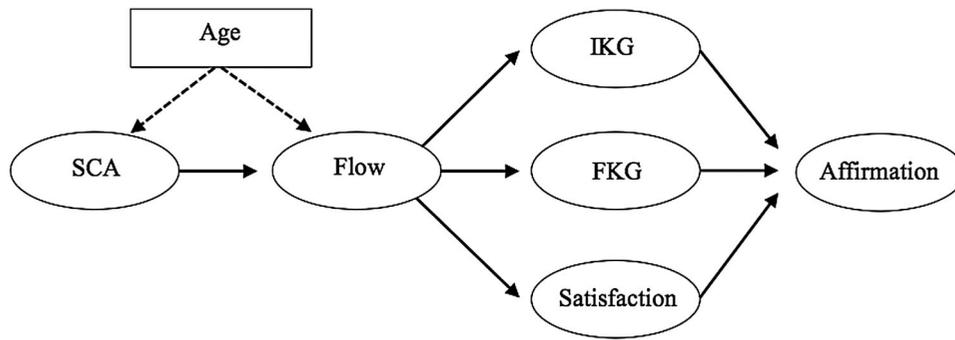


Figure 1. Proposed model. Note: Expected negative relationships are represented with a dashed line, while expected positive relationships are represented with a solid line; SCA = social capital affinity; IKG = incidental knowledge-gain; FKG = focused knowledge-gain.

correlation because they come from the same subjective source (common method bias). However, Conway and Lance (2010) demonstrated that this is often a misconception. In their paper, they describe a reanalysis of 18 published multitrait-multimethod matrices to evaluate the possible offsetting effects of unreliability and common method effects. Same-method correlations were compared to trait factor correlations from the confirmatory factor analysis of the matrices (because the trait factor correlations can be regarded as unbiased estimates of true correlations). Overall, these authors found that the average same-method correlation was .34, slightly lower than the mean trait factor correlation of .37. Conway and Lance argue that these results show that the attenuating effects of measurement error offset the inflationary effects of common method bias. Also, the same-method observed score correlations are quite accurate representations of their true-score counterparts, and ‘the widespread belief that common method bias serves to inflate common method correlations as compared to their true-score counterparts is substantially a myth’ (2010, 327).

As well, it should be noted that, for the most part, the measures in the current study showed good construct validity. They had been employed in other studies, and were piloted with undergraduate students prior to fielding the primary survey instrument.

With regard to the participants, this study involves a subset of data ($n = 289$; 6 participants did not disclose their age plus 1 participant identified as 98 years old, which was deemed an error. These participants were removed, resulting in an analytic n of 282) from a random digit dialling telephone survey of a total sample of 1417 Internet users from across the 50 states of the USA. Calls to land lines were supplemented by calls to cell phone-only households. Since cell-only households are more common among younger Americans, cell-only households were stratified by age groupings – Millennials, Gen X, Boomer, and Silent (Pew Research Center 2010).

Stratification by age and gender was based on 2010 US Census Bureau data. Five types of website genre were included in the investigation (e-commerce, news organisations, search engines, online video games, and social networking sites); however, for the purposes of this study, only the e-commerce data are examined. The assumption underlying the overall programme of research is that users choose to visit Internet sites not only to consume information or to participate in online activity, but also because they have the opportunity to observe user-generated content and to generate content themselves (e.g. comments and feedback).

The interviews were in English and Spanish (the questionnaire was translated and then back-translated). To qualify, respondents had to be 18 years old or older; resident in the USA; have personal access to the Internet by computer, smart phone, and/or tablet; and have accessed the Internet at least once in a typical day. A respondent was qualified for the study if he or she typically accessed an e-commerce site almost always, often, or sometimes. (Participants were asked to respond to the following, choosing from ‘almost always’ (5) to ‘never’ (1): *How often do you use e-commerce sites to buy or sell things, or simply to browse?*) Remaining participants answered questions relating to the other website genres (news organisations, social networking sites, or search engines) or reported low usage, and therefore, only provided demographic and other background information. The interviews lasted for 20 minutes on average. The demographic breakdown is displayed in Table 1.

3.1. Questionnaire and measures

In terms of the composition of the questionnaire, all items included in this study were closed-ended using a 5-point scale, with options ranging between strongly disagree (1) and strongly agree (5). In addition to items measuring Internet use, technology/media use, location of use, and demographic questions, multiple items

Table 1. Demographic profile of sample.

Favourite e-commerce site	Amazon	47.5%
	eBay	17.7%
	Etsy	0.4%
	Craigslist	15.6%
	Other	15.6%
	No preference/use multiple	3.2%
Gender	Male	54.3%
	Female	45.7%
Average age	What is your age in years?	45.23 years; (SD = 16.35 years)
		Range 18–86 years
		25th percentile = 32.00 years
		50th percentile = 43.00 years
		75th percentile = 58.00 years
Race/ethnicity	African American	8.9%
	Asian/Asian American	2.1%
	Caucasian	74.1%
	Hispanic	8.2%
	Native American	1.1%
	Multiracial	3.2%
	Other/refused	2.5%
	Bachelor's degree or higher	52.1%
Interview language	English	96.8%
	Spanish	3.2%
Average annual income		\$79,325.72 (SD = \$84,390.07)
Average daily Internet use		4.98 hours (SD = 3.29 hours)

measured the variables of interest in the current study. Prior to their inclusion in the present study, the scales were pilot-tested with 281 undergraduate students; some item modifications were made to improve reliability. The measures are detailed below along with the alphas for all the resulting scales.

3.1.1. Social capital affinity

Four items were, in part, adapted from Williams (2006) and Ellison, Steinfield, and Lampe (2007) bridging social capital scales such that they reflected affinity with weak ties on an e-commerce site. Some of the items included were as follows: *interacting with people visiting this site makes me feel like part of a community*; *when visiting this site, hearing what others say enhances the experience*; *communicating with the people visiting this site raises points of interest for me*; and *being with people visiting this site makes me want to follow up on things* ($M = 2.86$, $SD = 1.10$; skew = -0.13 , kurtosis = -0.94 ; $\alpha = .81$).

3.1.2. Flow

Four flow items were chosen based on Jackson and March's (1996) flow state scale and O'Cass and Carlson's (2010) flow scale. The items included were as follows: *I have feelings of total concentration when visiting this site*; *I become totally involved when visiting this site*;

when visiting this site, I lose track of time; and *When visiting this site, I really enjoy the experience* ($M = 3.29$, $SD = 0.97$; skew = -0.07 , kurtosis = -0.81 ; $\alpha = .72$).

3.1.3. E-commerce site satisfaction

Three items were adapted from Hennig-Thurau, Gwinner, and Gremler's (2002) customer satisfaction scale, Casaló, Flavián, and Guinaliu's (2008), and O'Cass and Carlson's (2010) website satisfaction scales. The measures were as follows: *choosing to visit this site was a wise one*; *this site does a good job of satisfying my needs*; and *I did the right thing in visiting this site* ($M = 4.57$, $SD = 0.59$; skew = -1.53 , kurtosis = 2.24 ; $\alpha = .85$).

3.1.4. E-commerce site affirmation

Three items from Casaló, Flavián, and Guinaliu's (2008) positive word-of-mouth scale were used to measure affirmation. The items were as follows: *I say positive things to others about this site*; *I recommend this site to others who seek my advice*; and *if anyone criticises this site, I will point out its positive aspects* ($M = 4.13$, $SD = 0.81$; skew = -1.03 , kurtosis = 1.14 ; $\alpha = .72$).

3.1.5. Reported focused knowledge-gain

Three items were constructed to measure reported focused knowledge-gain from e-commerce sites. These items were indirect measures of perceived knowledge-gain as opposed to objective measures of knowledge-gain. This scale showed acceptable reliability in the pilot study and in the current study. The focused knowledge-gain items were as follows: *I often learn something I need to know when visiting this site*; *this site effectively communicates what I need to know*; and *this site helps me learn what I need to know* ($M = 4.15$, $SD = 0.77$; skew = -0.94 , kurtosis = 0.89 ; $\alpha = .76$).

3.1.6. Reported incidental knowledge-gain

Three items were constructed to measure reported incidental knowledge-gain from e-commerce sites. The reported incidental knowledge-gain items were as follows: *I enjoy learning new things by accident when visiting this site*; *I often learn interesting things that I was not looking for when visiting this site*; and *sometimes I learn something new that wasn't intended when visiting this site* ($M = 3.82$, $SD = 0.97$; skew = -0.80 , kurtosis = 0.31 ; $\alpha = .84$).

4. Results

Latent variable analyses were conducted using Mplus 7.3. The model testing was a two-step process (Anderson and Gerbing 1988) in which hypothesis testing was preceded by the estimation of a measurement model. The estimated

Table 2. Loading ranges, commonalities, composite reliabilities, and AVE values.

Measure	Loading range	h^2 range	CR	AVE
Flow	.51–.86	.26–.73	.74	.43
Social capital affinity	.62–.79	.39–.63	.81	.52
Satisfaction	.70–.92	.48–.85	.86	.67
Affirmation	.61–.73	.37–.53	.73	.48
Incidental knowledge-gain	.72–.87	.52–.76	.84	.65
Focused knowledge-gain	.62–.85	.38–.72	.78	.54

measurement model had acceptable fit, $\chi^2 = 303.55$, $df = 155$, $\chi^2/df = 1.96$, $p < .001$; CFI = .93; (RMSEA) = .06 [90%_{CI} = .049, .068]; standardized root mean square residual (SRMR) = .06. Convergent validity was examined for each latent item. According to Fornell and Larcker (1981), convergent validity is demonstrated when all item indicators possess a significant t -value, demonstrate reasonably robust factor loadings (i.e. $>.50$), show an average variance extracted (AVE) coefficient in excess of .50, and have a composite reliability (CR) coefficient in excess of .70. The current data broadly indicated convergent validity. However, the flow and affirmation measures possessed AVE values slightly below the .50 heuristic (.43 and .48, respectively). However, it was deemed acceptable to continue with the estimation of the structural model in this exploratory study because removing indicators did not change the outcomes of the model tests and the fit statistics were acceptable. The relevant model values are summarised in Table 2.

Next, discriminant validity was assessed. Discriminant validity is demonstrated when the square root of the AVE is larger than the correlation between each of the other measures included in the model (Fornell and Larcker 1981). As seen in Table 3, this criterion was met.

4.1. Model testing

The second step in the analysis involved testing the specified structural model. Initial estimation suggested a marginally acceptable fit between the data and the model, $\chi^2 = 418.24$, $df = 181$, $\chi^2/df = 2.31$, $p < .001$; CFI = .90; RMSEA = .07 [90%_{CI} = .060, .077]; SRMR

Table 3. Latent correlations between items.

Measure	(1)	(2)	(3)	(4)	(5)	(6)
Flow (1)	.66	.49***	.36***	.48***	.41***	.31***
Social capital affinity (2)		.72	.10	.30***	.38***	.22**
Satisfaction (3)			.82	.62***	.23**	.51***
Affirmation (4)				.69	.37***	.38***
Incidental knowledge-gain (5)					.81	.44***
Focused knowledge-gain (6)						.74

Note: Discriminant validity is in bold type and placed on the diagonal.

*** $p < .001$.

** $p < .01$.

= .09. Examination of the modification indices indicated that overall model fit would be substantially improved by the inclusion of a regression path from focused knowledge-gain to satisfaction. Accordingly, this path was added and the model was re-estimated, resulting in acceptable fit, $\chi^2 = 383.68$, $df = 180$, $\chi^2/df = 2.13$, $p < .001$; CFI = .91; RMSEA = .06 [90%_{CI} = .055, .072]; SRMR = .08.¹

Examination of parameter estimates associated with the final model suggested that age was significantly and negatively related to both social capital affinity, $b = -.17$, $\beta = -.28$, $p < .01$, and flow experiences, $b = -.07$, $\beta = -.14$, $p < .05$. For its part, social capital affinity was a positive and significant predictor of flow, $b = .42$, $\beta = .48$, $p < .01$. Flow was significantly related to incidental knowledge-gain, $b = .44$, $\beta = .46$, $p < .01$, focused knowledge-gain, $b = .26$, $\beta = .35$, $p < .01$, and satisfaction, $b = .15$, $\beta = .23$, $p < .01$. Further examination of the model suggested that both incidental knowledge-gain, $b = .21$, $\beta = .24$, $p < .01$, and satisfaction, $b = .72$, $\beta = .58$, $p < .01$, were significant predictors of affirmation. Contrary to expectations, focused knowledge-gain was not significantly related to affirmation, $b = -.001$, $\beta = -.001$, $p = .99$. Focused knowledge-gain did, however, predict consumer satisfaction, $b = .38$, $\beta = .43$, $p < .01$. These results supported H1 through H7 and H9; however, H8 was not supported. These results are summarised in Figure 2.

Next, the model-implied indirect effects were examined. The significance of all indirect effects was examined using the 95% confidence intervals obtained through the use of 10,000 bias-corrected bootstrapped resamples of the data (Hayes 2013). Following convention, if the confidence intervals did not include 0, evidence of significance was obtained. The joint, indirect effect of flow on affirmation – as facilitated by incidental knowledge-gain and consumer satisfaction – was significant at the .05 level, $b = .27$, 95%_{CI} = .17, .41. Therein, significance was observed for the specific indirect effects of flow on affirmation as facilitated by both satisfaction, $b = .11$, 95%_{CI} = .04, .23, and incidental knowledge-gain, $b = .09$, 95%_{CI} = .03, .19. Following the method described by Preacher and Hayes (2008), the indirect effects were contrasted by subtracting the parameter estimate describing the indirect effect of flow through incidental knowledge-gain from the indirect effect of flow through satisfaction. This value was subsequently examined for significance by examining the bootstrapped confidence intervals associated with the point estimate. The results of this contrast suggested that the magnitude of the two indirect effects was not significantly different, point estimate = .02, 95%_{CI} = $-.10$, .13.

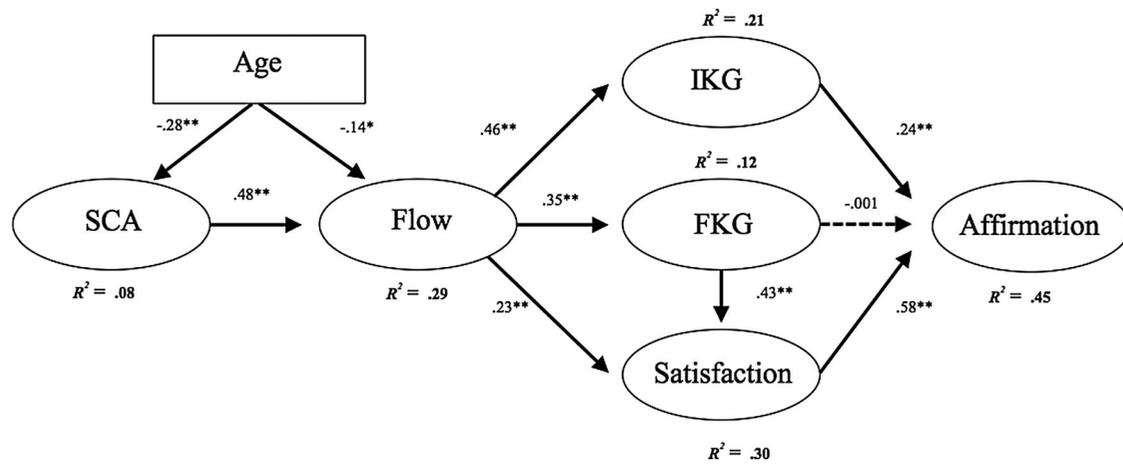


Figure 2. Structural model results.

Note: Standardized coefficients; $**p < .01$, $*p < .05$; IKG = incidental knowledge gain, FKG = focused knowledge gain

Furthermore, exploratory tests suggested that focused knowledge-gain exerted an indirect influence on affirmation via satisfaction, $b = .27$, $95\%CI = .14, .52$. Thus, while focused knowledge-gain did not exert a direct influence on affirmation (as predicted by H8), we did find some initial evidence that focused knowledge-gain may indirectly influence consumer affirmation.

As a final, exploratory step, the indirect effects of age and social capital affinity on affirmation were explored. Examination of joint effects suggested that age exerted a negative and significant influence on affirmation, $b = -.04$, $95\%CI = -.08, -.02$, while social capital affinity exerted a positive and significant indirect effect on affirmation, $b = .11$, $95\%CI = .06, .20$. Table 4 provides a summary of all possible specific indirect paths between social capital affinity, age, and affirmation.

5. Discussion

The overall goal of the current project was to develop and test an empirical model that explains the direct and indirect factors that facilitate consumer affirmation of e-commerce websites. Specifically, this study explored the relationship between age, social capital affinity (the sense of community and likeness felt for people online), flow (concentrated engagement in/enjoyment of an

activity), and positive outcomes reported by e-commerce site users (e-commerce site satisfaction, focused and incidental knowledge-gain, and, ultimately, e-commerce site affirmation). The findings confirmed that younger consumers are more likely to feel a sense of loose identity with other e-commerce users and are also more likely to experience flow while interacting with e-commerce sites. Specifically, social capital affinity strongly predicted flow, which, in turn, facilitated the relationship between social capital affinity and e-commerce customer satisfaction, focused knowledge-gain, and incidental knowledge-gain. Among younger e-commerce site users, then, the sense of community and likeness felt for online others facilitated the experience of flow. Additionally, analysis of the indirect effects indicated that younger users as well as those participants reporting high social capital affinity were more likely to express affirmation for e-commerce sites. Finally, the data indicated that the relationship between flow and consumer affirmation was facilitated by both incidental knowledge-gain and satisfaction with the e-commerce site.

These findings contribute to the field of knowledge in several ways. First, the results of this study broadly support prior research (e.g. Pahnla and Warsta 2010) in highlighting the importance of flow as an antecedent to consumer involvement in e-commerce environments.

Table 4. Decomposition of all possible indirect paths between SCA, age, and affirmation.

Path	<i>b</i>	95%CI
Age → SCA → Flow → FKG → Satisfaction → Affirmation	-.01	-.01, -.002
Age → Flow → FKG → Satisfaction → Affirmation	-.01	-.02, -.001
Age → SCA → Flow → IKG → Affirmation	-.01	-.02, -.002
Age → SCA → Flow → Satisfaction → Affirmation	-.01	-.02, -.002
Age → Flow → IKG → Affirmation	-.01	-.02, -.001
Age → Flow → Satisfaction → Affirmation	-.01	-.02, -.001
SCA → Flow → FKG → Satisfaction → Affirmation	.03	.02, .06
SCA → Flow → IKG → Affirmation	.04	.01, .09
SCA → Flow → Satisfaction → Affirmation	.05	.02, .10

Specifically, the current results suggest that flow functions as a critical facilitator of positive outcomes related to consumer learning and satisfaction. Therein, the present study's focus on the indirect mechanisms underlying the relationship between flow and consumer affirmation extends our present knowledge of the influence that flow experiences play in consumer use of e-commerce portals. For instance, the meta-model specified by Hoffman and Novak (2009) suggested that flow was an antecedent to a variety of outcomes related to consumer learning and behaviour. Our findings suggest that, in addition to driving consumer learning, flow also exerts a non-ignorable, albeit indirect, influence on consumer affirmation of e-commerce sites. Given that consumer affirmation plays an important role in the evaluation and use of e-commerce sites (Doh and Hwang 2009; Park and Lee 2009), it stands that further examination of the nuanced (i.e. indirect and conditional) effects of flow, relative to desirable consumer behaviour, is a ripe area for future research.

Additionally, the findings are in line with the expectations of socio-emotional selectivity theory in that, for older participants, social capital affinity plays a decreasingly influential role in users' e-commerce experiences. Social capital affinity is about weak ties rather than close intimate relationships. It encompasses affinity with those online who, in this case, are unknown offline. Furthermore, socio-emotional selectivity theory suggests that close ties are the most meaningful to older people; thus, it is more likely that opinions, advice, or information about online purchases are sought from close family members or personal friends. Arguably, comments and opinions from those present online are considered less important for older e-commerce customers. This may change. Baby boomers are an increasing presence on the Internet and provide a huge potential online market already rivalling the millennial cohort (http://ir.nielsen.com/files/doc_financials/Nielsen-Global-E-commerce-Report-August-2014.pdf). Suanet, van Tilburg, and Broese van Groenou (2013) demonstrated that peripheral relationships are becoming more important to older people. Therefore, as the baby boomer cohorts age, they may begin to see more value in the loose ties offered by Internet genres, including e-commerce. As it currently stands, however, the present data suggest that younger consumers attribute more weight to the opinions and thoughts of online others and, further, that the awareness of this loose community increases the sense of focus and enjoyment that are part of the flow experience. This suggests that those involved in e-commerce who are targeting a younger demographic should take into account the value of this sense of loose community for younger people in fostering flow.

5.1. Limitations

There are several limitations to this study. The findings do highlight the theoretical importance of flow in this context. However, flow is a multidimensional concept and, as such, requires a scale that better reflects that. In future research, development of a multidimensional flow scale that more holistically reflects the concept will be a priority. Again, in terms of validity, the measures of focused and incidental knowledge-gain were indirect rather than specific in nature. The participants reported that they learned something that they intended to and also sometimes they did not intend to, but the participants did not describe precisely what they had learned. In another work, the exact nature of what was learned and from who/where should be assessed. As well, the use of experimental work would further clarify the influence of flow and social capital affinity in terms of age group differences in the e-commerce domain. As mentioned, it may be that the finding that social capital affinity is not as influential among older participants will disappear over time. Thus, the study should be replicated and also conducted in other cultures to determine if it is confirmed across time frames, samples, and geographic areas.

On balance though, the study provides a platform to begin investigating social capital affinity and flow as telling factors in Internet research. And it offers potentially meaningful pointers to those concerned with garnering attention for Internet content and also facilitating positive outcomes for both online consumers and businesses.

Note

1. Comparisons between the initially hypothesised model and the model including the path from focused knowledge-gain and satisfaction indicated that the addition of the path did not substantively influence the direction, significance, or magnitude of the primary parameters of interest. Moreover, this addition did not substantively influence the direction, significance, or magnitude of the indirect paths of interest.

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