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Income effects on relative importance of two online purchase goals: Saving time versus saving money?☆

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ABSTRACT

The premise of the article is that income levels influence the relative importance of two objectives most consumers identify as reasons for shopping online, namely, saving time and saving money. The paper proposes and examines twin hypotheses that higher-income consumers may be more interested in saving time, while lower-income consumers may be more interested in saving money. The results show that higher-income consumers exhibit a greater tendency toward saving time than lower-income consumers, while the relationship between income level and saving money is less certain. The findings have important implications for marketing managers and public policy makers. Marketing managers need to be aware of the relative importance of saving time versus saving money to online shoppers while selecting the product assortment to be made available online. Public policy makers want to educate lower-income consumers on the importance of having saving money as an important shopping goal.

Time is the main resource that consumers spend when they shop online or in traditional retail settings (Bhatnagar et al., 2000). The average American has less free time than in any period in modern history (Comor, 2000). Shopping on the Internet normally takes less time than shopping in traditional retail outlets because of the many time-consuming activities associated with the latter (e.g., driving to the store, finding a parking space, waiting in line at the check-out) (Bellman et al., 1999; Rohm and Swaminathan, 2004). Shopping on the Internet also enables consumers to save money. The money-saving potential of the Internet is often stated as an important reason for shopping online by many consumers. But not all consumers may be realizing these benefits.

The above observations lead to a number of potential research questions. Consumers can choose to focus on either the cost of search (e.g., saving time), or the benefit of search (e.g., saving money), or make a cost–benefit trade-off (e.g. balance time spent with money saved) (LeClerc et al., 1995; Okada and Hoch, 2004). As a practical matter, a majority of consumers focus either on saving time or saving money while shopping online (Horrigan, 2008), because many find it difficult to estimate the economic (i.e., monetary) value of their time and weigh it against the amount of money saved. Who are the people who focus more on saving time than money while shopping online? Do they tend to have higher income? Or is this goal shared by lower-income consumers too? Similarly, is the goal of saving money shared by all online shoppers? Or only by lower-income consumers?

Lower-income consumers are often disadvantaged in traditional retail settings because they tend to pay more for goods and services as there are fewer stores in the neighborhoods in which they live (Bell and Burlin, 1993). With the advent of the Internet, a major concern was that a "digital divide" would magnify the differences between the rich and the poor due to unequal access to (and use of) new information and communication technologies (Mossberger et al., 2003; Wilson, 2004). Fortunately, the widespread availability of broadband in schools, colleges, public libraries, and offices has considerably narrowed the "digital divide" to the point that only minor differences in information technology use across income levels remain.

Yet, research indicates that certain segments of consumers may have benefited disproportionately more from the Internet than other groups (Zettelmeyer et al., 2005). Despite the significant decline in the cost of Internet access, some segments of society, such as the elderly and the less-educated, have been slow to adopt and use the Internet because it is not considered an essential good (Moss and Mitra, 1998). Less-educated consumers possibly avoid the Internet because of the predominance of content directed at their better-educated counterparts (Mills and Whitacre, 2003). Thus, lower-income consumers are not realizing the same benefits of e-commerce as their higher-income counterparts (Baye et al., 2003). A recent US government report issued by the Federal Communications Commission (FCC) titled "Connecting America" (accessible at www.broadband.gov) has made providing broadband access to lower-income Americans and enhancing their digital literacy a national priority (Commission Federal Communications, 2010). Hence,

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attempting to understand differences in online shopping behavior across the privileged and less-privileged segments of society is both timely and relevant.

1. Hypotheses and conceptual framework

The purpose of the research is to investigate the significance of two scarce resources (time and money) on the online purchase goals of consumers. The specific research question of interest is whether income levels influence the relative importance of two important objectives most consumers identify as an important reason for shopping online, namely, saving time and saving money. The twin hypotheses that higher-income consumers are more interested in saving time (because they value time more than money), while lower-income consumers are more interested in saving money (because they value money more than time) are examined. Several factors potentially moderate the primary relationships of interest, because they either augment or attenuate the effect of income. For instance, education and employment status could potentially influence the relative importance of both online purchase goals. Similarly, generational age (e.g., Gen Y, Gen X, leading boomers) and the extent to which the Internet is used at work or at home could also have an effect.

To consider the main and secondary effects in a systematic manner a cross-disciplinary approach, based on concepts and theories from economics, mental accounting, cognitive psychology, and regret theory is used to formulate the hypotheses. By so doing, a more detailed understanding of how income and related demographic and attitudinal variables potentially influence the online purchase goals of consumers can be obtained.

1.1. Economic perspective

Income affects the valuation of time. Higher-income consumers value their time more because of its opportunity cost (Goldman and Johansson, 1978; Stigler, 1961). They have been found to spend less time online than lower-income consumers (Goldfarb and Prince, 2008; Goolsbee and Klenow, 2006; Ratchford et al., 2003). But, higher-income consumers are also known to derive a greater benefit from online services because they use them more intensively to satisfy a wide-ranging set of needs. Economic theory predicts that consumers will balance the costs of search (e.g., time spent) against the benefits of search (e.g., money saved) based on the economic value of their time. The wage rate has commonly been used to denote the economic value of time (Stigler, 1961; Biswas, 2004). Consumers who are "time rich and income poor" find online shopping to be attractive mainly for the money savings potential, while those who are "income rich and time poor" may be attracted to it because it saves time, which leads to the following hypotheses:

H1. Income relates positively to saving time as an online purchase goal.

H2. Income relates negatively to saving money as an online purchase goal.

However, the effect of income on online purchase goals may not be that straightforward. For consumers to strike the right balance between "time spent" and "money saved" they need to be able to estimate the opportunity cost (i.e., economic value) of the time spent in search. Most consumers are in occupations where such exchanges are not the norm, except for those where the use of a billing rate for time expenditures is common (e.g., lawyers, consultants). Not all consumers can readily exchange time for money (LeClerc et al., 1995; Okada and Hoch, 2004). Some consumers only work part-time. Thus, estimates of the opportunity cost of time could be influenced by the employment status of the consumer, leading to the hypothesis:

H3. The positive relationship between income and saving time as an online purchase goal is stronger for shoppers who work full-time in comparison to those who work part-time.

1.2. Mental accounting perspective

The mental accounting model has been used to understand how consumers make trade-offs between scarce resources. According to the model, consumers create separate "mental accounts" for resources such as time and money and have difficulty transferring these resources between accounts (Duxbury et al., 2005; Thaler, 1999). Time and money are the two main resources consumers have available while shopping. Either or both of these resources can be *spent* or *saved* while shopping.

Thus, consumers may have one mental account for "spending time" and a different one for "saving money" while shopping online (LeClerc et al., 1995). Hence, consumers may not use the economic value of time to make the trade-off between the costs of search (e.g., time spent) and the benefits of search (e.g., money saved) (Thaler, 1999). Instead, the trade-off may be based on the subjective importance of saving time and saving money as online purchase goals. Decisions relating to spending time or saving money are then based on the denomination in which the mental account is held (i.e., time or money). It is possible that some consumers may have several mental accounts for "spending time" that enable them to distinguish between low-value and high-value online pursuits.

Lower-income consumers are more likely to use the Internet for recreation rather than consumption (Comor, 2000; Goldfarb and Prince, 2008). Hence, they are less likely to use a "time is money" approach while shopping online. In other words, lower-income consumers may lump time spent on all online activities into a single "mental account" and not adequately distinguish between low-value pursuits and high-value activities. In contrast, higher-income consumers who use the Internet more for consumption than for recreation (Comor, 2000) are more likely to have separate mental accounts for time spent on low-value versus high-value online pursuits. Hence, they are more likely to treat both "saving time" and "saving money" as important online purchase goals, leading to the hypothesis:

H4. Income relates positively to a combined focus on saving both time and money as an online purchase goal.

Thus, the mental accounting model prediction complements the economic model prediction regarding the effect of income on saving time and money as online purchase goals, due to the assumptions in the two theories regarding the behavior of consumers. Specifically, higher-income consumers will also focus on saving money in addition to saving time as an online purchase goal to a greater extent than lower-income consumers.

There are important generational differences in the use of the Internet. Thus, it is possible that generational age potentially moderates the effect of mental accounts on the two online purchase goals of interest. Younger consumers (e.g., Gen Y and Gen X) are almost always "connected" and lead wired lifestyles. Hence, they are less likely to have separate mental accounts for offline and online time. Older consumers (e.g., leading boomers and matures) in comparison are more likely to have one mental account for "Internet time" and a different one for time spent in the physical world. The separation in mental accounts for offline and online activities can be attributed to the differential adoption rates of new information and communication technologies by older consumers (Gilly and Zeithaml, 1985; Phillips and Sternthal, 1977), which leads to the hypothesis:

H5. The positive relationship between income and saving time as an online purchase goal is stronger for younger shoppers in comparison to older shoppers.

1.3. Cognitive psychology perspective

The effort-accuracy framework has been used to understand how consumers balance effort reduction with accuracy improvement goals (Bellman et al., 2006). Thus, in the online shopping context, consumers will make a trade-off between "time spent" and "money saved" that is based on effort-accuracy considerations. For instance, some shoppers may realize that if they spent another 15 min on a retail website while shopping for a pair of shoes they would be able to save another $5, but then may decide that the extra effort was not worth the extra savings. The empirical research on the effort-accuracy framework suggests that the trade-off between accuracy improvement and effort reduction is uneven. Consumers focus more on effort reduction rather than on accuracy improvement goals in offline settings due to cognitive limitations.

In an online setting, electronic decision aids (i.e., recommendation agents, shopbots) augment the cognitive capabilities of consumers. Thus, consumers can be expected to focus more on the benefits of search (e.g., money saved) in relation to the costs of search (e.g., time spent). But, not all consumers may do so. Previous research has found that consumers with more education are more likely to engage in an extended search for information (Beatty and Smith, 1987; Doti and Sharir, 1981) and make greater use of price information (Russo et al., 1975). In addition to education, consumers who use the Internet extensively at work or at home are more likely to have the cyber-fluency (i.e., web expertise) needed to become skillful at using electronic decision aids while shopping online, leading to the following hypotheses:

H6. The positive relationship between income and saving time as an online purchase goal is stronger for shoppers with more education in comparison to those with less education.

H7. The negative relationship between income and saving money as an online purchase goal is stronger for shoppers who use the Internet more frequently in comparison to those who use the Internet less frequently.

1.4. Regret theory perspective

Time costs are generally lower in online settings, while cognitive costs are potentially higher due to the wide selection of product choices available in online stores. The desire to examine a broad selection of products but also be able to do so without spending too much time has been labeled the "tyranny of choice" (Schwartz, 2004). Choosing an option forecloses the selection of other options that may be nearly as attractive. Hence, whenever a product is eliminated from consideration there are psychological "regret costs" that have to be incurred (Botti and Iyengar, 2006; Connolly and Zeelenberg, 2002). Consequently, online purchase goals may be influenced by the level of regret costs encountered by consumers. For consumers who enjoy shopping saving money is typically not an important purchase goal, because they obtain hedonic value from being online (Childers et al., 2001; Hoffman and Novak, 1996). Hence, regret costs for these consumers are likely to be low, leading to the hypothesis:

H8. The negative relationship between income and saving money as an online purchase goal is weaker for shoppers who enjoy shopping.

2. Methodology

The data used to test the hypotheses are based on telephone interviews of a national sample of 2400 adults, 18 years and older, in the continental United States, conducted by a leading American survey research organization, on behalf of Pew Internet & American Life Project (www.pewinternet.org), a non-profit organization that is regarded as an authoritative source on how Americans use the Internet. The telephone interviews were conducted using a dual-frame sample design. Both landline and cellular random-digit dial (RDD) samples were used. Calls were staggered over times of day and days of the week to maximize the chance of making contact with potential respondents. Of the working phone numbers in the combined sample (landline plus cell phone), 78% were contacted by an interviewer and 28% agreed to participate in the survey. Eighty-two percent were found eligible for the interview. Ninety percent of eligible respondents completed the interview. The final response rate calculated as the product of the contact rate, cooperation rate and completion rates was 20%.

The questionnaire was administered using professionally trained and experienced personal interviewers from a leading American survey organization. Information on the constructs in the study was gathered through both pre-coded and open-ended responses. Based on key comparisons on online usage and experiences between the sample and similar data from other surveys conducted by Pew Internet no evidence of any systematic error in the data was found.

3. Measures

3.1. Dependent variable

The dependent variable of interest was whether the primary online purchase goal of respondents was more oriented toward *Saving Time* or *Saving Money*. Respondents were asked to express agreement with the two statements "shopping online saves me time" and "the Internet is the best place to find bargains". An indicator variable (1 = disagree; 2 = agree) was used to used to operationalize the dependent variables. The two statements of interest were embedded in a larger set of statements that corresponded to other online purchase goals, such as the need for seeing and touching products prior to purchase, willingness to provide credit card or personal information online, etc.

3.2. Independent variables

The primary independent variable of interest was *Income*. It was measured as the total household income from all sources before taxes in 2006. To reduce potential over-reporting bias, respondents were first asked to indicate whether their income level was above or below $40,000. Depending on their response, they were then presented income categories that were appropriate for the income level indicated. A seven-point ordinal scale (1 = less than $10,000; 2 = $10,000 to $20,000; 3 = $20,000 to $30,000; 4 = $30,000 to $40,000; 5 = $40,000 to $60,000; 6 = $60,000 to $100,000; 7 = more than $100,000) was constructed by concatenating the categories presented to the below $40,000 and above $40,000 income groups. *Employment Status* was measured using an indicator variable to denote whether the respondent worked full-time (1 = full-time; 2 = part-time). *Generational Age* was measured using a six point ordinal scale that used break-points in chronological age that are normally used by demographers to distinguish between generations {1 = gen Y (18–30 years); 2 = gen X (31–42 years); 3 = trailing boomers (43–52 years); 4 = leading boomers (53–61 years); 5 = matures (62–71 years); 6 = after work (72+ years)}. *Education* was measured using a five-point ordinal scale (1 = less than high school; 2 = high school graduate; 3 = some college or vocational school graduate; 4 = college graduate; 5 = graduate school or advanced degree). *Internet Usage* which represented the frequency with which the respondent used the Internet at work or at home was measured using a five-point ordinal scale (1 = once every few weeks; 2 = 1–2 times a week; 3 = 3–5 times a week; 4 = about once a day; 5 = many times a day). Respondent attitudes regarding whether they liked having many product choices and whether they enjoyed shopping were measured using two indicator variables (1 = no; 2 = yes) and labeled *Like many Choices* and *Enjoy Shopping*. In addition to the variables included in the hypotheses, respondents were also asked to indicate whether they agreed with the two statements "overwhelmed by the amount of

information available online" and "confident about making the right purchase decision" on two point scales (1 = disagree; 2 = agree).

4. Results

The sample distributions showed that *Saving Time* and *Saving Money* were important online purchase goals for 73% and 52% of the respondents. The joint distribution of the two variables showed that 48% of the respondents were interested in doing both, *Saving Time* and *Saving Money*, while for 20% of the respondents neither one of these were important online purchase goals.

The modal *Income* category was $60,000 to $100,000 of annual income, while the modal category for *Education* was some college education or a vocational school graduate. For *Employment Status*, 57% of the respondents indicated that they worked full-time. The modal category for *Generational Age* was Trailing Boomers (43–52 years). Moderately high levels of *Internet Usage* were reported by the sample, with 52% of the respondents reporting Internet use many times a day. *Like many Choices* and *Enjoy Shopping*, 80 and 46% of the respondents indicated that they liked having many choices and enjoyed shopping, respectively. Overall, the sample distributions on the study variables closely matched the demographic profile of the American population with an Internet connection, as expected, due to the use of a national sample frame and probability sampling. Descriptive statistics on all study variables and related demographic characteristics are reported in Table 1.

Table 1
Descriptive sample information.

	Frequency	(Percent)
Online purchase goals		
Saving Time	1129	(73.1)
Saving Money	766	(51.6)
Income		
Less than $10,000	56	(4.2)
$10,000 to $20,000	79	(5.9)
$20,000 to $30,000	156	(11.7)
$30,000 to $40,000	120	(9.0)
$40,000 to $60,000	290	(21.7)
$60,000 to $100,000	352	(26.4)
More than $100,000	281	(21.1)
Employment status		
Full-time	922	(57.1)
Part-time	692	(42.9)
Generational age		
Generation Y (18–30)	332	(20.4)
Generation X (31–42)	327	(20.0)
Trailing boomers (43–52)	365	(22.4)
Leading boomers (53–61)	291	(17.8)
Matures (62–71)	208	(12.8)
After Work (72+)	108	(6.6)
Education		
Less than high school	66	(3.9)
High school graduate	434	(26.0)
Some college or vocational school	501	(30.0)
College graduate	380	(22.7)
Graduate school or advanced degree	290	(17.4)
Internet usage		
Once every few weeks	158	(9.5)
1–2 times a week	146	(8.8)
3–5 times a week	212	(12.7)
About once a day	289	(17.3)
Many times a day	863	(51.7)
Like Many Choices		
No	306	(19.8)
Yes	1243	(80.2)
Enjoy shopping		
No	817	(53.7)
Yes	704	(46.3)
Gender		
Female	891	(52.9)
Male	793	(47.1)

Table 2
Cross Classification of income and online purchase goal: saving time.

Income	Online purchase goal: saving time	
	Disagree	Agree
Less than $10,000	32.7	67.3
$10,000 to $20,000	25.4	74.6
$20,000 to $30,000	34.5	65.5
$30,000 to $40,000	29.5	70.5
$40,000 to $60,000	32.2	67.8
$60,000 to $100,000	23.1	76.9
More than $100,000	12.9	87.1

Note: Entries are row percentages.
$\chi^2 = 38.5$; df = 6; $p < .05$.

4.1. Hypotheses tests

The cross-classification of Income with Saving Time showed that 87% of the respondents in the more than $100,000 income category regarded it as an important goal, compared to 75% of the respondents in the $10,000 to $20,000 income category and 67% of respondents in the less than $10,000 income category, as shown in Table 2. The relationship between Income and Saving Time was significant ($\chi^2 = 38.5$; df = 6; $p < .05$). Hence, H_1 was supported.

A cross classification of Income with Saving Money indicated that 49% and 48% of respondents in the $30,000 to $40,000 and $40,000 and $60,000 income categories, respectively, regarded it as an important goal, compared to 58% of the respondents in the $60,000 to $100,000 income category and 56% of the respondents in the more than $100,000 income category, as shown in Table 3. The relationship between Income and Saving Money was significant ($\chi^2 = 13.1$; df = 6; $p < .05$) but not in the expected direction. Respondents in the low and medium income categories indicated Saving Money as an important goal with nearly the same frequency as those in the high income categories. Hence, H_2 was not supported.

A cross-classification of Income with Saving Time *conditional* on Employment Status showed that for 91% of the respondents who worked full-time and had more than $100,000 in annual income regarded Saving Time as an important goal. The corresponding percentages for those in the $60,000 to $100,000 and $40,000 to $60,000 income categories were 79% and 68% respectively, as shown in Table 4. The relationship between Income and Saving Time for those who worked full-time was significant ($\chi^2 = 34.3$; df = 6; $p < .05$), but not for those who worked part-time ($\chi^2 = 7.8$; df = 6; n.s.). Hence, H_3 was supported.

A cross-classification of Income with a variable constructed to examine capture the joint pursuit of Saving Time and Saving Money as online goals, showed that 55% and 52% of respondents in the more than $100,000 and $60,000 to $100,000 income categories, respectively, regarded *both* Saving Time and Saving Money as important online goals, compared to 44% of the respondents in the $30,000 to $40,000 income category and 37% of the respondents in the more than $20,000 to $30,000 income category, as shown in Table 5. The relationship between

Table 3
Cross Classification of income and online purchase goal: saving money.

Income	Online purchase goal: saving money	
	Disagree	Agree
Less than $10,000	51.0	49.0
$10,000 to $20,000	33.3	66.7
$20,000 to $30,000	50.0	50.0
$30,000 to $40,000	51.4	48.6
$40,000 to $60,000	51.9	48.1
$60,000 to $100,000	42.0	58.0
More than $100,000	44.3	55.7

Note: Entries are row percentages.
$\chi^2 = 13.1$; df = 6; $p < .05$.

Table 4
Cross Classification of income and online purchase goal: saving time conditional on employment status.

Income	Online purchase goal: saving time			
	Work full-time: Yes		Work full-time: No	
	Disagree	Agree	Disagree	Agree
Less than $10,000	0.0	100.0	38.2	61.8
$10,000 to $20,000	18.2	81.8	24.3	75.7
$20,000 to $30,000	27.7	72.3	38.5	61.5
$30,000 to $40,000	30.5	69.5	28.6	71.4
$40,000 to $60,000	32.7	67.3	33.6	66.4
$60,000 to $100,000	21.5	78.5	27.5	72.5
More than $100,000	9.5	90.5	21.3	78.8

Note: Entries are row percentages.
$\chi^2 = 34.3$; df = 6; p<.05 for Work full-time: Yes.
$\chi^2 = 7.8$; df = 6; n.s. for Work full-time: No.

Income and a combined focus on Saving Time and Saving Money as online purchase goals was significant ($\chi^2 = 56.2$; df = 18; p<.01). Hence, H_4 was supported.

A cross-classification of Income with Saving Time *conditional* on Generational Age showed that 93% of the respondents who were in the Gen Y category and had more than $100,000 in annual income regarded Saving Time as an important goal. The corresponding percentages for those in the $60,000 to $100,000 and $40,000 to $60,000 income categories were 83% and 73% respectively, and dropping down to 50% for the less than $10,000 income category, as shown in Table 6. The relationship between Income and Saving Time for those in the Gen Y category was significant ($\chi^2 = 18.6$; df = 6; p<.05). For those in the Gen X category, the relationship was not significant ($\chi^2 = 6.9$; df = 6; n.s.). Hence, H_5 was supported.

A cross-classification of Income with Saving Time *conditional* on Education showed that 91% of the respondents who were college graduates and had an income more than $100,000 regarded Saving Time as an important goal. The corresponding percentages for those in the $60,000 to $100,000 and $40,000 to $60,000 income categories were 79% and 77% respectively, as shown in Table 7. The relationship between Income and Saving Time for college graduates was significant ($\chi^2 = 16.9$; df = 6; p<.05). For high school graduates, the relationship was not significant ($\chi^2 = 11.5$; df = 6; n.s.). Hence, H_6 was supported.

A cross-classification of Income with Saving Money *conditional* on Internet Usage showed that 79% of the respondents who were in the many time a day Internet usage category and had $10,000 to $20,000 in annual income regarded Saving Money as an important goal. The corresponding percentages for those in the $20,000 to $30,000 and $30,000 to $40,000 income categories were 56% and 65% respectively, as shown in Table 8. The relationship between Income and Saving Money for those in the many times a day Internet usage category was marginally significant ($\chi^2 = 11.7$; df = 6; p<.05). But for those in the about once a day usage category, the relationship was not significant ($\chi^2 = 3.3$; df = 6; n.s.). Hence, H_7 was supported.

A cross-classification of Saving Money with Income *conditional* on Enjoy Shopping showed that for shoppers who enjoyed shopping, 49% of the respondents who regarded Saving Money as an important goal fell in the high Income category, compared to 24% and 27% of the respondents being in the medium and low income categories respectively. The relationship between Saving Money and Income was significant for those who Enjoy Shopping ($\chi^2 = 12.5$; df = 2; p<.01). Hence, H_8 was supported.

Table 5
Cross Classification of income and online purchase goals: saving time and money.

Income	Saving time and money	Saving time only	Saving money only	Saving neither
	Agree	Agree	Agree	Agree
Less than $10,000	37.5	29.2	14.6	18.8
$10,000 to $20,000	60.0	16.9	7.7	15.4
$20,000 to $30,000	36.8	29.3	10.5	23.3
$30,000 to $40,000	44.3	27.4	4.7	23.6
$40,000 to $60,000	40.5	27.8	7.9	23.8
$60,000 to $100,000	51.9	25.0	6.7	16.3
More than $100,000	55.0	32.5	0.8	11.6
	47.6	27.6	6.4	18.5

$\chi^2 = 56.2$; df = 18; p<.01.

Table 6
Cross Classification of income and online purchase goal: saving time conditional on generational age.

Income	Online purchase goal: saving time			
	Generation Y (31–42)		Generation X (18–30)	
	Disagree	Agree	Disagree	Agree
Less than $10,000	50.0	50.0	30.8	69.2
$10,000 to $20,000	44.4	55.6	15.4	84.6
$20,000 to $30,000	27.3	72.7	30.2	69.8
$30,000 to $40,000	28.6	71.4	24.1	75.9
$40,000 to $60,000	27.5	72.5	31.0	69.0
$60,000 to $100,000	17.2	82.8	15.0	85.0
More than $100,000	7.2	92.8	16.0	84.0

Note: Entries are row percentages.
$\chi^2 = 18.6$; df = 6; p<.05 for Generation Y (31–42).
$\chi^2 = 6.9$; df = 6; n.s. for Generation X (18–30).

Table 7
Cross Classification of income and online purchase goal: saving time conditional on education.

Income	Online purchase goal: saving time			
	College graduate		High school graduate	
	Disagree	Agree	Disagree	Agree
Less than $10,000	0.0	100.0	42.9	57.1
$10,000 to $20,000	75.0	25.0	18.2	81.8
$20,000 to $30,000	18.8	81.3	46.3	53.7
$30,000 to $40,000	28.6	71.4	32.6	67.4
$40,000 to $60,000	23.3	76.7	39.2	60.8
$60,000 to $100,000	21.0	79.0	41.4	58.6
More than $100,000	9.5	90.5	20.7	79.3

$\chi^2 = 16.9$; df = 6; p<.05 for college graduate; $\chi^2 = 11.5$; df = 6; n.s. for high school graduate.

Table 8
Cross Classification of income and online purchase goal: saving money conditional on internet usage.

Income	Online purchase goal: saving money			
	Usage: about once a day		Usage: many times a day	
	Disagree	Agree	Disagree	Agree
Less than $10,000	50.0	50.0	52.9	47.1
$10,000 to $20,000	28.6	71.4	20.7	79.3
$20,000 to $30,000	58.1	41.9	44.4	55.6
$30,000 to $40,000	56.5	43.5	34.6	65.4
$40,000 to $60,000	53.7	46.3	48.8	51.2
$60,000 to $100,000	45.3	54.7	37.2	62.8
More than $100,000	54.1	45.9	38.6	61.4

Note: Entries are raw frequencies and (row percentages).
$\chi^2 = 11.7$; df = 6; p<.10 for Internet usage: many times a day.
$\chi^2 = 3.3$; df = 6; n.s. for Internet usage: about once a day.

5. Summary and conclusions

The results indicate that higher-income consumers are attracted by the time-savings features of web-based shopping environments to a greater extent than the money-savings aspects attract lower-income consumers. Demographic and attitudinal influences such as education, generational age, degree of Internet usage, and the enjoyment of shopping, act as moderating influences that either augment or attenuate the effect of income level on online purchase goals.

While higher-income consumers exhibit a greater tendency toward saving time as an online purchase goal, the relationship between income level and saving money is less certain. Saving time has been, and continues to be, an important purchase goal for both higher-income and lower-income consumers, possibly because that is the primary benefit the online medium offers over traditional retail environments.

5.1. Public policy implications

The findings suggest that despite the closing of the digital divide, important differences remain between the digital haves and have-nots. While the "digital divide" was mainly due to differential access to technology, the differences that remain are behavioral. The challenge for policy makers is no longer proving access to the Internet to the disadvantaged, but changing the way they use the Internet now that they have access to it (Verplanken and Wood, 2006).

Can policy makers encourage lower-income online shoppers to strike a better balance between the relative benefits of saving time and saving money? Thus far, these consumers seem to have also focused mainly on the time saving benefits of shopping online like their higher-income counterparts. They need to be informed that the Internet is not just about saving time, but also about saving money (Bertrand et al., 2006).

An advertising campaign designed by non-profit agencies such as the Ad Council (www.adcouncil.org) could be used to encourage these consumers to use recommendation agents and virtual shopping assistants to become knowledgeable about the online market place before they go shopping. The campaign could show how these online tools may be used to discover previously unknown products, which are available at lower prices, and which possibly better meet their needs. A recent US government report titled "Connecting America" issued by the Federal Communications Commission (FCC) has called for the creation of a national digital literacy corps to assist lower-income, less-educated consumers become proficient in the use of the Internet in various aspects of life, including e-commerce.

5.2. Marketing implications

Marketers can play a more active role in educating lower-income consumers to make the correct trade-offs between time spent versus money saved, because they stand to benefit the most as these consumers begin to actively engage themselves in e-commerce. They can assist lower-income consumers in re-calibrating their time spent versus money saved trade-off by encouraging them to spend more time researching products on the Internet by ensuring that their websites are easier to navigate through and do not intimidate lower-income consumers by showcasing high-end products.

Economic models show that there is often a transfer of consumer surplus (i.e., the difference between the "price paid" and the "willing to pay" price) from consumers who purchase a high-end product to those who buy a low-priced bargain in the same product category (Aron et al., 2006). Lower-income consumers stand to benefit the most from this transfer of consumer surplus, because in a strange irony it has been created for them by their higher-income counterparts. Marketing managers need to be cognizant of this phenomenon and use it to expand their product assortment to include more low-price offerings that are specially designed for the low-income shopper. Encouraging lower-income consumers to participate in electronic markets is ultimately in the best interest of retailers and manufacturers, because the objectives of consumers and manufacturers, which are often at odds with each other, would become better aligned (Ratchford et al., 2003).

5.3. Limitations

The study has several limitations that need to be borne in mind while interpreting and using the findings. First, the study is based on data collected by a survey rather than in a laboratory experiment. Hence, like in any descriptive or cross-sectional study, due caution should be observed in drawing causal inferences. Second, in order for the study to have a high degree of external validity some compromises had to be made during the data collection process. Some of the variables were measured using only two-point scales. While multiple scales would have been preferred, the extent to which repeated measurements of the same underlying behavior might cause respondent fatigue and lead respondents to prematurely terminate the interview was an important consideration during data collection.

5.4. Future research directions

There are several directions in which the study findings could be extended. Two avenues for future research seem to hold promise for scholars interested in expanding what is currently known about the purchase goals pursued by consumers in online settings.

First, how do online shoppers form or develop their purchase goals? Are they based on their initial online experiences or are they a carry-over from their offline shopping orientations toward saving money and saving time? Of interest would be the finding that certain segments of consumers view the online and offline retailing channels as seamless options and pursue similar goals in both settings, while other consumer segments adopt a more compartmentalized view of the channels and pursue different goals in each channel. The findings could be important to marketers and retailers in formulating strategies intended to encourage cross-buying between the two retailing channels.

Second, to what extent are the purchase goals consumers pursue in online settings realized? Are consumers able to meet their online purchase goals and satisfied with their online experience, or are they unsuccessful in the effort and dissatisfied with the experience? Of interest would be the finding that some consumers are overwhelmed by the amount of product information available online. An understanding of the differences between the online experiences of shoppers who are successful in the pursuit of their purchase goals, compared to those who are not, would enable marketers to design websites that are easy to navigate through and reduce the problem of shopping cart abandonment prior to check-out.

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