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RESEARCH NOTE

THE RELATIVE ADVANTAGE OF ELECTRONIC CHANNELS: A MULTIDIMENSIONAL VIEW[1]

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Abstract

The Internet has the potential to fundamentally change the structure of marketing channels, but only if consumers choose to adopt electronic channels. Thus, this paper aims to develop a more nuanced understanding of consumer channel choices. Specifically, it contends that it is important to examine consumers' intent to adopt electronic channels, not as a monolithic decision, but as a choice they make at each of four stages in the purchase process: requirements determination, vendor selection, purchase, and after-sales service. Innovation diffusion theory suggests that consumers make adoption decisions based on their perceptions of the relative advantage of the innovation. The relative advantage of electronic channels is conceptualized as a multidimensional construct involving a cumulative assessment of the perceived relative merits of channels on three dimensions: convenience, trust, and efficacy of information acquisition. Combining the multidimensional nature of relative advantage with the multistage purchase process, the central assertion, and intended contribution, of this paper is to show that the relative advantage of electronic channels, and the influence of each dimension of relative advantage on the adoption of electronic channels, will vary across the different stages of the purchase process.

Survey data were collected from faculty and staff at a large university about their intention to use the web for auto insurance transactions. The results provide support for the multidimensional nature of relative advantage, although the emergent factors do not align neatly with the hypothesized dimensions (convenience, trust, and efficacy of information acquisition) or stages. Results of the study support three conclusions. First, the dimensions along which consumers assess relative advantage blend hypothesized dimensions such as trust and convenience with stages of the purchase process. Second, consumers consider the relative advantage of channels at two distinct stages of the purchase process: gathering information and executing the transaction. Third, different dimensions of relative advantage are critical in predicting consumer channel choice at each stage.

Keywords: Electronic channels, relative advantage, stages in purchasing process, B2C e-commerce, trust, efficacy of information acquisition

[1]Ritu Agarwal was the accepting senior editor for this paper. Ron Thompson was the associate editor. George Marakas and Paul Hendriks served as reviewers. An additional reviewers chose to remain anonymous.

Introduction

It has been suggested that the Internet will lead to fundamental changes in the structure of marketing channels (e.g., Choudhury et al. 1998, Clark and Kauffman 2000, Grover et al. 1999, Janssen and Sol 2000, Jin and Robey 1999). Predictions include simple substitution of electronic channels for traditional ones (e.g., using Amazon.com instead of a physical bookstore), disintermediation (e.g., buying tickets on an airline's web site instead of through a travel agent), and cybermediation, either to replace traditional intermediaries (e.g., online travel agencies replacing traditional travel agents) or to provide new services (e.g., aggregation of personal financial information) (Madnick et al. 2000). These predictions all assume that customers will choose electronic channels over traditional channels.

But the choice of channels is not a monolithic decision. Rather, the purchase process consists of several distinct stages and consumers can disaggregate their choice to "move from one channel to another at different stages of a single transaction" (Steinfeld et al. 2002, p. 93-94). Pavlou and Fygenson (2006) capture the distinction between using the web for information gathering and for purchasing. Anecdotal evidence indicates that a larger proportion of consumers use the web to search for invoice pricing on new cars than actually purchase the car on the web. Over 75 percent of online consumers abandon their shopping carts before purchase (BizRate 2000). Therefore, rather than assuming that consumers will use the same channel (electronic or traditional) for all stages of the purchase process, it is important to gain a more nuanced understanding of consumer channel choices. Thus the objective of this paper is to investigate consumers' decisions to adopt electronic channels *at each of four stages in the purchase process: requirements determination, vendor selection, purchase, and after-sales service*.[2]

Drawing on innovation diffusion theory, we posit that consumers will adopt electronic channels for a specific stage only if they perceive a relative advantage (RA) over traditional channels *for that stage*. In innovation diffusion theory, relative advantage is conceptualized as a multidimensional construct that captures the benefits of an innovation on such dimensions as lower costs, savings in time and effort, and decrease in discomfort (Rogers 1995). Consistently, we posit that relative advantage of electronic channels is multidimensional and involves a cumulative assessment of the perceived relative merits of channels on three dimensions: convenience, trust, and efficacy of information acquisition.

Having conceptualized relative advantage as a multidimensional construct and purchasing as a multistage process, the question arises: Do consumers assess relative advantage of channels across stages (e.g., electronic channels have an advantage over traditional channels for *requirements determination*), across dimensions (e.g., electronic channels are more *convenient* overall), or across a combination of the two (e.g., electronic channels are more *convenient* than traditional channels for *transactions* but not for *requirements determination*)?

The central assertion, and intended contribution, of this paper is to show that *the relative advantage of electronic channels, and the influence of each dimension of relative advantage on the adoption of electronic channels, will vary across the different stages of the purchasing process.* That is, some dimensions will be more important determinants of the relative advantage of electronic channels for some stages of the purchasing process than for others.

This study addresses three gaps in prior literature. First, while two of the posited dimensions of RA—trust and efficiency—have been widely discussed, the third—efficacy of information acquisition—has not. This is an important consideration, given that a large part of the use of the web is for information search and acquisition and as the use of the web moves toward more complex transactions and products, as we discuss later. Second, prior studies have largely viewed the purchase process as monolithic and adoption of electronic channels as a unitary decision. We disaggregate the purchase process into stages and suggest that consumers make an adoption choice for each stage. Finally, by blending the multidimensional nature of RA with a multistage purchase process, we examine if the influence of each dimension of RA varies with the stage of the purchasing process.

Research Model

Empirical evidence suggests that relative advantage, defined as the degree to which using an innovation is perceived as being better than using the practice it supersedes (Rogers 1995), is consistently the best predictor of adoption/usage (measured through behavioral intent to use in the current study) (Agarwal and Prasad 1997; Karahanna et al. 1999; Moore and Benbasat 1991; Plouffe et al. 2001; Rogers 1995). Thus, we posit

[2]It is worthwhile noting that, unlike most research on user acceptance of e-commerce, the current paper does not focus on the adoption of a *specific* website or e-vendor but rather on the adoption of electronic channels in general.

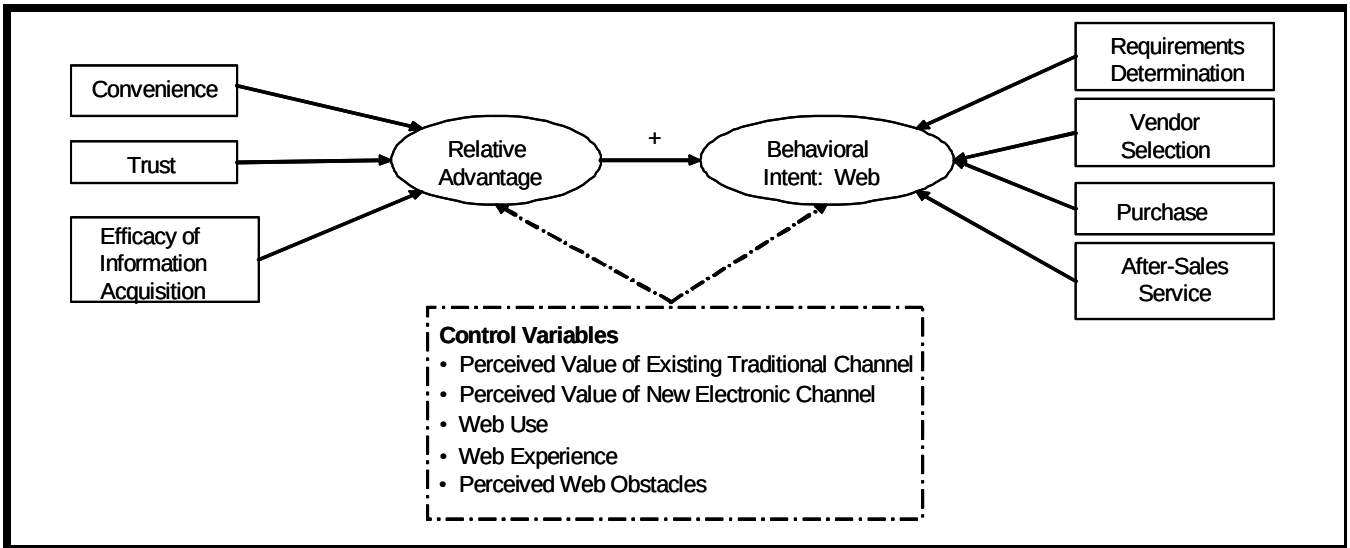


Figure 1. Research Model

H1: Overall perceptions of relative advantage of the web *vis-à-vis* a traditional channel will be positively related to behavioral intent to use the web.

The relationship between relative advantage and adoption is well established (for a meta-analysis, see Tornatzky and Klein 1982). Thus, hypothesis 1 is offered as a baseline, not as a central contribution. Our core contribution is a more granular conceptualization of both acceptance and relative advantage. Specifically, we (1) examine user acceptance at four stages of the purchase process, (2) propose that the relative advantage of electronic channels has three dimensions, and (3) argue that the dimensions of relative advantage that are most influential in adoption decisions vary by stage of the purchase process. The research model is depicted in Figure 1.

The dependent variable in most studies of adoption is the subject's behavioral intent to adopt the innovation (e.g., Agarwal and Prasad 1998; Karahanna et al. 1999; Koufaris 2002; Plouffe et al. 2001; Wixom and Todd 2005). As Table 1 shows, with few exceptions (e.g., McKnight et al. 2002), this is true in the context of e-commerce as well. Behavioral intent has been well established as a strong predictor of actual behavior (e.g., Chau 1996; Sheppard et al. 1988; Venkatesh and Davis 2000; Venkatesh et al. 2003). Thus, in this paper, our dependent variable is behavioral intent to adopt electronic channels at each of multiple stages in the purchase process.

Stages in the Purchase Process

Extant literature offers multiple conceptualizations of stages in the purchase process (e.g., Ives and Learmonth 1984; Li and Zhang 2002; Pavlou and Chai 2002) and ways that a seller can offer value through the web at each stage (e.g., Choudhury and Galletta 1998; Gonsalves et al. 1999; O'Keefe and McEachern 1998). Although the multiple frameworks identified in the literature vary in granularity, they all include some combination of activities at each of three stages: (1) the *prepurchase stage*, where buyers acquire information about products and vendors (e.g., prepurchase/information [Steinfeld et al. 2002]; acquire information [Pavlou and Chai 2002]; requirements [Ives and Learmonth 1984]; need recognition, information search, evaluation [O'Keefe and McEachern 1998]); (2) the *purchase stage*, where the buyer completes the actual transaction (e.g., purchase [Steinfeld et al. 2002]; make purchases [Pavlou and Chai 2002]; online purchasing [Li and Zhang 2002]; acquisition [Ives and Learmonth 1984]); and (3) the *post-purchase stage*, during which buyers receive any needed after-sales service (e.g., post-purchase phase [Steinfeld et al. 2002]; stewardship and retirement [Ives and Learmonth 1984]; and after-purchase evaluation [O'Keefe and McEachern 1998]).

We use this basic sequence with one modification. We split the prepurchase stage into two steps: requirements determination and vendor selection. Thus, we divide the consumer purchase process into four stages—the first two (requirements determination and vendor selection) focus on information gathering, and the latter two (purchase and after-sales service) on transaction execution.

Table 1. Summary of Selected Prior Studies

	Efficacy of Information Acquisition	Convenience	Trust	Other Possible RA Dimensions	Focus
Agarwal and Venkatesh (2002)	✓ (content)				
Barnes and Vidgen (2002)			✓ (information quality [accurate, timely, believable; security of site and personal information])	Empathy	Website quality
Bhatnagar et al. (2000)		✓	✓ (perceived risk)		
D'Ambra and Rice (2001)	✓ (ability to find otherwise hard to find information; ability to find needed information)	✓ (reduced shopping cost [convenience [no need to travel; absence of sales pressure])	✓ (information that is current)		Performance
Devaraj et al. (2002)	✓ assurance [had answers to all of my questions about product]	✓ (transaction cost [= time & effort to find product; lower costs, shipping & handling costs & PU])	✓ (assurance [safe in transactions] and reliability [= trust])	Service quality (empathy reliability [ns] responsiveness [ns] assurance	EC channel satisfaction (purchase)
Gefen et al. (2003a, 2003b)		✓ (PU)	✓ (trust in vendor)		BI purchase
Gefen and Straub (2000)		✓ (PU)			BI inquire BI purchase
Jarvenpaa and Tractinsky (1999)			✓ (vendor trustworthiness)		BI purchase
Koufaris (2002)		✓ (PU)			BI return
Lederer et al. (2000)	✓ (ability to provide needed information)	✓ (PU)			
Liao and Cheung (2001)			Yes (transaction security)	Price	
Liu and Arnett (2000)	✓ (learning capability)		✓ (information quality)		Website quality
McKinney et al. (2002)	✓ (usefulness dimension of information quality [informative, valuable])		✓ (reliability aspect of IQ [trustworthy, credible, accurate])		Web customer satisfaction (information gathering phase)
McKnight et al. (2002)			✓ (trust in vendor)		
Moon and Kim (2001)		✓ (PU)			BI use
Palmer (2002)	✓ (content richness, responsiveness, interactivity)				Satisfaction BI return Frequency of use
Pavlou (2003)		✓ (PU)	✓ (trust in vendor)		
Pavlou and Chai (2002)			✓ (trust in vendor)		BI purchase
Strader and Hendrickson (1999)		✓ (prices, transaction costs, convenience)	✓ (trust in vendor, site security)		Transaction

Table 1. Summary of Selected Prior Studies (continued)

	Efficacy of Information Acquisition	Convenience	Trust	Other Possible RA Dimensions	Focus
Tan and Teo (2000)		✓ (relative advantage)			BI adopt Internet banking
Wang et al. (2001)			✓ (security of web site, accuracy and trustworthiness of information provided)	Relevance of information	Customer information satisfaction
Wang and Benbasat (2005); Xiao and Benbasat (2004)			✓ (trust in recommendation agent)		

1. *Requirements determination*: At this stage, the consumer determines exactly what he needs/wants to purchase. This stage can be particularly involved for complex products that involve multiple attributes on which the consumer must make choices. For instance, an auto insurance consumer must configure a policy by deciding on the specific types and amounts of coverage. Consumers can either educate themselves about the various types of risk exposures and coverages to configure their own policies, or they may prefer not to acquire such detailed knowledge, but rather accept advice and recommendations either from an agent or a web site that offers such recommendations.

2. *Vendor selection*: This stage involves gathering information to choose among vendors (e.g., price) or vendors' reputation for product reliability and post-purchase service. In this study, we focus on comparing prices.

3. *Purchase*: The next stage is for the buyer to complete the purchase transaction, including communicating the product specifications, payment information, and other demographic information such as name and address.

4. *After-sales service*: This stage incorporates all services needed by the buyer to maintain and upgrade the product (e.g., downloading software updates). In the case of auto insurance policies, after sales services may include such tasks as changing address, modifying coverages, and claims processing.

Dimensions of Relative Advantage

Although prior research has identified a number of antecedents of consumer acceptance of business-to-consumer e-commerce (see Table 1 for a review), two factors have been consistently influential in acceptance of electronic channels: efficiency or convenience, and trust.[3] Although not explicitly labeled as such, one can argue that these are dimensions of RA because they represent ways in which electronic channels can offer advantages over traditional channels. To this, we add a third to posit that buyers evaluate the relative advantage of electronic channels on three dimensions: convenience, trust, and efficacy of information acquisition. We do not claim that this is an exhaustive set; rather that these dimensions are core to the choice of electronic versus traditional channels.

Convenience

Initial arguments for the move to electronic channels were based largely on expected reductions in the transaction costs (Williamson 1975 1985) of interaction between trading partners (e.g., Bakos 1997 1998; Birkhofer et al. 2000; Smith et al. 1999) For instance, Malone et al. (1987) predicted that information technology, by reducing the transaction costs of market-based coordination, would lead to increased use of market-based governance structures. However, transaction costs, as conceptualized in transaction cost economics, incorporate dimensions beyond just the efficiency of interaction, such as the costs of building contractual safeguards against opportunism. These additional dimensions are not as applicable in the context of B2C commerce.

[3]Perceived usefulness, or "the degree to which a person believes that using a particular system will enhance his or her job performance" (Davis 1989, p. 320), has shown a consistently strong direct positive effect on technology acceptance (for a review, see Venkatesh et al. 2003), including e-commerce (e.g., Gefen and Straub 2000; Gefen et al. 2003b). Our conceptualization of convenience is not inconsistent with PU.

In the context of B2C e-commerce, therefore, it is more useful to think in terms of perceived convenience: individuals are unlikely to measure such monetary transaction costs but rather consider how convenient a channel is. Devaraj et al. (2002) use time savings, ease of completing the transaction, and price savings to measure transaction costs. Li et al. (1999) concluded that consumers who shop on the Internet are convenience oriented. Thus, to avoid the connotation of the broader aspects of transactions costs (such as opportunistic behavior), we use the term convenience to refer to a customer's perception of the efficiency of interaction with a seller. Convenience, which we define as the time and effort required to interact through a channel, is likely to be an important consideration for consumers across both the informational and transactional stages.

Trust

Consumers worry about the trustworthiness of individual web-based vendors, many of whom are unfamiliar to them, as well as about the reliability of the web in general, in light of the much publicized potential for theft of private, sensitive data transmitted over the Internet. A number of studies have examined the factors that affect trust in the web and web-based vendors (e.g., Gefen et al. 2003a; Jarvenpaa and Tractinsky 1999; McKnight et al. 2002; Pavlou 2003) and concluded that trust positively influences consumers' intent to engage in e-commerce.

Trust is a multidimensional construct. McKnight et al. (2002) distinguish between dispositional, institutional, and interpersonal trust. A majority of studies on trust in B2C e-commerce (e.g., Gefen et al. 2003a, 2003b; Jarvenpaa et al. 2000; Pavlou 2003) have focused on interpersonal trust, that is, a user's belief that a specific web vendor has worthy attributes such as competence, honesty, or benevolence (McKnight et al. 2002). This makes the user willing to depend on a vendor (Rempel et al. 1985), for instance, by making purchases from the vendor.

In this study, our focus is not on willingness to deal with a specific web-based vendor but on the adoption of web-based electronic channels in general, so the relevant aspect of trust is institutional trust, that is, a user's beliefs about the institution of the web. For institutional trust, we can further distinguish between two aspects. The first may be termed *informational trust*, that is, a user's beliefs about the reliability, credibility, and accuracy of information gathered through the web. For instance, studies of online recommendation agents (Wang and Benbasat 2005; Xiao and Benbasat 2004) view trust as beliefs about the recommendations provided by these tools. Further, as Table 1 shows, information quality is an important factor in B2C e-commerce (e.g., Barnes and Vidgen 2002; Liu and Arnett 2000; Wang et al. 2001). Although labeled in multiple ways (e.g., as reliability of information [McKinney et al. 2002]), an important aspect of information quality is whether the information is credible, accurate, and believable.

The second dimension of institutional trust is structural assurance (McKnight et al. 2002). This refers to confidence in the social structure (Shapiro 1987; Zucker 1986) and the technological underpinnings of the web, that is, whether the user believes the technology is secure from hackers and unauthorized theft of personal information (Liao and Cheung 2001; Strader and Hendrickson 1999; Swaminathan et al. 1999; Wang et al. 2001).

In the requirements determination and vendor selection stages, a consumer uses the web to acquire information. Hence, the relevant consideration is informational trust. In the transactional stages (purchase and after-sales service), users communicate personal information. Thus, the focus is on structural assurance.

Efficacy of Information Acquisition

Media richness (Daft and Lengel 1984) and social presence (Short et al. 1976) theories suggest that, for effective communication, the richness of the chosen medium must match the equivocality of the information being communicated (Daft et al. 1987). For the communication of equivocal information, rich media such as face-to-face interactions are more appropriate whereas media perceived as low in richness (e.g., e-mail) are better for the exchange of low equivocality information (Rice 1993; Steinfield 1986). Most e-vendor web sites are perceived as lacking provisions for socially rich exchanges (Gefen and Straub 2000).

In the requirements determination and vendor selection stages, consumers use the channel to gather information. Thus, the efficacy of the channel (web-based versus traditional channel, such as speaking to a salesperson) as a medium for information acquisition is a relevant consideration. Yet, this factor has been largely ignored in B2C e-commerce studies—likely due to the focus of most prior studies primarily on the transaction stages of the purchasing process (exceptions include Gefen and Straub [2000] and McKinney et al. [2002]).

We define efficacy of information acquisition as user perceptions of a channel's ability to provide information and clear

Table 2. Relative Advantage: Dimensions and Stages of Purchase Process

Stages of Purchase Process	Dimension		
	Efficacy of Information Acquisition	Trust	Convenience
Informational Stages:			
(1) Requirements Determination	✓	✓	✓
(2) Vendor Selection		✓	✓
Transactional Stages:			
(3) Purchase		✓	✓
(4) After Sales Service		✓	✓

understandable explanations to educate the user on the product. This factor may be particularly important as web use moves toward more complex transactions, such as the acquisition of financial advice, or the purchase of products with complex descriptions and multiple, configurable attributes. For such complex products, we posit that consumers will vary in their knowledge of the product and, hence, in their perceptions of the equivocality of the information needed to determine exact requirements. Therefore, consumers will differ in perceptions of efficacy of electronic and traditional channels for acquiring such information. Hence, efficacy of the channel as a medium for information acquisition must be considered a salient factor. As noted above, though, this factor is relevant only during the requirements determination stage, particularly for a complex product; the exchange of information such as prices is typically sufficiently low in equivocality that this should not be a factor.

Table 2 summarizes the preceding discussion and presents the dimensions of relative advantage relevant to each stage of the purchase process. Because the activities and objectives at each stage of the purchase process differ, we posit that different dimensions of relative advantage are more or less salient at different stages. For instance, while efficacy of information acquisition may be predominant in the requirements determination stage, which focuses on information gathering, learning, and assessment, convenience may dominate the consumers' assessment of relative advantage at the purchase stage, which involves transaction execution. Indirect empirical support for this is provided by Pavlou and Fygenson (2006) who found different antecedents for attitude and perceived behavioral control leading to "intentions to gather information" than for attitude and perceived behavioral control leading to "intentions to purchase." This does not imply that the assessments are entirely independent of each other, or that only one dimension of relative advantage is significant during any stage of the purchase process, but rather that the relative significance of each dimension of relative advantage will vary by stage of the purchase process.

H_2: Dimensions of relative advantage will vary in importance across different stages of the purchase process.

Further, consumer perceptions will likely not be uniform across all three dimensions. That is, a consumer may perceive a high relative advantage for electronic channels on efficacy of information acquisition but perceive a low relative advantage for electronic channels on the trust dimension. This, combined with the posited differing importance of the dimensions across stages, suggests that a consumer's cumulative perception of relative advantage and, therefore, intended usage of the web will vary across stages of the purchase process.

H_3: Consumers will vary in their intended usage of the web across different stages of the purchase process.

Control Variables

We also include a number of control variables in the study as antecedents to both relative advantage and behavioral intention to use the web. First, for products such as auto insurance (our empirical context), consumers typically have a history of experience with traditional channels (e.g., agents). The more a consumer values the services provided by the existing channel, the less likely he is to perceive advantage from switching to an electronic channel. Thus, a decision of whether or not to use electronic channels must be understood, at least partially, within the context of the customer's history with the traditional channel. Consumers may also have experience with the web in contexts other than the purchase of insurance. Consumers who generally perceive the web as a useful tool for shopping and research are also likely to perceive relative advantage in using this electronic channel for purchasing insurance. Furthermore, level of experience with the web, frequency of web usage, and concerns with privacy and security on the web (George 2002; van Slyke et al. 2006; Wang et al. 1998) may also influence both percep-

tions of relative advantage and intentions to use the web, and are included as control variables.

Method

A field study using surveys for data collection was used to empirically test the research model. Purchase of auto insurance was chosen as the focus of the study for two reasons. First, auto insurance is not a commodity but a complex product consisting of a bundle of options, types and levels of coverage, and deductibles. The specific configuration of auto insurance policies varies across individuals. This was important in order to have a meaningfully complex requirements determination stage to test the importance of efficacy of information acquisition as a dimension of relative advantage. Second, selection and purchase of auto insurance is commonplace and most adults have experience and well-formed beliefs about the process. This makes it more realistic for respondents to project future behavioral intent.

We collected data from faculty and staff at a large state university. We asked respondents to fill out the questionnaire only if they were responsible for making the auto insurance purchase decisions in their household. The sample was particularly appropriate because it included individuals who were typically already knowledgeable in using computers and the Internet and thus had relatively well-formed perceptions about the capabilities of the web.

A pilot survey of 500 respondents from a cross section of academic and administrative departments at the university yielded 82 returned questionnaires. These were examined for completeness of responses, reliability, and construct validity, and appropriate changes were made. For the main study, 2,187 questionnaires were mailed (excluding some that were returned for incorrect addresses) to respondents other than the 500 included in the pilot study yielding 499 responses (23 percent response rate). Since the purpose of the study was to examine choice between traditional agent-led channels versus web-based channels, we excluded from the analysis respondents not purchasing auto insurance through agents (that is, those purchasing directly from the insurance company). This yielded 338 usable observations. Demographic information is shown in Table 3.

All research constructs were measured using multi-item scales (see Appendix A for items and their sources). We adapted existing validated scales where available. However, since few scales existed to measure the constructs in the specific context of auto insurance, some new scales were developed. Behavioral intent (BI) is the extent to which a consumer plans to use the web to interact with an insurance provider. To measure BI, we asked respondents how likely they were to use the web for activities in each of the four stages of the purchase process. For economy of presentation, in Appendix A, we group the items, not along the four originally hypothesized stages, but into the two stages that actually emerged from our factor analysis (see discussion of measurement model below): information gathering and transaction. We note in italics next to each item the originally hypothesized stage of the purchase process that it was intended to measure.

Relative advantage was measured using the vignettes presented in Appendix A. Current research on technology acceptance is often based on respondents' stated perceptions of the attributes of the new technology alone (e.g., Davis 1989; Gefen et al. 2003; Karahanna et al. 1999; Moore and Benbasat 1991; Venkatesh et al. 2003); any comparison with the current technology is at best implicit. This paper uses vignettes to directly measure customer perceptions of the *relative* advantage of electronic channels. The use of vignettes, where we described specific capabilities that insurance companies could provide, was also important for another reason: many respondents were not familiar with web sites offering these capabilities, as the use of the technology by auto insurance companies for interacting with consumers was still in its infancy. Thus, it was important to provide respondents with descriptions of the capabilities that they were being asked to rate. The vignettes were organized around the stages of the purchase process (the rows in Table 2). Items under each vignette tapped the three dimensions of relative advantage (the columns in Table 2). The number of items used to measure each dimension of RA included at least one item for each of the four stages (with the exception of efficacy of information acquisition, which is only relevant in the requirements stage). Where the construct could be measured in multiple nonredundant ways, we included more than one item per dimension per stage (Appendix A).

Based on prior literature and discussions with industry experts, value of an agent was conceptualized as a two-dimensional construct consisting of (1) the perceived value of services provided by an agent (e.g., Arnold et al. 1999; Ibrahim and Mobley 1991), and (2) trust in the agent (e.g., Bachrach 1994; Barthelman 1998; Cooper and Frank 1991). For the former, we asked respondents to indicate the extent to which their agent provides specific services and how important each service is to them. The two scores were multiplied and summed to arrive at a measure for the perceived value of the agent's services. We measured trust in the agent as beliefs about competence, benevolence, and honesty (McKnight et al. 2002) of the agent (interpersonal trust). Measures of perceptions of value of the web, web use, web experience in

Table 3. Demographic Information	
Gender	**Number**
Male	139
Female	192
Missing	7
Web Experience Information	
Purchase Any Item	233
Obtain Information on Auto Insurance	125
Obtain Auto Quote	62
Purchase Auto Insurance	6
Years of Experience with Insurance	**Mean**
Number of Years Owned Car	26.1
Number of Year Licensed	29.5
Number of Years With Current Auto Insurer	12.4

purchasing, and web obstacles are self-explanatory and can be found in Appendix A.

Results

Measurement Model

As discussed, relative advantage is conceptualized along three dimensions (efficacy of information acquisition, trust, and convenience) and evaluated across four stages (requirements determination, vendor selection, purchase, and after-sales service) in the purchase process. Thus, our first task was to conduct a confirmatory factor analysis (CFA) in LISREL to determine whether respondents assess relative advantage along stages (in which case we would get four factors corresponding to the four rows in Table 2) or along dimensions (which would lead to three factors corresponding to the last three columns in Table 2). Results of the two CFA runs (Table 4) show that the model fit is not acceptable for either one. Changes suggested by the modification indices did not make theoretical sense.

Hence, an exploratory factor analysis was conducted to determine the combination of dimensions and stages that, in fact, empirically define relative advantage. Results confirmed the multidimensional, multistage nature of relative advantage. However, as expected given the CFA results, the emergent factor structure did not align with either the hypothesized dimensions or stages, but combined them in interesting patterns. Specifically, four distinct factors emerged (Appendix B) which were subsequently tested in a LISREL CFA and show good fit (see Table 4, "emergent" column). Discriminant validity, assessed by pairwise comparisons of the four constructs where the unconstrained model was compared to a model that constrained the correlation between two constructs to one, suggests that all factors are distinct. Table 5 shows how the emergent factor structure compares to the hypothesized pattern.

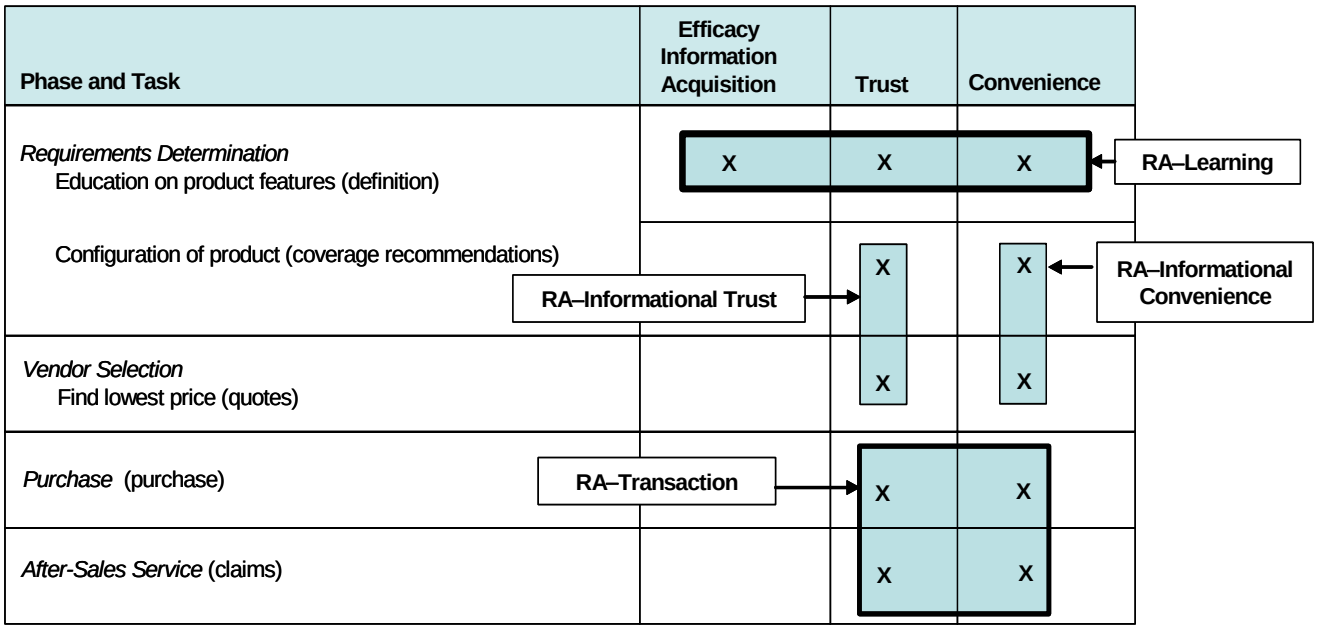
The first factor, labeled *RA–Learning*, includes all statements on learning about auto insurance terms and definitions, incorporating all three dimensions: convenience, trust, and efficacy of information acquisition. The second factor, labeled *RA–Informational Trust*, includes statements that refer to the extent to which a respondent had confidence in information obtained through the web versus that obtained from an agent with respect to both the lowest price available for a policy as well as recommendations on suggested coverage levels. The third factor, labeled *RA–Informational Convenience*, includes statements with respect to the convenience of obtaining information on the lowest price for a policy or obtaining recommendations on suggested levels of coverage. The final factor, *RA–Transaction*, combines the purchase and after-sales service stages of the purchasing process, incorporating all statements related to these two stages, including those related to the perceived convenience of transacting through each channel, and confidence in transacting through the channels.

The emergent factor structure provides interesting insights into how consumers assess the relative advantage of channels. The emergence of RA–Transaction as a distinct factor suggests that consumers clearly distinguish between the relative advantage of a channel for transactional stages versus its rela-

Table 4. LISREL CFA Fit Statistics for Structure of Relative Advantage

Fit Statistic	Acceptable Level	Stages	Dimensions	Emergent
X^2/df	<5	8.51	9.4	2.86
CFI	>.90	.88	.81	.97
NFI	>.90	.86	.79	.95
RMSEA	<.08	.15	.16	.074
GFI	>.90	.81	.77	.94
AGFI	>.80	.69	.68	.88

Table 5. Proposed Versus Resulting Dimensions of Relative Advantage



Terms in parentheses correspond to the vignettes used in this study.

tive advantage for informational stages. However, within the transactional stages, they do not distinguish among the dimensions of trust and convenience.

Even within the informational stages, there are differences in how consumers view relative advantage. Thus, the composition of the first factor (RA–Learning) suggests that (1) buyers evaluate the relative advantage of channels for this part of the requirements determination stage separately from their evaluation of the relative advantage for other informational (as well as transactional) stages, but (2) within their assessment of the relative advantage at this stage, they do not distinguish among the three dimensions of convenience, trust, or efficacy information acquisition.

The RA–Informational Trust and RA–Informational Convenience factors indicate that for *obtaining coverage recommendations and comparing prices across vendors*, consumers (1) make a distinction between the convenience afforded by the channel and the confidence the channel engenders (mean values of 3.87 and 4.55 for trust and convenience respectively; difference significant at .000), but (2) their assessment of the level of trust or convenience is similar across these two activities. One reason trust may be a separate factor for these two stages is that buyers may perceive a higher level of risk in accepting coverage recommendations or shopping for prices so they are more concerned with the credibility of the source of the information/recommendations.

Next, PLS was used to assess the psychometric properties of all scales used in the study and the structural model. PLS was chosen because, as we discuss later, some of our constructs are formative, and LISREL is not well-suited to modeling such constructs. A CFA was conducted in PLS to assess item loadings, discriminant validity, and internal consistency of *all* scales (not just the relative advantage dimensions). Item loadings and internal consistencies greater than 0.70 are considered acceptable (Fornell and Larcker 1981). In the initial CFA, one item from the web obstacle control factor (webost3) did not load well on its corresponding factor and was dropped.

Loadings for behavioral intent–web indicate two factors rather than the hypothesized four factors corresponding to the four stages in the purchase process. The first, labeled *BI–Information*, measures a consumer's intent to use the web for information gathering (information about auto policy coverage options, auto insurance companies, prices, and recommended coverage levels). The second, *BI–Transaction*, measures intended use of the web to purchase auto insurance and file claims. That is, consumers make a clear distinction between using the web to become better informed about insurance coverage and prices, and using the web to actually conclude their purchase, but do not make finer grained distinctions. A t-test of mean values of BI–Information and BI–Transaction (means of 4.35 and 2.98 respectively) shows significant difference at .000, providing support for hypothesis H3.

The final CFA results in Table 6 and composite reliability scores (Werts et al. 1974) in Table 7 indicate that the scales largely meet the guidelines. All items exhibit high loadings (> .70) on their respective constructs except for two items in services provided (loadings .69 and .63), one item in RA–Informational Trust (loading .63), and one item in the value of the web (loading .66). Further, constructs exhibit good internal consistency evidenced by their composite reliability scores (.82 to .94). The two lower composite reliability scores of .66 for web experience and .70 for web use on Table 7 are for formative constructs (see explanation below), which are not expected to be internally consistent.

To assess discriminant validity (Chin 1998), (1) indicators should load more strongly on their corresponding construct than on other constructs in the model, and (2) the square root of the average variance extracted (AVE) should be larger than the inter-construct correlations. Results of the CFA (Table 6) show that, without exception, all indicators load more highly on their own construct than on other constructs. Furthermore, as shown in Table 7, all constructs share more variance with their indicators than with other constructs. Thus, these results point to the discriminant validity of our scales. Descriptive statistics for the constructs in the study are reported in Table 7.

The Structural Model

To test the theoretical model we used PLS, a latent structural equations modeling technique (Chin 1998; Fornell and Bookstein 1982; Lohmoller 1989). With the exception of relative advantage, value of the agent, BI–Web, web experience, and web use, all other constructs in the model are modeled as reflective. The formative constructs are modeled as such since their underlying dimensions do not necessarily covary (Jarvis et al. 2003). Since PLS does not directly support second order factors, for the formative constructs, factor scores were calculated for each dimension and used in the structural model. The two remaining formative constructs (web experience and web use) and all the reflective constructs are fist order factors, and therefore they are modeled using their specific scale items.

Figure 2 presents the results of our analysis. As expected (H_1), there is a positive significant path between relative advantage and intended web usage. The weights of the RA dimensions are all significant, indicating that all four dimensions play a significant role in determining intended behavior. This lends credence to our belief that consumers' evaluation of the relative advantage of electronic channels is based on multiple criteria. Further, both BI–Information and BI–Transaction are significant formative dimensions of Behavioral Intent–Web. The path coefficients for the basic model strongly support our model, explaining 38 percent of the variance in BI.

We also tested whether perceptions of relative advantage vary across different stages of the purchase process (H_2). Since two BI factors emerged (BI–Information and BI–Transaction) corresponding to the information and transactional stages of the purchase process, two separate models were run to determine whether the weights of the dimensions of relative advantage differ across the two intended behaviors. One model had BI–Information as the dependent variable while the second model had BI–Transaction as the dependent variable. All four aspects of relative advantage are significant dimensions for BI–Information (weights: RA–Learning = .20; RA–Informational Convenience = .58; RA–Informational Trust = .20; RA–Transaction = .18; path coefficient between RA and BI–Information = .38, with 35.1 percent of explained variance in BI–Information). However, for BI–Transaction, only RA–Transaction, RA–Learning, and RA–Informational Convenience are significant (weights: RA–Learning = .23; RA–Informational Convenience = .31; RA–Informational

Table 6. Confirmatory Factor Analysis Results

	BI–Web Info.	BI–Web Trans.	RA–Learning	RA–Info. Trust	RA–Info. Convenience	RA–Transactions	Trust in Agent	Service by Agent	Value Web	Web Obstacles
Biwebi1	0.91	0.40	0.34	0.36	0.42	0.28	–0.02	–0.19	0.36	0.20
Biwebi2	0.92	0.41	0.34	0.37	0.44	0.29	0.02	–0.14	0.40	0.21
Biwebi3	0.93	0.44	0.40	0.44	0.50	0.38	0.00	–0.22	0.44	0.26
Biwebi4	0.77	0.57	0.39	0.44	0.41	0.41	–0.13	–0.22	0.32	0.21
Biwebt1	0.50	0.93	0.34	0.36	0.34	0.44	–0.19	–0.32	0.27	0.29
Biwebt2	0.45	0.93	0.34	0.31	0.27	0.45	–0.14	–0.21	0.23	0.23
RATC1	0.39	0.27	0.81	0.49	0.62	0.47	–0.10	–0.20	0.40	0.28
RAKN1A	0.34	0.33	0.90	0.57	0.56	0.52	–0.22	–0.25	0.37	0.32
RAKN1B	0.37	0.33	0.89	0.63	0.46	0.53	–0.27	–0.25	0.31	0.29
RATR1	0.35	0.33	0.88	0.66	0.50	0.52	–0.25	–0.21	0.36	0.31
RATR3A	0.41	0.30	0.60	0.82	0.68	0.55	–0.11	–0.15	0.42	0.25
RATR3B	0.35	0.35	0.59	0.89	0.53	0.58	–0.27	–0.21	0.34	0.28
RATR2	0.38	0.36	0.56	0.82	0.47	0.56	–0.31	–0.23	0.32	0.26
RATC2A	0.30	0.09	0.36	0.63	0.46	0.32	–0.12	–0.14	0.34	0.29
RATC3	0.46	0.31	0.60	0.64	0.90	0.59	–0.14	–0.20	0.45	0.30
RATC2B	0.45	0.29	0.52	0.57	0.91	0.49	–0.03	–0.15	0.53	0.32
RATC4	0.41	0.35	0.48	0.59	0.65	0.84	–0.23	–0.23	0.45	0.33
RATC5	0.28	0.34	0.50	0.43	0.52	0.78	–0.14	–0.22	0.42	0.24
RATR4	0.27	0.45	0.47	0.59	0.41	0.82	–0.29	–0.22	0.31	0.30
RATR5	0.25	0.40	0.44	0.42	0.30	0.75	–0.23	–0.11	0.17	0.13
Trusta1	–0.08	–0.18	–0.26	–0.25	–0.10	–0.25	0.90	0.51	0.01	–0.14
Trusta2	0.01	–0.11	–0.17	–0.25	–0.08	–0.27	0.89	0.36	0.02	–0.05
Trusta3	–0.02	–0.18	–0.21	–0.20	–0.06	–0.23	0.87	0.41	0.01	–0.08
Servimp1	–0.24	–0.24	–0.27	–0.20	–0.19	–0.25	0.43	0.89	–0.13	–0.18
Servimp2	–0.16	–0.26	–0.22	–0.20	–0.16	–0.23	0.46	0.88	–0.09	–0.20
Servimp3	–0.16	–0.19	–0.23	–0.21	–0.17	–0.21	0.38	0.86	–0.16	–0.22
Servimp4	–0.27	–0.19	–0.14	–0.16	–0.20	–0.07	0.25	0.69	–0.15	–0.23
Servimp5	–0.03	–0.26	–0.17	–0.15	–0.04	–0.21	0.39	0.63	0.01	–0.12
Valweb1	0.26	0.09	0.28	0.26	0.36	0.27	0.04	–0.07	0.66	0.27
Valweb2	0.37	0.22	0.28	0.33	0.39	0.32	0.00	–0.12	0.80	0.33
Valweb3	0.32	0.26	0.31	0.42	0.38	0.38	–0.09	–0.13	0.70	0.37
Valweb5	0.36	0.23	0.37	0.38	0.48	0.41	0.00	–0.16	0.85	0.45
Valweb6	0.36	0.21	0.33	0.29	0.44	0.28	0.11	–0.01	0.78	0.36
Webobst1	0.30	0.25	0.35	0.36	0.36	0.31	–0.04	–0.21	0.52	0.92
Webobst2	0.10	0.23	0.23	0.18	0.20	0.23	–0.16	–0.19	0.21	0.76

Table 7. Inter-Construct Correlations

	Composite Reliability[a]	Mean (SD)[b]	Value Web	Web Obstacles	Web Experience	Web Use	Trust in Agent	Service by Agent	RA Transaction	RA Info. Trust	RA Learning	RA Info. Convenience	BI Web Information	BI Web Transaction
Value Web	0.87 (5)	4.5 (1.10)	0.75											
Web obstacles	0.82 (2)	3.7(1.42)	0.47	0.83										
Web Exper.	0.66 (4)	N/A[c]	0.27	0.26	0.62									
Web Use	0.70 (2)	N/A[c]	0.19	0.11	0.22	0.75								
Trust in agent	0.92 (3)	5.2 (1.17)	0.01	-0.10	-0.03	0.04	0.89							
Service agent	0.89 (5)	27.2(10.26)	-0.13	-0.23	-0.09	-0.03	0.48	0.79						
RA Trans.	0.88 (4)	3.4 (1.19)	0.44	0.32	0.20	0.16	-0.28	-0.25	0.80					
RA Info. Trust	0.87 (4)	3.9 (1.08)	0.44	0.34	0.16	0.12	-0.26	-0.23	0.65	0.80				
RA Learning	0.92 (4)	3.9 (1.26)	0.41	0.35	0.20	0.12	-0.24	-0.26	0.59	0.68	0.87			
RA Conv.	0.90 (2)	4.6 (1.39)	0.54	0.35	0.19	0.15	-0.09	-0.19	0.60	0.67	0.62	0.90		
BI Web info	0.94 (4)	4.4 (1.47)	0.43	0.25	0.31	0.19	-0.04	-0.22	0.39	0.46	0.42	0.50	0.89	
BI Web Trans	0.92 (2)	3.0 (1.38)	0.27	0.28	0.24	0.12	-0.18		0.48	0.36	0.36	0.33	0.51	0.93

[a]Composite Reliability = $\rho_c = (\Sigma\lambda_i)^2 / [(\Sigma\lambda_i)^2 + \Sigma_i var(e_i)]$ where λ_i is the component loading to an indicator and $var(e_i) = 1-\lambda_i^2$. Items in parenthesis represent the number of items for the scale.

The shaded numbers on the leading diagonal are the square root of the variance shared between the constructs and their measures. Off diagonal elements are the correlations among constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements.

[b]All scales, except services provided by agent, are measured on a likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Services provided by agent is a multiplicative scale ranging from 1 to 49 (where 49 represents that the agent provides all services and these services are very important to the individual).

[c]Formative construct. Mean values for items that make up the construct can be found in Table 3.

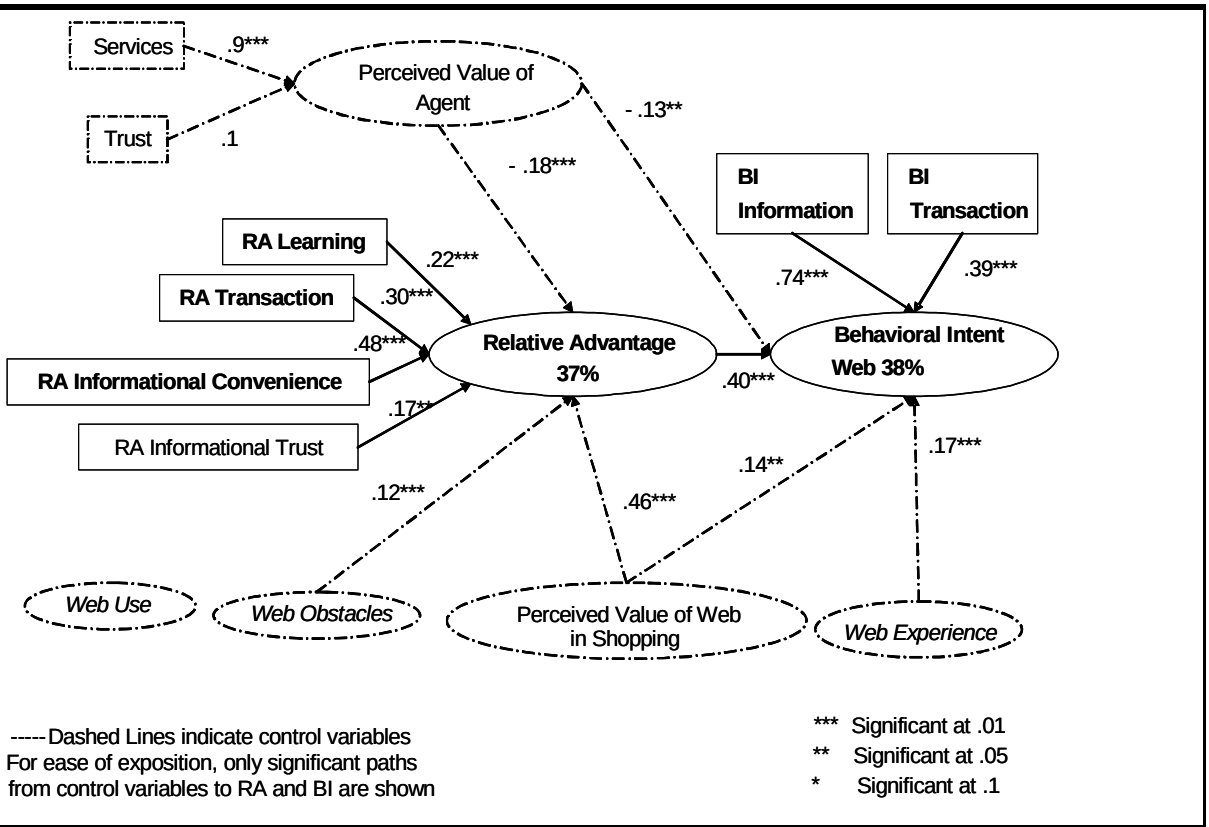


Figure 2. PLS Results, Research Model

Trust = .13 (nonsignificant); RA–Transaction = .51; path coefficient between RA and BI–Transaction = .37, with 27.1 percent of explained variance in BI–Transaction). Further, whereas RA–Learning seems to have a consistent influence across both stages, RA–Informational Convenience dominates for BI–Information, while, not surprisingly, RA–Transaction dominates for BI–Transaction.[4]

Discussion

The premise of the paper was that consumers can disaggregate their choice of channels for a purchase and may use electronic channels for some stages of the purchase process and traditional channels for others. Drawing on innovation diffusion theory, we posited that consumers will adopt electronic channels for a specific stage only if they perceive a relative advantage over traditional channels *for that stage*. Further, consistent with innovation diffusion theory, we posited that relative advantage of electronic channels is multidimensional and involves a cumulative assessment of the perceived relative merits of channels on three dimensions: convenience, trust, and efficacy of information acquisition. Based on these underlying principles, the central assertion tested in the paper was that *the relative advantage of electronic channels, as well as the influence of each dimension of relative advantage on the adoption of electronic channels, would vary across the different stages of the purchase process.*

Our results indicate that, as hypothesized, consumers do not view the purchase process as monolithic. However, they do

[4]An additional model included both BI–Information and BI–Transaction to examine the relationship between the two. BI–Information has a significant effect on BI–Transaction (path coefficient = .38; t-statistic = 5.81). Further, whereas BI–Information is determined by perceptions of RA, value of the web, and web experience, BI–Transaction is determined by perceptions of RA, BI–Information, perceptions of the value added by the agent, and perceptions of web obstacles as they pertain to privacy and security of information. That is, general experience with the web, along with perceptions of RA, are enough to motivate consumers to use the web to gather information. However, they will use the web to transact only if they also perceive low value added by the agent and are not concerned about the potential lack of security and privacy in communicating information over the web.

not make as fine grained a distinction as initially conceptualized. Rather than view the purchasing process as consisting of four distinct stages, for the purpose of making channel choices, consumers seem to divide the purchase process into two broad stages: *gathering information* and *executing transactions*. This is consistent with Pavlou and Fygenson's (2006) conceptualization of two distinct dependent variables in B2C adoption: information gathering and purchasing. However, while these authors *a priori* conceptualized these two stages, in our study, the two stages emerged empirically from an initially finer-grained conceptualization of the purchase process.

A central issue in our study was whether consumers perceive relative advantage along the three hypothesized dimensions (e.g., the web is more convenient than traditional channels), along the stages of the purchase process (e.g., the web is better than traditional channels for information gathering), or a combination of the two (e.g., the web is more convenient than traditional channels for information gathering but perhaps not for purchasing). The empirically emergent factors constituting relative advantage did not align neatly with the hypothesized stages or dimensions, but rather combined the two.

In the RA–Learning and RA–Transaction emergent factors, contrary to our expectations, respondents do not discriminate between dimensions of convenience, trust, and efficacy of information acquisition (relevant only in RA–Learning). In the former, they view educating themselves about the product holistically and evaluate it similarly on all three dimensions. It is possible that auto insurance terms are familiar and not complex enough for respondents to perceive a high degree of equivocality in information acquisition. Similarly, respondents may perceive explanations of auto insurance terms as sufficiently objective that trust in the channel is not a significant concern and blends with convenience. For RA–Transaction, the lack of discriminance between trust and convenience may reflect that users perceive relative convenience in a channel for transaction execution only to the extent that they trust the channel.

However, we find a different result for the two tasks of receiving recommendations on optimum levels of coverage (part of the requirements determination stage) and vendor selection. For these information gathering tasks, respondents make a distinction between the convenience of obtaining such information via the web or through an agent, and their relative trust in these two channels. This suggests that the *nature* of the information being gathered is an important factor in consumers' evaluation of channels and influences the salience of trust concerns. This has implications for research on trust in the web. First, it is important to measure trust not just in terms of a user's willingness to share information with a web-based vendor, but also in terms of a user's trust in information gathered over the web. Second, this additional aspect of trust may not be a crucial determinant of adoption of web-based channels when the information is perceived as being largely objective and nonjudgmental. But when the information involves relying on the judgment and integrity of the source, the respondents' trust in the channel is a significant dimension. Thus, users may have questions about whether an agent or a web-based search engine is, in fact, searching for the best possible price. Similarly, respondents may have concerns about whether an agent/web-based service is recommending coverage levels with their best interests in mind. Or they may have questions about the competence of the agent or the sophistication of the algorithm used by the web-based service.

Finally, the weights and significance of the four dimensions of RA differ when predicting BI–Information versus BI–Transaction. That is, individuals weigh criteria differently in choosing between an agent and the web for information gathering and for transacting. When predicting BI–Information only, the most important dimension is RA–Informational Convenience, that is, the relative advantage in perceived convenience of gathering information over the web rather than through an agent. However, the other dimensions of RA also show meaningful weights, including RA–Transaction, suggesting that some part of an individual's decision to use the web for information gathering is influenced by whether they may ultimately want to use the web for transaction execution as well. That is, while the two dimensions of BI–Web are distinct, they are not unrelated. The high correlation (0.52) between the two constructs—BI–Information and BI–Transaction—further supports this notion. When predicting BI–Transaction, the dominant dimension of RA, not surprisingly, is RA–Transaction. What is less intuitive is the fact that RA-Learning has significant effects across both the information gathering and transaction execution stages. A possible explanation may be that individuals' inclination to execute a transaction over a channel is partly a function of the perceived efficacy of that channel in educating them about the product.

Limitations

Prior to discussing implications of our work, limitations of the study must be acknowledged. With respect to external validity, the respondents were faculty and staff at a large state university. This population was purposefully chosen since it includes individuals who are already knowledgeable in using

the Internet and have well-formed beliefs about Internet use. Thus, there were no impediments (such as lack of Internet skills and computer access) that would make agent use a *de facto* choice. Further, data were collected in 2000, when discussion of the web as an alternate channel for purchasing was not as prevalent as it is today. Such secondary information can change individual's attitudes toward the web, especially in the absence of first-hand experience, and can be an important antecedent of perceptions of relative advantage. The focus of the study on the dimensionality of relative advantage and its relationship with intended behavior (and not on antecedents of relative advantage), and the fact that 67 percent of respondents had prior experience purchasing on the web, suggest that this may not pose a serious concern to the validity of our findings. Nonetheless, both the timeframe of the study as well as the nature of the sample should be considered as one interprets the results.

Further, conclusions drawn in this study are based on a single complex product and may not generalize across a wide set of products, particularly commodity products such as books. All constructs were measured at one point in time and, as such, the potential for common method variance exists. Finally, due to the cross-sectional nature of the study, causality cannot be inferred from the results but rather from the theoretical underpinnings of the study.

Implications and Conclusions

This study argues for the need to extend extant conceptualizations of B2C adoption in several ways. First, relative advantage in this study was originally conceptualized as a confluence of *convenience, trust, and efficacy of information acquisition*. We find the multidimensional view of relative advantage compelling and in line with conceptualizations in innovation diffusion theory. Results indicate that the dimensionality of relative advantage is an intriguing interplay between the three proposed dimensions and the stages of the purchasing process. Consumers seem to distinguish both among sources of value added by channels and by stage in the purchasing process.

Additional research is needed to further examine the underlying structure and dimensions of relative advantage across a range of products that vary in complexity. Further, future research can examine the role across the various stages of the purchasing process of other consumer perceptions, such as ease of use and compatibility, which have been shown to play a role in technology acceptance.

Second, as consumers become more accustomed to e-business and consider it for purchases of more complex products, research is needed to examine relative advantage dimensions that become salient as product complexity increases. While many prior studies have focused on the adoption of commodity products, e.g., books, the current study focuses on the adoption of a more complex product. In this vein, results of the current study imply that the perceived efficacy of the web for information acquisition plays an important role and is worthy of closer attention. Practitioners trying to persuade consumers to use the web site for transactional interaction, particularly for complex products, may first need to convince consumers that the web site is an adequate medium for the more equivocal information exchange and acquisition tasks such products often entail. For this, they may need to enhance the social presence of the web site through such tools as Online Live Help and multimedia presentations. Some empirical evidence suggests that enhancing the web site with multimedia capabilities is an effective way of increasing web site efficacy in handling less analyzable tasks (Lim and Benbasat 2000). The use of artificial intelligence (e.g., expert systems) may help consumers configure products, and provide the rationale underlying the recommendations to increase confidence in the recommendation (Wang and Benbasat 2005; Xiao and Benbasat 2004).

Finally, use of the web for e-business is not monolithic. Consumers engage in a range of activities prior to final purchase. Future research should therefore take a more nuanced view of the purchase process and identify both unique and common predictors of adoption at each stage. It may also focus on the relationship between behaviors at different stages of the purchase process. For instance, understanding the factors that would convert "information seekers" to "purchasers" would provide useful insights and guidelines to online vendors. Finally, although there is some convergence in the literature about the stages of the purchase process, it is not clear that online consumers make these same distinctions. Identifying which stages are distinct in the eyes of online consumers is a fruitful direction for future research.

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Appendix A

Survey Items

Vignettes Used to Measure Relative Advantage

The vignettes used to measure relative advantage are presented below. The vignettes are organized by stage in the purchase process. We indicate in italics next to each item the dimension of relative advantage it is designed to measure

Many insurance companies are making available a variety of tools on web sites related to the process of purchasing insurance. Please read the following descriptions of some of the tools available and then indicate your level of agreement with each statement by circling the appropriate number on the scale provided.

Definitions: Insurance companies provide definitions and descriptions of auto insurance terms on web sites to help customers learn about different coverage such as uninsured motorist, liability, medical payments, or rental reimbursement options.

RATC1: I would find it more convenient to educate myself about auto insurance policy coverages by reading from the web site than by asking questions of an agent. *(Convenience)*
RAKN1a: I would learn more by reading from the web site than by talking to an agent. *(Efficacy of Information Acquisition)*
RATR1: I would have greater confidence in the explanations provided on such web sites than those offered by an agent. *(Trust)*
RAKN1b: I would understand the explanations offered by insurance web sites better than those provided by an agent. *(Efficacy of Information Acquisition)*

Quotes: You are asked to enter information on the web site about the auto insurance coverages you would like. You then receive price quotes, either from a company of your own choosing, or from multiple auto insurance companies.

RATC2a: I would find a lower price for my policy using the web than through an agent. *(Convenience)*
RATC2b: It would be more convenient for me to use the web to compare auto insurance prices than an agent. *(Convenience)*
RATR2: I would trust the validity of quotes provided by the web more than those provided by an agent. *(Trust)*

Coverage Recommendations: You are asked to enter some information (without providing your name) on the web site, such as income level, automobiles owned, etc. The tool then computes and provides recommended levels of coverage for you.

RATC3: I would find it more convenient to use this web tool rather than an agent. *(Convenience)*
RATR3a: I believe such a web tool would provide more objective recommendations than an agent. *(Trust)*
RATR3b: I would trust the recommendation of such web sites more than the recommendation of an agent with regard to the appropriate level of coverage for my needs. *(Trust)*

Purchase: Enter your coverage and personal information on the web to purchase the policy online.

RATC4: I would find it more convenient to purchase the policy on the web than through an agent. *(Convenience)*
RATR4: I would feel more confident purchasing the policy through the web than through an agent. *(Trust)*

You can file claims directly on the company's web site.

RATR5: I would be more confident filing a claim through the web than through an agent. *(Trust)*
RATC5: I would find it more convenient to file a claim on the web than through an agent. *(Convenience)*

Services Provided (Source: new):

Indicate the extent to which

- your agent provides each of the following services, and
- how important each service is to you

Servimp1: Educating you about auto insurance policies
Servimp2: Analyzing your needs to recommend the right coverage
Servimp3: Finding the best price for your auto insurance policy
Servimp4: Finding the right auto insurance company
Servimp5: Helping you with the auto insurance claims process

Trust in the Agent (Source: McKnight et al. 1998; Mayer et al. 1995):

Trusta1: My current auto insurance agent acts in my best interests
Trusta2: My current auto insurance agent is honest in his/her dealings with me.
Trusta3: My current auto insurance agent is very knowledgeable about auto insurance policies

Value of the Web (Source: D'Ambra and Rice 2001; Devaraj et al. 2002; Strader and Hendrikson 1999):

Vaweb1: One of the advantages of shopping on the web is the absence of sales pressure
Vaweb2: Shopping on the web saves time.
Vaweb3: Shopping on the web saves money.
Vaweb5: Shopping on the web is very convenient.
Vaweb6: Shopping on the web allows me to compare prices easily.

Web Obstacles (Source: new):

Webobst1: Shopping on the web is generally safe and secure.
Webobst2: I would not enter personal information on the web site because I would be concerned about the security of my personal and financial information. (Reverse coded)
Webobst3: I am concerned about the privacy of personal information entered on the web (dropped).

Web Use (Source: Davis 1989; Karahanna et al. 1999; Venkatesh et al. 2003):

Webusehr: How many hours per week do you use the web?
Yrweb: How long have you been using the web?

Web Experience (Source: new):

Have you ever used the web to:

Webpur: Purchase a product other than insurance
Webquote: Request quotes from one or more insurance companies
Webauto: Purchase an auto insurance policy
Webinfo: Gather information about insurance companies and/or products

Behavioral Intent–Web: Information: (Source: New [based on Fishbein and Ajzen 1975]):

BIwebi1: To gather information about auto insurance policy coverage options (*Stage: Requirements Determination*)
BIwebi2: To gather information about auto insurance companies (*Stage: Vendor Selection*)
BIwebi3: To obtain auto insurance price quotes (*Stage: Vendor Selection*)
BIwebi4: To get a recommendation on the right coverage for me (*Stage: Requirements Determination)*

Behavioral Intent–Web: Transaction (Source: New [based on Fishbein and Ajzen 1975]):

BIwebt1: To purchase auto insurance (*Stage: Purchase*)
BIwebt2: To file an auto insurance claim (*Stage: After-Sales Service*)

Appendix B

Relative Advantage—Emergent Structure

Relative Advantage–Learning:

RATC1: I would find it more convenient to educate myself about auto insurance policy coverages by reading from the web site than by asking questions of an agent.
RAKN1a: I would learn more by reading from the web site than by talking to an agent.
RATR1: I would have greater confidence in the explanations provided on such web sites than those offered by an agent.
RAKN1b: I would understand the explanations offered by insurance web sites better than those provided by an agent.

Relative Advantage–Informational Convenience:

RATC3: I would find it more convenient to use this web tool rather than an agent.
RATC2b: It would be more convenient for me to use the web to compare auto insurance prices than an agent.

Relative Advantage–Informational Trust:

RATR3a: I believe such a web tool would provide more objective recommendations than an agent.
RATR3b: I would trust the recommendation of such web sites more than the recommendation of an agent with regard to the appropriate level of coverage for my needs.
RATC2a: I would find a lower price for my policy using the web than through an agent.
RATR2: I would trust the validity of quotes provided by the web more than those provided by an agent.

Relative Advantage–Transaction:

RATC4: I would find it more convenient to purchase the policy on the web than through an agent.
RATR4: I would feel more confident purchasing the policy through the web than through an agent.
RATR5: I would be more confident filing a claim through the web than through an agent.
RATC5: I would find it more convenient to file a claim on the web than through an agent.