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ncerpa@utalca.cl

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# Advice Sharing Between Paired Users in Online Travel Planning

Arnold Kamis<sup>1</sup> and Jonathan Frank<sup>2</sup>

Suffolk University, Information Systems and Operations Management Department, Boston, USA, <sup>1</sup>akamis@suffolk.edu,  
<sup>2</sup>jfrank@suffolk.edu

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## Abstract

There have been few studies investigating the effects of collaboration on online shopping. In this paper, we consider an online shopping scenario where the user and a partner, who are not collocated, plan the travel collaboratively. We develop a research model based on Website Trust to explain the user's Website Intentions. To test the model, we conducted a field experiment with 605 individuals and a partner using LiveLook, an online co-browsing platform. A PLS analysis of the influence of advice sharing showed the following variance explained: Website Trust 20.6 percent, Website Enjoyment 55.2 percent, Perceived Control 59.4 percent, and Website Intentions 55.3 percent. We also show separate models for two different user interfaces: one for packaged travel and one for customizable travel. The resulting models show the packaged travel interface to have greater website intentions while the customizable travel interface has greater variance explained. Overall, the results shed light on the network of influences that advice sharing has in online travel planning.

**Keywords:** Travel planning, Advice sharing, Website trust, Website enjoyment, Perceived control, Website intentions

# 1 Introduction

Tourism has been identified as the top online industry, as measured by transaction volume [91]. Disintermediation of the travel agent, which reduces information asymmetries, substantially reduces prices in big-ticket transactions. Yet variation in price and consumer demand remains [28], showing that travel planning is not a pure commodity. In fact, online travel agents can use Internet technologies to offer hyper-differentiation in the form of customizable travel packages [29]. Many travel planners choose to customize travel packages, whereas many others prefer standard, undifferentiated travel packages. Advice sharing with a trusted partner could help one understand and navigate the different travel packages that are offered and choose one with the intention of booking the travel. In the context of online travel planning [65], the online experience needs to be not only trusted but distinctive and compelling [33]. Social computing is a phenomenon that appears to offer strong value to both establish trust and create a distinctive, compelling online experience [87].

Trust has been shown to be an extremely important factor for individual online shoppers. This has been shown for various purposes: reducing uncertainty [72], evaluating web sites [22], [58], collaborating with others [54], or using anthropomorphic agents [8], [77]. Trust matters for individuals and groups of individuals, and website designers need to therefore bear that in mind [48]. Trusted advice from other individuals is particularly important when trust in the seller is questionable. For example, Forrester Research has found that online consumers do not fully trust the advice from sales staff or marketers who may have ulterior motives, i.e., sales commissions [15]. Advice from a trusted partner should be better than advice from a travel agent or an unknown traveler. In addition, anonymous reviews or ratings can be fraudulent, e.g., travel agents masquerading as independent travelers. It is important to have trustworthy advice to guard against inauthentic reviews or ratings [37], [60], [95].

Our purpose in this paper is to model how advice sharing can influence online travel planners' website intentions, which is a current gap in the literature. This paper addresses the literature gap by connecting advice sharing to website intentions mediated by Website Trust and elements of Flow [16], [51]. Flow is a general feeling of good fit between the user and the situation, e.g., a sense of pleasant immersion in the task, in which the challenge is matched with relevant skill. Because Flow is such a complex phenomenon, we limit this paper of online behavior to two elements of Flow: website enjoyment and perceived control [43], [51]. We formulate the research questions for this conceptual model as follows:

1. How does advice sharing influence website trust and website enjoyment?
2. How do website trust, website enjoyment, and perceived control influence each other?
3. How do website enjoyment and perceived control influence website intentions?

# 2 Literature Review

The Internet is, on the one hand, a channel of communication, and, on the other hand, a dynamic medium, allowing for social communication, navigation, and synchronized decision making. Consumers who require or desire advice may avoid the web for commercial transactions [52]-[53], [57]. Advice sharing is particularly important to consumers when the transactions that take place are complex, requiring a substantial amount of information exchange [53]. Such consumers may benefit from a variety of advanced technologies, including online reviews written by unknown product reviewers [69] or advice from humanistic avatars, which may be designed to have expertise or attractiveness (or both) [35]. Although potentially effective, those technologies do not connect consumers to people they already know and trust. Consequently, consumers may be served well by advances in real-time social technology, e.g., real-time co-web browsing, to decrease the need to go offline for advice or to rely on anonymous reviews or social simulations or anonymous opinions spread by electronic word of mouth [19].

Giving consumers appropriate social technology support can improve their website use, enhance their attitudes regarding the website or brand, prolong their shopping time and increase the likelihood of a transaction [3], [44], [68]. In one early study of social online shopping, Farnham et al. reported that a) people preferred a shared browser over a standard, unshared browser, and b) common ground between users could be enhanced with a What You See Is What I See (WYSIWIS) user interface [23]. Their results indicate that website designers should augment features focused on functionality with features that support advice sharing.

This study is based on the literatures of computer-mediated communication, as well as on the substantial literature of user behavior afforded by the Internet. Hence, we review the electronic commerce literature based on media, innovation

and social theories. We note that online travel planning is similar to and different from other types of electronic commerce. It is similar to transactions that commit to the shipping of a physical good in that consumption of that good is delayed. It is different in that a transaction is a booking of a future event, travel, which leads to an experience, e.g., a vacation. That is, online travel sites are “infomediaries” [67], [83], [93] for future consumption of an experience.

Many factors have been studied in the context of individual user retail electronic commerce. Table 1 describes the relevant literature in terms of research context, methods, theory base, and dependent variable.

Table 1: Literature review

Dependent Variable(s)	Context, Methods and Theory Base	Findings	Reference
actual use	Online survey: Retail B2C: Technology Acceptance Model TAM and Innovation Diffusion Theory	Perceived ease of use, usefulness and web compatibility predict user attitude, intent to use, and actual use.	[10]
adopting electronic commerce	Theoretical extension and longitudinal study	Trust, perceived usefulness and perceived ease of use are salient beliefs for predicting electronic commerce adoption	[71]
behavioral intent to use mobile commerce	Survey of B2C mobile commerce in online banking, shopping, investing, and online services: TAM, Innovation Diffusion Theory, Perceived Risk	Perceived risk, cost, compatibility, and perceived usefulness were antecedents of behavioral intent to use mobile commerce; perceived ease of use was an antecedent of perceived usefulness.	[92]
coordination performance, social presence	Lab experiment of navigation support X communication support of collaborative B2C electronic commerce retail: Common Ground Theory, Media Richness Theory	Shared navigation reduces coordination errors and enhances coordination performance. Voice chat likely increases the efficiency of resolving coordination errors.	[96]
e-trust	Online survey and experiment; Flow theory, social contract theory, social cognitive theory, resource allocation theory, and trust theory	Enjoyment and Anxiety partially mediate the influence of Perceived Web Quality on e-Trust, which consists of Integrity, Benevolence, and Ability.	[38]
initial trust, intent to provide personal information, bookmark, and purchase	Experiment of subjects faced with the decision of buying a travel package from an unknown online travel agency	Trust moderates brand's influence on purchase intention; new brands can benefit by association with something that is trusted (person, other brand, internet channel)	[18]
intent to buy	Two studies: lab experiment and follow-up conceptual study B2C electronic commerce in purchasing required textbooks: Individualism vs. Collectivism [34]	Peer customer endorsements, trusting beliefs and attitudes influenced intent to buy; differences based on individualist vs. collectivist culture.	[79]
intent to purchase or return	Online survey of B2C electronic commerce retail: TAM and Flow Theory	Impact of Decision Support System DSS interface design on behavioral intentions is mediated by perceived usefulness and Website Enjoyment; attribute-based DSS expresses higher perceived usefulness and Website Enjoyment than users of an alternative-based one; task complexity matters.	[45]
intent to return to website	Survey of B2C video rental: Consumer behavior, environmental psychology	Perceived Control and shopping enjoyment can increase the Intent of new web customers to return.	[50]
intent to transact, actual transaction	Exploratory survey of intent to transact and confirmatory survey of actual transactions in B2C electronic commerce: Theory of Reasoned Action and TAM	Developed Partial Least Squares PLS models of perceived risk, trust, ease of use, and usefulness, controlling for reputation and satisfaction with past transactions.	[70]

<i>Table 1: continuation</i>			
intent to use electronic commerce	Online survey of B2C electronic commerce in online retail: TAM extension	System quality, information quality, and service quality influence playfulness, perceived ease of use and perceived usefulness.	[2]
intent to use on-line shopping	Survey of B2C electronic commerce retail: Augmented TAM	Compatibility, usefulness, ease of use, and security were found to be significant predictors of attitude towards on-line shopping	[89]
purchase intentions	Longitudinal data, 521 consumers, two product categories, B2C electronic commerce with high/low involvement: Principal agent (moral hazard, adverse selection)	Structural model of uncertainty mitigators and uncertainty antecedents, which influence perceived uncertainty	[72]
purchase intentions	Free-simulation Experiment of B2C electronic commerce for book purchase, validated scales: TAM	Compared with potential customers, repeat customers trusted the e-vendor more, perceived the website to be more useful and easier to use, and were more inclined to purchase from it; potential customers influenced only by trust.	[26]
willingness to transact	Survey of B2C retailing and banking: Trust typology from [61]	Psychometrically valid scale of trust, including three components: ability, benevolence, integrity; mediating construct: familiarity.	[6]
satisfaction with the retailer, attitude toward the product, purchase intention	Computer-Mediated Interaction, theory of social response, online experiments with German shoppers	An avatar sales agent leads to more satisfaction with the retailer, a more positive attitude toward the product, and a greater purchase intention. Attractiveness vs. Expertise of avatar have different effects, depending on the level of user involvement.	[35]
purchasing intention	Elaboration Likelihood Model	The quality of online reviews positively affects purchasing intention, purchasing intention increases as the number of reviews increases, level of involvement is affected differently by quality vs. quantity of reviews.	[69]

As Table 1 shows, research in this area has focused on a variety of dependent variables: intent to purchase, willingness to purchase, intent to return to the website, intent to use on-line shopping, intent to use mobile commerce, choice of most preferred website, actual use, and actual purchase. We decided to focus on the most theoretically grounded and immediate antecedents to actual purchase, Intent to Purchase, as well as Intent to Return to the Website. The latter has been shown to be an important predictor of Intent to Purchase, as well as a predictor of making a transaction through a different channel, e.g., speaking to a travel agent. Many users simply need more time to ponder their tentative selection or consult with someone offline, and subsequently book travel online. Because these two constructs are closely related, we combine them into one: Website Intentions.

From the literature reviewed in Table 1, we see that Trust, trusting beliefs or perceptions of trustworthiness have been shown to be key antecedents of user intentions. In addition, Enjoyment or other hedonic factors can be key antecedents, mediators, or moderators. As such, they amplify or diminish the influence of some independent variable (or other mediator/moderator) upon the final dependent variable. We select Website Trust as our first mediator, because trust is fundamental. We then select Website Enjoyment and Perceived Control as our remaining mediators, leading to Website Intentions. To keep the model parsimonious, we do not select any variables to serve as moderators. We do however test our general model on two quite different types of travel: customizable and packaged.

Prior research remains inconclusive as to the effects of customization and packaging on travel planning. Bundling of travel offerings will tend to consolidate information, while the greater transparency of customized travel planning seeks to separate it [86]. Research on bundling has emphasized the benefits derived from decision process simplification, risk reduction, and increased perceived value [31]-[32], [49]. Other researchers conclude that consumers perceive the transparency of customization as fairer and are willing to pay more [9], [30], [64], [78]. The situation is further confounded when one considers the possible effects of information overload on online users' attention span and search-time potentially leading to consumer confusion and dissatisfaction with the online purchase process [41], [55].

### 3 Research Model

Having selected the theoretical constructs, we proceed to combine them into a single model of hypotheses to test. We start by defining the constructs formally:

- Advice Sharing: the giving or taking of advice from another person, adapted from Flynn et. al [24]
- Website Trust: Trust that a website will function properly and honorably [56], [62]
- Website Enjoyment : Enjoyment in the interaction with a website, adapted from Flynn et. al [24]
- Perceived Control: The perception that one is in control when interacting with a website, adapted from Flynn et. al [24]
- Website Intentions: Intention to purchase or intention to return to the website [22], [94]

Offline, and increasingly online, information seeking is done not as a solitary activity, but as a social activity, e.g., Groupon, LivingSocial, and Dibsie. DecisionStep's ShopTogether service has been licensed and incorporated into online shopping engines by Mattel, Charlotte Russe, Costume Craze, Buy.com, and others. As such, it is not strictly information seeking but rather advice sharing that many people want. Ideally, greater advice sharing is both useful, in a utilitarian sense, and enjoyable, in a social sense. Advice sharing adds additional value by providing social validation, and users share advice for different reasons. Users may share, i.e., contribute their opinions in large, online social networks because 1) the contribution increases one's social capital or reputation, or 2) the contributor may be so highly connected that their contribution is likely to be reciprocated in the future [63]. Thus, advice sharing may be with many others, known or unknown, in electronic word-of-mouth [69]. In the simplest case, advice sharing is between two people, an advice seeker and an advice giver. Advice seekers and advice givers engage in media synchronicity, both conveying information and converging upon mutually acceptable decisions [20]-[21].

We expect that online users who seek advice from others will enjoy a website that facilitates advice sharing. We expect the same from advice givers, because they enjoy the act of giving advice. In sum, we hypothesize that both advice leading and advice following, combined into one construct, Advice Sharing, will result in a greater sense of social presence and coordinated information exchange [96], which should be a more enjoyable website experience.

*H1: Greater advice sharing will be associated with greater enjoyment in online travel planning.*

Trust is important in any online electronic commerce situation because the Internet is a relatively lean, impersonal channel of communication — compared to a phone conversation or face-to-face communication at a travel agency. Although shoppers are becoming increasingly comfortable online because of their good experiences, it is nevertheless a less trustworthy mechanism than a personal encounter with a brick-and-mortar merchant, because, online, the security of transactions, privacy of information, and confidentiality of conversations are all vulnerable to breaches. Overall, trust is crucial, because a website is a less personal channel of communication, linking the user to a virtual representation of a business. Adding back the lost personal element through real-time advice sharing with a trusted partner is likely to enhance the trust that the user has in the website.

Trust is a critical factor in online shopping [26], [71], but trust itself is a complex, multi-dimensional phenomenon [6], [38]. Everard and Galletta found that the Intent to Purchase is influenced by the user's trust in the online store [22]. Other research has found perceived trust in the vendor to be a significant indirect influence, mediated through the user's attitude toward the vendor [74]. Other research has found that the impact of peer customer endorsements on trust is significant in both collectivist and individualist cultures [79]. Bhattacharjee posited that Website Trust is a necessary precondition for the Willingness to Transact and is distinct from other types of trust, thus calling for the development of a new scale for Website Trust [6].

Even relatively naïve users know that anyone can create a simple website with a few inter-connected web pages. Users need to be assured that such web pages represent a legitimate business, that the lean communication channel afforded by an ISP, a web browser and a mouse is, in fact, trustworthy. That is, to compensate for the leanness of communication, a website is insufficient. Trust needs to be signaled through more fundamental ways. The trust could be signaled via a recognized brand [90], the rich experience of social presence [17], [27], or by using the website with a friend, friendly salesperson, or friendly salesperson simulation [21], [59], [75], [77], [82]. Thus, increasingly, merchants try to make the experience social, to provide communication and navigation support [79], which makes the website trustworthy, a



necessary precondition for narrower objectives, e.g., enjoyment. If a shopper is convinced that a website is trustworthy, e.g., by a friend via co-browsing, the trustworthiness of their mutual experience is assured.

In this study, we focus on Trust in the Website, i.e., Website Trust. Without Website Trust, there is little chance of achieving an intent to purchase or an intent to further consider the possibility of purchase. Advice Sharing should increase the likelihood of achieving Website Trust, because real-time collaboration validates one's feeling of website trust and because that feeling is mediated through a trusted partner. We therefore hypothesized the following:

*H2: Advice Sharing will positively influence Website Trust in online travel planning.*

Website Trust is necessary and important, but what precisely does it influence? A number of researchers employing different theoretical bases have found similar positive effects on user attitudes and intentions online. Van Der Heijden and Verhagen, using the marketing theory of retail store image, found trust and enjoyment to be strong predictors of store image and attitude toward purchase [88]. Pavlou and Fygenson, basing their model of e-shopping on the Theory of Planned Behavior, found trust to influence both the attitude toward getting information and the attitude toward purchasing, positively influencing the intention to get information and the intention to purchase, respectively [71]. Other research based on personality-, cognition-, and institution-based trust in online shopping found that Online Trust positively influences intended use of the website [26]. Other research, based on the branding and social psychology literature, found that the user's general trust propensity and trust in the Internet enhance the user's website intentions, including the willingness to provide personal information [18]. Thus, overall, there is consistency in research from multiple perspectives, using multiple technologies, that shows trust to be positively correlated with positive user attitudes, e.g., website enjoyment, which then positively influences website intentions.

While most research has found that trust and enjoyment are positive correlated, the two constructs are usually modeled in parallel, neither one of them influencing the other. We claim, however, that trust is more fundamental and it therefore influences enjoyment. The greater the website trust, the greater the enjoyment because the user is less concerned about being deceived, more confident that the website is credible. Because he or she is more confident that the website is credible, there is greater cognitive energy available to enjoy the experience. This is predicated on the notion of Bounded Rationality [80]-[81]. Because the user is boundedly rationality, he or she has a limited supply of cognitive resources. The greater the website trust, the greater the cognitive resources can be reallocated to higher level needs, and therefore greater enjoyment of the experience is likely. If the website is 100% trustworthy, then the user can reallocate all cognitive resources concerned about deception to the task. If the website is not at all trustworthy, then enjoyment is not possible. We hypothesize therefore that Website Trust is more fundamental and antecedent to Website Enjoyment.

*H3: Website Trust will positively influence Website Enjoyment in online travel planning.*

Having control (and the perception thereof) are certainly important when shopping online, whether in a game environment [84], a 3-dimensional, virtual reality environment [43], or a more typical online shopping website [71]. This is true with simple websites shopping for standard, retail products and for self-customized products [45]-[46]. Shopping for services should be a process similar to shopping for products in that perceived control is important – and perhaps more so, because services are less tangible than products. Website Trust should support and enhance one's Perceived Control of the shopping process for services — and could even be more important for travel services, since travel services can be quite costly relative to other types of services.

The greater the website trust, the greater the perceived control. The greater the website trust, the greater the cognitive resources can be reallocated to higher level needs, and therefore greater perceived control of the experience is likely. If the website is not at all trustworthy, then perceived control is less likely. We therefore hypothesize the following:

*H4: Website Trust will positively influence Perceived Control in online travel planning.*

Research in IT usage has theorized and found empirical support for control and heightened enjoyment as two aspects of a cognitive absorption, a complex, multiple-dimensional construct [1]. Other research has tried to isolate the two aspects as constructs separate from cognitive absorption. Empirically testing the two constructs within the context of electronic commerce, Koufaris et al. modeled Online Shopping Enjoyment and Perceived Control as separate constructs operating in parallel, both presumed to influence Intention to Return [50]. In their results, Perceived Control was a significant influence, but Online Shopping Enjoyment was determined to be significant only at a level of  $p < 0.1$ . In other e-commerce research, Kamis et al. conceptualized Website Enjoyment and Perceived Control as mediating variables that can be influenced by different user interface designs [45]. They found the opposite result, however; only Website Enjoyment was statistically significant in influencing website intentions. That is, Perceived Control did not exert a significant influence on website intentions. We posit that both Website Enjoyment and Perceived Control are important, but we position them differently; we position Website Enjoyment as antecedent to Perceived Control. Website Enjoyment pertains not only to the planning process, which could be done individually or with others, but also to the anticipation of

the travel. Both will contribute to the process of planning the travel to be experienced at a later date. Travel planning itself includes different components, including information regarding the travel destination, the process of choosing options or customizing a standard package, and payment methods [73]. In sum, there are many elements of travel planning that the user needs to control. An enjoyable website process should help the user to stay engaged and involved, maintaining a good sense of control. We position Website Enjoyment as an antecedent of Perceived Control, because both the enjoyment of the planning process and the anticipated enjoyment of the travel and follow-on activities, can support and enhance the user's perceived control.

*H5: Website Enjoyment will positively influence Perceived Control in online travel planning.*

We define Intent to Purchase from the travel planning website as the user's assessment of his or her intent to book the vacation. We expect that the Intent to Purchase is linked to the user's experience of the website. That experience includes (1) its trustworthiness [56], [66], [88], (2) the website enjoyment, and (3) the perceived control of the user [1], [46]. These different elements cover the fundamental issue of trust as well as the less fundamental but nonetheless crucial aspects of enjoyment and control. All three elements are well-established antecedents to ease of use and usefulness in the context of electronic commerce [50], [71], [85]. The greater the website enjoyment or perceived control, the greater should be the intent to book the travel (on- or off-line) or return to the website in the near future to *close the deal*. We therefore hypothesize the following two hypotheses:

*H6: Website Enjoyment will positively influence Website Intentions in online travel planning.*

*H7: Perceived Control will positively influence Website Intentions in online travel planning.*

In sum, we expect that users' Intent to Purchase is linked to the Website Trust, Website Enjoyment and Perceived Control, set in an advice sharing, two person process. We expect that users who engage in more advice sharing will have more positive Website Trust and Website Enjoyment (directly) and Perceived Control (indirectly, via Website Trust and Website Enjoyment). The Website Intentions, i.e., the intent to book the vacation or return to the website (to book it in the future) should be influenced by all these factors. Combining the seven hypotheses, we propose the research model in Figure 1. We expect all influences to be positive.

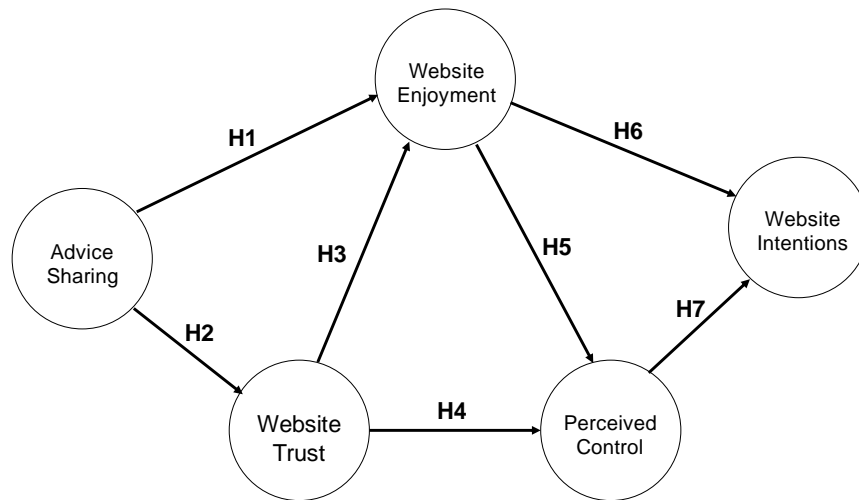


Figure 1: General research model

The general research model in Figure 1 is the first to include Advice Sharing, Website Trust, Website Enjoyment and Perceived Control as antecedents of Website Intentions. The model is a parsimonious explanation of the impact of Advice Sharing on Website Intentions, as mediated by Website Trust, Website Enjoyment and Perceived Control. This constitutes the general theoretical contribution of the paper. However, we argue that the general research model may be influenced by the specific type of travel planning: customizable or packaged. We devise an overall methodological design with two different user interfaces to test for that influence.

## 4 Research Design and Methods

The units of analysis in this study were pairs of online users in a task of online travel planning. After a pilot test of our model using students, we proceeded to conduct a field study using MarketTools' Zoomerang service. MarketTools is a



leading online survey company that fields anonymous surveys to online panels of subjects who meet screening criteria. Panelists are rewarded with points (25-150 per survey), with points redeemable for rewards. (A 12-cup digital coffee maker requires 5,000 points, a Bulova watch 7,500 points and an MP3 player 10,000 points; hence the reward is a small incentive.) Our screening criteria included only U.S. subjects who were young adults (18-27 years of age) with broadband Internet service. We selected this population segment to ensure skill and comfort with website interaction. Screening with those criteria, we obtained a sample of 605 subjects from across the USA, with approximately equal numbers of males and females. We collected no other demographic data.

The technology connecting a pair of users need not be complex; it can be screen sharing and real-time communication to make it social. Simple innovations can have disruptive impacts [13]-[14]. We had two experimental treatments: two different user interfaces randomly assigned to subjects. One treatment would be focused on packaged travel, an all-in-one package with no customization possible. With this interface, the goal would be to select the most attractive package. The other interface would be focused on customizable travel. In this treatment, the user pair would customize a base package, tailoring it to increase its attractiveness. We expected some differences in user behavior between the two treatments, but not enough to change the hypotheses we formulated.

Research has shown the importance of matching the process to the task [36]. The task design for both treatments was simple and open-ended: to plan the most preferred travel experience. Therefore, since this task involved anticipation of what travel package would be the most pleasurable, hedonic experience, we asked each subject to find a friend online for advice in the task, given a randomly assigned user interface (packaged travel or customizable travel).

Subjects worked in pairs using LiveLOOK, a simple screen sharing utility, and either voice or text-chat to communicate. Our choice of LiveLook as a collaborative tool was influenced by research which indicated that shared navigation reduces coordination errors and enhances coordination performance [96]. LiveLOOK is a simple shared navigation screen-sharing technology with a minimal learning curve, and is a potential disruptive technology [13] for collaborative online shopping. We assumed that each subject would select a collaborator of adequate knowledge or skill to perform the travel planning task. If the partner were to have neither adequate knowledge nor adequate skill, he or she would at least be of some social value, someone to validate the participant's choices. The subjects were informed that the travel budget was \$2500.

## 5 Results

Tables 2 and 3 show the descriptive statistics, factor analysis and two measures of reliability: Composite Reliability and Cronbach Alpha

Table 2: Mean and standard deviation of items in validated survey instruments (Likert 1-7)

Item	mean	stdev
perceived control1	2.74	1.58
perceived control2	2.81	1.61
perceived control3	2.85	1.57
perceived control4	2.80	1.57
perceived control5	2.73	1.58
Advice Sharing1	3.28	1.52
Advice Sharing2	3.08	1.43
Advice Sharing3	3.54	1.50
Advice Sharing4	3.20	1.48
Advice Sharing5	3.18	1.50
Advice Sharing6	3.27	1.46

item	mean	stdev
website trust1	3.15	1.38
website trust2	3.02	1.41
website trust3	3.23	1.41
website trust4	3.05	1.42
website enjoyment1	2.98	1.49
website enjoyment2	3.00	1.49
website enjoyment3	3.18	1.53
website intention to purchase1	2.98	1.61
website intention to purchase2	3.25	1.55
website intention to purchase3	3.44	1.59
website intention to return1	3.21	1.68

Table 3: Factor analysis, reliability composite and cronbach alpha

Item	Advice Sharing	website trust	website enjoyment	Perceived Control	t-stat for loading
Perceived Control1	<b>0.882</b>	-0.181	-0.256	0.191	p < 0.001
Perceived Control2	<b>0.846</b>	-0.164	-0.288	0.225	p < 0.001
Perceived Control3	<b>0.845</b>	-0.15	-0.274	0.241	p < 0.001
Perceived Control4	<b>0.868</b>	-0.166	-0.25	0.186	p < 0.001
Perceived Control5	<b>0.872</b>	-0.181	-0.274	0.188	p < 0.001
Advice Sharing1	0.191	<b>-0.801</b>	-0.149	0.096	p < 0.001
Advice Sharing2	0.202	<b>-0.825</b>	-0.161	0.054	p < 0.001
Advice Sharing3	-0.039	<b>-0.835</b>	-0.162	0.157	p < 0.001
Advice Sharing4	0.164	<b>-0.881</b>	-0.151	0.077	p < 0.001
Advice Sharing5	0.205	<b>-0.878</b>	-0.106	0.109	p < 0.001
Advice Sharing6	0.132	<b>-0.873</b>	-0.168	0.103	p < 0.001
website trust1	0.305	-0.194	<b>-0.842</b>	0.223	p < 0.001
website trust2	0.341	-0.2	<b>-0.795</b>	0.172	p < 0.001
website trust3	0.244	-0.211	<b>-0.838</b>	0.225	p < 0.001
website trust4	0.36	-0.245	<b>-0.779</b>	0.199	p < 0.001
website enjoyment1	0.472	-0.22	-0.35	<b>0.715</b>	p < 0.001
website enjoyment2	0.491	-0.219	-0.375	<b>0.701</b>	p < 0.001
website enjoyment3	0.427	-0.201	-0.408	<b>0.725</b>	p < 0.001
Cronbach Alpha	0.94	0.94	0.95	0.98	
Composite Reliability	0.95	0.96	0.97	0.98	

Table 3 shows acceptable loadings whereas table 4 shows adequate Convergent-Discriminant validity. The constructs load more heavily on their own items than on the items of other constructs.

Table 4: Convergent-discriminant validity

Average Variance Extracted	Advice Sharing	Website Trust	Website Enjoyment	Perceived Control	Website Intentions*
Advice Sharing	<b>0.774</b>				
Website Trust	0.445	<b>0.847</b>			
Website Enjoyment	0.474	0.523	<b>0.914</b>		
Perceived Control	0.379	0.635	0.558	<b>0.89</b>	
Website Intentions*	0.355	0.678	0.609	0.583	<b>0.805*</b>

\* formative construct

Figure 2 describes the general structural model tested with PLS-Graph and bootstrapping resampling [4]-[5], [11]-[12], [25]. The coefficients on each link are analogous to beta weights in a multiple regression, showing the relative magnitude of construct-to-construct influences.

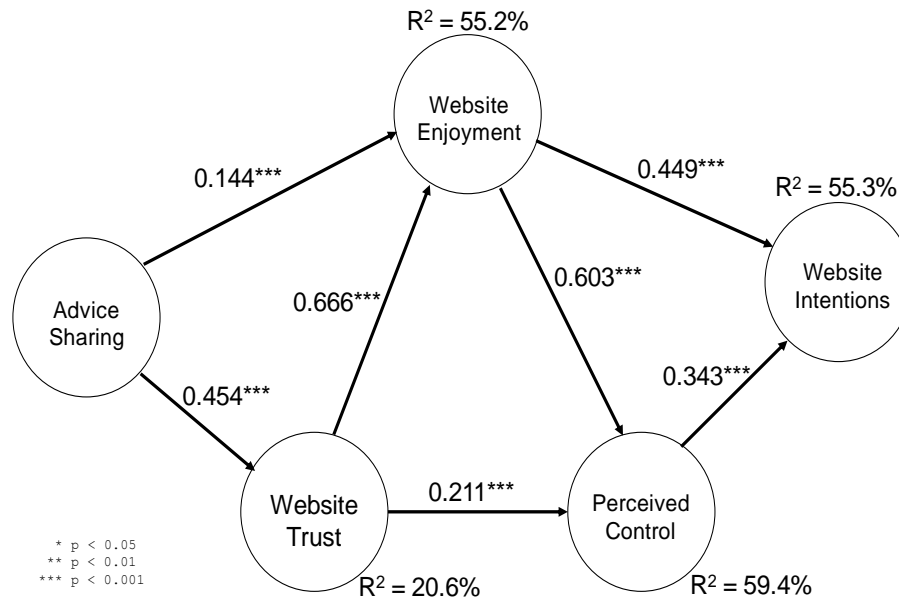


Figure 2: General structural model

Figure 2 shows that Website Enjoyment has its variance explained 55.2% by Advice Sharing and Website Trust. The variance explained for Website Trust is 20.6%, coming entirely from Advice Sharing. The variance explained is 59.4% for Perceived Control, influenced by Website Trust and Website Enjoyment. Finally, the variance explained is 55.3% for Website Intentions, influenced by two antecedents: Website Enjoyment and Perceived Control.

Overall, the variance explained is high for all constructs influenced by Advice Sharing. Website Trust, Website Enjoyment, and Perceived Control serve as mediating variables between Advice Sharing and Website Intentions. All seven hypotheses are supported. However, when the dataset is segmented by user interface treatment assigned, we do see some differences. Table 5, showing results of ANOVA, suggests that the user interface matters.

Table 5: Differences in user customizable vs. packaged models; 1-7 likert scale

		Advice Sharing	Website Trust	Website Enjoyment	Perceived Control	Website Intentions
	n	mean (stdev)	mean (stdev)	mean (stdev)	mean (stdev)	mean (stdev)
Packaged Travel	307	3.303 (1.238)	3.294 (1.168)	3.218 (1.408)	2.984 (1.467)	3.500 (1.473)
Customizable Travel	298	3.211 (1.368)	2.924 (1.388)	2.883 (1.448)	2.581 (1.492)	2.924 (1.447)
		p = 0.388	p = 0.001	p = 0.004	p = 0.001	p = 0.001

The packaged travel treatment enjoyed significantly greater Website Trust, Website Enjoyment, Perceived Control, and Website Intentions than does a customizable travel treatment. There was no significant difference between the two treatments in Advice Sharing. Modeling the two interfaces separately, we find some interesting differences in Figures 3 and 4. The variance explained is higher for the customizable travel interface than it is for the packaged travel interface. In addition, the influence from Website Trust to Perceived Control is not significant in the packaged travel treatment.

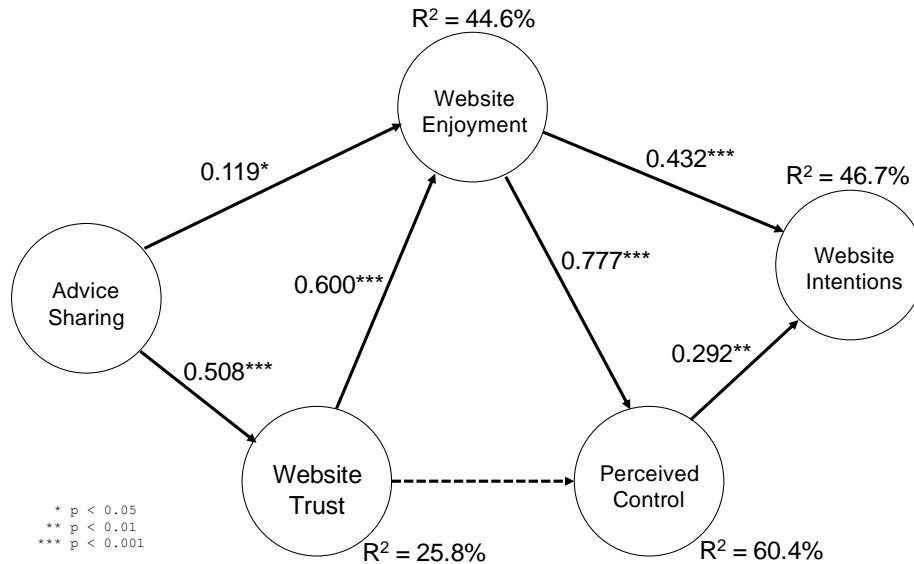


Figure 3: Packaged travel user interface

In Figure 3, we see variance explained ranging from 25.8% to 60.4% and six of the seven hypotheses are supported.

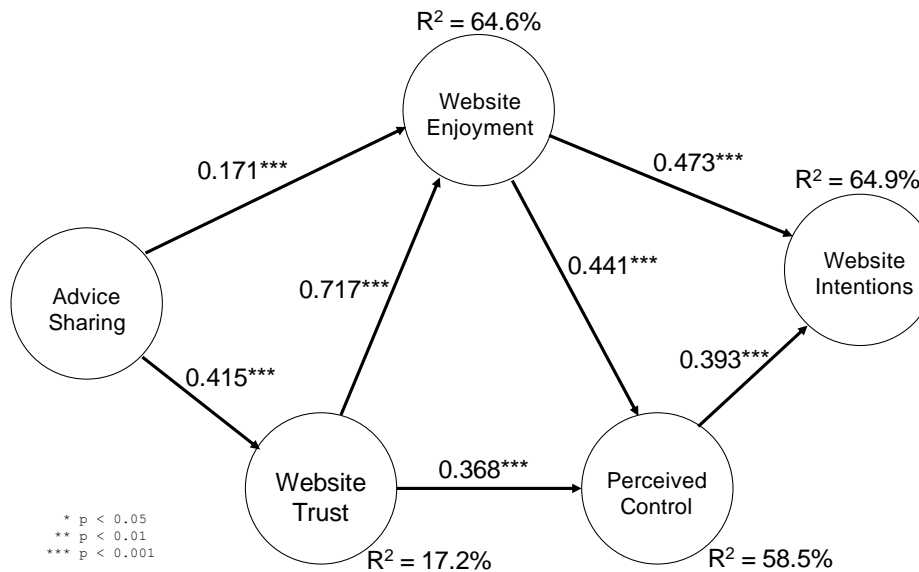


Figure 4: Customizable travel user interface

In Figure 4, we see variance explained ranging from 17.2% to 64.9% and all seven of the hypotheses are supported. This suggests that we have a good explanatory model of Website Intentions in the context of paired users sharing advice in online travel planning, with both user interfaces overall and subtle differences depending on the user interface.

## 6 Discussion, Implications and Future Directions

In this paper, we have developed and tested a model of Intent to Purchase in online travel. The overall model shows that Advice Sharing is powerful, triggering a cascade of positive influences on Website Trust, Website Enjoyment, and Perceived Control, which lead to Website Intentions. The main contribution of this paper is that the network of positive influences is quite strong, particularly for 1) the influence of Website Trust on Website Enjoyment and Perceived Control and 2) for the influence of those two constructs on Website Intentions. The secondary contribution of this paper is that

the influence of Website Trust on Perceived Control depends on whether the user interface supports customizable travel. If it does, the influence of Website Trust on Perceived Control is both direct and indirect, mediated by Website Enjoyment. If the user interface supports only packaged travel, the influence of Website Trust on Perceived Control is mediated only by Website Enjoyment.

It is not surprising that Advice Sharing has a positive influence, or that Website Trust, Website Enjoyment, and Perceived Control are key constructs. It is also not surprising that trust plays an important, central role in the nomological network, consistent with other research [47], [51], [70]. The benefits of combining Advice Sharing support with simple technologies, e.g., co-browsing and chat, can enhance Website Trust, which positively influences Website Enjoyment, Perceived Control, and Website Intentions. The interesting surprise is that the user interface makes a difference. We saw higher variance explained in the customizable travel interface model. In contrast, the packaged travel interface model had higher average values in Website Trust, Website Enjoyment, Perceived Control, and Website Intentions. This suggests that not only should the user interface be designed for collaborative travel planning, but that the type of travel is a significant variable. As such, the website could recommend packaged travel in general and be the default, but also allow for customizable travel. If the former is selected, website enjoyment should be maximized because it is the crucial influence. If the customizable travel option is selected, both website enjoyment and perceived control should be maximized. We note that the values on all variables with either interface seem low on a 7-point Likert scale, but this may simply be an artificial side-effect produced by participating in an experiment. That is, the users know that they will not be booking the travel plan; in a real life situation, those numbers would likely be substantially higher.

Other research has shown that trust looms large at first but as experience is gained, trust in the e-vendor is replaced by ease of use and other factors [26]. Our results suggest that trust in the e-vendor could diminish over time, but be replaced by trust in collaborative online shopping partners. Our work could be extended to compare potential customers vs. repeat customers to see how the model shifts with user experience. Other research has examined the role of perceived risk in models of electronic commerce [70]. The current research contributes by suggesting that perceived risk could be moderated by advice sharing.

Our approach was appropriate to the context of online users because the quality of the advice sharing online planning experience involved a combination of inter-personal communication processes and real-time information technology support. The processes included co-browsing via screen sharing and verbal coordination via chat. Although conceptually complex, because it involves visual and auditory channels, they are distinct and separable, and both served well by existing technology. This paper makes a theoretical contribution to electronic commerce research by identifying the importance of co-browsing and communication between paired users. Future research should consider larger groups (3+) of consumers sharing advice in collaborative shopping activities, e.g., for group travel or large events.

The limitations of this research include that we did not have a control group working individually rather than with a partner. We also did not collect any data about the partner selected, and therefore could not assess the influence of partner characteristics. As for demographic information, we collected only gender. Future research could collect more demographic data as well as assess level of online and e-shopping experience, particularly in the domain of online travel planning.

We envision a significant stream of research that could follow from the contribution made by this paper to help answer several questions pertaining to the effects of additional refinements and extensions:

- Effects of technology support: Co-browsing with master/slave browsers vs. dual cursor control, shared bookmarks vs. product/service reviews; platform-integrated chat vs. free-standing VoIP vs. mobile phone; tablet computer vs. smartphone;
- Effects of physical vs. digital environments: Shopping online vs. physical stores with the assistance of online social networks. We anticipate a growth in iPhone/Android applications enabling shoppers in physical stores to gain feedback from trusted social networks.
- Effects of risk propensity: Users with a higher propensity or tolerance for risk would logically have a lower need for trust. How do different risk propensity profiles influence Website Enjoyment and Perceived Control? How do they influence preference for packaged vs. customizable travel?
- Effects of different kinds of packaged travel: Since packaged travel seems to work better than customizable travel, what kinds of packaging work better, and how should the information be presented? What bundles are seen as more attractive, the inclusion of accommodations, rental cars, guided tours? What price premium would be tolerated?

- Effects of larger groups of individuals sharing advice: What works best: one trusted partner vs. wisdom of an online crowd vs. an online expert vs. a group of trusted friends; close friends vs. more distant social network relations? Large groups of individuals sharing advice could introduce greater complexity of social dynamics and greater pooling of knowledge, but also greater chance of miscommunication or misinformation [7]. When are the benefits of group size exceeded by the costs and risks? What is the effect of social media, i.e., Web 2.0, on advice sharing?
- Effects of culture: There could be U.S.-based assumptions we are making about online users, decision making, and social dynamics. Broadening our scope to other cultures would help determine whether those assumptions hold or vary across cultures, as shown by other research [79]. Peer endorsements can powerfully influence the intent to buy in the U.S., an individualistic culture. Future work could contribute to cross-cultural comparison research, e.g. [79], to determine whether shared navigation helps travelers to avoid uncertainty in a collectivist culture [39]-[40] or whether it would make less of a difference because collectivist cultures are more particular and demanding about the precise form of advice sharing.

This study confirms that advice sharing, when shopping online with a remote partner, is a promising idea, and is consistent with prior research [96]. Future research could compare and contrast different chat technologies. In addition to chat, sophisticated visual representations of the social partner could include a human avatar to increase social presence, trust, and enjoyment [75]-[77]. If the avatar changes expression during shared navigation, e.g., frowning to looking puzzled to smiling, the website intentions could be enhanced significantly.

Our findings have several practical implications. First, our findings highlight the roles and influences of website trust, website enjoyment and perceived control in an advice sharing process between online users. We show that shopper perceptions are influenced by the advice sharing of partners. Online businesses and technology vendors should bring shoppers together with others. Experts may be available but too expensive. Therefore, businesses should try to connect shoppers with people they already know and trust, e.g., through social networks. Independent of the advice sharing mechanism, online businesses should enhance the trustworthiness of their online shopping sites to enhance the website enjoyment and perceived control, which in turn enhance the website intentions.

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## Appendix A: Survey Instruments

Advice Sharing, adapted from [24]

1. When I consider buying a vacation package, I ask other people for advice.
2. I do like to talk to others before I buy a vacation package.
3. I frequently ask other people what vacation package to buy.
4. I like to get others' opinions before I buy a vacation package.
5. I feel more comfortable buying a vacation package when I have gotten other peoples' opinions on it.
6. When choosing a vacation package, other peoples' opinions are important to me.

Website Trust, adapted from [42], [70]

1. I find it necessary to be cautious with this website.
2. I trust that this website keeps my best interests in mind.
3. This website's behavior meets my expectations.
4. This website has more to lose than to gain by not delivering on its promises.

Website Enjoyment, [45], [51]

1. I found my web site visit interesting.
2. I found my web site visit enjoyable.
3. I found my web site visit fun.

Perceived Control, adapted from [45], [50]

1. If I wanted to, I am confident I could get information about vacation packages from Expedia within the next 30 days.
2. Getting information about vacation packages from Expedia within the next 30 days is completely under my control.
3. It would be easy to get information about vacation packages from Expedia within the next 30 days.
4. If I wanted to, I would be able to get information about vacation packages from Expedia within the next 30 days.
5. All necessary resources for getting information about vacation packages from Expedia will be accessible to me within the next 30 days.

Website Intentions, adapted from [22], [94]

1. Return to website: If you needed to purchase a similar service in the future, how likely is it that you would return to this website?
2. Intent to Purchase 1: If this vacation package were competitively priced, I would consider buying it from this website.

3. Intent to Purchase 2: If this vacation package were significantly less expensive at this website than at a better-known online merchant, I would consider buying it from this website.
4. Intent to Purchase 3: If I needed this vacation package in the near future I would consider purchasing it from this website.