

Journal of International Information Management

Volume 12 | Issue 2

Article 1

2003

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Recommended Citation

Sampson, Scott E. and Hulet, Kendall (2003) "An Empirical Model of Price and Quality Effects of e-Commerce," *Journal of International Information Management*: Vol. 12: Iss. 2, Article 1.
Available at: <http://scholarworks.lib.csusb.edu/jiim/vol12/iss2/1>

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An Empirical Model of Price and Quality Effects of e-Commerce

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ABSTRACT

During the e-Commerce boom of the late 1990s it was predicted that the Internet would have a significant impact on prices of various goods and services. Whether the net impact would be positive or negative was harder to forecast, there being opposing effects. We develop a model that describes some of those effects, including information asymmetry, search costs, price dispersion, trust premiums, and convenience premiums. The model is discussed, and a major portion is statistically tested with empirical data. As an exploratory gesture, the model is extended to consider product quality effects of online shopping. The final section concludes with direction for future research.

INTRODUCTION

“The explosive growth of the Internet promises a new age of perfectly competitive markets. With perfect information about prices and products at their fingertips, consumers can quickly and easily find the best deals. In this brave new world, retailers’ profit margins will be competed away, as they are all forced to price at cost. Or so we are led to believe.” – *The Economist*, November 20, 1999

Few areas are as replete with uncertainty as e-business. There was a “new economy.” Then, the new economy died. Now there is the “real” new economy. (Fingar and Aronica 2001) Many of the dot-coms disappeared. Then, some of the survivors started to make money. Many, including academic researchers, are still working to separate the e-commerce boom hype from the enduring business paradigm shifts.

One fact that seems quite clear is that the Internet has had a major impact on the availability of information to the rank and file. It is sometimes questioned whether this information is of true value, or is mostly noise. This article considers a model of correlates of reduced information asymmetry. In particular, we study the supposition that if the Internet reduces information asymmetry, then power will shift from suppliers to consumers and therefore consumers will have the potential to receive greater quality at lower prices.

Indeed, the popular press, and others, have hypothesized that electronic marketplaces, particularly the Internet, would create an extremely efficient economic environment which would

push prices down to meet marginal costs and thus all but eliminate profit margins. In this type of environment, only the most efficient producers would survive—hence, many predicted the demise of brick and mortar retail giants due to their high fixed-cost structure. Writers also touted the Internet’s ability to give producers and consumers access to perfect information, eliminate switching costs, and dramatically reduce transaction costs. Additionally, many thought barriers to entry would dwindle and physical location would become less relevant. (Porter 2001) Some have supposed that the group to primarily benefit from this ultra-competitive environment will be end consumers.

This article will look at ways in which the Internet impacts the pricing of goods and services. We will review relevant factors such as information asymmetry, search costs, price dispersion, trust premiums, and convenience premiums. A model that captures four major price effects will be presented. A major part of the model will be tested with empirical data. We extend the study to the realm of perceived quality of goods purchase online, and show how the quality effect differs from the price effect. A final section points to other potential extensions of this research.

PRICE EFFECTS OF THE INTERNET

Empirical studies suggest that for certain goods and services prices on the Internet are indeed lower than in traditional offline stores. The literature makes an important distinction between heterogeneous (or differentiated) goods, which are unique to each seller, and homogeneous goods, which tend to be identical across sellers. We might also suppose that such a distinction also occurs for service. However, services tend to be more heterogeneous as a whole, largely due to customer involvement in the delivery process. (Chase 1981; Schmenner 1986)

It has generally been found that for **differentiated goods**, consumers may actually be less price-sensitive when shopping online than in offline retail channels. Lee (1998) shows that prices in the online used-car market can actually be higher on average than those in traditional marketplaces, partially due to *increased* information asymmetry between sellers and buyers (i.e. buyers cannot “kick the tires”). Shankar et al. (1998) find that in the hospitality industry customers shopping online are actually less sensitive to price than customers using a conventional offline medium. Degeratu et al. (1998) show that although price sensitivity in the grocery industry appears to be higher online, it is actually a function of online promotions being stronger signals of price discounts. When the effects of promotion and price are combined, however, their net effect on choice is weaker online than in the traditional marketplace.

In the **homogeneous goods** market, however, it has been found that online prices are becoming lower, on average, than prices offered for identical products in offline marketplaces. For the sake of this study, we define “homogeneous” to mean the goods are, for all relevant purposes, identical if purchased from various online or offline vendors. This excludes products, such as basic tax accounting services, which may be homogeneous offline or online yet differ between the two mediums.

Bailey (1998) studied pricing for homogeneous physical goods (CDs, books, and software) in both online and traditional marketplaces from 1996 to 1997. His study showed that prices for Internet retailers were higher on average than prices in traditional retail outlets. Bailey attributed his counter-intuitive findings mainly to immaturity of the online marketplace. Two years later, Brynjolfsson and Smith (2000) similarly compared online and offline pricing for homogeneous goods. Using a more rigorous methodology, they showed that prices on the Internet for CDs and books on average were 9-16% less than identical items in offline markets.

Brown and Goolsbee (2000) found a similar effect in the relatively homogeneous service/product of life insurance. They indicate that the increase in online price comparisons for term life insurance resulted in the reduction of rates by 8-15% from 1992 to 1997.

The common explanation for reduced prices for homogeneous goods to online shoppers is increased market efficiency resulting from increased knowledge of consumers about competitive options. (Bakos 1997) This leads to a discussion of how the Internet impact information asymmetry and how it is reduced.

Information Asymmetry

Buyers and sellers in a typical market transaction have varying degrees of information on which to base their decisions, whether it is about the quality of the good or service, or about the appropriate price of the good or service. More often than not, producers have more information than consumers for various reasons. First, producers have access to product cost data, and may have access to cost data of their suppliers. Second, producers have greater access to aggregate consumer data, and are more aware of consumer price sensitivity. Third, producers “live” in the industry, and thus know more about the dynamics of the industry. Thus, when we refer to “information asymmetry” we generally mean the state that producers have more (price, quality, etc.) information than consumers.

This information asymmetry occurs largely because of the search costs for consumers—i.e. the time and energy associated with learning more about a particular good or service. An implied result of this information asymmetry might be that consumers pay a higher price on average for goods and services than they would if no asymmetry occurred. But, this supposition needs to be tested.

Reduced search and information costs may account for lower online prices for homogeneous goods. Salop (1979) argues that consumer search costs tend to promote pricing above production cost, even for homogeneous product. The implied supposition is that as consumers’ search costs are reduced towards to zero, prices will reduce towards production cost.

Search Costs

It is apparent that product and pricing information has become much more readily accessible to the end consumer since the advent of the Internet. The Internet has made information freely available to consumers, but has not made the availability of information free. For example, Stigler (1961) explains that advertising is only necessary when there is an absence of perfect information. Considering top online retailers’ heavy expenditures on branding and advertising, the cost of information dissemination via the Internet is very costly, at least to

sellers. Although sellers may bear the burden of these search cost, they will ultimately need to pass the costs onto consumers.

Despite its failure to completely eliminate search costs, the Internet has, however, significantly reduced them. Stigler (1961) states that the chief cost of search for a consumer is time. If nothing else, the Internet has done much to reduce the amount of time it takes to gather information.

Brynjolfsson and Smith (2000) found that gathering book prices took approximately one minute per store by visiting the retailers' sites as opposed to approximately three minutes per store by phone. This time differential is increased even more dramatically if price search intermediaries are used. Such **price search intermediaries** (also called "infomediaries") aggregate pricing data across a large number of online stores, giving consumers access to detailed pricing information from a single search. Brynjolfsson and Smith show that gathering book price information takes only twenty seconds per store using a price intermediary. Thus, the time to do price comparisons online is *one-ninth* the time for a conventional phone search.

Price search intermediaries are not just for price-focused consumers. Further, Smith and Brynjolfsson (2001) show that the use of price intermediaries, or shopbots, does not eliminate brand loyalty. They find that even for consumers using price intermediaries the three most heavily branded online retailers maintain a \$1.72 price premium over other less recognizable online retailers. Smith et al. suggest that consumers' reluctance to select the lowest priced offer is due to fear in relation to the seller's reliability and credibility.

Therefore, although there is cause to believe that lower search costs will cause prices for homogenous product to decrease, there is evidence that the price decrease will *not* be uniform across the sellers of a given product. Some sellers seem to experience greater price-reduction pressure than others, resulting in a price dispersion effect.

Sustained Price Dispersion

Price dispersion is the spread of prices available in the market for a given homogeneous good. If there are pressures to reduce prices for a given item, then price dispersion may increase (if some prices for the item reduce faster than others), or decrease (if the prices are forced to gather around some point, such as item production cost).

The relationship between search costs and price dispersion has been documented in prior research. In auto insurance industries (Dahlby and West 1986) and prescription drugs (Sorensen 2000), it was found that price dispersion was explained by search costs. The question of the present study is whether a reduction in search costs (due to the Internet) would lead to higher or lower price dispersion for goods sold online.

Research has shown that price dispersion is actually higher online than offline. In one study, the percent difference between the mean price and the minimum price for a set of homogenous goods averaged 28%. (Brynjolfsson 2000; Smith 2001) Clemons et al. (1998) performed a study on prices of airline tickets sold online. Their study showed that, even after controlling for observable product heterogeneity, the percent difference between the maximum

price and the minimum price level for identical tickets was as much as 20%. This is particularly interesting in light of Stigler's findings that "price dispersion is a manifestation—and, indeed, it is the measure—of ignorance in the market." (Stigler 1961) The subjects in Smith's study are some of the most informed consumers in terms of price, yet the level of price dispersion in this environment is still high. According to Smith and Brynjolfsson: "Both the high levels of price dispersion and the willingness of consumers to bypass the lowest cost retailers suggests that customers perceive some differences among retailer branding or service quality that make at least some of them willing to pay a premium for an otherwise homogeneous product." (Smith 2001)

These studies of online price dispersion support the hypothesis that consumers may prefer to pay a price premium for a homogeneous good from a retailer they trust. BizRate, a firm that surveys consumer attitudes online, found that typical online consumers feel that the level and quality of service received is more important than price. (Hanrahan 1999) Shankar et al. (1998) show that price sensitivity online is decreased by prior experience with a brand in an offline setting.

In fact, Brynjolfsson and Smith (2001) find that Internet retailers that also have conventional outlets can command an 8.6% price premium over Internet-only retailers. Consumers appear to have a higher level of trust in sellers with whom they have had a prior relationship. (Salaun and Flores 2001) That being the case, Brynjolfsson et al. purport: "a high market share may be, to a degree, self-perpetuating."

Trust signaling may be more important in an online environment than in a conventional marketplace. In fact, Brynjolfsson et al. (2000) state: "Indeed, one of the ironies suggested by our data is that, far from being a great equalizer of retailers and eliminating the need for branding as is often claimed, the Internet may heighten the importance of differences among retailers in dimensions such as trust and branding." The importance of signaling trust will likely be higher in an online environment than in an offline marketplace because the physical good cannot be inspected or handled, the consumer does not have immediate access to salespeople, there is no physical store location to return to if problems arise, and traditional offline purchasers usually have little or no previous experience with an online-only store.

Trust Premiums

As just mentioned, retailers with physical stores in addition to their online presence were seen to charge an 8.6% price premium in online transactions. Milgrom and Roberts (1986) show that consumers also recognize advertising as a signal of product quality and reliability. Advertising can take traditional forms or, in an online environment, can consist of links from other well-branded sites. Word of mouth is also an important signal of trust in the online marketplace.

Trust signaling appears to be more expensive for online store than for stores in the conventional marketplace. Brynjolfsson et al. (2000) report that Amazon.com spent over \$200 million on advertising in 1999, a budget comprising 24% of their total revenue and coming to \$29 per customer. In contrast, Barnes & Noble, spent only 4% of total revenues on advertising for its offline stores in the same year.

Ellison and Ellsion (2001) claim that “e-retailers’ costs not only are high now but will remain high in the future—fixed costs for advertising and website development are not just one time set up costs. Instead they appear to be continuing expenditures that are not shrinking in importance either over time or as sales grow. Second, prices on the Internet will remain low (or become even lower)...” Additionally, the gains from trust signaling may be smaller in an online environment because of the probable reduction in impulse buying versus in the traditional marketplace.

Shop.org, an association of online retailers, estimated that customer acquisition costs in 1999 were \$82 for Internet-only merchants but only \$12 for traditional retailers. Additionally, they report that in 1999 pure-play online retailers spent an average of 119% of revenues on marketing-related expenses, whereas retailers with a presence both online and in the traditional marketplace spent an average of 36% of online revenues on marketing-related expenses.

A study by the Boston Consulting Group and Shop.org showed that online retailers that did not have a catalog or offline presence spent an average of \$82 per customer acquisition in 2000. (BCG 2001) In comparison, during the same time period, store and catalog retailers spent an average of \$12 per new customer acquisition. They also report that customer acquisition rates for online retailers are falling significantly. Schlauch and Laposa (2001) find that online retailers have not been realizing significant cost advantages due to lower real estate-related expenses (when compared with brick-and-mortar competitors). They attribute this phenomenon primarily to industry immaturity.

Convenience Premiums

The increased costs to online retailers of trust signaling can be partially offset by charging consumers for convenience. Online retailers may be able to command a price premium over offline retailers because shopping online is often perceived more convenient than shopping at a physical store. (Elliott and Fowell 2000) For example, Utah’s Division of Motor Vehicles allows automobile-registration renewals online, but charges a \$3.50 “convenience fee” because patrons don’t have to wait in long lines. Brynjolfsson et al. (2000) find that on average it takes a consumer an average of 35 minutes longer to shop at a traditional retailer than at an online retailer. Depending on the value an average consumer places on his or her time, such reduced transaction costs and increased conveniences give consumers incentive to pay more for an online purchase.

For e-commerce involving physical goods, the primary convenience premium is shipping costs. It is certainly quite convenient to have the desired product delivered to ones home the next day, but that comes with a cost. Despite the increase in item drop-shipping, there has not seemed to be any news about lowering prices or increased competition in the shipping industry. Without a breakthrough in the design of distribution systems, it seems unlikely that the shipping convenience premium will dwindle any time soon.

Reduced Transaction Costs

Not only have transaction costs been reduced for consumers, but they have also been reduced for online sellers. One example is Southwest Airlines. On their website, Southwest

states: "Southwest's cost per booking via the Internet is about \$1, and the cost per booking via a travel agent is between \$6 and \$8. The cost per booking to Southwest via the airline's reservations agents lies somewhere in between." (from Southwest's website – at time of writing at http://www.iflyswa.com/about_swa/press/factsheet.html) Southwest and other airlines either offer special discounts to customers who book online, and in some cases extra frequent flyer miles. They can afford to do this because of the significant savings brought about by reduced transaction costs.

The transaction cost savings can be reallocated in different ways. For example, 1-800-Contacts, a contact lense distributor, offers customer who shop online free shipping, which represents a \$5.95 discount on any order. (<http://www.1800contacts.com/order.html>)

As we can see, there are a number of factors that may influence online pricing of homogeneous goods and services. In the next section we will seek to summarize these potential affects in a model.

PRICE EFFECT MODEL

Figure 1 shows a model of impacts of Internet use on prices. This model encapsulates the various issues described in the prior section. This model has four paths that represent four sets of hypotheses:

Path #1 (via transaction costs): Increased Internet use is hypothesized to reduce transaction costs, as illustrated by the Southwest Airlines example. This reduces overall costs to the producer, which ultimately can be passed on to consumers in the form of price reductions.

Path #2 (via trust premiums): It is more difficult for Internet-only sellers to instill trust and confidence in consumers than click-and-brick companies or physical-store sellers. For example, we suppose that a customer will be more likely to purchase an item from a physical store they never heard of before than from a web-retailer they never heard of before. The hypothesis is that Internet-based sellers will incur a greater expense to build consumer confidence. This increased expense will ultimately be passed on to consumers.

Path #3 (via convenience premiums): Some may argue that Internet shopping is less convenient than visiting physical retailers, perhaps due to immediate possession utility. However, we would argue that the prevalence in next-day drop shipment and existence of immediate online services results in online purchases being more convenient than off-line. Our hypothesis is that increased Internet use leads to a convenience premium. Sometimes this premium simply takes the form of the over-night shipping fees. The net result is an upward pressure on prices.

Path #4 (via product search costs, information availability, and consumer knowledge): As discussed, we hypothesize that Internet can dramatically reduce product (and service) search costs. Decreased search costs are supposed to increase the amount of product information within grasp of consumers, the result being more knowledgeable consumers. Greater knowledge correlates with greater perceived selection and greater consumer power. The result is hypothesized to be a reduction in prices paid for goods.

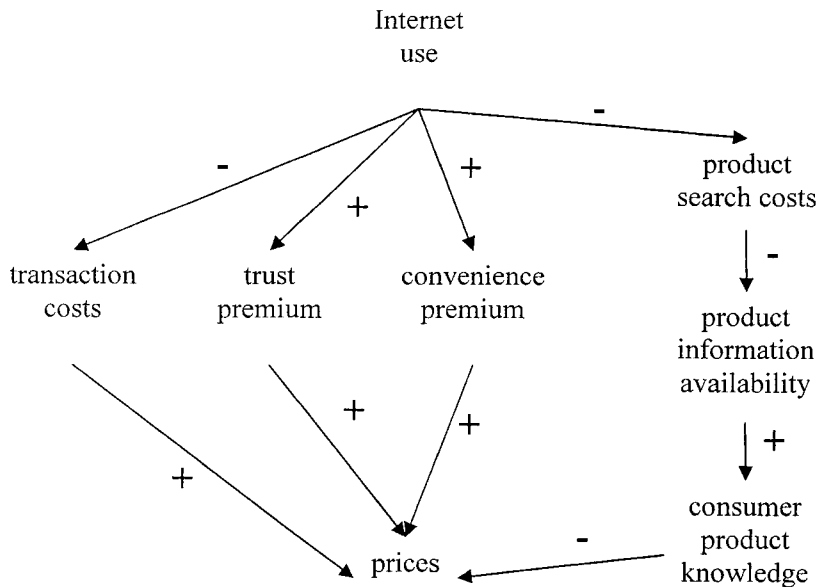


Figure 1: Basic Price Model

It is significant to note that two of the paths (#1 and #4) show the Internet to have a net effect of reducing prices, whereas the other two paths (#2 and #3) show the net effect of increasing prices. The data about which will ultimately dominate is yet to come forth. Up until just recently it was common practice among online retailers to sell below cost in order to gain market share. But, that is obviously not a sustainable strategy.

The next section will explore the most complicated of the four paths – path #4.

EMPIRICAL STUDY

In this initial empirical study, we will focus on path #4. Path #1 is possibly self-evident and probably indisputable. Path #2 is decreasing in significance as brick-and-click companies replace the dominance of online-only sellers. Path #3 is very interesting, but more difficult to study at a general level. Path #4, on the other hand, can be studied in aggregate by simply measuring customer perceptions.

Our measurement model has five general constructs, as shown in Table 1. These constructs were measured by a survey instrument that was developed and pre-tested towards the end of 2001. The actual items from the survey are shown in the Appendix. Nearly all of the items were measured via 7-point Likert scales, which is common for this type of study. Two forms of the instrument were developed, each with the items in a different random order (to control for item-ordering bias).

Construct	Measures
INTERNET_USE	Whether the consumer uses the Internet for commerce.
SEARCH_COSTS	The perceived cost in time and effort to identify produce alternatives.
AVAIL_PRICE	Whether the subjects feel there is more information available about product price.
KNOW_PRICE	Whether the subjects feel they are more knowledgeable about product price.
GET_PRICE	Whether the subjects feel they get lower prices.

Table 1: Constructs for Tested Model

The survey instrument was administered to 48 subjects in December of 2001, and another 39 subjects in January of 2002 (half of each group given each survey form). The subjects were from a convenience sample of undergraduate students in business management classes. We fully recognize how this limits the ability to generalize the results. However, this is common practice for preliminary studies, particularly in the stages of theory building.

Cronbach's Alpha scores were calculated for the various constructs, with scale reliability found to be excellent for some constructs and adequate for others. Nevertheless, we desire to further refine our instrument for use in a more stratified data collection.

The data was used to test relationships in the model represented by path #4 of Figure 1. Table 2 reiterates the hypothesized correlations of factors with textual explanations.

<u>Construct</u>	<u>Hypothesized Relationship</u>
INTERNET_USE	
9	– (more Internet use leads to reduced search costs)
SEARCH_COSTS	
9	– (lower search costs leads to increased availability of price information)
AVAIL_PRICE	
9	+ (more info availability leads to more knowledge about product prices)
KNOW_PRICE	
9	– (more price knowledge leads to getting reduced product prices)
GET_PRICE	

Table 2: Price Effect Model

Price Effect Results

Table 3 shows the empirical results for the price-effect model. These results are for pairwise test of relationships, not for simulation relationships or path analysis. Therefore, the

tests only consider direct effects of the model, but not alternate effects. The confirmatory path analysis is underway at this writing.

<u>Construct</u>	<u>H:Relat.</u>	<u>Coefficient</u>	<u>H:sign</u>	<u>t-stat</u>	<u>significance*</u>
INTERNET_USE					
9	-	-0.486	yes	-5.129	p<0.001
SEARCH_COSTS					
9	-	-0.452	yes	-4.669	p<0.001
AVAIL_PRICE					
9	+	0.578	yes	6.534	p<0.001
KNOW_PRICE					
9	-	-0.301	yes	-2.907	p<0.01
GET_PRICE					

*one-tailed significance levels

Table 3: Price Effect Results

The Table 3 column “H:Relat.” refers to the hypothesized sign of the relationship effect, from Table 2. The column “H:sign” indicates whether or not the hypothesized relationship was supported by the data. We observe that all of the relationships we hypothesized were supported—in no case could we reject a null hypothesis. Further, we found very strong significance levels.

Results for Trust Issues

Even though the empirical test focused on Path #4 effects, we did have one survey item about trust of online information: “I trust the product information I find on the Internet.” (7-point Likert) The mean score for this item was 4.8, which is only 0.74 standard deviations above the center-response of 4.0. In other words, the subjects tend to trust the Internet more than not, but that bias it is not statistically significant.

The correlation coefficient between this trust item and the INTERNET_USE construct is 0.186, which is significantly significant at a level $p < 0.05$. This implies that those who use the Internet more for commerce purposes tend to trust it more, as we would have expected. But the most interesting question, for which we do not yet have the answer, is about causality: Does trust motivate Internet use or does Internet use build trust? The answer is probably some of both.

Extension to Quality

As alluded to in the introduction section, one interesting extensions of this research is to the realm of perceived quality of goods purchased online versus offline. Unfortunately, we have been unable to locate theoretical foundations in the research literature for quality effects as we have for price effects. Nevertheless, the cost of extending the study was low, and there is value in theory building and opening the way for future research studies of quality effects.

Indeed, quality issues are closely related to price issues. We believe that similar effects occur for quality as for price, i.e. that consumers gain benefits by reduced information asymmetry. However, we may suppose that the strength of effect for quality is different than for price. To test this we used parallel constructs shown in the Appendix for quality information availability (AVAIL_QUAL), subject knowledge about product quality (KNOW_QUAL), and perception of getting higher quality (GET_QUAL). Table 4 shows the model of hypothesized construct correlations.

<u>Construct</u>	<u>Hypothesized Relationship</u>
INTERNET_USE	
9	– (more Internet use leads to reduced search costs)
SEARCH_COSTS	
9	– (lower search costs leads to increased availability of quality information)
AVAIL_QUAL	
9	+ (more info availability leads to more knowledge about product quality)
KNOW_QUAL	
9	+ (more quality knowledge leads to getting better quality products)
GET_QUAL	

Table 4: Quality Effect Model

The only effect difference between the price and quality models is that “lower is better” for price and “more is better” for quality. This makes the final effects of each model of different signs. Otherwise, the models are fundamentally identical.

Table 5 shows the results for the quality-effect model. Interestingly, we supposed that the price effect would be the stronger of the two, but found that the quality effect was stronger for two of the relationships. This makes us think that e-commerce is not all about price shopping, but is as much about getting better quality goods and services.

<u>Construct</u>	<u>H:Relat.</u>	<u>Coefficient</u>	<u>H:sign</u>	<u>t-stat</u>	<u>significance*</u>
INTERNET_USE					
9	-	-0.486	yes	-5.129	p<0.001
SEARCH_COSTS					
9	-	-0.245	yes	-2.328	p<0.01
AVAIL_QUAL					
9	+	0.671	yes	8.347	p<0.001
KNOW_QUAL					
9	+	0.459	yes	4.765	p<0.001
GET_QUAL					

*one-tailed significance levels

Table 5: Quality Effect Results

COMMENTS AND FUTURE DIRECTIONS

This research has been interesting because of the dynamic nature of e-commerce. The rapid evolution of e-commerce makes research in the area both interesting as well as somewhat risky. One result may be to document an effect that occurs in the current state of things, but which becomes obsolete due to new technologies or changing economies. Another outcome may be developing a model that predicts the direction e-business will evolve next, only to have the evolution be realized before the model ever makes it into print.

Notwithstanding the perils of e-commerce research, there is an appeal to studying history in the making. The following are some of the follow-on research questions to be addressed in this quest.

- In what way will brick-and-click companies (having both online and offline sales channels) reconcile the different cost structures of their physical operations and their online operations?
- Will price dispersion for online sale of homogeneous goods eventually decrease as more of the population uses price search intermediaries?
- Will established brick-and-mortar companies (i.e. offline only) be successful at transferring their consumers' trust over to online operations?
- Will consumers consider brick-and-click companies as holistic companies, or as companies with separate online and physical operations?
- Will the reduction in search costs transfer over to heterogeneous goods and services? (Online services that provide consumers with bids for home repair work have not seemed to taken off.)
- The Internet seems to help consumers *find* higher quality goods and services, but will it also help producers *design and deliver* higher quality?

Our next step is to complete the confirmatory factor analysis of the current models, and to gather data from a more stratified sample of e-commerce users and non-users. The hope is that this research can be used to help companies anticipate appropriate ways of positioning products and services in an e-commerce environment.

APPENDIX: SURVEY ITEMS

Construct	Survey Items*
INTERNET_USE	<p>I have made a purchase over the Internet within the last year.</p> <p>I research products on the Internet even if I plan to purchase from a retail store.</p> <p>I consider myself to be an "Internet shopper" (someone who shops on the Internet)</p> <p>I frequently use the Internet to learn more about products before making a purchase.</p>
SEARCH_COST	<p>It takes less time to locate and learn about a product and its alternatives online than at a retail store.</p> <p>It takes more time to locate and learn about a product and its alternatives online than at a retail store.</p> <p>The "costs" (time, energy, effort) of searching out and learning about a product are reduced by the Internet.</p> <p>The Internet does not reduce the "costs" (time, energy, effort) of searching out and learning about a product.</p>
AVAIL_PRICE	<p>There is more product price information available on the Internet than at retail stores.</p> <p>It is easier to do price comparisons by visiting local stores than by using the Internet.</p>
KNOW_PRICE	<p>By shopping on the Internet, I am more knowledgeable about reasonable prices than if I just visited local retailers.</p> <p>Visiting local retailers makes me more knowledge about reasonable prices for products than I get from the Internet.</p>
GET_PRICE	<p>I typically get better prices from Web retailers than from retail stores.</p> <p>Local retailers typically sell products at better prices than you can get on the Internet.</p>
AVAIL_QUAL	<p>Online sources can give me more information about a product's quality than I can learn from visiting local stores.</p> <p>Local retailers provide better information about product quality than is available on the Internet.</p>
KNOW_QUAL	<p>When I shop online I feel like I have a greater knowledge of product quality than when I shop at a local store.</p> <p>I feel more informed about product quality when I shop at retail stores than when I shop online.</p>
GET_QUAL	<p>Internet research helps me get a better quality product than if I relied solely on retail stores.</p> <p>In making a purchase, I do not get a better quality product by using the Internet for research than if I just visited local retailers.</p>
TRUST	<p>I trust the product information I find on the Internet.</p>

* the first INTERNET_USE item measured on a no-yes scale.

All other items measured on a seven-point Likert scale (strongly-agree to strongly-disagree).

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