

FACTORS AFFECTING E-COMMERCE TEXTBOOK PURCHASES

Harry Reif, James Madison University, reifhl@jmu.edu
Thomas W. Dillon, James Madison University, dillontw@jmu.edu

ABSTRACT

With the advent of e-commerce, opportunities have arisen for students to obtain course textbooks from sources other than the traditional campus bookstore(s). This research seeks to understand the factors motivating students to select e-commerce or traditional vendors for their textbook purchases. It surveys student perceptions of e-commerce textbook purchases from the perspectives of product perception, shopping experience, customer service, and consumer risk.

Keywords: e-commerce, consumer behavior, purchasing practices

INTRODUCTION

Four specific determinant groups that influence consumers' purchase decisions have been identified in the literature (10, 15). They are: product perception, shopping experience, customer service, and consumer risk. Product perception is one determinant of where consumers choose to shop (7). The most influential product perception factors cited in the literature are price, product quality, and product variety (1, 2). The second group of determinants of shopping choice are attributes of the shopping experience, often described in terms of time, convenience and product availability (4, 5); effort (3); lifestyle compatibility (13); and playfulness or enjoyment (8) of the shopping process. Customer service is frequently identified as the third dimension that determines shopping choice (2). Customer service attributes influencing shopping choice include responsiveness, assurance, and reliability. Consumer adoption of new retail innovations, such as electronic-commerce purchasing, is influenced by perceived risks. Economic, social, performance, personal and privacy risk dimensions are typically considered (10,14).

The objective of this study is to relate the four factors identified in the literature as affecting purchase decisions (product perception, shopping experience, customer service, and perceived risk) to electronic-commerce textbook purchases. The survey discriminates among purchasers based upon demographic status and self-reported computing experience.

REVIEW OF LITERATURE

Each of the four factors believed to influence consumers' purchase decisions has historically been researched and documented in the context of traditional consumer behavior literature. For the purposes of this research, existing research findings are used to construct a basis for examining how each of the factors apply to e-commerce textbook purchases.

Product Perception

Perceptions of the products to be found at a given retailer, Internet-based or traditional, are one key determinant of where consumers choose to shop (7). The most influential factors cited in the literature for general purchases are perception of price, product quality, and product variety (1,2).

Price is defined as the total monetary cost to the consumer for the purchase. New pricing strategies are now being applied to goods and services sold over the Internet. Dynamic pricing, defined as a pricing strategy where prices change over time, across consumers, or across product bundles can be easily executed on the Internet. This is in contrast to conventional channels (11) where pricing changes are traditionally performed over the course of weeks or months.

Product quality is defined as the distinguishing characteristics or traits inherent in the product or service that differentiate it from competitive product or service offerings. For the purpose of this definition, service refers to the service that is being purchased and should not be confused with customer service which is treated as a separate factor and is defined in a separate heading later in this paper. A third variable, product variety, is defined as the assortment or range of similar or complimentary goods available from the retailer. Product variety is important to shoppers because it provides them with the opportunity to compare, contrast, and select from amongst multiple potential solutions that meet their shopping needs.

The shopping experience that is the subject of this research, textbook purchases, requires students to purchase a pre-selected product as opposed to other shopping experiences where the shopper must narrow their choices from a host of many products that might meet their needs. Due to the nature of the shopping experience of this study, variety is not a consideration in the shopper's product perception.

Shopping Experience

The shopping experience is a mixture of effort (3), lifestyle compatibility (13), and playfulness (8, 9). When engaged in e-commerce purchases over the Internet, effort is primarily mental as opposed to physical; shoppers work at their keyboard instead of having to plan for and travel to multiple shopping sites. For e-commerce shopping, the dominant components of effort are ease of use and ease of placing and canceling orders. These components may be described in terms of the time required to find and purchase items, the convenience of using the shopping engine or toolset as part of the purchasing process, or the availability of the desired products (4, 5).

Compatibility considers the consumers' lifestyle and shopping habits (15). The shopping tools must be easy to use and must provide the customer with all of the information required to make a purchase decision. If additional support is required, such as telephone interaction to answer personal questions, the tools must facilitate this linkage and personnel must be available to effect the desired support. Long telephone wait times or lack of available personnel due to the seller's business hours all have negative impact on the purchaser's perceived compatibility of lifestyle.

Playfulness takes into account the shopper's overall satisfaction with the shopping experience. It is negatively affected by sites that are cumbersome to navigate, that insult the shopper's intelligence, or that do anything to make the shopping experience unpleasurable. Realistically,

all shoppers are seeking a shopping experience that is the most convenient, most lifestyle compatible, and the most enjoyable activity as possible

Customer Service

Customer service determines shopping choice (2) through responsiveness, assurance, and reliability attributes. Responsiveness is embodied in the way that the service provider anticipates and responds promptly and effectively to customer needs and requests. Assurance is exemplified by the degree to which the service provider reduces customers' uncertainty by instilling confidence that the transaction will occur as the consumer expects it will. Reliability occurs when the customer perceives that there is a high probability that the service provider can be counted on to deliver all of what is being promised. Internet purchases of tangible goods pose significant reliability challenges (10) because, unlike traditional in-store purchases where the customer has an opportunity to physically inspect the goods prior to purchase and most often takes physical possession of the goods immediately, Internet purchasers must rely on mediated representations of the goods being purchased and are dependent on a third party for the delivery of the purchased item.

Consumer Risk

Consumer adoption of a new retail innovation, such as e-commerce textbook purchasing, is influenced by perceived risks. The risk dimensions typically considered are economic, performance, personal, (14) and privacy (10). Economic risk encompasses monetary losses associated with poor purchase decisions, the inability to return a product, and the non-receipt of a product ordered (12). Performance risk involves the consumer's perception that a product or service may fail to meet expectations or the "fear of not getting what they want" (6). The possibility of harm to the consumer resulting from either the product or the shopping process is referred to as personal risk. Credit card security is a key personal risk factor when participating in an e-commerce retail transaction (10). And finally, privacy risk reflects the degree to which a consumer may lose privacy because of a loss of confidential information that may be made available when participating in a retail e-commerce transaction (10).

Each of the determinants described above (product perception, shopping experience, customer service, and perceived risk) will be examined in an effort to better understand how they affect students' decisions to purchase textbooks from Internet e-commerce sites in lieu of traditional bookstores.

METHOD

Data Collection Procedures

One hundred and seventy students completed the "Student Internet Purchase Survey" 30 days after participating in the textbook buying process. Surveys were distributed in a variety of business classrooms. Students completing the survey were almost exclusively business or science majors. One of the completed surveys was discarded due to inadequate completion.

The Instrument

The questionnaire began with demographic questions that identified the respondent's academic level and gender. Respondents self-reported their overall level of computer expertise (beginner, novice, average, experienced, or expert). Students were asked whether they had made an Internet purchase from an electronic commerce vendor in the past six months. It was assumed that all participants in the study had made at least one traditional purchase during the past six months.

The second section of the questionnaire sought to measure how each of the purchase determinants affected the respondent's decision to purchase or not to purchase a textbook over the Internet. These determinants were product perception, shopping experience, customer service provided by the textbook vendor, and consumer risk. The survey contained 15 words or phrases taken from the literature as representing factors that influence the four determinants of the buying experience.

We began with two product perception factors (price and quality), five shopping experience factors (physical effort, lifestyle compatibility, enjoyment of the activity, shopping time, and required textbook in stock), four customer service factors (delivery time, customer service/responsiveness, vendor reliability, and return convenience), and three consumer risk factors (forms of acceptable payment, confidentiality of personal data, and return policy). The items were listed randomly and respondents circled a number on a seven-point semantic distance scale to show how well they felt each described an Internet textbook purchase. The extremes were labeled "Not at all" and "Very influential".

RESULTS

This section presents the results of the study. First, the reliability and validity of the instrument is discussed. Second, factors affecting an electronic commerce purchase decision are examined. Finally, conclusions are drawn to provide a better understanding for how electronic-commerce vendors will fare in the future with this segment of the marketplace.

Reliability and Validity

To provide content validity for the variables gathered, all questionnaire items were drawn from a previous study of similar design (10).

Factor validity was assessed by factor analysis of the product perception, shopping experience, customer service, and consumer risk scale items using principal component extraction and oblique rotation. Four sub-variables did not appear to fall into either of the four scales (shopping time, delivery time, physical effort, and required textbook is in stock). Each was removed and the factor analysis was run again. As shown in Table 1, the four-factor solution is consistent with four distinct scales, one for each of the four factors (product perception, shopping experience, customer service, and consumer risk). Results suggest that the respondents related return policy more closely with customer service than with consumer risk. This finding was not surprising given the literature's findings that some factors overlap in a web-based context (15).

Cronbach's alpha was used to assess inter-item reliability for each multi-item instrument; product perception, shopping experience, customer service, and consumer risk (i.e., seven-point semantic differential rating scales). As reported in Table 2, Cronbach's alphas were .802 for product perception, .783 for shopping experience, .841 for customer service, and .755 for consumer risk.

Table 1: Construct Validity (Factor Analysis)

| Scale Items | Customer Service | Product Perception | Shopping Experience | Consumer Risk |
|-------------------------|------------------|--------------------|---------------------|---------------|
| Vendor reliability | .773* | .232 | .173 | .210 |
| Return convenience | .741* | .162 | .018 | .206 |
| Return policy | .735* | .375 | .018 | .223 |
| Customer service | .733* | .167 | .253 | .143 |
| Vendor knowledge | .617* | .101 | .435 | -.018 |
| Price | .113 | .869* | .106 | .223 |
| Quality | .326 | .703* | .161 | .219 |
| Enjoyable activity | .180 | .167 | .824* | .220 |
| Lifestyle compatibility | -.024 | .190 | .804* | .116 |
| Forms of payment | -.024 | .220 | .130 | .847* |
| Confidentiality | .508 | .192 | .107 | .628* |
| Credit card security | .478 | -.024 | .286 | .576* |

Table 2: Inter-Item Reliability (Cronbach's Alpha)

| Variable | Alpha |
|---------------------|-------|
| Product perception | .802 |
| Shopping experience | .783 |
| Customer service | .841 |
| Consumer risk | .755 |

Factors Affecting an Electronic Commerce Purchase Decision

The demographic distribution for the sample is presented in Table 3. The sample was somewhat evenly balanced between males and females and the academic level, but the self-evaluation of computer expertise and previous Internet purchase had wider ranging sample sizes. For academic level, no freshman was asked to complete the questionnaire because the assumption was made that a first semester freshman would not have experience with the online university textbook buying process. Interestingly, no student that completed the survey self-evaluated their computing expertise as a beginner.

Table 3: Demographic Distribution of Sample

| Academic Level | Number | % |
|----------------|--------|------|
| Freshman | 0 | 0 |
| Sophomore | 36 | 21.3 |
| Junior | 57 | 33.7 |
| Senior | 76 | 45.0 |

| Self-evaluation of computer expertise | Number | % |
|---------------------------------------|--------|------|
| Beginner | 0 | 0 |
| Novice | 6 | 3.6 |
| Average | 31 | 18.3 |
| Experienced | 119 | 70.4 |
| Expert | 13 | 7.7 |

| Sex | Number | % |
|--------|--------|------|
| Male | 95 | 56.5 |
| Female | 73 | 43.5 |

| Previous Internet Purchase | Number | % |
|----------------------------|--------|------|
| Yes | 40 | 23.7 |
| No | 129 | 76.3 |

Paired T tests were used to determine the mean differences for each factor. Consumer risk (mean of 4.48) and customer service (mean of 4.57) were both found to be overall more influential than product perception (mean of 3.39) and the shopping experience (mean of 3.18) for Internet textbook purchases.

An analysis of variance was used to locate response differences for academic level, gender, self-evaluated computer skills, and previous Internet purchase experience. No significant differences were found for academic level. Gender differences were found for consumer risk. Self-evaluated computer skills differences were found for product perception. Previous Internet purchase experience differences were found for product perceptions and for shopping experience.

The sample contained 95 males and 73 females. An analysis of variance indicated a significant effect for consumer risk ($F(2, 166) = 3.173, p = .044$). Males (mean of 4.27) were influenced less than females (mean of 4.79) by consumer risk (i.e., forms of payment, confidentiality, and credit card security).

There were 6 self-evaluated novices, 31 self-evaluated average users (mean of 2.63), 119 self-evaluated experienced users (mean of 3.4), and 13 self-evaluated experts (mean of 5.11). An analysis of variance indicated a significant effect for product perception ($F(1, 167) = 21.336, p = .000$). Experts were influenced by product perception (i.e., price and quality) more than average users ($t(42) = 3.942, p = .000$) and experienced users ($t(130) = 3.183, p = .002$).

Forty students indicated that they had not yet made an Internet purchase, while 129 indicated that they had. Those students with at least one Internet shopping experience (means of 3.75 and 3.35) were more likely to be influenced to make an Internet purchase by product perception ($t(167) = 4.619, p = .000$) and the shopping experience ($t(167) = 2.747, p = .007$) than those that had not yet purchased something over the Internet (means of 2.22 and 2.63).

Discussion and Conclusions

The objective of this study was to relate the four factors affecting purchase decisions (product perception, shopping experience, customer service, and perceived risk) to the electronic-commerce textbook purchases of students. Javenpaa and Todd (1996) suggest that each of these factors influence the purchase decision of customers that make purchases on the Internet. The findings of this research indicate that consumer risk and customer service are the main factors that influence the Internet purchasing practices of students. Product perception and the shopping experience are less influential factors for all students, but do become important for certain demographics. Initial findings indicate that textbook vendors will need to provide secure, well-designed web sites to attract student shoppers.

REFERENCES

1. Arnold, S.J., Handelman, J., & Tiger, D.J. (1996). Organizational legitimacy and retail store patronage, Journal of Business Research, (35), 229-239.
2. Baker, J. Levy, M. & Grewal, D. (1992). An experimental approach to making retail store environment decisions, Journal of Retailing, (64), 445-460.
3. Baty, J.B., & Lee, R.M. (1995). InterShop: enhancing the vendor/customer dialectic in electronic shopping, Journal of Management Information Systems, (11), 9-31.
4. Berkowitz, E.M., Walker, O.C., & Walton, J.R. (1979). In-home shoppers: the market for innovative distribution systems, Journal of Retailing, (55), 15-33.
5. Bhatnagar, A., Misra, S. & Rao, H.R. (2000). On risk, convenience, and internet shopping behavior, Communications of the ACM, (43), 98-105.
6. Cox, D.F. & Rich, S.U. (1964). Perceived risk and consumer decision making-the case of telephone shopping, Journal of Marketing Research, (1), 32-39.
7. Cronin, M.J. (1996). Global Advantage on the World Wide Web. New York: Van Nostrand Reinhold.
8. Hoffman, D.L., & Novak, T.P. (1996). Marketing in the hypermedia computer-mediated environments: conceptual foundations, Journal of Marketing, (60), 50-68.
9. Hoffman, D.L., & Novak, T.P. (1997). A new market for paradigm for electronic commerce. Information Society, (13), 43-54.
10. Javenpaa, S.L. & Todd, P.A. (1996-97). Consumer reactions to electronic shopping on the world wide web, International Journal of Electronic Commerce, (1), 59-88.
11. Kannan, P.K. & Kopalle, P.K. (2001). Dynamic pricing on the Internet: Importance and implications for consumer behavior, International Journal of Electronic Commerce, Spring 2001, (5), 3, 63-83.
12. Peterson, R.A., Albaum, G. & Ridgway, N.M. (1989). Consumers who buy from direct sales companies, Journal of Retailing, (65), 273-286.
13. Rogers, E.M. (1983). Diffusion of Innovations (3rd ed.). New York: Free Press.
14. Simpson, L & Lakner, H.B. (1993). Perceived risk and mail order shopping for apparel, Journal of Consumer Studies and Home Economics, (17), 377-398.
15. Vellido, A., Lisboa, P.J.G., & Meehan, K. (2000) Quantitative characterization and prediction of on-line purchasing behavior: A latent variable approach. International Journal of electronic Commerce, (4), 83-104.