Developing a Scale to Measure the Perceived Quality of an Internet Shopping Site (PQISS)

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Abstract

Internet shopping sites must be of high quality to attract consumers and influence their shopping decisions. We have developed a scale to measure the perceived quality of an Internet shopping site (PQISS). This scale can be used to evaluate Internet shopping sites and to examine the relationships between the site quality and relevant variables.

The purpose of this study is to develop a psychometrically sound instrument to measure the perceived quality of an Internet shopping site (i.e., PQISS). We generated items purely based on consumers' own descriptions because PQISS should measure consumers' perceptions of quality. Students in two marketing classes in a major state university participated in the study. They listed the characteristics of Internet shopping sites that succeeded or failed to make them purchase by responding to open-ended questions. The participants named a total of 92 descriptions of site characteristics. With obviously overlapping descriptions excluded, 54 descriptions were retained as the pool of candidate items of PQISS. The descriptions were reworded in short, clear sentence form for evaluations.

A two-page questionnaire was developed to evaluate the 54 descriptions of site characteristics, using five-point Likert scales anchored at 1 = "strongly disagree" and 5 = "strongly agree." The descriptions were randomly arranged to avoid the systematic order effect or the cluster answering effect.

The questionnaire was distributed to 94 students in three marketing classes. Participants were asked to visit and interact with any three Internet shopping sites of their own selection and then rate the 54 descriptions for each site. A total of 69 participants (73% response rate) completed the questionnaire, which resulted in 207 evaluations. Sites for books, music, videos, apparel and accessories, department stores, travel, and automobiles received the most visits, but no single category was dominant. This wide variety of site categories enhances the cross-site applicability of the scale.

To reduce the length of the description set while maintaining the diversity of site quality perceptions, we conducted exploratory factor analysis. As a result of a careful examination of eigenvalues, proportion of variance explained, and scree test, nine distinct factors were identified. These factors exceeded one eigenvalue each, showed rapid increments in the scree curve, explained 75 percent of the variance, and, more importantly, showed a clear factor-loading pattern. Based on the shared meaning of the items of each factor, the nine extracted factors or dimensions were labeled as aesthetic design, competitive value, ease of use, clarity of ordering, corporate and brand equity, security, processing speed, product uniqueness, and product quality assurance.

The PQISS measurement model of 20 items estimated by confirmatory factor analysis was supported by values of fit. First, CFI and IFI were .90 and .91, respectively. SRMR was .052. RMSEA was .079. The chi-square statistic was 306.59 with 133 degrees of freedom. Second, despite the large number of items considered, no substantial departures from unidimensionality were observed. Every other modification index was less than 10. Third, all items were loaded on their corresponding constructs. The loadings of the items on their corresponding dimensions ranged from .60 to .96. The smallest t-value of the loadings was 7.63, which exhibits the high significance of the loadings. Fourth, the composite reliability estimates, computed from LISREL results as evidence of convergent validity, were satisfactory, ranging from .70 to .93. In addition, the average variance extracted for each dimension ranged from .47 to .87.