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TRAINING AND USER PERCEPTIONS OF THE QUALITY OF INTERNET-BASED INFORMATION

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Abstract

The potential for information quality problems on the Internet is generally recognized. There have been calls for training designed to increase awareness of these problems. However, little research has examined the effect of this training on perceptions of the quality of Internet-based information. This study surveys subjects who have and have not received training on information quality problems associated with Internet-based information using an instrument that builds on prior research by Wang and Strong (1996). The findings will provide a basis for the development of training programs designed to sensitize users of the Internet to information quality issues.

Introduction

It is generally recognized that problems may occur with information published on the Internet. For example, Pack (1999) notes that “much information on the Internet isn't reliable” (page 24) because editorial and peer review processes are often missing. Hawkins (1999) notes that information can be posted more quickly on the Internet but that this may lead to information with errors being published. Fuld (1998) notes that poor information quality on the Internet can damage business performance and warns executives of the dangers of old and irrelevant information.

Checklists and frameworks providing prescriptive advice for evaluating the quality of information published on the Internet have been developed (e.g., Alexander and Tate 1999; Hawkins 1999). However, little is known about how training affects users' perceptions of the information quality of Internet-based information. The objective of the study reported in this paper is to improve our understanding of how training programs can change users' evaluations of Internet information quality. The study is built on prior research aimed at understanding the dimensions of data quality.

Dimensions of Information Quality

Information quality is generally thought of as a multi-dimensional concept. For example, Huh et al. (1990) define four dimensions of information quality: accuracy, completeness, consistency, and currency. They define accuracy as agreement with either an attribute about a real world entity, a value stored in another database, or the result of an arithmetic computation. They say that completeness must be defined with respect to some specific application and that the term refers to whether all of the data relevant to that application are present. Consistency refers to an absence of conflict between two datasets. Currency refers to whether data are up-to-date. Other taxonomies of information quality have been developed by Zmud (1978), Davis and Olson (1985), Madnick and Wang (1992), Fox et al. (1993), and Wand and Wang (1996).

The Data Consumer Perspective

Wang and Strong (1996) departed from earlier taxonomies of information quality by creating a framework of dimensions of information quality from the perspective of data consumers. Two surveys of data consumers were conducted to generate a comprehensive list of data attributes. Fifteen dimensions (encompassing 50 data attributes) were found. The dimensions are believability, accuracy, objectivity, reputation, value-added, relevancy, timeliness, completeness, appropriate amount of data, interpretability, ease of understanding, representational consistency, concise representation, accessibility, and access security.

Wang and Strong (1996) suggest that their framework is a tool for measuring information quality. Strong et al. (1997) discuss data quality problems in three organizations using this framework.

Research Propositions

Fifteen research propositions examining the effect of training on perceptions of the quality of Internet-based information are examined in this study. Each research proposition corresponds to one of the fifteen data quality dimensions found by Wang and Strong (1996). The fifteen research propositions are stated below in the alternate form.

- Proposition 1:** Training will not affect user perceptions of the believability of information available from the Internet.
- Proposition 2:** Training will not affect user perceptions of the accuracy of information available from the Internet.
- Proposition 3:** Training will not affect user perceptions of the objectivity of information available from the Internet.
- Proposition 4:** Training will not affect user perceptions of the completeness of information available from the Internet.
- Proposition 5:** Training will not affect user perceptions of the reputation of information available from the Internet.
- Proposition 6:** Training will not affect user perceptions of the value added by information available from the Internet.
- Proposition 7:** Training will not affect user perceptions of the relevancy of information available from the Internet.
- Proposition 8:** Training will not affect user perceptions of the timeliness of information available from the Internet.
- Proposition 9:** Training will not affect user perceptions of the appropriateness of the amount of information available from the Internet.
- Proposition 10:** Training will not affect user perceptions of the interpretability of information available from the Internet.
- Proposition 11:** Training will not affect user perceptions of the ease of understanding of information available from the Internet.
- Proposition 12:** Training will not affect user perceptions of the representational consistency of information available from the Internet.
- Proposition 13:** Training will not affect user perceptions of the conciseness of the representation of information available from the Internet.
- Proposition 14:** Training will not affect user perceptions of the accessibility of information available from the Internet.
- Proposition 15:** Training will not affect user perceptions of the access security of information available from the Internet.

Research Methodology

This study uses a survey based on the Wang and Strong (1996) framework. This framework is an appropriate foundation for this study because we are interested in perceptions of the quality of information provided through the Internet from the perspective of the consumers (users) of this data.

The survey will be administered to 150 undergraduate students. A treatment group consisting of seventy-five subjects will receive training on information quality problems associated with the use of Internet-based information prior to completing the survey. A control group consisting of another seventy-five students will complete the survey without receiving the training. Demographic

data on the subjects' age, gender, work experience, computer experience, and Internet experience will be collected to ensure that the treatment and control groups are comparable.

The survey asks questions about the extent to which the fifty data attributes identified by Wang and Strong (1996) describe Internet-based information. A sample question is shown below for one of the data attributes (accuracy).

Data from Internet sources are accurate.
 Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

The survey is based on an instrument previously validated by Wang and Strong (1996). Factor analysis will be performed to test for consistency with the dimensions found by Wang and Strong (1996). Reliability and validity of the instrument will be evaluated following the methodology of Straub (1989). Results of the tests of reliability and validity of the instrument as well as differences in the perceptions of the trained and untrained users along the fifteen dimensions developed by Wang and Strong (1996) will be presented at the conference.

Conclusion

This study will be a first step toward understanding how training affects user perceptions of the information quality of information available from the Internet. The findings will help researchers and practitioners develop interventions to improve user understanding of the quality of information available through the Internet.

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