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Abstract

Little empirical research on users' perceptions of the information quality of the World Wide Web has been conducted. This study examines users' perceptions of the quality of information found on the World Wide Web. The effect of demographic differences (age, gender, and education) and differences in experience (computer experience, Internet experience, experience conducting research using the Internet, and work experience) on users' perceptions of the information quality of the World Wide Web are examined. Undergraduate and graduate students were surveyed using an instrument that builds on prior research by Wang and Strong (1996) identifying fifteen dimensions of data quality. Measures of demographic characteristics and experience were added to the survey. The findings will provide a basis for the development of interventions to sensitize users of the World Wide Web to information quality issues.

Introduction

Because of the ease with which information can be published on the World Wide Web, information quality problems may occur. Yet, despite anecdotal evidence that problems with the quality of information available through Internet sources such as the World Wide Web can occur (e.g., Calishain, 1997), little research measuring users' perceptions of the quality of this information has been done.

Little is known about how demographic differences may affect users' perceptions of the quality of information accessed using the World Wide Web. While the majority of users of the World Wide Web have been young, male, and college educated in the past, this is less likely to be true in the future (Fitzgerald and Dennis, 1999). As the population of people using the World Wide Web comes to resemble the general population, an understanding of demographic differences in perceptions of information quality will be more important.

It is also not known whether users' experience with computers in general or with the World Wide Web specifically affects their perceptions of the quality of information accessed using the World Wide Web. Other factors affecting these perceptions may include work experience and experience completing research projects that involve using the World Wide Web.

A study of users' perceptions of the quality of information retrieved from the World Wide Web is being conducted. The study applies prior research on identifying dimensions of information quality. The remainder of the paper discusses this body of research on the dimensions of information quality, the methodology of the present study, and the research propositions tested in the present study.

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. Fox et al. (1993) discuss the same four dimensions of information quality.

Other taxonomies of information quality have been developed by Zmud (1978), Davis and Olson (1985), Madnick and Wang (1992), 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) argue 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 Methodology

A survey based on the Wang and Strong (1996) framework has been developed. 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.

Subjects

The survey was administered to 150 undergraduate and graduate students. Half the students had completed a course project requiring the use of Internet resources as tools for conducting research. Half the students had not completed the project.

Information Quality

Questions about the extent to which the 50 data attributes identified by Wang and Strong (1996) describe information from Internet sources were asked. Students who had completed the course project involving Internet resources answered the questions in the context of the course project. A sample question is shown below.

Data used for the course project from Internet sources were accurate.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Students who had not completed the course project answered questions which asked them to draw on their experiences using the Internet for school assignments, work assignments, or personal projects. A sample question is shown below.

Data from Internet sources are accurate.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Demographics

All subjects were asked to report their age, gender, and number of undergraduate or graduate credit hours completed prior to the study.

Experience

All subjects were asked to report their computer experience, Internet experience, and work experience. Completion of the course project was taken as another indicator of experience with the World Wide Web.

Data Analysis

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 user perceptions of the information quality of Internet sources along the fifteen dimensions developed by Wang and Strong (1996) will be presented at the conference.

Research Propositions

Seven research propositions will be examined for each of the fifteen information quality dimensions found by Wang and Strong (1996). Three of the propositions address demographic differences, and four of the propositions addresses differences in experience. The seven research propositions are stated below for one of the dimensions of information quality (accuracy).

Proposition 1: Differences in gender will affect users' perceptions of the accuracy of information available from the Internet.

Proposition 2: Differences in age will affect users' perceptions of the accuracy of information available from the Internet.

Proposition 3: Differences in education will affect users' perceptions of the accuracy of information available from the Internet.

Proposition 4: Differences in amount of experience with computers will affect users' perceptions of the accuracy of information available from the Internet.

Proposition 5: Differences in amount of experience with the Internet will affect users' perceptions of the accuracy of information available from the Internet.

Proposition 6: Differences in experience conducting research using the Internet will affect users' perceptions of the accuracy of information available from the Internet.

Proposition 7: Differences in amount of work experience will affect users' perceptions of the accuracy of information available from the Internet.

Conclusion

This study will be a first step toward understanding how demographic differences and differences in experience affect users' perceptions of the 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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