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ABSTRACT

Are e-services to different ethnic groups equal? Although extensive research has been conducted on racial and ethnic bias, little research has been conducted on discrimination in the online setting. Title II of the Civil Rights Act states that service providers should not discriminate on the grounds of race, color, religion, or national origin, yet it is possible that e-services are biased. Providing services to diverse user groups over the internet may increase, eliminate, or decrease such bias. This experimental study examines virtual reference services to determine whether services are equal. E-services received queries that differed only by the user's name; these names represent to most Americans a specific ethnic group. Findings indicate lower quality of e-services provided to Arabs and African-Americans compared with Caucasian users. This study adds to the knowledge base of subjective bias in virtual environments.

Keywords

E-services, discrimination, equality, service quality.

INTRODUCTION

According to the most recent US Census 77% percent of the population were White and only 67% were white non-Hispanic; 12% were Black or African American; 4% were Asian; and 14% of the people in United States were Hispanic (people of Hispanic origin may be of any race). Twelve percent of the people living in United States in 2004 were foreign born and 19% spoke a language other than English at home. Of those speaking a language other than English at home, 61 percent spoke Spanish and 39 percent spoke some other language; 45 percent reported that they did not speak English "very well." These groups are making growing use of the internet; 73% of Whites (non-Hispanic), 79% of (English speaking) Hispanics, and 60% of Blacks (non-Hispanics) are using the internet (Pew Internet & American Life Project, 2005). These diverse user groups make use of online services.

Service discrimination has been a major social concern in the face-to-face environment and reports on discrimination in public accommodation are not rare. For example, Feagin (1991) reported that 79% of discrimination actions against African Americans in public accommodations involved rejection or poor service and LaPiere (1934), in the pre Civil Rights Act era, reported that formal written requests for service were rejected more than in person requests by minorities.

There is data to support the fact that the online environment reproduces social and other inequalities (e.g., the digital divide) and enables and supports uninhibited behaviors. Douglas and McGarty (2001) claim that in the virtual environment people can become less self-aware and less likely to monitor their behavior and therefore more likely to act on impulses that would normally be inhibited. Thus, discrimination is more likely to be expressed overtly due to the anonymous, spontaneous, impersonal, and disinhibited nature of computer-mediated communication (Glaser and Kahn, 2005). It is likely, therefore, that in the virtual environment subjective bias will be similar to the pre civil rights era and that greater inequality will arise. While e-services providers will not be likely to deny some resources or services on the basis of group membership, they may find an excuse to behave discriminatorily at the moment (Crosby, Bromley, and Sax, 1980).

Conversely, other research has shown that because computer-mediated communication decreases social cues and reduces social presence it may have a democratizing effect on communication resulting in, for example, status equalization (Sproull and Keisler, 1986). Similarly, claims that the use of email can mediate challenges of cultural diversity and that online heterogeneity improves group performance have been made (e.g., Daily and Steiner, 1998; Daily, Whatley, Ash, and Steiner, 1996; Shachaf, 2005). Thus, online discrimination may be less common due to the ability of potential targets to eliminate social cues, group identification cues, and to remain anonymous; the relative absence of social cues may mean greater equality of services in the virtual environment (Glaser and Kahn, 2005; Shachaf, 2005).

While it is possible that unequal services will increase in the virtual environment, it is also possible that e-service providers may be able to offer unbiased service. This paper is designed to address the following question: Do e-services provide equality of service to different ethnic groups?

The importance of this study and its implications extend to all e-services and to society in general. The most significant contribution of the study is by adding to the knowledge of subjective bias in the virtual environment.

E-SERVICES QUALITY

This study evaluates the quality of direct e-services that are provided by information professionals. Evaluation of direct e-services focuses on the technology mediated interaction of the user with service providers directly and is different from the evaluation of indirect e-services that focuses, for example, on information systems and services portfolios, when the user does not interact directly with service providers. This study evaluates the equality of online mediated e-services interactions between service providers and users.

Online services experienced an extensive growth during the last decade, yet the quality of these online services was perceived to be inferior to traditional face-to-face services (Yang, Jun, and Peterson, 2004). Over the past three decades researchers made efforts to uncover the most important dimensions of perceived service quality (e.g., Parasuraman, 1985); these efforts have focused lately on e-services quality (e.g., Yang, Jun, and Peterson, 2004). Many of the dimensions for evaluation of service quality that have been identified in the face-to-face environment are as influential in the virtual environment. For example, some of the dimensions that Parasuraman (1985) identified include: reliability (accuracy), responsiveness (promptness and timeliness), competence (knowledge and skills), access (approachability and accessibility), courtesy (politeness, respect, and friendliness), security (freedom of risk), understanding (individual attention), communication (explanations), credibility (trustworthiness by name and company name), and tangibles. Parasuraman, Zeithaml and Berry (1988) attempt to expand the use of traditional service models to the internet using SERVQUAL, which includes five dimensions (Madu and Madu, 2002): reliability (dependability and accuracy of service), responsiveness (prompt services), assurance (trust and confidence - based primarily on knowledge and courtesy of employees), empathy (caring and individualized attention to users), and tangibles (appearance of physical facilities and equipment) (Parasuraman, Zeithaml, and Berry, 1988). Parasuraman, Zeithaml, and Berry's (1988) scale for measuring consumer perceptions of service quality are probably the most widely used (Voss, 2003). These include: "Tangible: Physical facilities, equipment, and appearance of personnel; Reliability: Ability to perform the promised service dependably and accurately; Responsiveness: Willingness to help customers and provide prompt service; Assurance: Knowledge and curtsey of employees and their ability to inspire trust and confidence; and Empathy: Caring, individualized attention the firm provides its customers (Parasuraman, Zeithaml, and Berry, 1988, p. 23). Yang, Jun, and Peterson (2004) identified in the literature 17 dimensions, 10 of which indicate customer service quality: responsiveness (prompt response), reliability (accurate and efficient response), competence, access (accessibility of service and contact information), personalization, courtesy, continuous improvement, communication, convenience, and control.

O'Neil, Wright, and Fitz (2001) applied the SERVQUAL dimensions to examine the quality of online services in an Australian library and focused particularly on contact, responsiveness, reliability, and tangibles. Hernon and Calvert (2005) developed a survey instrument, e-SERVQUAL for libraries, which focuses exclusively on examining library services online. They found that unlike the traditional five dimensions of SERVQUAL (tangible, reliability, responsiveness, assurance, and empathy) the most important dimensions to library users were (in order of importance) ease of use, collections, reliability, customization/ personalization, security/ privacy/ trust, support, ease of access, linkage, flexibility, and web site aesthetic. These efforts have focused on both direct and indirect e-services. Specific guidelines for the quality of direct e-services of information professionals and librarians have been published by the International Federation of Library Association (IFLA) digital reference guidelines (IFLA, 2005), the Reference and User Services Association (RUSA) guidelines for implementing and maintaining virtual reference services (RUSA, 2004b), and the RUSA guidelines for behavioral performance of reference and information service providers (RUSA, 2004a). Using these guidelines for direct services and Yang, Jun and Peterson (2004) dimensions of e-services this study focuses on the following three quality dimensions:

1. E-service - Responsiveness (Yang, Jun, and Peterson, 2004).

   Virtual reference - by acknowledgements of user email questions in a timely manner, providing patrons with responses as quickly as possible, and adherence to stated turnaround policy (IFLA, 2005; RUSA, 2004a).

2. E-service - Reliability (Yang, Jun, and Peterson, 2004).

   Virtual reference - by answering the query efficiently and correctly and providing a signature that contains the librarian name or initials, title, and institution (IFLA, 2005).

3. E-service - Access (Yang, Jun, and Peterson, 2004).

Virtual reference - by approachability, friendliness, politeness, and professional courtesy (IFLA, 2005; RUSA, 2004a; RUSA, 2004b).

The quality of e-service is high when the service is provided at a high level on all three dimensions and inferior e-service quality is provided when any (or all) of these dimension are performed at a lower level. One factor that can affect the quality of e-services is the provision of unbiased service to diverse user groups. The quality of the service as a whole is reduced when some users receive a lower level of service. This study focuses on the equality of e-service among user groups as evaluated on these three quality dimensions. Service equality is defined as the equal level of quality of services provided to all users, without discrimination on the ground of ethnic or religious affiliation.

Thus we hypothesized that:

H1. All user groups will receive a response in a timely manner.

H2. All user groups will receive efficient service and the name, departmental affiliation, and contact information of service providers will be included in the responses.

H3. All user groups will receive equal quality of access from e-services without differences in the level of approachability, friendliness, politeness, and professional courtesy.

Figure 1 provides a general overview of the model and relationships hypothesized in the study.
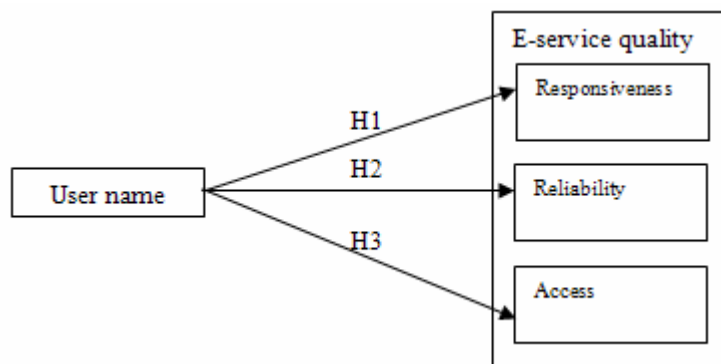
Figure 1. Relationship between user's diversity and e-service quality.

METHOD

An experiment using scenarios of information needs was conducted among e-services that are provided by academic libraries in North America. The experimental feature of the study is that the requests have six versions which differed only in the implicit ethnicity of the user involved in the six incidents, indicated by the users' names. Each version of the request represented one ethnic group: African American, Hispanic, Asian, and Caucasian, or one religious group identification: Christian (Caucasian), Muslim (Arab), and Jewish. The targeted e-service received a version of the same type of request but with a different user name (indicating a different ethnic or religious affiliation). In this way, it was possible to determine whether e-services provide equivalent service to different groups when salience of diversity (e.g., ethnic group) is not an obvious factor and when all other factors are constant. This method is particularly important when attitude and behavior variability are measured on sensitive variables, such as diversity. If people avoid blatant discrimination to avoid social ramifications they might monitor their discriminatory behavior closely if they believe the study is related to race (Bushman and Bonacci, 2004).

Data Collection

During summer 2005, 123 member libraries of the Association of Research Libraries were invited by e-mail to participate in the study. These libraries provide virtual reference services to their users by providing e-mail, a mailto link, or a web form that users can fill out where an indication has been made that users can ask reference questions (Stacy-Bates, 2003). Twenty-three libraries agreed to take part in this study—for a participation rate of 19%.

In the fall of 2005 e-mail reference requests were sent to these 23 e-services; each e-service received one request per week during six consecutive weeks. Each e-service received five different types of requests using six different names and six different hotmail e-mail accounts. Every week 23 messages were sent from one e-mail account (one user), one per library, and five from each type of question.

The names that were used to represent ethnic groups are: *Latoya Johnson* for African-American, *Rosa Manuz* for Hispanic, *Chang Su* for Asian (Chinese), and *Mary Anderson* for Caucasian. The names that represent religious groups are: *Mary Anderson* for Christian, *Ahmed Ibrahim* for Muslim, and *Moshe Cohen* for Jewish.

Five reference queries were used in this study; three of them are variations on Stacy-Bates's (2003) examples. These queries, according to her study, are expected to be answered by more than 90% of the libraries. The other two queries were questions that are not expected to be answered when made by a user who is not affiliated with the university. These are the queries that were sent:

1. Dissertation query: Can you tell me the title of [name]'s dissertation? [She/He] finished [his/her] degree at [institution name] in [year]. Do you have it in your library? How can I obtain a copy of this dissertation?

2. Sports team query: How did [sports team name] become the name for [institution name]'s sports teams? Can you refer me to a book or article that discusses it?

3. Population query: Could you tell me the population of [institution's city name] in 1963 and 1993?

4. Subject query: Could you help me find information about [special collection topic]? Can you send me copies of articles on this topic?

5. Article query: Can you send me by e-mail a copy of the article "Free Indirect Discourse and Narrative Authority in Emma" by D.P. Gunn?

Before the questions were sent information about each institution was collected into a file. Each institution file included (1) details of a dissertation awarded by the institution in 1964 which was identified using *Dissertation Abstract*, (2) sports team's name as identified from a search on the parent institution website, (3) topics of special collections for the subject query, (4) policies about service restrictions for unaffiliated users and response time. In addition, a full text article that was available via *EBSCO Academic Search Premier* was selected for the fifth question. It was assumed that any of these libraries will have access to the full text of this article, but that due to licensing restrictions librarians will be less likely to send the full text of the article to unaffiliated users.

A total of 138 queries were sent during September and October 2005. An example of the chronological order, user name, and type of questions a particular institution received as part of this study is given below. Each week a different question was received at the reference service of an institution from a different user. For example an institution received these queries by these users during a six week period.

1. Week 1: Mary Anderson – population query.

2. Week 2: Moshe Cohen – subject query.

3. Week 3: Ahmed Ibrahim – article query.

4. Week 4: Latoya Johnson – dissertation query.

5. Week 5: Rosa Manuz – sports team query.

6. Week 6: Chang Su – repeated question

The requests were sent during different days and hours because it was possible that if the requests were to be sent to the e-service on the same day of the week and at the same hour of the day service providers would be suspicious about this pattern of requests coming in from users who are not affiliated with the university. As a result some of the messages were sent during the weekend.

Data Analysis

All 138 transactions were uploaded into Nvivo2.0. Nvivo is a QSR software that supports qualitative analysis. After all the transactions were coded, inter-coder reliability was calculated during 3 iterations until acceptable level of agreements was reached (above 90%). A different set of transactions (10% of the data) was coded per iteration. Each coding was followed by a discussion among the coders that clarified codes and modified the coding scheme. The final result of the inter-coder

reliability was 92% (number of agreements divided by the sum of number of agreements and disagreements). Using SPSS 13.0 one-way ANOVA and cross tabulations were conducted to identify differences among users groups.

RESULTS

The content analysis of the 138 e-mail transactions revealed differences in the quality of service that virtual reference librarians provide to various users groups. This is the case when African American and Arab users are compared with whites, both Christian and Jewish users. Table 1 summarizes the averages and proportions of quality indicators by user group and Tables 2 and 3 summarize the frequencies of codes by user group. Each of the ethnic or religious groups is represented by a shorter version of the names using the first name of the user (for example, Mary instead of Mary Anderson).

Responsiveness

As can be seen in Table 1 the average amount of time it took to respond to users' requests differ among users. It is evident that Moshe is getting the quickest reply and the best level of service. It is also obvious that Ahmed is getting the worst level of service as it takes on average much longer for e-service providers to reply to his requests. At this point it should be clarified that Latoya and Mary can only be compared to one another and not to the other users, since these requests were sent during the weekend. Yet, it is clear that Mary's response time is shorter when compared with Latoya's. While Mary and Moshe receive most of the replies within the same day or during the following day, some of the replies to Latoya and Ahmed are sent weeks after they were submitted (some of the messages that Ahmed received arrived on the 31st day after sending the requests and Latoya received some replies on the 18th and 21st days after the requests were sent).

	Mary (N=26)**	Moshe (N=25)**	Latoya (N=31)**	Ahmed (N=32)**	Rosa (N=29)**	Chang (N=27)**
Response Time (number of days)*	M=1.49 SD=1.26	M=0.42 SD=.44	M=3.4 SD=1.03	M=3.6 SD=5.7	M=1.03 SD=2.3	M=0.55 SD=1.01
Response Proportion (replies/messages)	10/26 (0.38)	8/25 (0.32)	6/31 (0.19)	5/32 (0.15)	10/29 (0.34)	6/27 (0.22)

Table 1. Quality Indicators by User Group

* Reply received on same day was calculated as .1, next day as 1, and so forth.

** 170 messages received as a reply to 138 requests.

A one-way analysis of variance was conducted to evaluate the relationship between the response time and users. The ANOVA was significant, F (5, 170) = 2.654, p = .025. Follow-up pairwise comparisons were made to evaluate the differences among users. The Tukey's HSD method was used to control for type I error at the .05 level across all six comparisons. The pairwise differences that were significant were between Ahmed Ibrahim and all other users, except for Mary Anderson and Latoya Johnson, and between Latoya Johnson and all other users except for Mary Anderson and Ahmed Ibrahim. It should be restated again here that Latoya Johnson and Mary Anderson requests were sent during the weekend and for that reason it took longer to reply to their requests.

H1 was not supported; all users do not receive the same level of service in terms of responsiveness. Ahmed and Latoya are discriminated against.

Reliability

As can be seen in Table 1, e-services provided to Mary, Moshe, and Rosa are higher in quality compared with those received by Ahmed, Latoya, and Chang in terms of efficiency (the proportion of replies to messages). Efficiency of the services means that the reply is given using the least resources. The level of service each user group received is measured in terms of the ratio between the number of messages that answered the request to the number of messages sent to the user (not including automatic responses); the higher the ratio the higher the level of service. In other words, a user who receives one response which answers the question (ratio equal to one) receives the best level of service. Conversely, a user who receives many messages but still does not receive a reply to the request (ratio closer to zero) receives a lower level of service. When comparing users it is evident that Mary, Moshe, and Rosa receive higher levels of service in this category while the level of service for Ahmed, Latoya, and Chang is the lowest. Ahmed, Latoya, and Chang receive many messages but fewer answers compared with Moshe, Mary, and Rosa, who receive proportionally many more answers out of the messages they receive.

This study has not measured the completeness or accuracy of the responses to these requests because the level of accuracy of reference responses was consistently found to be 55% in all previous studies that followed Hernon and McClure's (1986) study.

A two way contingency table analysis was conducted to evaluate whether the proportion of responses to the requests that the users received out of the total messages received by a user was different among users. Proportion and users were found not to be significantly related, Pearson χ^2 (5, N = 170) = 6.26, $\underline{p}$ = .282, Cramer's $\underline{V}$ = .192.

Another indication of reliability of e-services is evaluated based on the provision of contact information and name of the service provider with departmental affiliation. These are most likely defined in e-services policies and are not supposed to vary among user groups. Yet, names, department affiliation, or contact information were included in the messages sent to Mary, Rosa, and Chang more frequently than in messages sent to Ahmed, Latoya, or Moshe (Table 2).

	Mary (N=23)	Moshe (N=23)	Latoya (N=23)	Ahmed (N=23)	Rosa (N=23)	Chang (N=23)
Name of Librarian	14	13	12	13	16	14
Department	10	9	6	7	10	11
Contact Information	5	3	4	5	8	5

Table 2. Frequencies of Reliability Indicators by User Group

A two way contingency table analysis was conducted to evaluate whether the use of librarian's name in the response was different among users. Use of librarian's name and users were found not to be significantly related, Pearson χ^2 (5, N = 138) = 1.683, $\underline{p}$ = .891, Cramer's $\underline{V}$ = .110. A two way contingency table analysis was conducted to evaluate whether the use of department's name in the response was different among users. Use of department's name and users were found not to be significantly related, Pearson χ^2 (5, N = 138) = 3.461, $\underline{p}$ = .629, Cramer's $\underline{V}$ = .158. The frequency for contact information per cell was less than five for Moshe and Latoya; for that reason cross-tabulation could not be meaningful and was not conducted.

H2 was supported; all users receive the same level of service in terms of reliability. Despite the fact that Ahmed's and Latoya's proportions are lower than Mary's, Moshe's, and Rosa's proportions, these differences were not statistically significant. Similarly, the use of librarian's name and department name in the responses did not differ significantly among the users.

Access

Another indication of the quality of service is the way the e-service provider addresses the user. The use of honorifics and greetings indicate a higher level of politeness and the use of first name indicates a higher level of friendliness (in the United States). The frequencies of greetings, thank you, honorifics, and first name in the responses for each user group are different (Table 3). Yet again, Ahmed gets the lowest level of service, with no single case of honorific, lower frequency of greetings, and less frequent use of first name, while Mary gets the highest quality of service. Rosa is treated most friendly, with the highest level of use of first name and greetings. Similarly, including "thank you for using the service" in the message is another indication of quality. The responses to Mary include more thank you notes than the responses to Ahmed or Latoya (Table 3).

	Mary (N=23)	Moshe (N=23)	Latoya (N=23)	Ahmed (N=23)	Rosa (N=23)	Chang (N=23)
First Name	7	8	9	5	9	5
With Honorific	5	2	2	0	1	0
Greetings	13	15	14	13	16	15
Thank You	8	6	5	4	7	7

Table 3. Frequencies of Access Indicators by User Group

A two way contingency table analysis was conducted to evaluate whether the use of first name in the response was different among users. Use of first name and users were found not to be significantly related, Pearson χ^2 (5, N = 138) = 3.293, $\underline{p}$ = .655, Cramer's $\underline{V}$ = .148. A two way contingency table analysis was conducted to evaluate whether the use greetings in the response was different among users. Use of greetings and users were found not to be significantly related, Pearson χ^2 (5, N = 138) = 1.35, $\underline{p}$ = .929, Cramer's $\underline{V}$ = .099. The frequencies for thank you and honorifics per cell were less than five for some users; cross-tabulation in these cases could not be meaningful and therefore was not conducted.

H3 was supported; all users receive the same level of service in terms of access. Despite the fact that the frequencies of friendliness and politeness are lower for Ahmed and Latoya and higher for Mary, Moshe, and Rosa these differences were not statistically significant.

DISCUSSION AND CONCLUSION

Discrimination against Arabs and African American was found in terms of service responsiveness. While the frequencies indicate differences that discriminate against Arabs and African Americans on all quality dimensions (access, reliability, and responsiveness) only responsiveness differences were found to be statistically significant. The quality of service to all user groups was equal in terms of access and reliability. Discrimination against African Americans has been reported in the research literature for many years, discrimination against Arabs attracts only very little empirical attention. Yet, anecdotal acts of discriminations against Arabs are reported in North-American newspapers more frequently than ever before. "A few studies… have examined Jewish-Israeli prejudice and aggression towards Arabs who live in the Middle East, where there is strong Anti-Arab sentiment. However, there is a dearth of research examining prejudice and discrimination towards Arabs who live in the United States. In light of the terrorist attacks on September 11, 2001, and the apparent backlash against Arabs, such research is desperately needed." (Bushaman and Bonacci, 2004, p. 754) Bushman and Bonacci (2004) used the lost e-mail technique to examine the effect of prejudiced attitudes on discrimination against Arabs. They found that more prejudiced individuals were more likely to return a lost email stating that an Arab has not won a scholarship, and less likely to return a lost email stating that an Arab won a scholarship. Like Bushaman and Bunacci's (2002) findings, this study found that online discrimination in asynchronous mediated communication of e-services is evident even when blatant differences are not evident. The virtual environment has not eliminated discrimination on ethnic or religious grounds, yet it is possible that the degree of discrimination differs or is reduced between face-to-face and online services. Future studies should examine the extent of discrimination in both settings (virtual and face-to-face), or when using different types of technologies to provide services (phone, video-conference, chat, and face-to-face). Also, future studies should evaluate if gender plays a role in this type of discrimination. It is possible, for example, that service quality to female and male Arabs will not be similar.

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