Egypt Population Research Center (EGYPOP)

TECHNICAL PAPERS SERIES

No. 1

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Cairo, Nov. 2000

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The World Wide Web has created the opportunity to involve remote users in a rapidly and low cost manner in different sorts of professional development, networking, data collection, and research activities. Large numbers of users could be reached throw GroupWare technologies such as news groups and e-mail lists. This study aims at investigating the Arab demographers' us of computer and Internet resources for their own professional development and networking, in addition, the paper introduces the concept and the methods of implementing electronic surveys in the field of demography with an illustrative case study. The sample consisted of 16 Arab demographers. The paper briefly describes the methods used for questionnaire design, use of electronic surveys versus paper questionnaires as well as user satisfaction measurements.

Keywords: Arab demographers, electronic surveys, remote usability evaluation, user satisfaction measurement.

1. INTRODUCTION

Despite the limitation of electronic surveys compared to other data collection techniques, it is especially useful when substantial numbers of subjects are to be surveyed early in a project. Usually, more personalized data collections are desirable, but it would provide a trade off with high cost, time and human resources needed. The first goal of the study from which this paper is written was to highlight the importance of electronic surveys as a data collection method in the field of demography and to

shed some light on Arab demographers utilization of computers and internet resources in their field of specialization

Electronic surveys versus paper questionnaire

Electronic surveys save the cost and effort of printing, distributing, and collecting paper forms. Many people prefer to answer a brief survey displayed on a screen, instead of filling in and returning a printed form. One survey of World Wide Web utilization generated more than 13000 respondents (Shneiderman, 998).

Although paper questionnaires -administered by a researcher - do have the advantage of being more flexible, since difficult questions could be explained in more depth, also they could be rephrased if the respondent's answer indicates that the questions was misunderstood. Even though it may require a fair amount of work to revise the questions of electronic questionnaire until they are easy to understand and easy to answer. Electronic surveys are probably the only method that makes such extensive coverage feasible, with the ensuring possibility for discovering differences between various user categories as well as the specific needs of various small groups of users (Nielsen 1993).

Paper questionnaires as well, are reported to have usually, a relatively low response rate. A study by Armstrong and Lusk (1988) showed that the average response rate of mailed questionnaire is 26%. Although, the respond rate can be increased substantially by including a pre-paid and pre-addressed reply envelope.

Usability Evaluation and User Satisfaction Measurement

Ease of use became the major way to differentiate products in any of today's markets. As for computer markets, usability spells success or failure more clearly then any other feature. "*Usability is a narrow concern compared to large issue of system acceptability, which is the question of whether a system is good enough to satisfy all the users' needs and requirements*" (Nielsen, 1993). Usability is a combination of attributes that affect the user's experience with the product. Many researchers have specified these attributes - that defined high systems usability -, as Learnability, Efficiency, Memorability, and Satisfaction. In this research paper we focus on satisfaction, thus other attribute of usability will not be discussed. Focus will be given to measure user perceived satisfaction through an electronic questionnaire.

Satisfaction is the degree to which users like the system and how pleasant it is to use it. User satisfaction is the most difficult to measure of all the usability attributes. User

satisfaction can be measured whether by objective or subjective measures. Objective methods are mainly used to estimate the user's stress and comfort levels. For most of usability experts, subjective measures of satisfaction are more reliable. This is achieved by simply asking the users for their opinions. Questionnaire is the common method for gathering this type of data. "Written user satisfaction questionnaire is a familiar, inexpensive, and generally acceptable companion for satisfaction test." (Shneiderman, 1998).

In this study we investigated two research points; first, the use of Arabic demographers of computers and Internet resources in their work and professional development, Second, their level of satisfaction using computers and Internet. To cover the first point, we asked the respondents questions about their frequency of accessing Internet from home, and work, and whether they are members of demographic Internet e-mail groups or not. To cover the first point, we asked the respondents questions about their degree of comfortableness using computers in general, their satisfaction level with their current skills for using Internet, and their degree of comfortableness using Internet.

2. QUESTIONNAIRE DESIGN

The questionnaire of this survey was designed using an interactive Internet-based site that provides a free service for its visitors. The site URL is http://appblast.desktop.com. By using very simple instructions and just being Internet illiterate you can design a good questionnaire. This site provides all types of questions which your survey may include.

Table 1

Number of Respondents by Nationality

Nationality	Number of Respondents
Algeria	1
Egypt	9
Jordan	2
Morocco	2
Sudan	2
Total	16

Background variables (age, sex, etc.) were included as questions to be used as confounding variables in data analysis. Nationality question was intended to measure the relation between the country of nation and responses received within the same culture that is the Arabic culture. Unfortunately, such analysis couldn't be conducted as the total number of respondents was only 16 as shown in Table 1.

Language Barrier

The online survey was designed in English language, which is not the native language of all the survey population. Questions were written in a comprehensive format with elimination of any language complexity. All the questions in the electronic survey were close-ended or rating scale questions. As it is always recommended to avoid open questions and to be restricted to rating scale, in the case when electronic survey is not translated to subjects' native language. In that case, open-ended questions may minimize the response rate and increase the bias inherent if only answers from subjects with fluency in the survey foreign languages are received.

Questionnaire Administration

The link to the questionnaire' Internet site was sent to 63 e-mail addresses with an explanation of the survey objectives as a call for participation. We got these e-mail addresses from Arab Population Conference 1996's list of participants, and the Arab League's Database for Experts in the Field of population in Arab Countries. Out of the 63 e-mail messages, 29 were undeliverable due to miss spelling of e-mail addresses. The total number of deliverable e-mail messages was 34. We received 16 completed questionnaires. The response rate of deliverable e-mail messages is 47 percent (16/34). The downside of this approach is that the respondents will be self-selected, which will bias the results towards more experienced and more highly motivated users (Nielsen 2000).

3. RESULTS

The satisfaction level of using computers and Internet was assessed through three questions. The three questions were concerning comfortable level of using computers and Internet as well as self-satisfaction of users' Internet skills. The results were as follows:

How Comfortable Do You Feel Using Computers In General?

Out of 16 replies received, 13 reported that they are *Very Comfortable*, while three users reported that they are *Somewhat Comfortable*.

Table 2

How Comfortable Do You Feel Using Computers In General?

Response	Number of Respondents
Very Comfortable	13
Some What Comfortable	3
Total	16

How Comfortable Do You Feel Using the Internet?

Out of 16 replies received, 11 reported that they are *Very Comfortable*, while five users reported that they are *Somewhat Comfortable*.

Table 3

How Comfortable Do You Feel Using the Internet?

Response	Number of Respondents
Very Comfortable	11
Some What Comfortable	4
Total	16

How satisfied are you with your Current Skills for Using the Internet?

Out of 16 replies received, 8 reported that they are *Very Satisfied* (They can do everything that they want to do), while 7 users reported that they are *Somewhat Satisfied* (–They can do most things they want to do). Only one respondent reported that he is *Somewhat Unsatisfied* (He can't do many things he would like to do).

Table 4

How satisfied are you with your Current Skills for Using the Internet?

Response	Number of Respondents
Very Satisfied	8
Some What Satisfied	7
Somewhat Unsatisfied	1
Total	16

One question was addressed to measure the allocation of Internet resources to demographers; professional development. This question was *Are you a member of any demographic e-mail group?* Out of the 16 respondents ten reported that they are members of a demographic mail group.

Most of the respondents reported that they have access to Internet at workplace while few of them reported that they have computers at home and they access the Internet from home.

4. CONCLUSIONS

The problems that we faced tracking e-mail addresses reinforced the importance of an updated electronic database for Arab demographers for their professional development and networking. Building on the existing Arab League database may be the logical tendency. Building on our experience in this research work we may consider this research paper as a pilot that may open horizons to build on its results to develop a large scale study that assesses the use of computer and internet resources among Arab demographers and social scientists.

The use of Internet and computer-based surveys should be integrated in all of the Arab institutes and organizations working in the field of population statistics and demography. We recommend including such techniques in the curriculum of the demographic teaching centers.

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