Designing and Implementing Internet Questionnaires Using Microsoft Excel

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Abstract
Over the past ten years, the use of the Internet and e-mail as communication tools has become ubiquitous. In the survey arena, the rising costs of gathering data have been partly compensated by the use of the internet and e-based technologies which offer a range of new, relatively cost effective survey design and delivery options. This paper reports on two studies where Microsoft Excel was used to design and gather data without the additional investment associated with specialist programs. Study one examines the development of a multi-attribute survey conducted to create a new scale using a local (Australian) population of students. The second describes the use of Excel in a stated choice experiment that was sent to an international sample of museum managers. These studies show that it requires minimal programming skill on behalf of the researcher whilst offering the many of the cost, administrative and questionnaire design benefits seen with specialist software and Internet delivery. We conclude that Microsoft Excel can be considered when designing online surveys as it provides a wide range of features and benefits that allow for flexible, rich instrument design and fast, potentially accurate, data collection, checking and entry.

Keywords: Microsoft Excel, Online Data collection, Survey design.

1. Introduction
It is an important goal for market researchers to improve methods for designing and implementing questionnaires in order to reduce costs, reduce research timescales and improve data quality. These methods should be capable of being used in a wide range of research types, constructing a comprehensive range of questionnaire design features and using a full range of stimulus materials. Implementation should be characterised by fast data collection, easy access to respondents and allow fast, accurate coding, checking and data entry.

In this paper we report on two studies where Microsoft Excel was used to design Internet questionnaires. In both cases email was used to return the surveys after being delivered either by email or by posting onto a bulletin board. The ubiquitous and familiar nature of Microsoft Excel promises cost, speed and usability benefits for market researchers if it can be used successfully to design and implement survey research. It is the aim here to demonstrate Excel’s ability to do this.

Studies into the use of internet technologies in research have found both advantages and disadvantages. A number of authors have found they provide speed and cost advantages over “paper and pencil” methods (Ilieva et al., 2002; Best and Kreuger 2002; Dommeyer and Moriarty, 2000; Schaefer and Dillman, 1998). In addition, there thought to be are presentational and multimedia benefits (Couper, 2001 and Forrest, 1999). However, reservations over data quality and comparability (Couper, 2000; McDonald and Adam, 2003) have been raised.

Cost savings fall into a number of categories; stationary savings come from the lack of paper, envelopes, ink and postage (Sheehan and McMillan, 1999), administration savings include reduction in photocopying, letter fulfilment, typing and scanning and labour savings are seen with reduced data entry, cleaning, and coding (McDonald and Adam 2003). However, Thomson et al. (2003) cautions us by detailing the high start up cost linked to soft and hardware purchases and staff training.
Internet technologies also increase the speed with which surveys are delivered, returned and the data entered, checked and cleaned (Dommeeyer & Moriarty, 2000; Sheehan, 2001). This combination of benefits lead these authors to conclude that internet based surveys are more cost effective than paper alternatives.

These technologies allow the researcher to use a full range of colour, sound, art and video as stimulus material or to improve the presentation of the survey and allows data to be collected on a wide range of research questions. Whilst Dillman (2000) found that visual presentation improves response rates and is important in survey design, Deutsken et al., (2004) found that visual versions of surveys were associated with lower response rates. This apparent discrepancy can be explained in terms of the longer download times involved with large files and this must be considered. In addition presentation can be affected by local computer setting (browser configuration, user preferences, monitor settings) and this leads to the concern that the researchers can lose control of this important area (Thomson et al., 2003).

A number of respondent, sample and data issues exist with online surveys and Internet data collection. It is clear that not everyone has convenient access to the Internet, making these methods appropriate only for a restricted (though growing) range of demographics (Ilieva, 2002). In addition, connection problems and network outages are a well-known feature and may frustrate attempts to access and successfully complete online surveys (Thomson et al., 2003).

McDonald and Adam (2003) found a lower response rate to online surveys compared to traditional methods and that respondents were different from non-respondents. Concerns over response rates are exacerbated by the growing problem of unsolicited email (Spam) that has led to greater respondent resistance, legal restrictions and software barriers. For example, it is now illegal in Australia to recruit respondents without a pre-commercial existing relationship. Anti-virus software and firewalls make it harder to recruit respondent and a resistance to “pop ups” has seen “click through” rates fall dramatically (Dreze and Hussherr, 2003). These combine to make it more difficult to reach samples using email. Questions over the identity of respondents have also been raised as well as the need to ensure that surveys are completed only once per respondent. This is a particular problem when incentives are used (Tierney 2000). Finally, a lack of trust in technology and has been found to exacerbate typical respondent concerns of anonymity, confidentiality, data security and delivery (Ilieva et al., 2002; Kraut & Saari, 1999).

To use such technologies, software is needed to design the survey in an electronic format. For example, SNAP, Websurveyor or SSI Web can be used to design surveys for implementation via WWW, email and Bulletin boards (e.g. Deal, 2002; Rapoza, 2003). However, the cost benefits of using the Internet are eroded by having to purchase these packages and then train people to use them. Surveys can be designed as HTML files (Dillman, 2000; Jackson and DeCormier, 1999) though this is more complex and requires specific programming skill.

The aim of this paper is to demonstrate that Microsoft Excel can be used to design internet based questionnaires and to collect the results from them. Furthermore, due to the ubiquitous nature of Excel and the transferable skills gained from using it, it is able to do so and avoid many of the cost disadvantages of specialist software.

We will illustrate a wide range of design features which allow a full range of question and scale types to be created in an aesthetically pleasing and creative manner. The benefits and issues of using this program in combination with email delivery will then be assessed and recommendations as to Microsoft Excel’s suitability as a survey design and delivery platform will discussed.

First, however we outline the questionnaire and research design features that Excel must be capable of creating. We follow this with an introduction into the features and tools that allow questionnaires to be designed. It is not the aim of this research to provide the reader with a step-by-step guide on how to use these functions, readers requiring this should look to the comprehensive handbooks such as Walkenbach (2003).

2. Survey Design Features

In order to assess the use of Microsoft Excel survey design platform we must first provide criteria against which to compare it. Schaefer and Dillman (1998) discuss the importance of well-crafted introductory letters and invitations as these can increase the response rate. In addition to the numerous requirements regarding wording, questionnaires should be “respondent friendly” (Dillman 1978; Dillman, Sinclair and Clark, 1993), this describes a form “that is easy for respondents to complete, avoids confusion about what or how to answer it and results in respondents feeling neutral or positive” (Dillman, Sinclair and Clark, 1993, p2). The use of
instructions, clear layout of questions and answer formats, appropriate font size and type and appropriate number of questions per page addresses these requirements.

A design platform must allow a full range of scale properties contained in nominal, ordinal, interval and ratio scales to be used. It should also be capable of providing open, closed, graphic and written response formats and allowing randomisation of response options so to combat order effects (Green and Tull, 1978). It is also important to minimise respondent burden by effectively including skip patterns and question sequencing and should be capable of including a wide range of stimulus material including multimedia effects (Dillman, 2000). There should be no restrictions on the number of questions that can be asked and the length of the questionnaire. It is also important for internet data collection methods to be able to code answers automatically into a data file (Ioannou and Black, 2004).

3. Microsoft Excel Functions and Tools

This review of functions is designed to familiarise the reader with the parts of the programme we used when designing our data collection instruments. The core features used are found in either the “Forms Toolbar” or “Control Tool Box” (figure 1). These features allow for the design of a wide range of response formats such as check and option boxes or answer lists, which, when combined with question text and other features, produce the survey. When designing the questionnaire the worksheet is treated as the blank canvas upon which the questions and answers are written. The text of the survey (questions, responses and instructions) is written into individual cells on a worksheet in the same way that text is entered into any Excel spreadsheet. The response options designed using the “Forms Toolbar” or “Control Tool Box” are then placed near the cells containing the text (see Appendix 1). Either method can be used and as with many Microsoft functions, the choice is down to personal preference. Commonly used functions such as “cut and paste”, “paste link”, “cell protection”, “font options” and “formulas” are combined within the worksheet to link the respondents choices to the datasheet and to improve the presentation, sequencing and respondent friendliness of the questionnaire.

4. Training

Prior to combining the above features into a questionnaire, a short period of training was required. The authors possess a range of research experience ranging from novice to early career lecture staff and we would rate ourselves as having an intermediate level of knowledge of Excel functions. Specific training was conducted by one member of the team who demonstrated (for approximately 20 minutes) the “Forms” toolbar features and how to create macros and cell-link worksheets. Following this, additional time was invested in self-education in order to become familiar with the features and to experiment with the dynamics of the application. Overall learning to use Excel to design

Figure 1:
questionnaires was felt to be a straightforward extension of our survey design and Excel skills. We now move on to detail two different data collection instruments designed using Excel.

5. Satisfaction Typology Survey

5.1 Background

The first data collection instrument designed was a survey for research into consumer satisfaction typologies (Oliver, 1997) using a student sample. The use of Excel was driven by a lack of funds to purchase commercially available software and the need for fast data collection and preparation.

5.2 Design of the questionnaire

The questionnaire design process was guided by the nine-step framework of Churchill and Iacobucci (2002). The questionnaire was transferred from a paper version written using Microsoft Word. There is nothing to stop the researcher designing the questionnaire directly using Excel but in this case, we only discovered the possibility of using Excel after the pre-test.

The questionnaire and data sheet were designed on individual worksheets within a workbook. The number of worksheets depends on the length of the questionnaire and how many questions you want to fit on each sheet. We found it useful to use a multiple worksheet format which showed one section of the questionnaire at a time rather than try and fit the whole questionnaire on a sheet as it allowed clear instructions to be written for each section and reduced the probability of respondents being intimidated by the length. The text of the survey (questions, responses and instructions) is written into individual cells on a worksheet. The response options designed using the “Forms Toolbar”. It is important to note that the worksheet tabs which appear at the foot of open Excel file (where the name of the sheet is placed) were hidden in order control navigation through the questionnaire.

The questionnaire comprised predominantly of quantitative questions using five point Likert scales and seven point semantic-differential scales as the main response format. See Figures 2 and 3 for examples of the question and response formats used. The key feature...
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from the “Forms” toolbar used to design each of the response formats was the “Option” buttons inserted within a “Group Box”. Each “Option Box” was inserted into the “Group Box” in a specific order and each “Group Box” was cell-linked to a cell in the answer sheet. For example, to construct the semantic differential scale shown in Figure 2, seven “Option Boxes” where inserted within a “Group Box” and text written into adjacent cells. The adjectives used in the scales were then written into adjacent cells in the worksheet. It is possible by adding cell protection to ensure that only one answer can be selected. By giving each “Option Box” a title, it is simple to design ordinal/interval scales as shown in Figure 3. These examples demonstrate the program’s ability to design a range of questions easily and automate data entry and capture.

5.3 The answer sheet

Each answer is “paste linked” to a password-protected, hidden worksheet within the Excel file. All the answers for each respondent were contained on one row. Configuring the answer sheet is time-consuming during the design phase though it is rewarding overall because of time saved during data entry.

5.4 Navigation

Navigation through the survey was controlled using three methods. First, simple macros were used. Instructions were created using the “Command button” so that when cells were clicked upon, the respondent moved to the next worksheet and hence through the survey. The relevant cells then had appropriate instructions written in to them so to guide the respondents actions (see figure 4). Navigation was also controlled by using the IF or VLOOKUP commands so to ensure that respondents cannot move forward unless all questions are answered. Finally, cells were locked so that only certain cells could have information inserted into them.

5.5 Presentation

A number of simple features were used to ensure that the survey was easy to read and presentable. The “Format-Cell-Font” function allows manipulation of size, font, effect and colour. This was used throughout the design process to create an aesthetically pleasing style and font scheme for the questionnaire. Respondent instructions and response formats were colour coded using “Format-Cells-Patterns”. The “Forms-Toggle-Grid” feature was used to create a mono-coloured background. In order to create a spacious layout and avoid crowding, the questions/scales were spread over multiple spreadsheets within a single workbook. The canvas style quality of the application (as opposed to a template design) provides the researcher with the ability to insert their own creativity into the design of the questionnaire and to apply the variety of features at their own discretion.

5.6 Order Effects

The ordering of questions is an important consideration in questionnaire design as bias may occur if responses are in a consistent order. Therefore, multiple versions of the original questionnaire were created by rearranging the order of questions/scale items in each of the questionnaires. In this case, Excel provided a simple and efficient way to do this. Once the master questionnaire was designed, scale items were randomised using the cut and paste feature to create five versions of the questionnaire (yielding a total of six questionnaires). The key benefit of using the “cell link” function was that questions in different orders can easily be coded in the same order within the answer sheet (i.e. the answers to the scale item positioned at number 5 in questionnaire version one and as item 14 in questionnaire version two would always appear in the same cell within the answer sheet).

6. Procedure

6.1 Administration of the Questionnaire

Two versions of the surveys were designed (one for mobile phone and the other for cars) each comprising 136 questions split into 10 sections. These were distributed to 450 students at an Australian university, and a response rate of 74% was achieved.

After successfully pre-testing the questionnaire on a sample of 70 students, the Excel version was designed and the file was password protected and uploaded onto the University bulletin board. Instructions were also provided on how to download, complete and return the questionnaire. It is common for students to download content from this site (lecture slides, tutorial information etc) and no difficulties were reported. As there were two versions of the questionnaire (based on Mobile phones or Automobiles ownership) a screening process was used to ensure that students were granted access only to a version relevant to their circumstances. This was achieved by instructing participants to download the version which was saved as their tutorial session time.

The survey was then completed as part of a tutorial with each tutorial class randomly allocated one of the six
versions of the questionnaire. The respondents then saved the Excel file to their file space on the university system and emailed it as an attachment back to the researcher. Instructions were then given to delete the file from this location. In order to preserve respondent confidentiality, university email accounts were used as these do not disclose the full name of the user.

6.2 Data Editing and Entry
As emailed responses were received, the Excel attachments were sequentially saved using unique filename. Once all the respondents had replied, the saved attachments were opened in turn and the row of data from the hidden answer sheet was copied-pasted into a master answer sheet. The “Paste Special-Values” function available in “Edit” was used here to avoid data entry errors and to increase speed. On completion, the master file was then exported from Excel into SPSS for analysis. Once this was completed, data cleaning was performed and additional coding steps were taken to transform code reversed items and to replace missing values.

An important point to highlight is the need to be systematic in your approach to opening each file and moving it to another location once the data has been removed. Simple eyeballing of the data as it added to the master file was found to be effective in guarding against duplication. This was also assessed by ensuring that at end of the process, the number of rows corresponds exactly to the number of email attachments received. Overall, this procedure is relatively time consuming and open to the possibility of errors when compared to the automated construction of a data file offered by specialist software. However, it was thought to save considerable time when compared with coding from paper surveys, and cut and paste errors were readily identified and fixed. Whilst in this case the data was transferred to SPSS, it should be mentioned that Excel has its own statistical package add-ins (e.g., PACE XL, Analysis ToolPak, PHstat2) that could have been used.

6.3 Summary
The use of standard Excel functions in conjunction with the “Forms” toolbar allowed for fast, flexible questionnaire design. An intermediate level of knowledge with Excel is required by the researcher in order to know how to use these functions and to learn quickly additional uses. It does however depend on a strong knowledge of questionnaire design. In this case the decision to use Excel was taken late in the design process after a draft paper questionnaire had been drawn up. It was easy to learn how to convert this into a spreadsheet and no changes had to be made to the question wording or response formats. It allowed for a more aesthetically pleasing survey that was faster and cheaper to distribute and considerably faster to code, edit and enter. In this case, Excel (distributed via Bulletin board and email) proved to be a useful design and implementation platform and one we could recommend.

7. Choice Modelling Experiment
7.1 Background
The second case is based on the design and administration of an unlabelled choice based conjoint experiment distributed via email to an international sample of museum directors, curators and exhibition managers. Once again, the use of Microsoft Excel to design and implement the experiment was borne out of the lack of funds combined with the necessity of receiving answers from a widely dispersed international sample.

7.2 Design of the questionnaire
The questionnaire for this study was divided into two different parts: Part One gathered information on the characteristics of the respondents and their respective institution by means of a traditional survey. Part Two displayed 16 of the 32 choice sets of the choice based conjoint experiment (for more information on this methodology, refer to Louviere et al., 2000 or Hensher et al., 2005). In a choice based conjoint experiment, the researcher presents the respondent with a number of hypothetical scenarios with a description of the levels of the attributes, and asks the respondents to choose among these scenarios (Louviere et al. 2000). Figure 4 shows an example of a choice profile used in this experiment, together with the contextual explanation given to the respondent. It also demonstrates again the presentation and flexibility possible with Excel. Each choice is “paste linked” to a password-protected, hidden worksheet using the same procedure detailed earlier in this paper.

7.3 Types of Questions and Response formats
A wide range of scaling properties, scale type, question and response formats were used in this research. These include nominal, ordinally-interval and ratio scales and open, closed, multiple choice and multiple item Likert scales response formats. These features were designed using “Control Toolbox” toolbar where the “Option” buttons inserted within a “Group box” was used to provide answer categories. For example, appendix 1 shows the use of a closed response format (with nominal scaling properties) for answers to the question ‘Have you spent more than six months in another country?’
The ‘Combo Box’ feature allowed multiple choice answers to be displayed by using a drop-down type of feature. The analyst first writes the list of answers to be included in the box, in a column outside of the exhibited questionnaire. This can then be linked to a number of questions and is convenient for those answers that are repeated in many questions for example with Likert scale. See Figure 5 and Appendix 1 for an example of how the same answers are reused in different parts of the questionnaire.

Open ended answer formats are created using a ‘Text Box’ with ‘Design Mode’ activated. This is the preferred method of creating these questions because it allows the researcher to restrict the respondent to writing answers in desired cells only.

The international nature of the sample and the heterogenous level of fluency in English made it necessary to design a number of comments sections in the questionnaire containing definitions and additional information. Respondents who needed more explanation were able to position the cursor over the red marks the “Insert” “Comment” commands uses to indicate that additional information is available (See Figure 5 and 6).

7.4 Navigation

Controlling navigation through survey was easier than in study one because all questions fitted onto two worksheets. Macros were used to control navigation between these in the same way described in study one for most respondents. However, as will be described in more detail later, where security levels on respondents machines did not allow macros to function, then worksheet tabs were unhidden and instructions on how to move forward were given.

7.5 Presentation

Presentation of the questions was a particular issue as the respondents were art specialists and their positions did not permit them much time to complete the experiment. Excel allows for the analyst’s creativity to be displayed, enabling them to insert pictures, diagrams, charts, photographs, sound, video files and other multimedia features. Insertions are easy to use and benefit presentation. Figure 5 shows the use of a colourful world map including drop down boxes.

The researcher should balance these possibilities with file’s final size. It should not be assumed that the
respondents’ have broadband and consequently consideration should be given to likely download and file opening times. Furthermore, ‘hotmail’ or ‘yahoo’ types of account severely limit email file sizes.

7.6 Order Effects

Literature in choice based conjoint (Hensher 2004; Louviere et al. 2000; Train 2003) recommends randomising the order in which the choice profiles appear to different respondents. Six versions of the experiment were created, (this number could easily have been higher if required) using simple formulas to randomise the order in which the choice sets were presented.

8. Procedure

8.1 Administration of the Questionnaire

The survey was aimed at key decision makers involved in negotiating displays of international travelling exhibitions. It was emailed to 266 potential respondents over five continents, and a total response rate of 38% was achieved. An extensive process was used to identify
potentially eligible institutes and the email address of the key personnel. Personal contact, conference attendance and museum websites were particularly useful sources of potential respondents and snowball sampling was also used. Whilst we did not purchase or use a specific mailing list, doing so is likely to reduce respondents concerns over SPAM and virus threats.

An e-mail invitation was used including a very brief explanation of the research aims. After “opting in” a second e-mail with Excel file attached. The use of email allowed a negotiation process to be entered into and a number of respondents were persuaded to complete the experiment when workloads eased. We had been concerned over problems that may have been caused by recipients running older versions of Excel, however Excel is designed to be backwards compatible and no issues of this sort were raised.

This ability to communicate with the respondents proved important with a small number (six) who reported that they were unable to write their answers inside the ‘text box’ for open-ended questions. This was due to the “macros” settings on their machines. As not all of these recipients had administration rights over their computers which would have allowed them to change these setting, they were instead sent instructions on how to unlock sheet protection and to write in adjacent cells. This is a more desirable suggestion than the other option which is to reduce the computers security settings. However, control over where respondents write answers was lost and additional time was spend locating these answers during data entry.

Once the experiment had been completed, respondents sent the Excel file as an email attachment back to the researcher. The data from each file was then removed in the same answer sheet by answer sheet processed as used in study one. There was one additional step however which demonstrates further the flexibility of Excel. The NLogit 3.0 software used to model the answers to the experiment requires data to be entered in a text format. Once all data had been entered into the master answer sheet, a simple formula was used to convert the numerals to text. Finally the resultant worksheet was then saved in the .txt format also required by Nlogit 3.0.

9. Summary

Again, Excel was found useful in designing and implementing a complex questionnaire. A wide range of response formats was possible and it placed no restrictions on the data we wanted to collect. The use of macros caused minor problems for some respondents but these were quickly and easily addressed. Email once again proved a fast method of distribution and a small number of respondents commented in replies that it had allowed them to choose where they completed the questionnaire.

The literature review provided criteria against which to assess Microsoft Excel as a survey design and implementation platform. For Excel to be used in research, it must be capable of incorporating a number of questionnaire design features to ensure that it allows accurate communication of answers from the desired sample. We found it straightforward to include a full range of scales types over both studies and these were presented in a respondent friendly fashion. Cognitive burden was reduced by being able to include additional instruction, hide worksheets and skip patterns. A full range of stimulus material was used, allowing it to be used for a wide range of marketing research objectives and data quality was improved by randomising scale items and choice profiles.

It was found to be a cost-efficient method of design as it eliminated software, printing, delivery and coding costs. There were however there are costs associated with the time to become familiar with the “Forms Toolbar” and “Control Tool Box” features. Researchers who are not intermediate level users can expect to have to commit to additional Excel training. A further cost is associated with the researchers time used to construct the master data file from the individual excel files. This took approximately one minute per respondent and therefore multiplied considerable considering the size of the samples in our two studies. However, it was still considerably faster than manual coding and less costly than machine reading. In larger surveys, there may be additional costs based on the size of the researchers email account and additional server capacity may have to be purchased. In summary whilst it is less expensive than purchasing specialist software and implementing paper and pencil methods, researchers must factor in training and additional researcher time in their overall assessment of cost. We believe though, that for our studies Excel provided a cost effective method.

A number of features inherent in Excel improve the chances of obtaining a sufficiently large sample that answer the questions judiciously. Administering the research via internet (from email or hosted online) gave the respondents 24/7 access to the questionnaire from any geographic location with internet access. This is
convenient for respondents and this flexibility may have enhanced the response rates. We encountered no significant network or server problems, these issues are less likely with email rather than hosted surveys. We also found that the majority of completed questionnaires were returned quickly.

Ensuring that only the desired sample complete your survey is vital. Whilst we worked hard to ensure respondents were eligible and that only one survey per email address was submitted like all other data collection methods we cannot guarantee that identity of the respondent. There was no benefit in completing multiple surveys in our studies but the weakness remains for those using some form of incentive.

We attempted to maintain anonymity in a number of ways for example by assigning a unique name to each respondent when the results were pasted into SPSS. However, there are some concerns where communication occurred to sort out problems. The use of macros and embedded multimedia files whilst easy to use, did cause us some issues regarding respondents computer settings. Email communication removed the impact of this in one sense but caused problems in another by breaking the barrier of anonymity. Data quality may therefore have been affected via demand and interviewer effects. Researchers should consider using a third party to manage this communication or during the invitation to participate respondent should be asked not reveal their name in any correspondence.

Manipulating security levels in order to enable macros also highlights concerns over security and virus infection. All reasonable steps must be taken to ensure that the emails are clean of infections and that the host site is secure. This must be communicated clearly to the respondents. An important related issues are the challenges that firewall and anti-spam software are present not only the use of Excel but all email based questionnaires and emailed and pop-up invitations. Specifically here, the pre-existing relationships between the student sample and researchers in study one and the snowball sampling procedure used in study two, provided ways around common security devices. It is recognised that were these procedures are not used or relationships do not exist then email questionnaires are becoming more difficult to use.

Overall, the process of learning to use Excel in this way was uncomplicated and difficulties were solved using the “help” function. We would recommend that people with an intermediate knowledge of Excel can use it to design and administer survey questionnaires. There is then considerable flexibility in which data collection method to use.

The researcher should not, however, take for granted respondents’ familiarity with the Excel program. In this research, some respondents with a post-graduate education and a high career position needed very simple instructions in basic Excel functions. Again, email communication with the respondents allowed all problems of this sort to be worked out.

10. Conclusion and Recommendations

It is the conclusion of this research that Excel provides a useful, flexible and easy to use Internet survey design programme. It should be considered by academics (particularly research students), schools and commercial organisations (particularly smaller companies with limited resources) as a legitimate alternative to specific survey software. Its usability in these organisations is improved however where pre-existing relationships exist as this helps avoid problems of reaching the sample caused by internet security programs.

Whilst we did not use it to design an online hosted survey, it could be developed for this purpose. This use may be where it is more suited to the commercial world because design and presentational issues can be more rigorously controlled. Internal company research is another area to consider. The slightly “ad hoc” nature of the email attachment survey, by this we mean it is clear that email attachments are clever use of a program primarily designed for other purposes, may work better for the academic. This association may reinforce the not-for-profit nature of the research and the goodwill this generates may support the higher academic response rates.

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Australasian Marketing Journal 13 (2), 2005 71
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