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Motivations for Online News Usage: An Australian Survey

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Abstract

This paper considers user motivation and acceptance for adoption of online newspapers. The Technology Acceptance Model (TAM) was modified to incorporate several external variables that have been identified as strong influences of technology acceptance: gender, social influences and the level of Internet experience as well as other variables. The model was tested via an online questionnaire where 1592 responses collected. The results provide strong support for social influence and Internet experience and cost in influencing users' acceptance of an online newspaper. The implications of these findings for theory and practice are discussed.

Keywords: online news, usage, adoption

1. Introduction

With the advent of the Internet, different types of information are readily accessible online. There is no doubt of the importance of the Internet as a source of new information (Yang and Oliver, 2004). Reading online news is the third most popular Internet activity reported in The UCLA Internet Report (UCLA 2003 & 2005).

While the benefits of online news are quite intuitive, the literature draws to our attention a number of concerns from both the viewpoints of news providers (e.g. economic viability (Sääksjärvi and Santonen, 2002)) as well as readers (e.g. user-interface issues). Furthermore, marketing opportunities on news sites demand new considerations with respect to content, advertising and delivery formats (Palmer and Eriksen, 1999); these factors provide opportunities to win new customers through the customized products and services.

The research reported in this paper aims to explore and understand the usage of online news. By exploring this issue providers may modify business models appropriately. The scope of this current research is the usage of online news from the perspective of the users of an online news website.

2. Literature Review

The literature is reviewed from a number of domains: mass communication, journalism, and information systems.

In the literature, online news is classified as a particular form of a digital product, which is defined to include any product or service (e.g. newspaper) that can be digitized (Hui and Chau, 2002). These can be viewed from multiple perspectives. From an organizational perspective, as a provider of digital products, a greater understanding of the usage, using user profiles and preferences (Liang and Lai, 2002), and characteristics of digital products (including online news), can help formulate its organizational management strategy (e.g. in choosing an appropriate business model, revenue generation strategy (Sääksjärvi and Santonen, 2002)). Hui and Chau's (2002) framework classifies digital products along two dimensions:

1. **product category** (tools and utilities, content-based, online services).
2. **product characteristics** (delivery mode (downloadable, interactive), granularity (low, high), trialability (low, high))

From the individual perspective, a range of research objectives has been posed. For example, usage has been studied for its effects on personal issue agendas (Althaus and Tewksbury, 2002). Research has also studied the effects of different types of customization as a business model (Sääksjärvi and Santonen, 2003).

Usage has been measured in a number of ways including: users' behaviour (Tewksbury, 2003), and Liang and Lai's (2002) objective performance indices and customer satisfaction. The later work used a time-based approach to user profiling; using three experimental websites constructed using actual news provided by China Times. Some researchers consider subtle differences in measurement, such as attention or exposure to news (Chaffee and Schleuder, 1986). Kim et al. (2005) distinguish between conscious and automatic usage of online news sites. Their work suggests that when past use increases, user behavior becomes less evaluative and less intentional (i.e. more automatic) (Venkatesh and Morris, 2000)

The issues of online news usage from the individual perspective compared to the traditional printed medium are summarized in Table 1. From this list, it is clear that while the online medium offers many advantages (over the printed medium), there are some issues against the online medium. Online content includes both advertisement and news. Some research focuses on the relative effect of news and advertisement (Yang and Oliver, 2004). This strand of research stems from the concern of the negative effects of commercialization, such as undermining of the perceived credibility and importance of serious news stories being reported. Perhaps the most serious concern against online newspaper is its economic viability (Gallaughier et al, 2001).

Table 1: Case for and against online newspaper

For Online Newspaper	Against Online Newspaper
Search and archive capabilities (Harper, 1996)	Uncomfortable to travel through (Chyi and Lasorsa, 1999).
No significant space limitations (Harper, 1996).	Unappealing to browse leisurely (Chyi and Lasorsa, 1999).
Other forms of news presentation, e.g. audio, video (Harper, 1996; Sundar, 2000), interactive services	More difficult to read than printed medium (Chyi and Lasorsa, 1999).
More accessible (Chyi and Lasorsa, 1999)	User agreements (Ekstrand, 2002).
Less expensive (Chyi and Lasorsa, 1999)	Economic viability (Gallaughier et al, 2001)
Useful links (e.g. email addresses, URLs) (Harper, 1996)	Negative effects of commercialization (Yang and Oliver, 2004)
Opportunity to talk to the newspaper (reporters) (Harper, 1996).	
Offering immediacy (Harper, 1996).	
Newsworthiness (Sundar, 2000).	

Chyi and Lasorsa (1999) suggested that users viewed the online and print mediums as *complementary* forms. However given the same price and content, the print format was the overwhelming preferred option among web users. At the time of this research, most of the content was free (Chyi and Lasorsa, 1999). This is no longer always the case as some news providers (e.g. The Straits Times Interactive, The Australian Financial Review) are beginning to charge for usage to parts of news site.

Several studies try to understand specific readership, either governed by online content, or the nationality of the readers. For example, the study of American readership has been popular (Stafford and Gonier, 2004; Tewksbury, 2003). Studies have also targeted specific online news (regional) sites such as New York Times (Althaus and Tewksbury, 2002) China Times (Liang and Lai, 2002), and the Finnish newspaper industry (Sääksjärvi and Santonen, 2003). However, we are not aware of any study on an Australian newspaper.

A common underlying (often unarticulated) objective of most empirical research in this area is the need to understand the business needs from the perspective of the news provider in formulating an appropriate business strategy in the competitive market place. This strategy may involve a whole range of options involving issues such as the choice of medium for different news content, choices and levels of customization, revenue generation avenue(s) (Harper, 1996, Gallaughier et al, 2001) and so on. What is quite clear is that news providers have a wide range of options, and the appropriate strategy depends on many factors such as the provider's history, customer preferences, etc. And the strategy may change as any of those factors change. Harper (1996, p.2) reported that '*online newspapers have no systematic scheme for making money. Most are*

seeking ways to produce revenue.' Gallagher et al (2001) found correlations between four revenue streams of magazine publishers, and manager's assessment of the performance of online efforts: 1) the sale of online advertisements, 2) subscriptions charged for online content, 3) ability to use online presence to subscribe to print publications, and 4) firm's syndication of content other online services.

Online news usage therefore remains of interest to both the research and industry (Chyi and Lasorsa, 2002). It is important from the provider's perspective to better understand the market in which they operate. This understanding will also enhance news providers' ability to make decisions regarding revenue generation options for online content. As a starting point, we would like to explore how satisfied users are with online news, and some of the factors affecting usage.

To our knowledge, there has been no comprehensive study done on the Australian news service, which is the subject of this paper. We therefore propose an exploratory study to begin to understand the market in which it operates. We will also not focus our study on a particular segment of the industry/market. Our intention is also not to enumerate factors affecting individual users' detailed usage patterns.

Due to the large number of different types of digital content (Hui and Chau, 2002), we limit our research to that of editorial news content. We therefore propose the following high-level research questions as a starting point for our exploration.

1. What are the demographics of users of the news site? (E.g. age, level of education, occupation, gender, etc)
2. What are relative popularities of the different sections of the editorial news content?
3. Is there a possible relationship between the usage of the online and print medium?
4. Do users find value in the online news site?

3. The Research Model

Several different models have been developed to explain user acceptance of technology. Models examined include the Task Technology Fit (TTF) model, Technology Acceptance Model (TAM) and The Theory of Planned Behaviour (TPB). Due to the limited research on TTF, the primary focus was on TAM and TPB.

The theoretical basis of the TAM model was Fishbein and Ajzen's (1975) Theory of Reasoned Action (TRA) – a prominent marketing theory. The Technology Acceptance Model (TAM) is an adaptation of TRA specifically tailored for modelling user acceptance of information systems (Davis et al. 1989). The model provides a basis for tracing the impact of external factors on internal beliefs, attitudes and intentions (Davis et al., 1989).

The TAM has emerged as a powerful and parsimonious way to represent the antecedents of system usage through beliefs about two factors: the perceived ease of use and the perceived usefulness of an information system (Davis et al. 1989). They defined perceived usefulness, as "the degree to which a person

believes that using a particular system would enhance his or her job performance,” and defined ease of use as, “the degree to which a person believes that using a particular system would be free of effort.” In essence, TAM posits that systems adoption is affected by prior use-related beliefs. Within the TAM, the constructs of usefulness and ease of use predict the attitudinal components of Intention to Use. Intention to perform a particular behaviour has been shown to be an effective predictor of the actual behaviour itself (Ajzen and Fishbein, 1980).

Based upon the study of TAM and TPB constructs, we propose a model from which to study the impacts of these constructs on user’s adoption and usage of a major online Australian newspaper. The modified TAM proposed consists of the original TAM with the external variables (some TPB constructs) broken down into several items. Thus, we will be implementing both the TAM and TPB strengths in our proposed research model.

The proposed research model extends Davis’s (1989) basic TAM framework, to incorporate the effect of several external factors within the category of users Demographics (this include User’s personal attributes, peer and social influence and the level of Internet & computer experience the user has.) as illustrated in Figure 1. From the literature surveyed (both within the IS and non-IS domain), these external factors have proven to be influential factors affecting the TAM model. In addition, the proposed model includes a Cost dimension to the model. The value of the technology to the user is an important factor to consider, considering the commercial nature of online newspapers companies.

The primary aim of the research model is to determine the factors which influence a user’s acceptance of an online newspaper. As Picard (2000) notes user’s acceptance of any system is primarily based on their satisfaction and actual usage of the system.

Thus, the two constructs (User Satisfaction and System Usage) will be used to access the level of acceptance the user has towards an online newspaper. All other constructs in the model are the factors we will be testing to determine the extent each factor influences user acceptance.

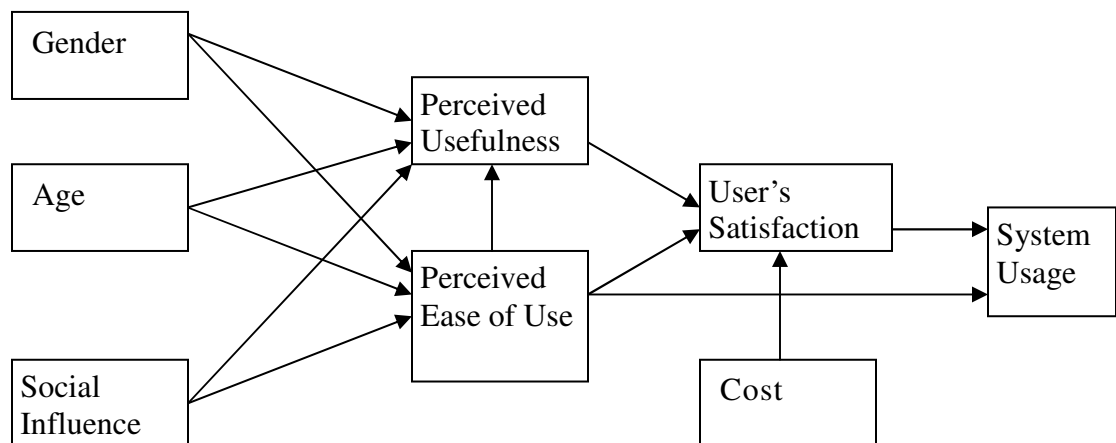


Figure 1: Proposed Research Model

The Technology Acceptance Model has been used to test the degree of acceptance with a wide variety of technologies. Based upon the study of TAM constructs, we propose a model from which to study the impacts of these constructs on the online newspaper satisfaction and usage patterns. The modified TAM (See Figure 1) proposed contains modified parts of the original TAM (Perceived Usefulness, Perceived Ease of Use, User Satisfaction, Actual Usage) with the external variables broken down into three items: gender, Internet experience and social influences. We hypothesize that each of the three items will have a significant external or moderating effect on actual usage. Prior studies have revealed the individual influence of each of these items (Davis, 1989; Taylor & Todd, 1995; Gefen & Straub, 1997; Venkatesh & Davis, 2000).

Perceived Usefulness

Perceived Usefulness, defined as the “extent to which a person believes that using the system will enhance his or her job performance” (Davis 1989, p. 320). Davis (1989) found that the relationship between perceived usefulness and usage was stronger and more consistent than other variables reported in prior studies. Usefulness has been confirmed to be the most important factor affecting user acceptance with few exceptions (Sun, 2003).

Perceived Ease of Use

Perceived ease of use, defined as the “extent to which a person believes that using the system will be free from effort” (Davis 1989, p. 320). Perceived ease of use has been found to influence usefulness, attitude, intention, and actual use. Davis et al (1989) found that perceived ease of use directly and indirectly affects usage through its impact on perceived usefulness through the attitude towards the systems use.

User Satisfaction

The attitude toward using is an individual’s positive or negative feelings about performing the target behaviour (Davis et al. 1989). Findings show that users are likely to have a positive attitude if they believe that usage of a technology will increase their performance and productivity.

System Usage

Igbaria et al. (1995) defined perceived usage as the amount of time interacting with a technology and the frequency of use. Actual usage, as originally conceptualized in the Davis (1989) study, was measured by the frequency of use and length of time of use. Objective measures of actual use are difficult to obtain for Internet-based technologies and therefore many of the TAM studies either left out usage as a dependent variable, focusing solely on behavioural intention or else moved to perceived usage.

Legris, Ingham and Collarette (2003) examined IS implementation through an analysis of the TAM studies. They consulted 80 articles for analysis of the TAM and found a high proportion of positive results for all relations of the TAM components with some inconsistencies. As for external variables, there is no clear pattern. The marginal influence of external variables helps in understanding the variance in system use. This study introduces three different external variables.

The external variables focused on include:

- Gender
- Level of Computer and Internet Expertise and experience
- Social Influences

In previous research conducted, external variables have proven to influence the original TAM constructs perceived usefulness and perceived ease of use. The researchers hypothesize that each external variable will impact on both the user's perceptions of Perceived Usefulness (PU) and Perceived Ease of Use (PEU).

Gender

Gender differences exist in many disciplines, including technology. This claim has been backed by several studies including Gefen and Straub (1997) and Venkatesh & Morris (2000). In Venkatesh & Morris's study (2000), it was discovered that men's decisions were strongly influenced by their perceptions of usefulness; whereas, women were more affected by the perceptions of ease of use and subjective norm.

Experience

Prior research has shown that prior experience is a determinant of behaviour (Ajzen & Fishbein, 1980). Igbaria et al. (1995) found that computer experience will directly and indirectly affect usage through beliefs and that individual skills and expertise were related to user beliefs and usage. They concluded that computer experience and training were positively associated with perceived ease of use and perceived usefulness.

Social Influences

Social Influences is defined as the degree to which an individual believes that people who are important to her/him think she/he should perform the behaviour in question (Fishbein and Ajzen 1975). In the technology domain, both peer and superior influences have been shown to be strong determinants of social influence (Mathieson 1991). Much prior research in psychology (see Ajzen 1991 for a review) found subjective norm to be an important determinant of intention and/or behaviour.

Davis (1989) and Davis et al (1989) had observed that the omission of subjective norm from TAM represented an important area needing further research.

Cost Construct

Online newspapers are a commercial venture and it is important to investigate the influence on value on user satisfaction and perceived usage. If a user is willing to pay for a system, it may indicate their level of satisfaction with the system...

Non-IS literature has assessed the economic nature of online newspapers and has shown that as cost increases for a product, actual usage of the product should decline. This follows the economic theory Law of Demand: "People do less of what they want to do as the cost of doing it rises." (Frank & Bernanke 2001, p. 105)

4. Research Methodology

Based on the research model a survey was developed including questions on the following constructs:

- Internet usage and social influences.
- Perceptions of newspaper site based on TAM: Perceived Usefulness; Ease of use; User Satisfaction; and an additional construct cost.
- System usage
- Registration
- Demographics (gender, age, education, occupation, industry)

Constructs were mostly identified from previous studies and operationalised into scales for the purposes of testing the proposed research model. In order to increase the measurement reliability of each construct, multiple scale-items were used (i.e., each scale item is a question which corresponds to a construct dimension identified from the literature review.) The conventionally accepted minimum of 3 items per construct is suggested by (Velicer and Fava 1998) and was used in the development of the survey tool. The items were implemented using a 7-point Likert scales. System usage was computed by multiplying frequency of usage (7-point Likert scale (daily, two to five times a week, ... , almost never) by the number of minutes per visit.

The sample population for this investigation targets current Internet users. Thus, the Internet-based data collection method is appropriate.

4.1 The Pilot Study

The purpose of the pilot study was to ensure the validity and reliability of the survey tool. This was achieved by collecting data to simultaneously test content and construct validity and reliability. Content validity was tested through feedback from pilot participants. Subjects were prompted to provide comments and feedback after each section of questions. These comments and feedback ensured each question was clearly stated and understood by the subject and to ensure there was no ambiguity present. From these responses, the instrument's content validity was verified.

Construct validity and reliability was determined from the questionnaire's close-ended responses. Preliminary statistical analysis was applied to detect any

scale-items that did not perform to satisfactory measures of construct reliability and validity. From the preliminary analysis completed, construct validity and reliability were confirmed. The results of the pilot study were used to add the final touches to the questionnaire and to ensure its legitimacy for this research study. Systems' testing was conducted through completing the instrument several times and ensuring the data was correctly stored in the backend database.

Members of academic staff, administration staff and students at the University of New South Wales piloted the questionnaire. Validation by academic staff provided expert feedback whilst validation from the administration and student body provided thoughtful insight more reflective of the target sample population (i.e. typical Internet users). The pilot study ran for a one week period and was completed by 28 respondents.

To test the questionnaire's construct validity, exploratory factor analysis was conducted and Cronbach alpha computed for each set of scale-items measuring a construct.

All survey respondents had positive feedback about the survey instrument. Comments about the online method included "quick" and "easy". All surveys were completed with no technical difficulties. Average time required to complete the survey was 9 minutes. The questions on System Usage produced mixed results. To eliminate any inaccuracies, we modified one of the questions. We then re-tested that portion of the questionnaire. The results significantly improved.

4.2 Data Collection

The data were collected via the web-based version of the final instrument. This data collection exercise was undertaken with the collaboration of one of Australia's largest newspaper publishers. The publisher provides a web based version of their Sydney based broadsheet newspaper. It was this web portal that was used to solicit responses for the survey. Advertisements for the survey were placed free-of-charge on the home page of the portal and provided a direct link to the survey. As an incentive the newspaper made a payment of \$2 per response to a charity (UNICEF), to a limit of \$1500. Once users navigated to the survey site the ethics requirements were displayed and if the respondent agreed to participate the survey commenced. Once consent was not given or the survey completed the user was returned to the newspaper portal. 1592 usable responses were collected. Data was cleaned and indicators were reversed where necessary.

5. Results

In analysing the data the descriptive statistics of the sample were derived and then to test the strength of the theoretical model, a Structured Equation Modelling (SEM) technique was used, specifically Partial Least Squares (PLS). PLSGraph Version 3.0 was used to assess the predictability and significance of the structural model. Gefen et al. (2001) provide guidelines for use of SEM techniques. The current research satisfies the requirements for PLS analysis: the model is based on a set of path specific null hypothesis of no effect; the objective of the analysis is to confirm the variance of the

dependent variable; the research is both exploratory and confirmatory; the sample size confidently meets the requirements of assumed distribution and required minimal sample size.

The descriptive statistics of the sample answer research question 1. 63.6% of the respondents were females and 36.4% were males. 64.9% of the sample participants are aged between 21 and 39 years old. The average age of the sample was 35.38 years. Education levels for the sample collected were coherent with the research already completed. In this sample, 72.6% of respondent had attained an undergraduate degree or higher qualification. More than half (52.4%) of sample participants held an office position, opposed to 8% of field workers, 8.8% students, 0.4% unemployed and 2.3% retired. In terms of main access location, access via work was the most significant at 74.6%. Online newspaper readers reinforced the message of Boston.com's advertising campaign: "There is no more captive audience than the one lashed to their desk." Coats (2002) comments "Anyone reading site server logs will attest that the 9-to-5 shift is when online newspapers enjoy the lion's share of their traffic." The majority of the sample can be called 'Power Users,' with 96.3% of the sample having used the Internet for four or more years. This savvy profile also emerged in the type of Internet connection used by sample. With 90.1% of the sample using a high speed Internet connection (including Cable, Wireless, High speed LAN and Corporate Network). Only 9.2% of the sample accessed the online newspaper with a dial-up Internet connection. Print newspaper subscription was fairly low with only 14.1% of the online sample having a newspaper subscription. The majority of the sample was more reliant on online news than the printed newspaper with 20.4% exclusively reading online news and 78% of the sample accessing online news more often than the print medium. Only 9.7% of the online sample read the printed newspaper daily, compared to 74.6% of the sample accessing online news daily. Only 43.1% of the sample read the printed newspaper less than once a week.

Research question 2 considers the usage of the different sections of the paper. The editorial content of the paper is split over three sections: National news (covers all local Australian news; Breaking news (includes breaking news of considerable significance); and World news (all international news). Users are required to navigate to each section as required. It is clear that the news content was the most popular section of the on-line newspaper with 83% of users using national news, 77% using Breaking news and 70% reading world news. The next most popular section was entertainment with a usage rate of 32%.

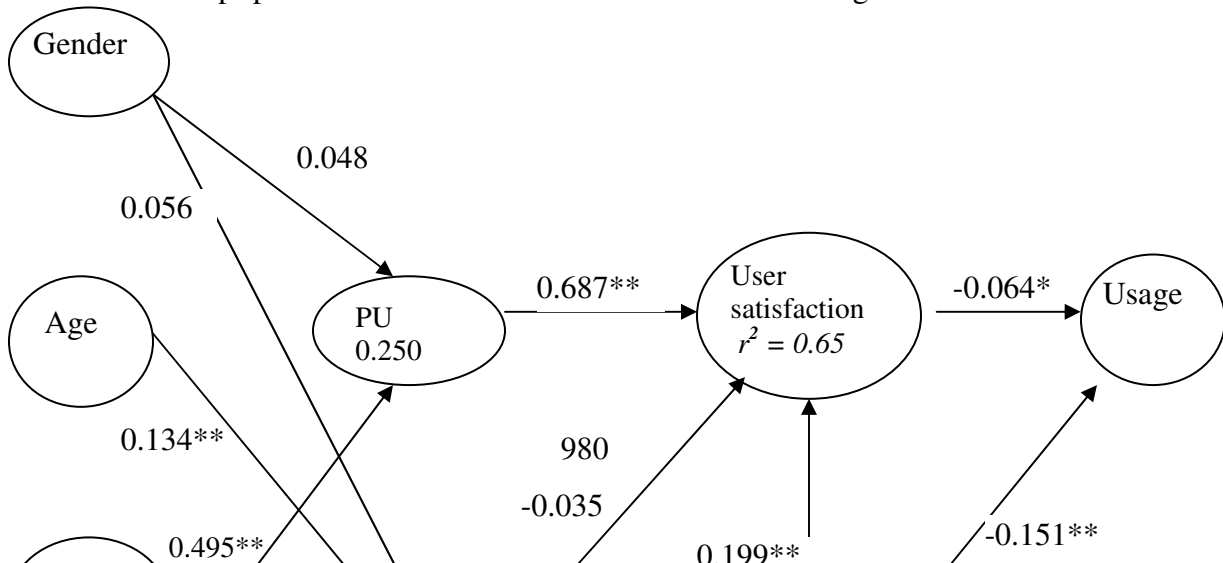


Figure 2: Preliminary Results for the Structural Model
(* significant at 0.05; ** significant at 0.01)

Overall the results of the confirmatory factor analysis for the observed variables (the scales) used to determine the constructs of PEU, PU, attitude towards the Internet, user satisfaction, cost, and social influence was acceptable. The construct reliability was high with the majority loading above 0.7 (Hair et al. 1998). However some items for all constructs, apart from attitude towards the Internet and user satisfaction, did not load above 0.7. Given that this research is exploratory in nature it was decided to include these items in the analysis. We estimated the path's significance using a bootstrapping procedure in PLS. Figure 2 presents the structural results of fitting the model in figure 1 to the data. The multiple r^2 for user satisfaction is 0.65. This greatly exceeded 10%, which was suggested by Falk and Miller (1992) as an indication of substantive explanatory power. The significant paths are: age and PEU; attitude towards the Internet and PEU; social influence and PEU; Social Influence and PU; PU and user satisfaction; cost and user satisfaction.

6. Discussion

The profile of the respondents indicates that the majority of the users were under 39 years of age, well educated and employed at a professional level. 90% of the sample had high-speed Internet access. This is a consistent profile of the reported typical profile of Internet users. There is a disparity in terms of the gender of the respondents. Nearly twice as many females responded to the survey than males. This may be explained by the motivation that was offered to undertake the survey of a \$2 donation to UNICEF for each response. This motivation may have been more attractive to females by being more dispersed to undertaking a charitable exercise.

In terms of usage of the different sections of the online newspaper editorial content was the most popular: national news 83.3%, breaking news 77.5%, and world news 70.7%. Usage dropped significantly for other content, the next most popular being entertainment at 32.1%. This indicates that user's main purpose in using the site is to remain up-to-date on news.

The majority of the users, 82%, use the on-line version of the paper 75% of the time rather than the paper version. This is consistent with the profile of the respondents outlined above indicating their reliance on the web for information resources rather than traditional sources.

The efficacy of the model has been demonstrated by the research with a very strong sample size. The significance of the variables age, Internet attitude and social influence with PEU is reflective of the demographics of the sample. The mean age of the sample being 35.4 years with 65% of the sample of the sample in the range of 21 – 39 years of age. The level of Internet usage was high with high levels of accessibility. This suggests a group of young professionals heavily reliant on the Internet as an information resource with a group of peers with similar patterns of behavior.

There is a clear relationship between the usability of the site and satisfaction. A major contribution of the model was the relationship between cost and user satisfaction. This demonstrates users preference for free access to the online newspaper.

7. Conclusion

This paper has presented a model capable of determining the level of user satisfaction with an online newspaper, indicating that the online newspaper does meet the needs of its users. However user satisfaction is not a good predictor of system usage. There could be at least two reasons for this. Firstly, this research assumes that online users of the news site access the site for editorial news content. In reality, this may not be true. From the initial interview we had with some members of the news site, some services that the sites provide (such as car sales and job recruitment) are also very popular. Therefore we may better predict system usage if we also take into account user satisfaction of other services provided on the news online site. The relative popularity of classified and editorial news content was not investigated in this study and may be a topic of future study. Secondly, our indicator for usage calculates the number of minutes users visit the news online site

each time they visit. It does not take into account the purpose of each visit (e.g. services used). Therefore future study may explore more comprehensive measures of system usage.

Only 14.1% of our respondents subscribe to the printed version of the newspaper. We were thus not able to make a fair comparison of the relative benefits of the printed and online news content. It therefore remains unclear whether readers who read *both* the printed and online newspapers are equally satisfied with the online editorial news content, whether the online version provides a substitute or complementary role (Chyi and Lasorsa, 1999). Assuming satisfactory newsworthiness across the two mediums, research has shown the multimedia effects of online news appear to benefit advertisements, but may hinder readers' memory for news content (Sundar, 2000).

As mentioned before, the motivation or attraction for each respondent to complete the survey for this study was a small donation to charity (there was no direct benefit to each respondent). There is therefore a bias in the sample, although we are not aware whether there is a relationship between charitableness and usage.

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