

2004

Uses, motivations and community attachment of social internet users

Laura Price
Edith Cowan University

Follow this and additional works at: https://ro.ecu.edu.au/theses_hons



Part of the [Communication Technology and New Media Commons](#), and the [Critical and Cultural Studies Commons](#)

Recommended Citation

Price, L. (2004). *Uses, motivations and community attachment of social internet users*. Edith Cowan University. https://ro.ecu.edu.au/theses_hons/582

This Thesis is posted at Research Online.
https://ro.ecu.edu.au/theses_hons/582

Edith Cowan University

Copyright Warning

You may print or download ONE copy of this document for the purpose of your own research or study.

The University does not authorize you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site.

You are reminded of the following:

- Copyright owners are entitled to take legal action against persons who infringe their copyright.
- A reproduction of material that is protected by copyright may be a copyright infringement. Where the reproduction of such material is done without attribution of authorship, with false attribution of authorship or the authorship is treated in a derogatory manner, this may be a breach of the author's moral rights contained in Part IX of the Copyright Act 1968 (Cth).
- Courts have the power to impose a wide range of civil and criminal sanctions for infringement of copyright, infringement of moral rights and other offences under the Copyright Act 1968 (Cth). Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

Uses, Motivations and Community Attachment of Social Internet Users

by

LAURA PRICE

**A Thesis Submitted in Partial Fulfilment of the
Requirements for the Award of**

Bachelor of Business (Marketing) with Honours

Faculty of Business, Edith Cowan University

Date of Submission: 10th December, 2004

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

ABSTRACT

The ability of the Internet to connect users across diverse locations has resulted in the use of the Internet for social purposes, such as to communicate and interact with others online. This has created the need to study the impact of the Internet on community attachment. Motivated by conflicting views relating to the impact of the Internet on community attachment, this study addresses the relationship from a social perspective, in order to investigate the motivations for social Internet use and to assess the impact of social Internet use community attachment.

A quantitative design was utilised and a self administered questionnaire employed to capture data on usage patterns, motivations for social Internet use and community attachment. Stepwise regression analysis was used within the data analysis stage of the study to determine the predictors of online community attachment, while factor analysis was performed on the motivations scale to identify underlying dimensions. T-tests and ANOVA were then used to determine the impact of social Internet activity on community attachment levels.

The findings reveal that online community attachment can be predicted by seven variables. In particular, it found that motivations and type of activity performed online were the strongest predictors. In relation to community attachment and social Internet use, the study reinforces the dystopian perspective towards the impact of the Internet on community attachment and highlights the underlying motivations for social Internet use, providing depth to this finding.

DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) *incorporate, without acknowledgement, any material previously submitted for a degree or diploma, in any institution of higher education;*
- (ii) *contain any material previously published or written by another person except where due reference is made in the text; or*
- (iii) *contain any defamatory material."*

Signature:

Date: 04/02/06

ACKNOWLEDGEMENTS

I would like to thank the following people for helping me complete this thesis, without your help it would not have been possible:

My supervisors, Marie Ryan

*For her encouragement and her wisdom on community attachment,
and factor analysis.*

and

Elaine Leong

For her time, invaluable advice and rigorous editing of each of my drafts.

My family

*For their love, patience, and encouragement
and for giving me space to study when I needed it!*

Gary

*For his unwavering belief in me
Thank you for all your support and encouragement.*

<u>Table of Contents</u>	<i>Page</i>
Abstract	II
Declaration	III
Acknowledgements	IV
 Chapter 1 <u>Introduction</u>	
1.0 Introduction	1
1.1 Background	3
1.2 Significance of Study	5
1.2.1 Type of Internet use	7
1.2.2 Level of Internet use	7
1.2.3 Offline and online attachment	8
1.2.4 Motivations for social Internet use	8
1.3 Purpose of the Study	9
1.3.1 Research objectives	9
1.3.2 Research questions	10
1.4 Terminology	12
 Chapter 2 <u>Literature Review</u>	
2.0 Introduction	14
2.1 Internet Users and Usage Patterns	15
2.1.1 Internet users	15
2.1.2 Internet usage patterns	16
2.1.2.1 Demographic characteristics	16
2.1.2.2 Psychographic characteristics	17

2.1.2.3	Type of Internet activity	17
2.1.2.4	Level of Internet use	19
2.2	Motivations for Social Internet Use	19
2.3	Community Attachment	23
2.4	Virtual Communities	25
2.5	The Internet and Community Attachment	27
2.5.1	The impact of the Internet on community attachment debate	27
2.5.2	Supplementarian view	31
2.6	Virtual Communities and Community Attachment	32
2.7	Summary of Literature Review	36
Chapter 3	<u>Theoretical Framework</u>	
3.0	Introduction	38
3.1	The Lifestyle and Consumption Process Model	38
3.2	The Systemic Model of Community Attachment	39
Chapter 4	<u>Research Methodology</u>	
4.0	Introduction	43
4.1	Population and Sample	44
4.1.1	Population	44
4.1.2	Sample	45
4.2	Research Design	46
4.3	Research Instrument	47
4.3.1	Section one: Internet usage patterns	48
4.3.2	Section two: Motivations for social Internet use	48

4.3.3	Section three: Community attachment	48
4.3.4	Section four: Demographic and psychographic factors	50
4.4	Procedure	51
4.5	Analysis	52
4.5.1	Descriptive statistics	52
4.5.2	Stepwise regression	53
4.5.3	Factor analysis	53
4.5.4	Independent sample t-tests	55
4.5.5	One-way ANOVA with post hoc comparisons	56
4.6	Methodological Limitations	58
4.6.1	Size and diversity of sample	58
4.6.2	Self report of time and psychological characteristics	58
4.6.3	Questionnaire design and respondent error	59
4.6.4	Ethical considerations	59
 Chapter 5 <u>Results</u>		
5.0	Introduction	60
5.1	Description of the Sample	61
5.1.1	Demographic characteristics	61
5.1.1.1	Gender	63
5.1.1.2	Age	63
5.1.1.3	Personal income	63
5.1.1.4	Type of student	64
5.1.1.5	Type of residency	64

5.1.2	Psychographic characteristics	65
5.1.2.1	Level of extroversion	65
5.1.2.2	Level of competence with computer	66
5.1.3	Internet usage	67
5.1.3.1	Type of social Internet use	67
5.1.3.2	Level of social Internet use	70
5.1.4	Summary of user characteristics of online group	71
5.2	Predicting Attachment to Online Communities	72
5.2.1	Stepwise regression	72
5.2.2	Summary of stepwise analysis	73
5.3	Motivations Influencing Social Internet Use	74
5.3.1	Factor analysis	74
5.3.2	Comparisons of mean scores between groups	77
5.3.3	Motivations and user characteristics	78
5.3.3.1	Demographic characteristics	78
5.3.3.2	Level of computer competency	80
5.3.3.3	Usage patterns	82
5.3.3.4	Level of social Internet use	83
5.3.4	Summary of motivations influencing social Internet use	85
5.4	Relationship between Social Internet Use and Community Attachment	86
5.4.1	Type of social Internet activity and online community attachment	86
5.4.1.1	Results of independent sample t-tests	87
5.4.1.2	Summary of results of independent sample t-tests	89
5.4.2	Level of social Internet activity and online community attachment	89

5.4.2.1 Results of ANOVA factor score analysis	90
5.4.2.2 Results of ANOVA item score analysis	90
5.4.2.3 Summary of ANOVA tests online community attachment	90
5.4.3 Level of social Internet activity and offline community attachment	91
5.4.3.1 Results of ANOVA factor score analysis	92
5.4.3.2 Results of ANOVA item score analysis	92
5.4.3.3 Summary of ANOVA tests for offline community attachment	93
Chapter 6 Discussion	
6.0 Introduction	94
6.1 Summary of Study	94
6.2 Discussion	95
6.2.1 Characteristics of the online group	96
6.2.2 Motivations influencing social Internet use	103
6.2.3 Community attachment	108
6.3 Contributions to Marketing	112
6.4 Limitations and suggestions for future research	113
6.5 Conclusion	114
List of References	116
Appendices:	
1. Measurement Instrument: Questionnaire	125
2. Factor Analysis of Community Attachment scales	129
3. Information Letter to Participants	133

<u>List of Tables:</u>	<i>Page</i>
1 Summary of Researchers' views towards Internet Usage and Community Attachment	28
2 Characteristics of sample and sub groups	62
3 Level of Computer Competence by sub group	66
4 Frequency of use of social activities	67
5 Type of communication by sub group	68
6 Use of audio and video tools by sub group	69
7 Number of hours spent performing social Internet activities	70
8 Results of Regression Analysis- Beta, Significance and t-values	73
9 Results of Factor Analysis- Factor Loadings and Communalities	75
10 Results of t-tests Time and Entertainment factor by Gender	78
11 Results of t-tests- Altruism factor by Gender	79
12 Results of t-tests- Altruism factor by Residency	79
13 Results of t-tests Time and Entertainment factor by Residency	80
14 Results of t-tests Time and Entertainment factor by Type of Social Internet Use	82
15 Results of t-tests Time and Entertainment factor by Type of Communication Tools	82
16 Results of t-tests Altruism factor by Type of Communication Tools	83
17 Results of ANOVA Time and Entertainment factor by Level of Social Internet Use (Low- Medium)	84
18 Results of ANOVA Time and Entertainment factor by Level of Social Internet Use (Low- High)	84

<u>List of Figures:</u>	<i>Page</i>
Figure 1. Theoretical Framework	42
Figure 2. Level of Extroversion	65
Figure 3. Diagram of analysis procedure for Type of Social Internet Activity and Online Attachment	87
Figure 4. Diagram of analysis procedure for Level of Social Internet Activity and Online Attachment	89
Figure 5. Diagram of analysis procedure for Level of Social Internet Activity and Offline Attachment	91

CHAPTER 1

Introduction

1.0 Introduction

The Internet, originally developed in 1962 to allow the US Air Force to maintain command and control over its missiles and bombers after a nuclear attack, quickly evolved into a means to communicate with others and transfer information quickly and efficiently over large distances (Kristula, 2001). In the second quarter of 2003, more than four million (55%) Australian households had access to the Internet (National Office for the Information Economy [NOIE], 2003). These figures represent a 28% increase, since the first quarter of 2001, in the number of Australian households who had immediate Internet access (NOIE, 2003), indicating the rapid and widespread diffusion of the Internet within Australia. The level of Internet usage is projected to continue increasing dramatically in the future (NOIE, 2003).

The pervasiveness of the Internet into everyday life and the ability of the Internet to connect users across diverse and dispersed locations (Catterall & Maclaran, 2002) has resulted in the need to study the Internet and its impact on communication and interpersonal interactions. One aspect of this impact is community attachment. While studies have been performed on the impact of the Internet on community attachment (Wellman, Quan Haase, Witte & Hampton, 2001; Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, & Scherlis, 1998) there are a number of conflicting views resulting in the need for further research.

This chapter provides background information on the emergence of the Internet as a tool for online social interaction. It also highlights the debate over the effect of the Internet on community attachment, illustrating the disagreement among researchers, and highlighting the importance of further study into the impact of the Internet on community attachment. The significance of the study for a number of stakeholders in society is also addressed.

The last section of this chapter presents the research objectives and research questions of the study, while also outlining some of the terminology used within the literature review.

1.1 Background

Past research has highlighted the link between media use and community attachment as originating from the premise that media use, such as reading the newspaper or watching television, will “direct a person’s attention away from matters of purely individual concern and toward the community” (Rothenbuhler, Mullen, DeLaurell & Ryu, 1996, p. 447), thereby increasing an individual’s level of community attachment.

In contrast, several studies cite evidence which suggest that communications media, such as television, have a negative impact on community attachment levels by causing individuals to become isolated, depressed and lonely and thereby resulting in the weakening of community ties and attachment levels (Bargh & McKenna, 2003; Kavanaugh & Patterson, 2000; Katz, Rice & Aspden, 2000).

The emergence of the Internet as a new form of communications media, and the rapid adoption of it by consumers as a channel to communicate with others (Strauss, El Ansary & Frost, 2003) has re-ignited the debate over the impact of communications media on community attachment and resulted in the need for research into the impact of the Internet on community attachment.

Research has sought to delineate the relationship between Internet use and community attachment by assessing the impact of Internet use on the level of offline community attachment exhibited by individuals. This research has resulted in the development of two conflicting views: the utopian view and the dystopian view (Wellman et al., 2001).

Implicit in the utopian assertion that increased Internet use will increase community attachment and social capital is the assumption that individuals use the Internet for social interaction purposes, such as communicating with others (Wellman et al., 2001). However, this view fails to acknowledge that the Internet can be used for asocial purposes, such as information searching and online shopping.

Alternatively, dystopians, under the perspective that increased Internet usage will lead to a decrease in community attachment and social capital (Wellman et al., 2001), imply that individuals use the Internet for asocial purposes, where time spent on the Internet detracts from time spent interacting socially offline (Nie, 2001). However, this perspective fails to recognise that the Internet can be used for social interaction purposes.

While Franzen (2003) suggests that these conflicting perceptions result from the differences in the studies designs and methodologies, Wellman et al. (2001) suggest that the Internet will have a differing impact on individuals depending on “the types of activities performed online and ... how these fit into the complexities of everyday life” (Wellman et al., 2001, p.449).

This view is supported by researchers who feel that the Internet must be studied in the context of “real” life (Bakardjieva, 2003; Mesch, 2001; Wellman et al., 2001), due to the fact that offline ties, values and motivations influence online activities (Matel and Ball-

Rokeach, 2001) and that the impact of the Internet will depend on the user's situation, relevancies (Bakardjieva, 2003) and goals (Bargh & McKenna, 2003).

1.2 Significance of Study

The key aim of this study is to increase understanding in regards to the impact of the Internet on community attachment. This section identifies gaps within the literature which will be addressed by this study, thereby increasing knowledge of and insight into consumer Internet behaviour.

An understanding of consumer Internet behaviour and the way in which the Internet impacts on community attachment is imperative for marketers as it will allow them to determine whether existing models and theories of consumer behaviour are appropriate to the online environment (Goldsmith, 2002). This will enable marketers to develop and more effectively target their marketing, promotional and public relations strategies. For example, the creation of a strong web community can be used as a tool to encourage customer loyalty and strengthen brand and corporate image (Catterall & Maclaran, 2002).

Furthermore, the emergence of virtual communities to which consumers are highly attached may mean that individuals will develop online reference groups, which will influence their opinions and perceptions. This will be an important issue for marketers as they must not only understand the opinions and perceptions of consumers towards their

products, they must also understand the origin of these views and the factors influencing these views.

Other stakeholders who will benefit from this study include community groups and organisations, particularly voluntary organisations, as it will allow them to understand the types of online activities which may potentially decrease community attachment. Knowledge of this may allow groups to devise and implement strategies to protect against declining participation and involvement levels.

Finally, as young people are the future of Australia, ensuring students receive a high level of tertiary education is of great importance to the community as a whole. This research, by providing insight into social Internet usage patterns, the motivations for social Internet use and its impacts on community attachment will result in a greater understanding of university students. This may allow universities and other tertiary institutions to better cater to their students, thereby increasing the satisfaction and quality of education received by students and ultimately increasing the number of students and therefore the profit margins of the tertiary institution.

Furthermore, although this study samples university students, these students are representative of a new generation of young, highly educated, Internet savvy users, referred to within the literature as the “net generation” (Garrison, 2000). Therefore, this study will also provide insight into this new generation of net users, increasing the value and significance of this research for a number of stakeholders. The gaps which will be addressed within this study are discussed in the following paragraphs.

1.2.1 Type of Internet use

Current research addresses the impact of the Internet on individuals' attachments to their community (Kraut et al., 1998; Stoll, 1995). However, this research fails to distinguish between social and asocial Internet uses. Social Internet use, which comprises of activities such as participating in online games and interactive discussions, encourages social interaction online and is expected to have a significantly different impact on community attachment compared to asocial Internet use, where individuals perform activities such as web browsing or shopping, which do not necessarily encourage online social interaction. The distinction between social and asocial Internet use, within this study, is expected not only to increase understanding in the area but also allow marketers to determine how social tools such as discussion boards and chat rooms can enhance their marketing, promotional and public relations activities.

1.2.2 Level of Internet use

While research indicates that the level of Internet use will affect the type of Internet activity and consequently community attachment (Wellman et al., 2001), research has neglected to investigate the direct relationship between the level of social Internet use and community attachment. This study aims to fill this gap by identifying differences in the community attachment of high, medium and low level Internet users. Distinguishing between the different online behaviours of high and low level users will be of importance to marketers, particularly in the creation of strategies to target these different groups.

1.2.3 Offline and online attachment

Current research focuses on the impact of Internet use on offline community attachment levels, but has neglected to investigate how Internet use impacts on online community attachment levels. The impact of the Internet on online community attachment will have important implications for many stakeholders, particularly community groups and voluntary organisations, due to the fact that community development processes and the creation of online social ties may influence consumer behaviour

1.2.4 Motivations for Internet use

While a number of studies have investigated the motivations for general Internet use (Papacharissi & Rubin, 2000; Joines, Scherer & Scheufele, 2003), none have looked specifically at motivations for social Internet use. This study aims to improve the understanding of the motivations impacting Internet use, by examining the motivations for performing social activities online. This will benefit marketers as it will allow them to cater their online products and services in such a way to satisfy these social motivations.

1.3 Purpose of the Study

The purpose of this study is to gain insight into the social Internet activities of university students. There are five primary research objectives for the study.

1.3.1 Research Objectives

- To profile users who are attached to an online community.
- To determine whether there any variables which predict online community attachment.
- To examine the underlying motivations influencing social Internet use among university students.
- To examine the relationship between **type** and **level** of social Internet activity and **online** community attachment among university students.
- To examine the relationship between **level** of social Internet activity and **offline** community attachment among university students.

1.3.2 Research Questions

Research Question 1:

What are the characteristics of university students who belong to an online community?

Research Question 2:

What are the variables which predict online community attachment among university students?

Research Question 3:

What are the underlying motivations influencing social Internet use among university students?

Hypothesis H1:

Motivations for social Internet use differ based on demographic, psychographic and usage characteristics (Papacharissi & Rubin, 2000).

Dependent Variable: Motivations

Independent Variables: Demographic, psychographic and usage characteristics

Statistical procedure: T-tests and ANOVA

Research Question 4:

What is the relationship between **type** of social Internet activity and **online** community attachment among university students?

Hypothesis H2:

Use of the Internet for synchronous social activities increases the level of online community attachment of university students (Wellman et al., 2001).

Dependent Variable: Online community attachment

Independent Variables: Type of communication (asynchronous vs. synchronous)

Statistical procedure: T-tests

Hypothesis H3:

Use of the audio or video tools to communicate online increases the level of online community attachment of university students (Papacharissi & Rubin, 2000).

Dependent Variable: Online community attachment

Independent Variables: Type of tools used to communicate online

Statistical procedure: T-tests

Hypothesis H4:

Use of a broadband Internet connection increases the level of online community attachment of university students (O'Shea, 2002).

Dependent Variable: Online community attachment

Independent Variables: Type of Internet connection

Statistical procedure: T-tests

Research Question 5:

What is the relationship between **level** of social Internet activity and **online** community attachment among university students?

Hypothesis H5:

As social Internet use increases, attachment to online communities increases among university students (Chen, Chen & Paul, 2001).

Dependent Variable: Online community attachment

Independent Variables: Level of social Internet use

Statistical procedure: ANOVA

Research Question 6:

What is the relationship between **level** of social Internet activity and **offline** community attachment among university students?

Hypothesis H6:

As social Internet use increases, attachment to offline communities decreases among university students (Chen, Chen & Paul, 2001).

Dependent Variable: Offline community attachment

Independent Variables: Level of social Internet use

Statistical procedure: ANOVA

1.4 Terminology

Term	Definition
Community	Traditionally, a community is defined as “a group of people living near to each other” (Hampton & Wellman, 2001, p. 477). However, many community ties are non-local and therefore communities should be defined in social rather than spatial terms. Consequently, within this study, the term community will be defined in terms of “supportive, sociable relationships that provide a sense of belonging” (Hampton & Wellman, 2001, p.477).
Community Attachment	Community attachment- the social relationships, participation in political and voluntary organisations and the commitment of individuals to their social communities (Wellman et al., 2001).
Social Capital	This research study will utilise the definition of social capital developed by Putnam (2000) in his work on communication and quality of life in communities, where social capital is the “features of social organisations, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions” (Putnam, 2000, p.167).
Virtual Communities	Traditionally, a virtual community can be defined as “a cyberspace supported by computer based information technology, centred upon communication and interaction of participants to generate member

driven content, resulting in a relationship being built up” (Lee, Vogel & Limayem, 2003, p.50). However, as this study is looking at the impact of the Internet on social life and relationships the term will be limited to virtual social communities. Virtual social communities are those communities on the Internet where individuals with similar needs, interests, experiences or desires come together to form meaningful personal relationships (Lee, Vogel & Limayem, 2003) and develop affective bonds (Blanchard & Markus, 2004).

Social Internet Use	Social Internet use involves performing activities such as sending emails, which promotes online social interactions and often results in the development of online social ties (Wellman et al., 2001).
Asocial Internet Use	Asocial Internet use alternatively involves use of the Internet, for purposes such as information searching or website browsing, which does not promote social interaction online (Wellman et al., 2001).
Synchronous Internet Activity	Synchronous activities can be defined as “social activities involving at least two people acting simultaneously” (Wellman et al., 2001, p.443)
Asynchronous Internet Activity	Asynchronous activities include activities which do not require simultaneous interaction (Wellman et al., 2001).

CHAPTER 2

Literature Review

2.0 Introduction

This chapter reviews existing literature relating to six main areas. These areas include:

1) Internet users and usage patterns; 2) motivations for social Internet use; 3) community attachment; 4) virtual communities; 5) Internet and community attachment; and 6) virtual communities and community attachment.

The main objectives of this chapter are to provide insight into current research on the impact of communications media, particularly the Internet, on community attachment, and to highlight the need for studies to be performed on the effect of social Internet use on community attachment. In particular, the section on the Internet and community attachment serves to review the current debate about the impact of the Internet on community attachment. The section on motivations for Internet use helps to highlight the underlying motivations for general Internet use and provides depth to the discussion on how the Internet can influence community attachment.

2.1 Internet Users and Usage Patterns

2.1.1 Internet users

A report compiled by the NOIE (2003) highlights the demographic trends of Internet users within Australia. Users were found to be relatively young, with 82% of people aged 14 – 17 having accessed the Internet in June 2003, and 79% of 18-24 years olds having accessed the Internet in the same period. In contrast, only 29% of the over 55's had accessed the Internet in June 2003. However, the over 55's age group recorded the highest proportional increase in Internet use, between December 2000 and June 2003, with a 61% increase in users, compared to a 34% in 14 to 17 year olds (NOIE, 2003).

Educational attainment is often equated with rate of Internet access. The NOIE (2003) report indicates that more highly educated users tend to have a greater level of access to the Internet, with 85% of people with a university degree accessing the Internet. Despite this, the level of total Internet use increased significantly between June 2001 and June 2003 regardless of educational attainment levels (NOIE, 2003), signifying that although education level is correlated to higher Internet access, it is not a reliable indicator of level of Internet use.

Employment type and income level are also related to Internet use with those people working full time and having a household income of over AU\$50,000 more likely to have accessed the Internet in June 2003 (NOIE, 2003). 75% of full time workers used the Internet in June 2003, compared with 66% of part time workers and 45% of unemployed people. Furthermore, Internet use was also found to be related to personal

levels of disposable income as 90% of people with an income of over \$100,000 used the Internet compared to only 36% of people with an income of \$10,000 to \$ 14,999, in June 2003 (NOIE, 2003).

2.1.2 Internet usage patterns

Internet usage patterns have been shown to be influenced by a number of factors including demographic and psychographic characteristics, type of activity performed online and level of Internet use.

2.1.2.1 Demographic characteristics

Empirical evidence suggests that gender plays a role in determining what activities are performed online (Howard, Raine & Jones, 2001; Jackson, Ervin, Gardner & Schmitt, 2001). Women have been found to be more likely to use the Internet to communicate with family and friends (Jackson et al., 2001), find health or religious information, and to research new jobs, while men are more inclined to use the Internet to play online games, search for news and financial information and to shop, trade online stocks and participate in auctions (Howard, Raine & Jones, 2001).

Age was also found to influence type of Internet use as the Pew Internet Study (Pew Research Centre, 2000) indicates that younger users were more likely than older users to use the Internet to socialise, browse for fun or work/ school related research, perform convenience activities such as Internet banking, and perform leisure activities such as downloading music or information relating to movies and books (Howard, Raine & Jones, 2001).

2.1.2.2 Psychographic characteristics

Psychographic factors have also been found to impact on Internet usage patterns (Schiffman, Sherman & Long, 2003; Kraut, et al. 1998; Mesch, 2001). Schiffman et al. (2003) found that respondents who valued self fulfilment, excitement and fun and enjoyment in life were more likely to use the Internet for fun and entertainment related purposes such as playing online games and communicating with others, while those who valued a sense of accomplishment were more likely to use the Internet for information, business and research related purposes. Furthermore, those who valued respect, excitement and personal relationships were more likely to use the Internet for social interaction purposes such as to “communicate with others in chat rooms or on message boards” (Schiffman et al., 2003, p. 177).

Another psychographic element expected to influence Internet usage patterns is the level of social extroversion of an individual. One study found that the more socially extroverted an individual was, the fewer hours per day the individual spent online (Kraut et al., 1998). Similarly, individuals who exhibit social introversion and an “individualistic approach to others” (Mesch, 2001, p. 338) have been found to use the Internet more often than prosocial or extroverted individuals (Mesch, 2001).

2.1.2.3 Type of Internet activity

Insight into usage patterns can also be gained by analysing the types of activities performed online. Internet use can be categorised into two types: social and asocial. Asocial Internet activities involve surfing the web, shopping, and looking for news (Wellman et al., 2001). Social Internet activities allow users to communicate and interact

with others, and create “new social relationships and (exchange) resources such as social support, information and knowledge” (Mesch, 2001, p. 329).

Social Internet activity can be further divided into asynchronous and synchronous activities. Asynchronous social activities are activities where communication takes place in delayed time, such as with emails and non interactive discussion boards. Alternatively, synchronous social activities are activities where users communicate and interact in real time such as while participating in chat rooms and in online role playing environments and playing multi user games (Wellman et al., 2001).

Sending and receiving emails is the most widely performed activity online, with 74% of Australian Internet users using email in June 2003, with 61 per cent growth between December 2000 and June 2003. 6 per cent of Australian Internet users participated in non interactive discussions in June 2003 (NOIE, 2003).

In addition, the NOIE report (2003) indicates that synchronous activities performed online included playing online games (17%) and participating in interactive discussions (15%). Participation in interactive discussions, such as chat rooms, grew by 48.8% between December 2000 and June 2003. By looking at the demographics of users participating in synchronous activities, it was found that users tended to be younger, and have a low personal income (users in the less than \$10,000 income group were heavily represented in the results, probably due to the fact that these users were predominantly students) (NOIE, 2003).

2.1.2.4 Level of Internet use

Activities performed online were found to be influenced by the amount of experience users have with the Internet. More experienced users were found to use the Internet as a communication and information seeking tool within their jobs, to perform transactions and to manage their money online, while less experienced users were more likely to use the Internet to perform more basic functions such as information searching and “surfing” (Howard, Raine & Jones, 2001).

These findings show that demographic and psychographic characteristics, the type of Internet activity and the level of Internet use impact on general Internet usage patterns. However, there is a paucity of information linking these aspects to social Internet usage patterns (Wellman et al., 2001) and community attachment. This will be addressed within this study.

2.2 Motivations for Social Internet Use

Traditionally, motivations for media use have been measured from the uses and gratifications theory. The uses and gratifications theory is based on the premise that people use communications media to gratify needs or wants (Papacharissi & Rubin, 2000). By identifying the needs or wants people are attempting to gratify, researchers can identify the motivations of consumers for using particular media channels (Stafford, Stafford & Schkade, 2004). The uses and gratifications perspective has been previously used to assess television and radio media (Stafford et al., 2004) and several studies have

extended it to assess the motivations of individuals using the Internet (Papacharissi & Rubin, 2000).

The gratification achieved from using communications media can be classified into two areas: content and process gratification. Content gratification occurs when an individual's need for content (e.g. information or entertainment) is satisfied, while process gratification occurs when an individual receives satisfaction from "the experience of the media usage process" (Stafford et al., 2004, p. 268).

However, while the uses and gratifications theory is considered to be relevant to the Internet due to the interactive and user-orientated nature of this form of media, some researchers suggest that the theory has not been adequately adapted to the Internet and that a vital Internet-specific gratification has not been identified (Stafford et al., 2004). Stafford et al. (2004) suggest that the Internet is a social environment and it is therefore important to look at the uses and social gratifications afforded by the Internet.

In assessing the Internet as a communications medium, from the uses and gratifications perspective, research shows that individuals' social and psychological characteristics affect the way in which they use the Internet (Papacharissi & Rubin, 2000). Furthermore, due to the diversity and content of activities available on the Internet, there are many different uses and gratifications to be found within the one medium (Joines et al., 2003). Therefore, studies have identified a number of motivations associated with Internet use. Papacharissi & Rubin (2000, p. 189) identified five primary motives:

“interpersonal utility, pass time, information seeking, convenience and entertainment” from a study of college students at a large mid western university. Information seeking, entertainment and convenience were found to be the most salient motivations, while pass time and interpersonal utility were found to be less salient motivations for Internet use.

The primary antecedent in relation to motives to communicate on the Internet was the level of social presence. People who perceived the Internet to have a greater social presence were found to be motivated to use the Internet to be entertained, to pass time and for convenience (Papacharissi & Rubin, 2000).

This study also found that motives predicted Internet outcomes. Interpersonal utility significantly predicted total Internet use, as those who used the Internet the most were motivated by the desire to fulfil interpersonal needs such as affection, inclusion and expression. Email use was positively predicted by information seeking and entertainment motivations, while newsgroup use was negatively predicted by the convenience motivation (Papacharissi & Rubin, 2000).

Similarly, a study performed by Korgaonkar & Wolin (1999) identified five comparable motivations for Internet use: social escapism; information; interactive control; socialisation and economic motivations.

It is suggested that individuals who have few close friends and face problems forming intimate relationships (Mesch, 2001; Caplan, 2003; Papacharissi & Rubin, 2000) or have socially unacceptable personal identities (Bargh & McKenna, 2003) may use the Internet for its interpersonal utility or its ability “reinvent one’s ... personality” (Papacharissi & Rubin, 2000, p.193). Alternatively, those individuals who have satisfying social relationships offline are more likely to use the Internet for asocial purposes, such as information seeking (Papacharissi & Rubin, 2000).

A final motivation for Internet use arises from a study performed on first year college students which illustrate that feelings of detachment and culture shock bring on feelings of homesickness (Fisher, Murray & Frasier, 1985). This is expected to slow the process of forming new attachments in a new environment and may motivate individuals to use communications media, such as the Internet, to maintain social ties in their hometown (Bolan, 1997).

Each of these studies provide insight into the motivations for general Internet use. These motivations contain social aspects, for example the Papacharissi & Rubin (2000) study identified interpersonal utility as a motivation for Internet use, while the Korganonkar & Wolin (1999) study identified socialisation as a motivation for Internet use. However, none of these studies specifically address the motivations for social Internet use. This gap within the literature will be addressed in this study by exploring in depth why individuals use the Internet for social activities.

2.3 Community Attachment

Community attachment is proposed to comprise of a number of different aspects, such as “satisfaction (with a place), cognitive preferences (perception of and preference for a place) sense of belonging ..., identification with place and dependence on place” (Cross, 2003, p. 15). Gerson, Steuve & Fischer (1977) suggest that an individual’s attachment to their community is expressed both affectively and behaviourally. Affective attachment can be expressed as the attachment of individuals “to ideas, people, psychological states, past experiences and culture” (Firth, 1995, p.11). Affective community attachment or sense of community is defined as “a feeling that members [of a group] have a belonging, a feeling that members matter to one another and to the group and a shared faith that members’ needs will be met through their commitment to be together” (McMillan & Chavis, 1986)

Research suggests that people display affective community attachment or a “sense of community” in four specific ways. These are: “a sense of belonging to a community, a belief that one can exert some control over the community and visa versa, a feeling that personal needs can be and are being satisfied by the community and expressions of emotional connection to the collective known as community and to other community residents” (Lui et al., 1998, p.432). Blanchard and Markus (2004) also suggest that feelings of shared history and community spirit are another element of affective community attachment.

However, it must be noted that there are inherent difficulties in defining sense of community due to the fact that while many researchers use it to define the concept of community, other researchers posit that a sense of community occurs as a result of living within a community (Blanchard & Markus, 2004). Furthermore, sense of community is often considered to be a subjective experience as it is “highly particular and localised” (Rapely & Pretty, 1999) and “unique to each community” (Blanchard & Markus, 2004, p.69).

Community attachment can also be expressed behaviourally, for example, through the level of community social relationships and organisational involvement exhibited by an individual (Sampson, 1988). However, researchers often disagree over the relationship between the affective and behavioural attributes (Lui et al., 1998). Researchers (Kasarda & Janowitz, 1974; Sampson, 1988) who subscribe to early theories on the determinants of community attachment, view behavioural attributes as merely “predictors of affective indicators” (Lui, et al., 1998, p.432). For example, socio demographic variables such as religion, length of residence and other indicators of well being including collective action and perceptions of open communication can be used to predict the level of affective attachment an individual may exhibit (Brehm, Eisenhauer & Krannich, 2004).

Alternatively, other researchers (Beggs, Hurlbert & Haines, 1996; Gerson et al., 1977), posit that both behavioural and affective attributes indicate level of community attachment (Lui et al., 1998) by citing evidence that demonstrates that behavioural factors such as length of residence are significantly associated with community attachment levels (Brehm, et al., 2004).

2.4 Virtual Communities

With the emergence of the Internet, the importance of geography as a defining force in communities is reduced (Lee, Vogel & Limayem, 2003). Therefore, communities exist not only in the physical environment, but in the online environment also. Virtual communities allow strangers, acquaintances, friends and family to communicate in new ways by providing a forum for social interaction (Hanson, 2000), to share ideas and feelings with others and to engage in common activities (Lee, Vogel & Limayem, 2003). However, pessimists to the value of socialising online feel that virtual communities “isolate us from one another and cheapen the meaning of actual experience” (Hanson, 2000, p. 327).

Virtual communities are characterised by “their own cultural composition (which is) a unique collective sense that members share” (Catterall & Maclaran, 2002, p.230). It is suggested that they form when individuals identify with “collective goods of value” (Dann & Dann, 2004, p.106). Collective goods of value are goods which individuals in a group have in common. Dann & Dann (2004, p. 106) suggest that collective goods could include a common interest, a shared belief, experience or suffering, a shared knowledge base, a sense of belonging or membership, social network capital (“experience and collective history of the group”) and participation and involvement in the community.

Furthermore, virtual communities often have shared values, norms, rules and a unique sense of identity (Catterall & Maclaran, 2002). Virtual communities are proposed to comprise of four main features: tools to facilitate communication online (e.g. email lists,

chat rooms, bulletin boards), rules to define membership in the community (e.g. adherence to a religion, language, interest groups etc), ongoing use by members and the responsibility of the members to produce and consume information on the site (Hanson, 2000).

Kozinets (2000) identifies five types of virtual communities: boards, rings, lists, dungeons and chat rooms. Boards are bulletin boards, such as UseNet's or newsgroups, where users can post messages. Rings are communities which link webpage's that are thematically associated, while lists are sets of emailing lists which are united by a common interest or topic. These three types of communities are characterised by asynchronous communications, which are relatively information based. Alternatively, chat rooms are communities which function around common interests or demographic segmentations, while dungeons are communities in which "interactions are structured by role playing rules" (Catterall & Maclaran, 2002). These communities tend to operate on synchronous communication and often focus on more social and relational interactions.

In discussing virtual communities, it is important to define the type of community that will be examined. Komito (1998) suggests that there are four types of virtual communities: moral communities, normative communities, proximate communities and fluid communities. Moral communities are communities defined by individuals who care and help each other and have a common sense of responsibility, purpose and commitment, while normative communities are those which are defined by agreed upon behaviour. Proximate communities are characterised by the social interactions of

physical communities, while fluid communities are where individuals are kept in a specific location due to social, economic or cultural factors (Komito, 1998). In this study, a broad approach is taken in regard to type of virtual community due to the fact that the respondents within sample may have different understandings of what constitutes a virtual community.

2.5 The Internet and Community Attachment

2.5.1 The impact of the Internet on community attachment debate

Past research into the social consequences of the Internet has indicated a distinct relationship between Internet use and community attachment (Wellman et al., 2001; Nie, 2001; Kraut et al., 1998). However, conflicting findings have resulted in the emergence of two views. Utopians see the Internet as a key to revitalising offline social capital through the increased communication and social interaction abilities of the Internet (Matel & Ball-Rokeach, 2001). Dystopians, however, argue that the Internet reduces the level of offline social capital (Nie, 2001). Table 1 illustrates these views and the researchers who subscribe to them.

Table 1

Summary of researchers' views toward Internet usage and community attachment

Variable	Authors	Comments
Utopian View	Howard, Raine & Jones (2001) Levy (1997) Stein (1995) Kiesler & Sproull (1992)	Positive correlation between Internet use and community attachment/social capital.
Dystopian View	McQuillen (2003) LaRose, Mastro & Eastin (2001) Nie (2001) Kraut et al. (1998)	Negative correlation between Internet use and community attachment/ social capital.
Supplementarian View	Katz & Rice (2002) Wellman et al. (2001) Kavanaugh & Patterson (2001) Franzen (2003)	Internet supplements other communications media

Katz & Rice (2002) summarise the impact of the Internet into three main areas: access, involvement and social interaction, and expression. Access is defined as access to a networked computer which can be used to find information and material or to communicate with others. Utopians view the Internet as a tool which will increase the global accessibility of information, while reducing geographic, ethnic and social barriers (Katz & Rice, 2002). However, dystopians argue that unequal access will disadvantage minority groups i.e. those who can not afford or do not have adequate infrastructure to support the Internet, by decreasing their economic opportunities and their participation in social, civic and community activities (Katz & Rice, 2002).

Internet use is also expected, by utopians and dystopians, to influence involvement in social, civic and community activity. Utopians believe that the Internet will increase community involvement by making it easier for individuals to identify and join community organisations. Furthermore, as the Internet can overcome geographic and temporal boundaries, individuals can become more involved in a wide range of organisations globally (Katz & Rice, 2002). Increased community involvement will benefit the community to which an individual belongs as it will facilitate the mobilisation of collective community action (Katz & Rice, 2002; Wellman et al., 2001).

However, dystopians claim that the Internet decreases community involvement levels due to the inelasticity of time, where time spent on the Internet comes at the expense of other activities, such as participating in the community and interacting with family and friends (Stoll, 1995; Nie, 2001). However, this argument assumes that Internet use comes at the expense of social time. It does not consider the type of activities the Internet is being used for or when it is being used. In fact a study conducted by Nie (2001) indicated that time spent using the Internet came primarily at the expense of television watching and newspaper reading, as opposed to time spent socialising.

Katz and Rice (2002) also suggest that the Internet affects the social interaction and expression of individuals and communities “through the exchange of information ... (and material)... among individuals and groups online and the influences of online interactions on offline communication” (Katz & Rice, 2002, p.5). Utopians claim that the communication and social interaction abilities of the Internet will increase the declining social capital levels (Matel & Ball-Rokeach, 2001) which characterises late

modern societies by complementing and strengthening offline relationships and interactions (Katz & Rice, 2002).

Utopians further claim that offline relationships are strengthened and complemented as online interactions tend to fill communication gaps left by other communications media such as the telephone and physical communication. Online interactions also enhance offline communication levels as they allow individuals to exchange files, facilitate online arrangements to meet in person, and allow people to become more aware of each others needs through more frequent contact (Wellman et al., 2001). Furthermore, online social interactions promote open and democratic communication, allow for the dissemination of multiple perspectives and allow the maintenance of non local ties at a relatively low cost (Wellman et al., 2001).

However, Nie (2001) claims that users of the Internet tend to be younger, wealthier and more educated and sociable. Therefore, although users report higher levels of social interaction it is because they are predisposed to being more sociable rather than any impact the Internet has had on them.

Alternatively, dystopians feel that the lack of authenticity on the Internet can lead to social problems, such as the predation on vulnerable individuals (Katz & Rice, 2002). Online social interactions are also suggested to impact on the perceived nature of reality, allowing vulnerable people to temporarily hide from their problems. This is considered dangerous as in the long term it "ultimately heightens the despair and emptiness of existence" (Katz & Rice, 2002, p.10).

Kraut et al. (1998) claim that an increase in Internet usage decreases offline social interactions and creates homogenous social ties, while Nie (2001) posits that Internet use is positively correlated with loneliness, alienation and depression. Furthermore, it is posited that the lack of nonverbal social cues in computer mediated communication can result in a diminished social interaction experience, as it increases the anonymity of communication, often causing individuals to act in a self centred and less socially regulated manner (Kiesler & Sproull, 1992). In extreme cases, Chen, Chen & Paul (2001) suggest that some users may develop Internet dependency or Internet addiction disorder, which can result in high Internet usage at the expense of offline social interactions.

Wellman et al. (2001) further cites studies which suggest that the Internet facilitates the development of weak online social ties at the expense of stronger offline social ties (see Kraut et al., 1998; LaRose, Mastro & Eastin, 2001), thereby reducing the level of community attachment and social capital.

2.5.2 Suppletarian view

Wellman et al. (2001) introduced a third perspective into the debate; that as the Internet is inherently cheaper than the telephone and often more convenient than physical communication, it fills a communications gap and complements traditional communications channels. In order to substantiate this view, Wellman et al. conducted a study, which provided empirical evidence to support the hypothesis that "Internet use

should supplement offline interpersonal interactions, not affect organisational participation and increase community commitment” (2001, p.442).

Similarly, it is suggested that the utopian and dystopian views exaggerate the ability of the Internet to change the social and cultural interactions ingrained in everyday life, as the Internet is merely a tool with which users can complement and extend other forms of social interaction (Matel & Ball-Rokeach, 2001). This is validated by the Pew Internet Study (Pew Research Centre, 2000) which suggests that the Internet is used to maintain or reinforce offline social ties by Internet users.

Each of these views has a different perspective on the impact of the Internet on community attachment. However, these perspectives fail to distinguish between social and asocial Internet use, and the impact this will have on community attachment. This will be addressed within this study.

2.6 Virtual Communities and Community Attachment

The debate over the relationship between the Internet and community attachment is heightened by disagreement among academics as to whether virtual communities can be “real” communities. Some researchers suggest that virtual communities are not real communities due to the fact that they lack defining attributes of community life such as non verbal cues (Bakardjieva & Feenburg, 2002). This is proposed to reduce emotional

commitment, make trust more difficult to establish online, and result in misunderstandings as messages can be received out of context (Komito, 1998).

Furthermore, due to the fact that online communities are completely open, assurance of mutual respect, authentic communication, stable identity and acceptance of common rules is more difficult than in a physical community (Bakardjieva & Feenburg, 2002). Additionally, researchers argue that social ties developed online are weaker and less valuable than offline ties, thereby making online communities an inadequate substitute for offline communities (Bargh & McKenna, 2003).

However, Wellman & Gulia (1999, p.334) posit that "the net is only one of many ways in which the same people may interact. It is not a separate reality". The other ways in which individuals interact provides them with knowledge and personal relevancies gained from their history and social experience and this informs their online interactions. Therefore, it is suggested that virtual communities cannot be dismissed as inferior to physical communities on the basis of their lack of non verbal cues (Bakardjieva, 2003).

Similarly, other researchers suggest that virtual communities constitute "real" communities due to the fact that they are equally as capable of "supporting relations of reciprocity, common commitment and trust" (Komito, 1998, p.102) as any other form of communication. In support of this view, Komito (1998) questions why telephone communications, which also lack non verbal cues, are considered to be real communications which can support commitment among individuals; while computer mediated communication is considered to be artificial. In support of this view, it is

suggested that physical communication itself is artificial due to the fact that its meaning is learned and requires a shared cultural system to be understood (Komito, 1998).

Additionally, Wellman, Salaff, Dimitrova & Garton (1996) state that online ties meet the criteria for strong ties due to the fact that they facilitate “frequent, reciprocal, companionable, and often supportive contact” (1996, p. 222) and therefore can be as strong as offline ties as many online. The placelessness of the Internet also enables individuals to form and maintain long-term relationships regardless of physical location (Wellman et al., 1996). Furthermore, researchers suggest that between half and two thirds of online relationships exist offline also (Bargh & McKenna, 2003; Wellman et al. 2001; Papacharissi & Rubin, 2000) thereby making them real, valuable relationships.

Bargh & McKenna further support the argument that the Internet facilitates the formation of strong social ties by stating that the “fundamental point of many cyber-realms such as chat rooms, is to make new acquaintances (2003, p.581). These chat rooms, which ensure the users anonymity, encourage individuals to feel safe about disclosing personal information, which is a vital antecedent to developing intimacy and forming a personal relationship (Bargh & McKenna, 2003).

Finally, Powers (2003) argues that actions performed within virtual communities can constitute real moral wrongs due to the fact that they are the product of authentic social practices. Therefore, if individuals can commit moral wrongs online, communities must to some extent be considered real communities.

Another view towards the strength of online social ties suggests that the value and strength of online social ties depends on the individual's offline social ties, as offline social ties and personal values are antecedents to the development of online ties (Matel & Ball-Rokeach, 2001).

Studies suggest that when online social ties supplement offline social ties, the level of social capital within the community is expected to increase, as individuals are expected to consequently be more involved and attached to their community, and have stronger social ties. However, if online social ties substitute offline social ties, social capital is expected to decrease as individuals are lured away from "real life" and become more attached to online reality (Cummings, Butler & Kraut, 2002; Wellman et al., 1996).

The strength of online social ties are also suggested to be affected by technical factors such as the individuals access to audio and video tools to communicate online, and the use of a broadband Internet connection. Individuals who have access to audio and video tools, such as microphones and web cameras, tend to have a more active role in their online communities due to the fact that communication is more personal. This is expected to increase the strength of the individual's online social ties and can result in online relationships being extended into the physical environment (Papacharissi & Rubin, 2000).

Similarly, individuals who had a broadband Internet connection were found to have greater access to the Internet and utilise it more often (NOIE, 2003) thereby increasing their level Internet usage (O'Shea, 2002). The type of Internet connection is an

important consideration when looking at the impact of the Internet on community attachment due to the fact that:

The ability to facilitate greater access and download speeds within an “always on” operating environment (<http://www.nap.edu/html/broadband/ch2.html>) is perhaps the most important difference between broadband and narrow band Internet services. This difference has allowed providers and users of online services the opportunity to build and participate in a far more dynamic interactive online experience (NOIE, 2003, p.46).

The impact of audio/ video tools and type of Internet connection on online community attachment will be addressed within this study.

2.7 Summary of Literature Review

Research shows that Internet users are primarily male, young, highly educated and relatively affluent (NOIE, 2003). Internet usage patterns are shown to be influenced by demographic and psychographic characteristics and level of Internet use (Howard, Raine & Jones, 2001) as well as the type of activities performed (synchronous vs. asynchronous), type of tools used to interact (text vs. audio) and the type of Internet connection available (broadband vs. dial up) (NOIE, 2003; Papacharissi & Rubin, 2000).

Motivations for Internet use are also suggested to influence usage patterns as they are determined by the role the Internet plays in the life of an individual. Several studies have investigated the motivations for general Internet use (Papacharissi & Rubin, 2000; Joines et al., 2003), and indicate that individuals who have inadequate social interactions

offline, will use the Internet as a tool to interact with others, while those who have fulfilling and satisfying offline social interactions are more likely to use the Internet for asocial purposes such as browsing or Internet shopping. However, there is a lack of research into the motivations for social Internet use.

As the Internet is used for social purposes, it has been found to impact on community attachment levels. Community attachment can be measured by the level of affective and behavioural attachment individuals' exhibit towards their communities. Affective attachment is measured by an individual's sense of belonging and emotional connection towards their community, and their feelings that their personal needs are being satisfied by the community and that they can exert some form of control over the community (Lui et al., 1998). Behavioural attachment is often measured by the number of social bonds and community organisations the individual is involved with (Sampson, 1988).

There is intensive debate over the impact of the Internet on community attachment. While some researchers feel that the Internet reduces community attachment, others contend that the Internet actually increases or supplements community attachment (Wellman et al., 2001). Some researchers suggest that these conflicting perspectives are due to differences in the research designs of each study (Franzen, 2003), however, Wellman et al. (2001) suggest that these differences occur due to the fact that researchers typically fail to distinguish between type of Internet use (social vs. asocial). This study will look at social Internet use in relation to online and offline community attachment.

CHAPTER 3

Theoretical Framework

3.0 Introduction

The theoretical framework helps to graphically depict the major dimensions to be studied within the research. Its development helped to focus this research and create boundaries for the study. The theoretical framework for this study is presented in Figure 1. It is comprised of two models; the Lifestyle and Consumption Process Model adapted from Hawkins, Best & Coney (1987) and the Systemic Model of Community (Lui et al., 1998).

3.1 The Lifestyle and Consumption Process Model

This model stresses that activities such as purchase and use are influenced by elements of a consumer's lifestyle, such as their demographics, values, motives, perceptions, emotions and reference groups (Hawkins, Best & Coney, 1987). Furthermore, often the purchase, use and evaluation of a product provides "experiences which can alter or

reinforce lifestyles” (Hawkins et al., 1987, p.395) and this can result in lifestyle changes which may consequently impact on “consumption related problems or opportunities” (Hawkins et al., 1987, p.395).

3.2 The Systemic Model of Community Attachment

There are two competing models for community attachment in the literature; the Linear Development model and the Systemic Model. Both models treat behavioural attributes such as social bonds and organisational participation as factors which influence affective indicators of community attachment, such as “a sense of belonging to the community, expressions of emotional connection to the community, a feeling that personal needs are being satisfied within the community and a belief that one can exert some control over the community” (Lui et al., 1998, p. 432). However, the models differ in the external variables which purport to influence the strength of social bonds.

The Linear Development model, originally developed by Toennies (1887), and subsequently used by Wirth (1938) and Fischer (1982) is based on the community of limited liability approach (Bolan, 1997). It posits that external variables such as community size and density (the forces of urbanisation) will determine the level of kinship, friendship, affectional ties and participation in local issues within a community, which will ultimately impact on the level of community attachment (Sampson, 1988; Lui et al., 1998; Kasarda & Janowitz, 1974).

Alternatively, the systemic model hinges on the Chicago School approach which is based on the premise that residential mobility and personal attributes such as residential tenure, age and socioeconomic status, influence community attachment levels by affecting the level of integration of an individual into their community (Lui et al., 1998; Bolan, 1997).

Research studies (Beggs et al. 1996; Sampson, 1988; Kasarda & Janowitz, 1974), provide quantitative empirical evidence to support the systemic model. This research shows that an individual's community attachment is a function of their length of residence. Length of residence is positively related to individual local friendships, community sentiment and participation in local affairs. They also found that attitudes and behaviours towards a community were significantly influenced by length of residence, while increased density and population size (variables within the linear development model) were found to have no significant impact on community attachment (Sampson, 1988). Based on this research, this study will utilise the systemic model of community attachment.

By incorporating the lifestyle and consumption process model with the systemic model, in relation to the Internet, it can be seen that the consumers' user characteristics (demographics, psychographics, type of use and level of use) directly impacts on their social Internet use. Internet use and the consumer's user characteristics, such as their demographic and psychographic factors (Hawkins, Coney & Best, 1987) are proposed, within this research, to impact on the level of community attachment, thereby impacting on the consumers' behavioural attachment (social bonds and level of organisational

involvement) and their affective attachment (sense of belonging, belief that they can exert control over their community, their satisfaction of personal needs and their expressions of emotional connection) (Lui et al., 1998). The impact of social Internet use on level of community attachment will ultimately affect the consumer's user characteristics. This relationship is illustrated in Figure 1.

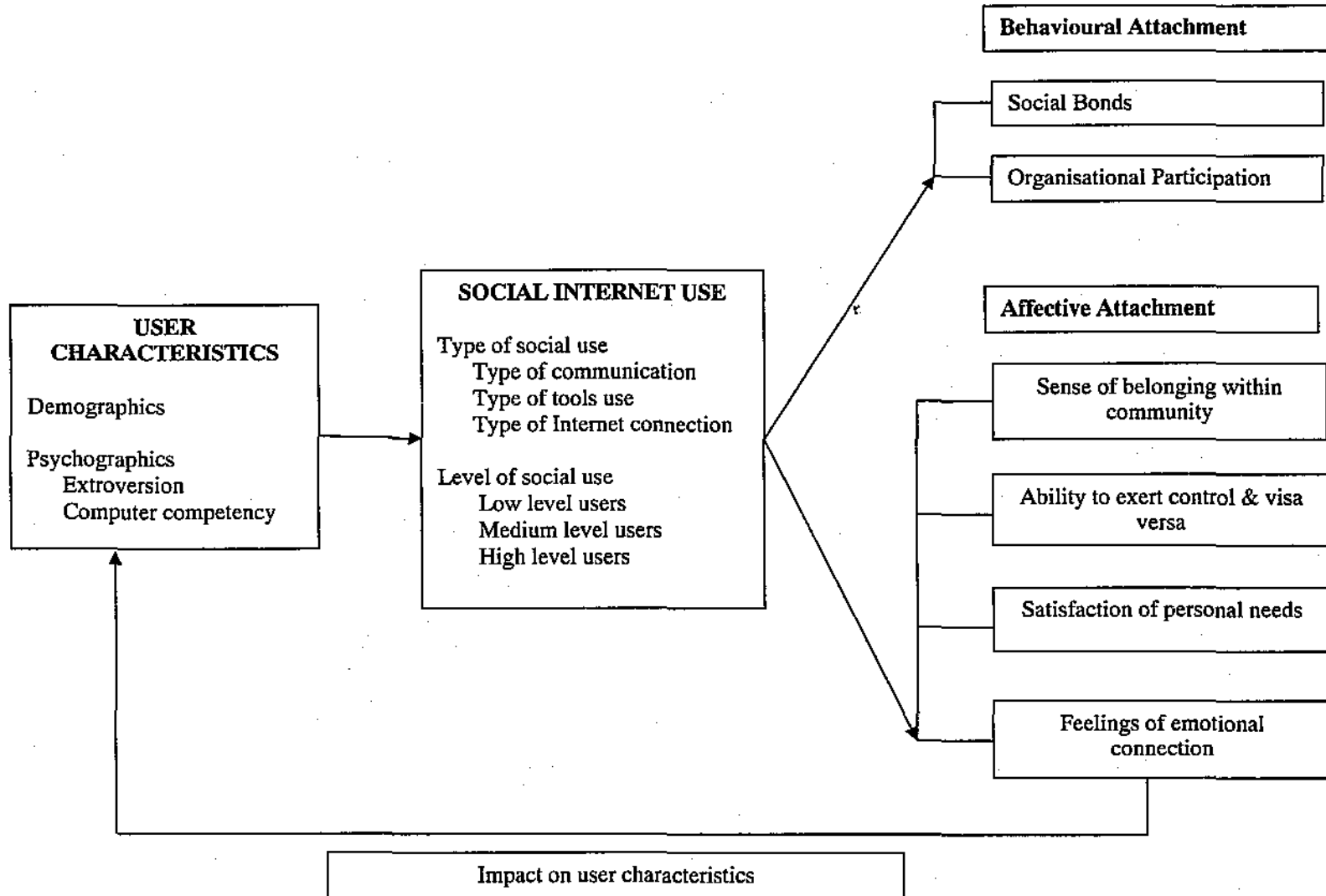


Figure 1 Theoretical Framework (adapted from Hawkins, Coney & Best, 1987 & Sampson, 1988)

CHAPTER 4

Research Methodology

4.0 Introduction

This chapter describes the research design of the study. The population and sample used within the study are delineated, followed by an explanation of the chosen research design. The layout and justification of the research instrument is discussed before the sampling procedure and the techniques used to analyse the data from the quantitative questionnaire are outlined. Justification for the research design chosen is discussed throughout the chapter.

The last section of the chapter discusses the study's limitations in relation to the research design, and how these limitations were overcome. It also outlines the ethical considerations taken into account during the development of this study.

4.1 Population and Sample

4.1.1 Population

The target population for this research study consists of undergraduate university students in Perth, Western Australia, who currently use the Internet for some form of social activity, such as sending and receiving emails or instant messages, and participating in interactive and non interactive discussions, online games or multi-user dungeons (MUD's) (Wellman et al., 1996; Catterall & Maclaran, 2002).

The population for the study was selected on the basis of two criteria: the population was to be significant users of the Internet and had to have a significant level of involvement with the Internet; in order to investigate the motivations of social Internet users' and the relationship between social Internet use and community attachment.

University students were considered a suitable population to study due to the fact that University courses require students to have a significant involvement with the Internet. Furthermore, the characteristics of university students - young, highly educated, net savvy users' - means that they are representative of a wider group of Internet users, known as the "net generation" (Garrison, 2000). This is supported by the NOIE report (2003) which indicated that social Internet users are likely to have many of the characteristics of university students (young, highly educated individuals with a low income).

4.1.2 Sample

This study will utilise a sample to represent the population as a whole (Zikmund, 2003). The sample comprised of students attending university Edith Cowan University (ECU): Joondalup, Churchlands or Mount Lawley campuses, in Perth, Western Australia.

ECU was chosen for two reasons. Firstly, the university attracts a large diversity of students from school leavers to mature age students from both Western Australia and overseas. Currently, ECU is the second biggest university in Western Australia, with almost 23,000 students. Over 13 per cent (3,000) of these students are international students from more than 80 different countries (Edith Cowan University, 2004). This is an important consideration as an adequate international student sample is required to facilitate comparisons with the domestic student sample. Due to the characteristics of ECU, it was expected to provide a better representation of the research population. Furthermore, as the university has multiple campuses, data collection can be spread across all three campuses to ensure that there is adequate diversity within the sample, which may not be achieved if the sample was limited to one geographic area.

Secondly, the university was chosen on the basis of convenience for the researcher (Zikmund, 2003). Due to the fact that university students within Perth are expected to be demographically and psychographically similar (Australian Government Department of Education, Science and Training [DEST], 2004), the choice of university is expected to have little impact on the results of the study. Therefore, ECU was chosen due to its accessibility and convenience for the researcher.

A non probability sampling procedure, where respondents were chosen on the basis of convenience and judgement of the researcher was utilised (Zikmund, 2003). Traditionally, the use of student samples have been met with controversy in regards to their external validity (Cunningham, Anderson & Murphy, 1974). However, within this study students are not being used as surrogates for the Internet population (Morgan, 1979), but rather they are the population and are representative of the “net generation” (Garrison, 2000). Furthermore, student samples have been widely used within Internet research (Papacharissi & Rubin, 2000; Jackson et al., 2001; LaRose, Mastro & Eastin, 2001) thereby making university students an appropriate sample to study.

The demographic profile of respondents was compared with the Australian Bureau of Statistics (1999) and the DEST, (2004) data on university students, in order to ensure respondents were representative of the population.

4.2 Research Design

The study utilised a descriptive research design, as literature on the relationship between communications media, particularly the Internet, and community attachment, allowed the identification and formulation of “specific research questions and hypotheses” (Zikmund, 2003, p.65).

Data was collected via a quantitative measurement instrument (see appendix one). The measurement instrument, a questionnaire, was developed in line with the logical-positivism paradigm, and gathered cross sectional data, where respondents were

studied at one point in time. A cross sectional design was chosen as it suited the study's research objectives. In addition, a cross sectional design allows collection of data which is often more representative of the population and produces fewer respondent errors (Zikmund, 2003) than a longitudinal design.

4.3 Research Instrument

Data was collected via a self administered, quantitative questionnaire. In order to ensure content validity, the questionnaire was developed on the basis of relevant literature and the research objectives for this study (Zikmund, 2003). Once the questionnaire was completed, it was pre-tested on a postgraduate marketing class of ten students, who provided valuable feedback from an independent perspective. Much of this feedback was incorporated into a revision of the questionnaire in order to make it more relevant to this study and easier for the respondents to understand.

Section two of the questionnaire adapted from Papcharissi and Rubin's (2000) study into the uses and gratifications approach to the motivations influencing general Internet use was pre-tested in a second year undergraduate marketing research class in order to determine whether these motivations were relevant to undergraduate students. 51 responses were received and this enabled the researcher to clarify the statements and make them relevant to students and their social Internet use. The pre-testing of the questionnaire helped to ensure that the construct was reliable and valid (Churchill, 1979).

The questionnaire consisted of four main sections which are outlined below.

4.3.1 Section one: Internet usage patterns

This section aimed to collect information regarding the respondents Internet usage patterns, specifically their usage of social Internet activities (such as email, discussion boards, instant messaging, chat rooms and multi-user domains). This section also aimed to identify the type of Internet connection and the tools respondents used to communicate online in order to determine whether these factors influence motivations and community attachment.

4.3.2 Section two: Motivations for social Internet use

Section two, as previously indicated, was developed with reference to the literature on the motivations for general Internet use. Papacharissi & Rubin's (2000) study on the motivations for Internet use and Mesch's (2001) scale of pro-social attitudes were combined to develop a scale to measure the motivations of undergraduate students for social Internet use. Both scales had an acceptable internal reliability. The question used a likert scale to measure the extent to which students agreed or disagreed with each of the 26 motivation items.

4.3.3 Section three: Community attachment

Section three aimed to identify the level of attachment students feel towards Perth, their home town (if different to Perth) and their online communities (if they perceive themselves to belong to any). Attachment was measured on a likert scale from strongly disagree to strongly agree, and was made up of seven items assessing both behavioural and affective attachment to their communities.

The behavioural attachment item, "all of my close friends live in ... my community" is a measure used in most previous studies on behavioural attachment (Lui et al. 1998; Sampson, 1988; Kasarda & Janowitz, 1974).

The second component of behavioural attachment, "I belong to many community organisations in my community" was taken from Clark & Stein (2003), and measures the degree of involvement individuals have with their community.

Two items measuring affective community attachment "I feel at home in my community" and "I would be very sorry to leave my community" were taken from Kasarda & Janowitz's (1974) study on community attachment levels. These two items have been previously used to develop an index for community attachment. The index was calculated by summing the standardised scores for the two items. (Lui et al., 1998) and purported to measure the sense of belonging individuals feel towards their community.

The final three items: "I feel that my personal needs are being met in my community"; "I feel an emotional connection to my community" and "I feel that I can exert control over my community" were developed by McMillan and Chavis (1986) and are widely accepted measures of community attachment. They are based on both theoretical and qualitative empirical evidence (Blanchard & Markus, 2004), and this increases the reliability and validity of these measures (Zikmund, 2003).

These seven items were also used to measure the respondent's attachments to online communities. As research indicates that online communities exhibit similar characteristics to physical communities (Blanchard & Markus, 2004) the same

concepts and measures were used to examine both physical and virtual communities (Komito, 1998).

4.3.4 Section four: Demographic and psychographic factors

Research has indicated that the demographic and psychographic characteristics of Internet users impact significantly on their consumption behaviours (Hawkins et al., 2002; Wellman et al., 2001), motivations (Papacharissi & Rubin, 2000; Mesch, 2001) and level of attachment to their communities (Wellman et al., 2001). Therefore, demographic information were collected and used to profile Internet users. Two psychographic characteristics: level of extroversion and level of computer competence were also collected. The level of extroversion of respondents was measured on a 10 point likert scale with one being very introverted and ten being very extroverted. Similarly, the level of computer competence was also measured on a likert scale with one being very incompetent and ten being very competent.

The respondents perceived level of competence with using a computer was expected to influence their usage patterns, while the level of extroversion was expected to influence the extent to which the respondent uses the Internet for social activities (Mesch, 2001; Papacharissi & Rubin, 2000).

4.4 Procedure

Three diverse Faculties at ECU: Business and Public Management, Computer and Information Sciences and Communications and Multimedia were selected for study

due to the fact that they would provide a relatively diverse and representative sample of the population.

The Business and Public Management faculty was selected due to the diversity of students and the high number of international students enrolled in the Bachelor of Business degree. Alternatively, the Computer and Information Sciences and Communications and Multimedia faculties were chosen as students enrolled in these faculties were expected to have a high level of involvement with computers and the Internet, thereby providing diversity within the sample. Suitable lectures were chosen by liaising with the relevant school secretaries. Lecturers were then approached via email and telephone to determine their willingness to allow questionnaires to be distributed within their lecture/s.

Within the Business and Public Management faculty, a first year undergraduate marketing unit was chosen. Data was collected during the lecture break on Tuesday 12th October on the ECU Joondalup Campus. This unit was chosen as it is a compulsory first year business unit. Therefore, students within this unit would be representative of first year students enrolled in the Bachelor of Business degree at ECU. Data was also collected from two second year business units at the Joondalup campus and two third year business units at the Churchlands campus within the same week.

Within the Computer and Information Sciences faculty, two first year units were surveyed on Monday the 18th and Wednesday 20th October on the Mount Lawley campus of ECU, while one second-year and one third year lecture within the

Communications and Multimedia faculty were surveyed on Thursday 21st October, also on the Mount Lawley campus.

Students were encouraged to participate in the questionnaire, which took approximately five to ten minutes to complete. The questionnaires were distributed during the lecture break in order to maximise the response rate. However, as participation was voluntary, students were offered a small incentive to encourage their participation in the study.

4.5 Analysis

Data collected from the quantitative questionnaire was entered into SPSS (Statistical Package for the Social Sciences) Version 11.5, in order to aid analysis in line with the research questions.

4.5.1 Descriptive statistics

Descriptive statistics, including frequency tables and graphs, were used to provide insight into the demographic profile of the sample. In order to aid analysis in later sections of the study and to address research question one, a profile of the online group (those students who belong to an online community) was constructed by comparing it to the offline group (those students who did not belong to an online community). Chi Square tests with a significant result, $p < 0.05$ and an expected cell count of > 5 , were used to describe the relationship between demographics, psychographics, type and level of Internet use in relation to the online group.

4.5.2 Stepwise regression

The multivariate analysis technique, stepwise regression was used to address research question two. This technique was used to determine whether any variables could be used to predict online community attachment. For the purpose of this study, a least square regression model was used. The data met following pre requisites indicating that it is suitable for regression analysis (Brace, Kemp & Snelgar, 2000).

- the criterion variable was measured on a continuous (interval) scale
- the predictor variables were adequately coded
- the respondent: predictor variable ratio (33:1) exceeded the minimum acceptable ratio (10:1).

Stepwise regression was chosen due to the fact that previous analysis indicated that several variables may impact on online attachment. It also results in the most parsimonious model (Brace et al., 2000).

In interpreting the model, the adjusted R square was examined to enable selection of the model for which the largest variance in online attachment is explained. The F probability value was then examined to ensure the solution was significant. The standardised Beta (β) coefficients, t values and significance levels were used to determine the strength of each predictor variable. Variables with a low Beta coefficient were discarded from the model.

4.5.3 Factor analysis

The multivariate analytical technique of exploratory factor analysis was used to reduce the 26 motivation items within the questionnaire into a small set of factors;

highlighting any underlying dimensions (Hair, Anderson, Tathham, & Black, 1998), in order to address research question three.

A number of tests were applied to the data to ensure it was suitable for factor analysis. Firstly, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy of .913 was found to exceed the recommended minimum value of .6 (Kaiser, 1974, Garson, 2004), indicating that the data was adequate. Furthermore, the Bartlett's Test of Sphericity was statistically significant ($p < .05$). Finally, the correlation matrix was examined to ensure that sufficient inter-correlation existed among the items, as indicated by a number of coefficients greater than .3 in the matrix (Coakes & Steed, 2001).

To assist the interpretation of the resultant factors, the factor matrix was rotated in order to find an "interpretable, psychologically meaningful, and replicable" solution (Thurstone, 1947, p. 284). An examination of the correlation matrix revealed correlations between items; therefore oblique (Direct Oblimin) rotation was considered appropriate (Hair et al., 1998). However, items within the rotated solution which did not satisfy the following criteria were deleted.

1. Dominant loadings for each variable greater than .50.
2. Communalities higher than .3.
3. Cross loadings lower than .25 (DeVellis, 1991).

In order to determine the number of factors which adequately represented the items, both the Kaiser (eigenvalue) rule and Cattell's scree test were used (Hair et al., 1998). The Kaiser rule suggests that as the eigenvalue of a factor represents the

percentage of total variance explained by each factor; only factors with an eigenvalue of greater than one should be examined. Using this rule, only three factors were examined. The scree plot also supported the extraction of these factors, following the Cattell scree test which suggests that factors after the scree in the graph should not be used (Cattell, 1966). Finally, these three factors account for 62.0 per cent of the variance, which is greater than the acceptable level of 60.0 per cent (Garson, 2004).

Cronbach's alpha coefficient was used to measure the internal consistencies and reliability of the factors derived from the factor analysis. Each factor had an alpha value of greater than 0.7, indicating that they were reliable and consistent (Cronbach, 1951).

Factor analysis, using the Maximum Likelihood method with oblique (direct oblimin) rotation, was also performed on each of the community attachment scales (see appendix two) in order to generate factor scores to facilitate comparison between the overall attachment levels of students.

4.5.4 Independent sample t-tests

To address research question four, hypotheses two to four, independent sample t-tests were used to investigate the relationship between **type** of social Internet activity and **online** community attachment. The sample was grouped into:

- asynchronous or synchronous users;
- text or audio/ video tool users and
- broadband or dial up users.

T-tests were then used to compare the mean factor scores for each of these groups in order to determine whether there were any significant differences between the online attachments of: asynchronous and synchronous users; text and audio/ video users and broadband and dial up users. Additionally, the mean scores for each of the seven items within the online community attachment scale were also investigated to determine which items influenced online community attachment.

In interpreting the t-tests, the Levene's test was examined to determine whether equal variances could be assumed ($p > .05$). Factors and items with a two tailed significance of $p < .05$ were reported as significant differences.

4.5.5 One-way ANOVA with post hoc comparisons

In addressing research question five, hypotheses five, one-way ANOVA with post hoc comparisons were used to investigate the relationship between level of social Internet use and online community attachment. To examine this relationship, respondents were divided into three groups based on the reported number of hours spent performing social activities online; low level users, $n=126$ (who spend three or less hours performing social activities online); medium level users, $n= 84$ (who spend between four and ten hours performing social activities online inclusively) and high level users, $n=60$ (who spend more than ten hours performing social activities online).

ANOVA tests were used to compare the mean online community attachment factor scores between each level of social Internet use to determine if there were any significant differences at the 95 per cent confidence level. ANOVA tests were also

performed on the mean item scores within the attachment to online communities scale to determine which, if any, items influenced online community attachment.

Finally, in addressing research question six, hypotheses six, one-way ANOVA with post hoc comparisons were used to investigate the relationship between level of social Internet use and **offline** community attachment. In examining this relationship, ANOVA tests were used to compare the mean online community attachment factor scores between each level of social Internet use to determine if there were any significant differences at the 95 per cent confidence level. ANOVA were also performed on the mean item scores with the attachment to offline communities scale to determine which, if any, items influenced offline community attachment.

In interpreting these results, the Levene's test for homogeneity of variances was noted to ensure it was not significant ($p > .05$), indicating that the population variances for each group were approximately equal (Coakes & Steed, 2001).

The F-probability value was then observed to ensure that it was significant ($p < 0.05$). Where significant results were found, the Tukey HSD test was used to identify where the significance lay (Coakes & Steed, 2001).

4.6 Methodology Limitations

4.6.1 Size and diversity of sample

Time and cost restraints imposed on this study have resulted in the use of a non probability sampling technique, where respondents were chosen based on the convenience and judgement of the researcher and not on a random sampling basis (Zikmund, 2003). However, in order to ensure the sample was representative of the population, and to reduce non sampling error, the demographics of the respondents were compared to statistics relating to the demographics of undergraduate university students, collected by the Australian Bureau of Statistics (1999) and the DEST (2004).

Furthermore, the sample was subject to self selection bias (Zikmund, 2003) due to the fact that only those students who attended lectures on the day the questionnaire was administered were able to complete the questionnaire. Furthermore, as the questionnaire was voluntary, respondents were able to choose not to participate in the study. However, small incentives were offered to encourage participation.

4.6.2 Self report of time and psychological characteristics

Another potential limitation of the study was that students are asked to estimate the number of hours spent online in a typical week. This may have resulted in an incorrect representation of time spent online, thereby influencing the results of the questionnaire. Furthermore, given the subjectivity of the level of extroversion and computer competency scales, there may not be consistency in the way in which

respondents answered these questions. However, studies show that self report measures are an acceptable way to collect data (Malhotra & Birks, 2003).

4.6.3 Questionnaire design and respondent error

In order to reduce errors in the design of the questionnaire, the motivations and community attachment scales were adapted from scales used in previous research, thereby reducing non-sampling error and ensuring construct and criterion validity. Where the scales were significantly changed, they were pre tested on students to ensure their content validity (Zikmund, 2003). Furthermore, in order to reduce respondent error, questionnaires were voluntary and were distributed during lecture times in order to reduce the number of refusals. Although acquiescence bias and social desirability bias were noted, no such problems appeared to be present in the study.

4.6.4 Ethical considerations

The questionnaire was administered according to ECU and MRSA ethical guidelines. The questionnaire was an anonymous questionnaire, which was accompanied by a disclosure statement in the form of an information letter (appendix three), detailing the intention of the project and the use of the data. The questionnaire also provided contact details of the principal researcher and supervisors in case any of the participants have further queries regarding the research (Edith Cowan University, 2003).

CHAPTER 5

Results

5.0 Introduction

This chapter presents the findings of the quantitative questionnaire. It is divided into four parts. The first section provides an overview of the sample and addresses research question one by profiling respondents who belong to an online community in terms of their demographic and psychographic characteristics and usage patterns.

The second section addresses research question two by presenting seven items which predict online community attachment, the result of stepwise regression analysis.

Section three addresses research question three by performing a factor analysis of the motivations scale in order to determine the salient motivations underlying social Internet use among university students. The relationship between motivations and user characteristics (hypothesis one) are also investigated within this section.

Finally, in addressing research questions four, five and six, the relationship between community attachment and type and level of social Internet activity are investigated through independent sample t-tests and one-way ANOVA.

5.1 Description of the Sample

A total of 276 questionnaires were collected during the data collection stage of the study. However, five questionnaires were discarded as either incomplete or irrelevant (i.e. the students did not participate in any social Internet activity) leaving a total sample size of 271 respondents.

5.1.1 Demographic characteristics

The general demographic characteristics of the sample can be summarised as follows:

- Slight majority of the sample (56%) was male
- 76% of respondents were in the 18-24 year old age group.
- 50% of respondents had a personal income of less than AU\$20,000.
- 60% of respondents were Australians (domestic students)

Table 2 provides an overview of the demographic and psychographic characteristics and usage patterns of the sample. These characteristics will be further discussed in the following paragraphs. In addition, in order to address research question one and to aid analysis in later sections of the study, the sample was divided into students who belonged to an online community (online group) and students who did not belong to an online community (offline group).

Table 2

Characteristics of sample and sub groups

Variable		Total sample (%) (n=271)	Online group (%) (n=84)	Offline group (%) (n= 187)
DEMOGRAPHICS				
Gender:	Male	55.7	63.1	52.2
	Female	44.3	36.9	47.8
Age:	18-24	75.9	85.7	71.4
	25-39	19.3	11.9	22.7
	40-55	4.8	2.4	5.9
Income:	A\$19 999 or less	50.4	51.9	49.4
	A\$20 000- A\$49 999	22.5	19.8	23.9
	A\$50 000- A\$99 999	14.3	16.0	13.6
	A\$100 000 or more	12.8	12.3	13.1
Year of current degree:	1 st year	30.3	23.8	32.8
	2 nd year	33.9	29.8	36.0
	3 rd year	29.9	38.1	26.3
Type of residency	Australian	59.2	59.3	59.0
	International	40.8	40.7	41.0
PSYCHOGRAPHICS				
Level of computer competence:				
	Mean score	7.78	8.40	7.49
Level of extroversion:				
	Mean score	6.46	6.40	6.49
USAGE PATTERNS				
Level of social Internet usage:				
	0-3 hours/ week	46.7	22.9	57.5
	Over 3-10 hours/ week	31.1	36.1	29.0
	Over 10 or more	22.2	41.0	13.4
Length of time online (years):				
	Mean Score	6.19	7.01	5.82
No. of hours online in typical week				
	Mean Score	19.33	27.35	15.66

5.1.1.1 Gender

The slight majority (55.7%) of respondents were male. While the 2002 census indicates that, in 2002, the majority of students in higher education courses were female (54.4%) (Griffith University, 2004; Australian Bureau of Statistics, 1999), further research shows that some degrees, such as Information Technology, typically have low levels of female participation (DEST, 2004). This was reflected in the sample with a large proportion of the respondents within the Computer Science and Digital Media degrees being male (DEST, 2004), thereby causing the sample to vary from a typical distribution.

5.1.1.2 Age

The majority of students within the sample (75.9%) were within the 18-24 age category. Although this suggests that the sample was heavily skewed to the younger age groups, this is considered representative of the undergraduate university population, as the median age for full time, internal, undergraduate students in Western Australia in 2000 was 20 (Commonwealth Department of Education, Science and Training, 2001).

5.1.1.3 Personal income

The majority of the sample (50.4%) had a personal income below AU \$20,000. Although this is relatively low, it is typical of university students who study fulltime (DEST, 2004). Furthermore, studies show that each year approximately 15% of new undergraduate enrolments are from low socio-economic backgrounds (Guerrera, 2003).

5.1.1.4 Type of student

53.8 per cent of the total sample were school leavers, while the remaining respondents were mature age students. Slightly more second year students (33.9%) were sampled than first (30.3%) and third (29.9%) year students; however, the relatively even distribution indicates that sufficient students were sampled in each year group to ensure adequate sample diversity.

5.1.1.5 Type of residency

The majority of students sampled (60.1%) were Australian citizens/ permanent residents (domestic students). Although this is not consistent with the 2002 census which indicated that 82 per cent of university students were domestic students (DEST, 2004), business lectures have a higher number of International students, thereby increasing their representation within the sample.

Of the 108 international students, 40.0 per cent indicated that they would be returning to their permanent place of residence once they had completed their studies, while 12.9 per cent would not and 47.1 per cent were unsure. The permanent place of residence was defined as the continent to which the respondent was a permanent citizen. 70.0 per cent of international students were from Asia, while, 21.7 per cent were from Africa and 8.3 per cent were from Europe.

The majority of international students (81.4%) had been in Perth for less than three years, with a large proportion being in Perth for two (28.6%) or three (25.7%) years.

The demographic characteristics of the online and offline groups were found to be relatively similar.

5.1.2 Psychographic characteristics

5.1.2.1 Level of extroversion

Within this study one aspect of personality, level of extroversion, was assessed. The majority of respondents (43.1%) rated themselves relatively extroverted (seven or an eight on a ten point likert scale). This distribution is illustrated in Figure 2.

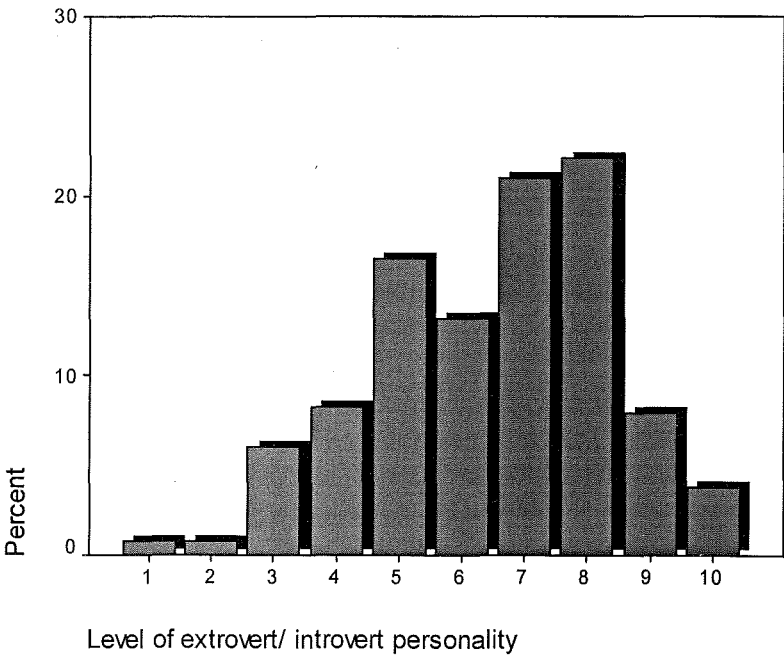


Figure 2. Level of extroversion

Although respondents within the online group tended to report lower levels of extroversion (6.40 online group vs. 6.49 offline group) these results were not statistically significant.

5.1.2.2 Level of computer competency

The vast majority of respondents (79.9%) believed they were relatively competent (above seven on a ten point likert scale) with general computer use. This can be attributed to the fact that a large proportion of the respondents were Computer Science or Digital Media students who were expected to have a high level of computer competence (DEST, 2004).

To analyse the competency levels of the online and offline groups, respondents were grouped into one of three categories based on their reported level of computer competency:

- incompetent users (reported competency levels 1-6);
- somewhat competent users (reported competency levels 7 or 8) and
- competent users (reported competency levels 9 or 10).

T-tests reveal that the online group has a significantly higher level of computer competence than the offline group (8.40 online group vs. 7.49 offline group, $t = 3.90$, $p = .000$). Table 3 shows a cross tabulation of the competency distribution of the online and offline groups.

Table 3

Level of computer competence by sub group (%)

Level of competence	Type of group	
	Online group (n=84)	Offline Group (n=187)
Incompetent (n=54)	13.3	23.2
Somewhat competent (n=113)	30.1	47.6
Competent (n=102)	56.6	29.2
Total	100.0	100.0

($\chi^2 = 18.419$, $p = 0.01$, sig. = 0.000)

5.1.3 Internet usage

5.1.3.1 Type of social Internet use

This study classifies type of social Internet use into three categories – type of communication, type of tools used to communicate online and type of Internet connection.

Type of communication

Two types of social communication exist online: asynchronous (delayed) and synchronous (real time) communication. Asynchronous activities include sending and receiving emails and using discussion boards while synchronous activities include sending and receiving instant messages, and participating in chat rooms, multi user dungeons and online games. The frequency of each social activity performed by the respondents is shown in Table 4.

Table 4.

Frequency of use of social activities (n=269)

Type of social activity	Used (%)	Never Used (%)
Sending/ receiving emails	99.3	0.7
Sending/ receiving instant messages	70.6	29.4
Participating in non interactive discussions	45.7	54.3
Participating in interactive discussions	37.2	62.8
Playing online games	30.9	69.1
Participating in multi user dungeons	10.4	89.6

Multiple responses cause percentages above 100%

Respondents further indicated that the primary social Internet activity engaged in was sending and receiving emails (53.8%), followed by sending and receiving instant messages (26.5%).

Chi square analysis between type of communication and belonging to an online community revealed that the majority of students within the online group primarily engaged in synchronous social Internet activities, while students within the offline group primarily engaged in asynchronous online activities. This relationship is illustrated in Table 5.

Table 5.

Type of communication by sub group (%)

Belonging	Type of Communication		Total
	Asynchronous (n=155)	Synchronous (n=109)	
Online group (n=84)	37.0	63.0	100.0
Offline group (n=187)	68.7	31.3	100.0

($\chi^2 = 23.192$, $p = 0.01$, sig. = 0.000)

(Continuity Correction= 21.903, sig. =0.000)

Tools used to communicate online

Online communication tools consist of text tools such as keyboards, audio tools such as microphones and video tools such as web cameras. Text tools are the most commonly used tools to communicate online. However, 21.0 per cent of respondents also used audio tools and 19.6 per cent used video tools.

Analysis of the type of tools used to communicate online by sub group showed that students within the online group were more likely to use audio or video tools than students within the offline group. This is illustrated in Table 6.

Table 6

Use of audio/ video tools by sub group (%)

Belonging	Use of audio/video tools		Total
	Use A/V tools (n=78)	Do not use A/V tools (n=193)	
Online group	45.2	54.8	100.0
Offline group	21.0	79.0	100.0

($\chi^2 = 16.721$, $p = 0.01$, sig. = 0.000)

(Continuity Correction= 15.5523, sig. =0.000)

Type of Internet connection

Interestingly, the majority of the sample (55.0%) reported having a broadband Internet connection on the computer which they primarily used to access the Internet. While the NOIE report on the current state of play for the Internet indicated that in June 2003 broadband users comprised only 21 per cent of home Internet users (NOIE, 2003), the availability of computers with broadband Internet connections on the ECU campuses may have contributed to the inflation of this figure above the general Internet population.

5.1.3.2 Level of social Internet use

Level of social Internet use was measured by the number of hours in a typical week respondents spent performing social Internet activities. Students were divided into low, medium and high level users, depending on the number of hours spent performing social activities online. Students within the online group were found to spend more hours performing social Internet activities than students within the offline group (17.80 hours online group vs. 11.75 hours offline group, $t = 2.50$, $p = .013$). Table 7 shows the distribution of low, medium and high level users by sub group.

Table 7.

Number of hours spent online performing social activities by sub group (%)

Number of social hours spent performing social activities online	Offline group (n=186)	Online group (n=84)
0-3 hours (Low level user) (n=126)	57.5	22.9
Over 3-10 hours (Medium level user) (n=84)	29.0	36.1
Over 10 hours (High level user) (n=60)	13.5	41.0

All values significant at the .05 level.

Not surprisingly, the online group were also found to have been using the Internet for longer than the offline group (7.01 years online group vs. 5.82 years offline group, $t = 3.79$, $p = .000$), and to spend more hours in a typical week online (27.35 hours online group vs. 15.66 hours offline group, $t = 4.70$, $p = .000$).

5.1.4 Summary of user characteristics of online group

In examining the user characteristics of the sample, it was found that the majority were male, in the 18-24 age group and had an income of less than AU \$20,000. The sample was relatively evenly distributed by year of current degree. However, slightly more Australian students than International students were sampled. Further, respondents were found to be relatively extroverted and competent with using the computer. On average, respondents had been online for six years and spent approximately 19 hours online in a typical week.

Understandably, the demographic and psychographic characteristics of the online and offline groups were similar due to the fact that the sample consisted of university students and was screened for social Internet usage. Interestingly however, respondents within the online group were found to differ from respondents in the offline group on the basis of level of computer competence, type of communication and level of social Internet use.

The online group were found to be significantly more competent with using the computer than the offline group. Further, the online group also spent more time online and were more likely to primarily use synchronous activities compared to the offline group, who were more likely to primarily use asynchronous social activities online. Additionally, students within the online group were found to be more likely to use more advanced audio and video tools to interact online than the offline group.

Whilst these findings are not surprising overall, they provide valuable insight into the factors that lead to online community attachment. This is further explored in the following analysis.

5.2 Predicting Attachment to Online Communities

5.2.1 Stepwise regression

Stepwise regression was used to determine the relationship between the dependent variable: online community attachment and the independent variables: gender, motivations for social Internet use, type of social activity engaged in online and number of hours spent performing social Internet activities. For the purpose of this study, an ordinary least square regression model is established and is shown as follows:

$$\text{Online Community Attachment} = \alpha + \beta \text{ Gender} + \beta \text{ MOTIV} + \beta \text{ Type} + \beta \text{ Social}$$

Where gender	= gender of sample
MOTIV	= motivations for social Internet use
Type	= type of social activity primarily engaged in online
Social	= number of hours spent performing social Internet activities

From the establishment of the regression model, a model summary is formulated. The adjusted R square for the model is .475 indicating that 48 per cent of the variance in the dependent variable (online community attachment) is accounted for by the independent variables. ANOVA tests indicate that the relationship is significant ($F= 7.418, p= .000$)

Table 8 presents these variables and their Beta, t and p values.

Table 8

Results of Regression Analysis- Beta, Significance and t-values

Predictor Variable	Beta	t-value	p
Included variables			
To contribute to society	.515	5.926	.000
Get new points of view	.451	3.889	.000
It is exciting	.446	3.579	.001
Type of activity performed online	.408	4.637	.000
Number of hours (social)	.382	4.246	.000
To meet new people	.326	3.200	.002
Gender	.224	2.431	.018
Adjusted R square: .475			

Examination of the tolerance value and the variance inflation factor (VIF) indicate that collinearity does not explain more than 10 per cent of the variance of any of the predictor variables. This means that less than 10 per cent of each independent variable is explained by other independent variables indicating that there is no problem with collinearity in the data (Hair et al., 1998).

5.2.2 Summary of stepwise analysis

In order to address research question two, stepwise regression analysis was used to determine whether any variables could be used to predict online community attachment. The analysis revealed seven significant predictor variables: gender, type of activity, level of social Internet use and the motivation items *to contribute to society, to get new points of view, it is exciting and to meet new people*.

5.3 Motivations Influencing Social Internet Use

Undergraduate university students revealed their motivations for social Internet use by indicating how strongly they agree with twenty six items, representing possible motivations for social Internet use. In order to address research question three, a multivariate analysis technique: exploratory factor analysis was utilised (Hair et al., 1998) to determine the underlying dimensions for social Internet use.

5.3.1 Factor analysis

Factor analysis, using SPSS, was performed using the Maximum Likelihood extraction method (Fabrigar, Wegener, MacCallum & Strahan, 1999; Verbeke & Bagozzi, 2002), in order to establish the latent factors underlying the set of variables. This is done by determining the factors which account for the correlations among the set of variables (Fabrigar, Wegener, MacCallum & Strahan, 1999). The twenty six motivations items were grouped into a set called MOTIV to facilitate analysis.

The rotated solution of twenty six variables revealed that five variables had insignificant dominant loadings of less than .5 and were therefore removed from the analysis following DeVellis' (1991) guidelines. The results of the Maximum Likelihood analysis can be seen in Table 9.

Table 9

Results of Factor analysis- Factor loadings and Communalities

Motivations	Factor Loadings	Communalities
FACTOR 1 (eigenvalue: 5.535)		
To help others	.993	.906
To understand others	.876	.772
To help/ support others	.828	.809
To contribute to society	.766	.592
Alpha Coefficient: 0.93		
FACTOR 2 (eigenvalue: 5.546)		
It is enjoyable	.755	.729
Occupies my time	.710	.491
It is entertaining	.701	.628
To pass time	.700	.470
Nothing better to do	.639	.337
To have fun	.638	.692
Like to use the Internet	.599	.545
It is exciting	.509	.545
Alpha Coefficient: 0.89		
FACTOR 3 (eigenvalue: 4.938)		
Exchange information with others	.896	.725
Get information from others	.686	.542
Enjoy sharing information	.540	.658
Alpha Coefficient: 0.82		

The factors may be interpreted as follows:

- Factor 1 Altruistic motives
- Factor 2 Time and Enjoyment motives
- Factor 3 Information Exchange motives

Factor 1: Altruistic motives

Factor one consists of four items, with factor loadings from .766 to .993 and can be termed Altruistic motives. The items *to help others* and *to understand others*, which expressed the desire to interact with others online in order to help or support others, loaded highly ($>.8$) on this factor. This factor explains 43 per cent of total variance and has an internal reliability of .93.

Factor 2: Time and enjoyment motives

Factor two consists of eight items relating to respondents motivations to use the Internet for enjoyment purposes or to pass time. It has factor loadings ranging from .51 to .75. The items- *it is enjoyable* and *to occupy my time* loaded highly ($>.7$) on this factor. This factor explained 12 per cent of total variance and has an internal reliability of .89.

Factor 3: Information exchange motives

Factor three consists of three items relating to exchanging and sharing information with others. This factor has loadings ranging from .54 to .90 and accounts for 8 per cent of total variance. The items *information exchange* and *to get information from others* load highly on this factor ($>.65$). The Cronbach's alpha coefficient is an acceptable .82 (Cronbach, 1951).

The mean scores for each of the factors show that the information exchange factor ($M = 4.94$) is, on average, the most salient motivation for social Internet use for undergraduate university students. Respondents further indicated that time and

entertainment ($M=4.28$) and altruism ($M = 3.92$) factors were weaker motivations for social Internet use.

5.3.2 Comparison of mean factor scores between sub groups.

A factor analysis of the motivations of the online group indicated that similar underlying dimensions exist. However, the mean scores differed between the two groups. While information exchange was still the most salient motivation for each group, respondents within the online group were more likely to agree to the information exchange factor as a motivation for social Internet activity (5.45 online group vs. 4.72 offline group, $t= 5.37$, $p= 0.000$). Similarly, respondents within the online group were also more likely to agree to the time and entertainment factor (4.57 online group vs. 4.06 offline group, $t= 4.40$, $p= 0.000$) and the altruism factor (4.57 online group vs. 3.62 offline group, $t= 5.57$, $p= 0.000$) as motivations for social Internet use.

5.3.3 Motivations and user characteristics

A number of user characteristics were found to impact significantly on the motivation factors – **information exchange, time and entertainment and altruism**, resulting in the acceptance of hypothesis one:

Motivations for social Internet use differ based on demographic, psychographic and usage characteristics.

5.3.3.1 Demographic characteristics

Demographic characteristics were examined in relation to motivations and the following differences were found.

Gender

Analysis of the three motivations factors in relation to gender revealed that there is a significant relationship between gender and the **time and entertainment** factor. For six of the eight items within the **time and entertainment** factor, females were found to be more likely to disagree than males. This is shown in Table 10 below.

Table 10

Results of t-tests- Time and Entertainment factor by Gender

Item	Mean (Females)	Mean (Males)	t- value	p
Nothing better to do	2.92	3.75	3.80	.000
I like to use the Internet	4.18	4.74	2.81	.005
It occupies my time	3.72	4.19	2.27	.024
I enjoy using the Internet	4.34	4.74	2.10	.037
It is exciting	3.66	4.09	2.12	.035
It is fun	3.98	4.58	2.98	.003

Interestingly, females were also found to be more likely to agree to all four items within the **altruism** factor, as motivations for social Internet use. These items are shown in Table 11.

Table 11

Results of t-tests- Altruism factor by Gender

Item	Mean (Females)	Mean (Males)	t- value	p
To help/ support others	4.01	3.57	2.35	.020
To help others	4.25	3.73	2.63	.009
To understand others	4.33	3.73	3.18	.002
To contribute to society	3.96	3.50	2.44	.002

Type of residency

Significant relationships were also found between type of citizenship and motivations for social Internet use, with International students being more likely to agree to items within all three motivation factors. The results are presented below.

Within the **altruism** factor, international students are more likely to agree to all four factors. The mean scores are presented in Table 12.

Table 12

Results of t-tests- Altruism factor by Residency

Item	Mean (Domestic)	Mean (International)	t- value	p
To help/ support others	3.44	4.31	-4.73	.000
To help others	3.71	4.42	-3.66	.000
To understand others	3.86	4.33	-2.37	.019
To contribute to society	3.46	4.12	-3.46	.001

Additionally, international students were more likely to agree to all three items within the **information exchange** factor: *exchange information with others* (4.97 domestic vs. 5.35 international, $t = -2.14$, $p = .033$); *enjoy sharing information with others* (4.11 domestic vs. 4.74 international, $t = -3.40$, $p = .001$) and *to get information from others* (5.17 domestic vs. 5.54 international, $t = -2.30$, $p = .043$).

Finally, international students were also found to be more likely to agree to all the items within the **time and entertainment** factor, as shown in Table 13.

Table 13

Results of t-tests- Time and Entertainment factor by Residency

Item	Mean (Domestic)	Mean (International)	t- value	p
Nothing better to do	3.01	3.91	-4.01	.000
I like to use the Internet	4.26	4.85	-3.05	.003
It occupies my time	3.54	4.60	-5.33	.000
I enjoy using the Internet	4.27	4.98	-3.80	.000
It is exciting	3.45	4.55	-5.65	.000
It is fun	3.92	4.93	-5.23	.000
To pass time	4.35	5.28	-4.375	.000
It is entertaining	4.55	5.19	-3.31	.001

5.3.3.2 Level of computer competency

Examination of psychographic characteristics in relation to motivations revealed significant relationships between perceived level of computer competence and the motivation factors: **information exchange** and **time and entertainment**.

ANOVA tests on the **information exchange** factor revealed that competent users were more likely to agree to the item *enjoy sharing information with others* than incompetent users (4.00 incompetent vs. 4.64 competent, $F=3.33$, $p=.032$).

Competent users were also found to be more likely to agree to three items within the **time and entertainment** factor than incompetent users. These items were: *It is entertaining* (4.37 incompetent vs. 5.06 competent, $F= 3.60$, $p= .022$); *Nothing better to do* (2.78 incompetent vs. 3.58 competent, $F= 3.91$, $p= .022$) and *It is fun* (3.91 incompetent vs. 4.55 competent, $F= 2.81$, $p= .048$).

No significant differences were found between incompetent and somewhat competent users or competent and somewhat competent users.

5.3.3.3 Usage patterns

Analysis revealed significant relationships between the motivation factors and type and level of social Internet activity.

Respondents who primarily performed synchronous online activities were found to be more likely to agree to all eight items within the **time and entertainment** factor. This can be seen in Table 14.

Table 14

Results of t-tests- Time and Entertainment factor by Type of Social Internet Activity

Item	Mean (Asynch.)	Mean (Synch)	t- value	p
To pass time	4.37	5.28	-4.52	.000
It is entertaining	4.43	5.32	-4.77	.000
Nothing better to do	2.99	3.88	-4.07	.000
I like to use the Internet	4.19	4.84	-3.36	.001
It occupies my time	3.66	4.40	-3.70	.000
I enjoy using the Internet	4.23	5.00	-4.27	.000
It is exciting	3.69	4.11	-2.07	.040
It is fun	4.90	4.85	-4.86	.000

Respondents who used audio or video (A/V) tools were similarly found to be more likely to agree to all eight items of the **time and entertainment** factor. These items are presented in Table 15.

Table 15

Results of t-tests- Time and Entertainment factor by Type of Communication Tools.

Item	Mean (Text)	Mean (A/ V)	t- value	p
To pass time	4.59	5.13	-2.54	.012
It is entertaining	4.63	5.27	-3.14	.002
Nothing better to do	3.17	3.92	-3.12	.002
I like to use the Internet	4.28	5.01	-3.51	.001
It occupies my time	3.74	4.58	-3.88	.000
I enjoy using the Internet	4.35	5.10	-4.15	.000
It is exciting	3.69	4.42	-3.45	.001
It is fun	4.03	5.03	-5.22	.000

In relation to the **altruism** factor, respondents who primarily performed synchronous social activities online, were found to be more likely to agree to the items: *to help/ support others* (3.54 asynchronous vs. 4.14 synchronous, $t = -3.22$, $p = .001$) and *to help others* (3.79 asynchronous vs. 4.29 synchronous, $t = -2.58$, $p = .010$).

Furthermore, respondents who used audio or video tools were more likely to agree to all four items, as shown in Table 16.

Table 16

Results of t-tests- Altruism factor by Type of Communication Tools.

Item	Mean (Text)	Mean (A/V)	t- value	p
To help/ support others	3.55	4.49	-4.76	.001
To help others	3.81	4.53	-3.47	.001
To understand others	3.82	4.67	-4.11	.000
To contribute to society	3.55	4.27	-3.54	.000

Finally, on the **information exchange** factor, synchronous users were more likely to agree to the item *enjoy sharing information with others* (4.16 asynchronous vs. 4.68 synchronous, $t = -2.80$, $p = .005$).

Respondents who use audio or video tools were more likely to agree to the items: *enjoy sharing information with others* (4.20 use text tools vs. 4.85 use audio/ video tools, $t = -3.22$, $p = .001$), *to exchange information with others* (4.96 use text tools vs. 5.53 use audio/ video tools, $t = -2.98$, $p = .003$) and *to get information from others* (5.19 use text tools vs. 5.68 use audio/ video tools, $t = -2.56$, $p = .011$) than respondents who used text tools.

5.3.3.4 Level of social Internet activity

ANOVA analysis on the **information exchange** factor revealed that medium and high level users were more likely to agree to the item, *exchange information with others*, than low level users (4.82 low level users vs. 5.35 medium level users, $F = 4.93$, $p = .008$) and (4.82 low level users vs. 5.41 high level users, $F = 4.93$, $p = .000$). There was no significant difference between medium and high level users.

Within the **altruism** factor, high level users were found to be more likely to agree to the item *to help/ support others* than low level users (3.77 low level user vs. 4.55 high level user, $F = 5.197$, $p = .006$). There was no significant difference between medium and high level users.

Finally, within the **time and entertainment** factor, medium and high level users were found to be more likely to agree to five items than low level users. These results are presented in Table 17 and 18.

Table 17

Results of ANOVA- Time and Entertainment factor by Level of Social Internet Use (Low- Medium)

Item	Mean (Low)	Mean (Medium)	t- value	p
It is entertaining	4.17	4.99	20.41	.000
Nothing better to do	2.90	3.54	11.43	.000
I like to use the Internet	4.04	4.67	12.54	.000
It is exciting	3.42	4.12	12.18	.000
It is fun	3.79	4.46	16.90	.000

Table 18

Results of ANOVA- Time and Entertainment factor by Level of Social Internet Use (Low- High)

Item	Mean (Low)	Mean (High)	t- value	p
It is entertaining	4.27	5.69	20.41	.000
Nothing better to do	2.90	4.19	11.43	.000
I like to use the Internet	4.04	5.20	12.54	.000
It is exciting	3.42	4.57	12.18	.000
It is fun	3.79	5.17	16.90	.000

Additionally, high level users were more likely to agree to two items within the **time and entertainment** factor than low level users: *It is entertaining* (4.99 low level users vs. 5.69 high level users, $F= 20.40$, $p= .000$) and *It is fun* (4.46 low level users vs. 5.17 high level users, $F= 16.90$, $p= .000$). There was no significant difference between medium and high level users.

5.3.3.5 Summary of motivations for social Internet use

In addressing research question three, factor analysis revealed three factors as motivations for social Internet use. The **information exchange** factor was the most salient motivation for social Internet use, while the **time and entertainment** and **altruism** factors were less salient. Analysis of the differences the online and offline groups revealed that the online group was more likely to agree to all three factors as motivations for social Internet use compared to the offline group.

In addition, analysis of the three motivation factors in relation to demographics revealed a number of significant relationships. Females were found to be more likely to disagree to items within the **time and entertainment** factor, while being more likely to agree to items within the **altruism** factor. Further, international students were found to be more likely than domestic students to agree to all three motivation factors.

Analysis of the psychographic characteristics of respondents revealed that competent users are more likely to agree to items within the **information exchange** and **time and entertainment** factors than incompetent users.

Finally, in addressing the usage patterns of respondents, it was found that respondents whose primary social activity was synchronous, who used audio or video tools and/ or were high level users were more likely to agree to items within all three motivation factors. These findings will be further discussed in Chapter 6.

5.4 Relationship between Social Internet Use and Community Attachment

This section will investigate the relationship between type and level of social Internet activity and community attachment, through one-way ANOVA with post hoc comparisons tests and independent sample t-tests, in order to address research questions four, five and six. Factor analysis of the community attachment scales (see appendix two) revealed one dominant factor for each scale, which was used to determine whether social Internet use impacted on overall community attachment levels. Analysis of the items within each community attachment scale was also performed to further investigate the relationship between community attachment and social Internet use.

5.4.1 Type of social Internet activity and online community attachment

In order to address the research question four, hypotheses two to four; social Internet use was divided into three categories:

- type of communication (synchronous vs. asynchronous);
- type of communication tools (text vs. audio/ video) and
- type of Internet connection (broadband vs. dial up).

Independent sample t-tests were used to examine the relationship between these three types of social Internet use and the attachment to online communities of the sample, based on the factor scores. T-tests were then performed on items within the attachment to online community scale to determine which items influenced the overall result. Figure 3 illustrates the analysis procedure.

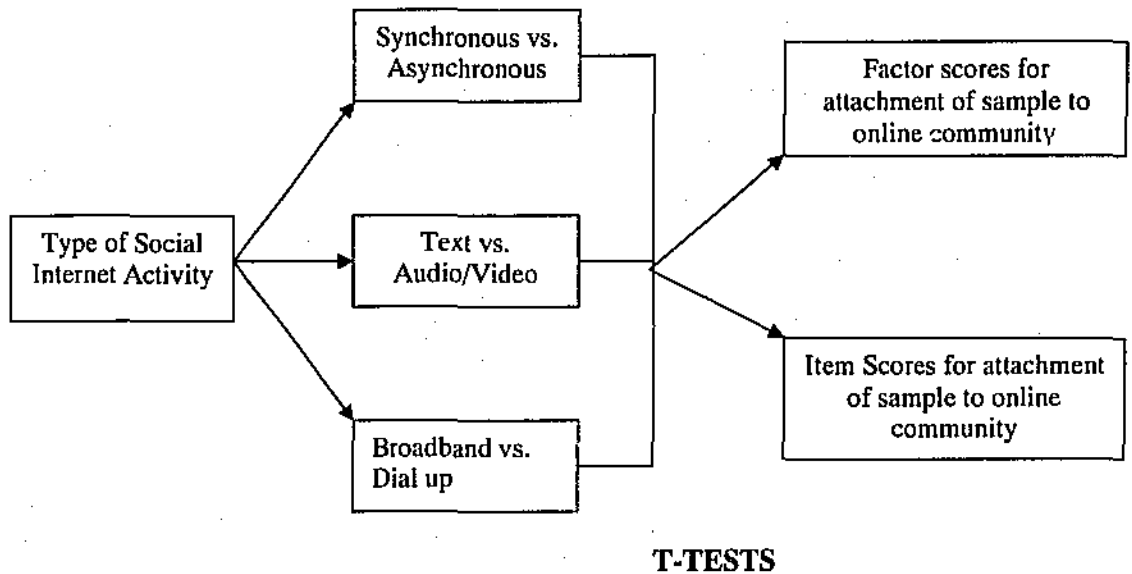


Figure 3. Analysis procedure for Type of Social Activity and Online Attachment

5.4.1.1 Results of independent sample t-tests (factor scores)

Type of communication

Analysis of the factor scores for attachment to online communities found that use of synchronous social Internet activities had no significant impact on attachment to online communities thereby resulting in the rejection of hypothesis two: Use of the Internet for synchronous social activities increases the level of online community attachment of university students.

Type of communication tools used

T-tests on the factor scores for online community attachment revealed that type of tools used to communicate online had no significant impact on level of online community attachment thereby resulting in the rejection of hypothesis three: Use of the audio or video tools to communicate online increases the level of online community attachment of university students.

Type of Internet connection

Faster Internet connections (via broadband connections) were found to have no significant impact on online community attachment within the sample, thereby resulting in the rejection of hypothesis four: Use of a broadband Internet connection increases the level of online community attachment of university students (O'Shea, 2002).

5.4.1.2 Results of independent sample t-tests (item scores)

In examining whether the use of audio or video tools impacted on attachment to online communities further, it was found that students who use audio or video tools were more likely to agree to the item: *all of my friends live within my online community* (3.50 text tools vs. 4.32 audio/ video tools, $t=-2.06$, $p=.043$) and *I belong to many communities online* (2.93 text tools vs. 4.00 audio/ video tools, $t=-2.07$, $p=.044$) than students who do not use audio or video tools to communicate online.

5.4.1.3 Summary of results of independent sample t-tests

Independent sample t-tests were performed on both the factor scores for online community attachment and the items within the online attachment scale (see appendix one, question 13 a-g), in relation to type of social Internet activity. Analysis revealed that students who use audio or video tools are more likely to agree to the items – *all my close friends live within my online community* and *I belong to many communities online* than students who only use text tools such as the keyboard to communicate online.

5.4.2 Level of social Internet activity and online community attachment

In addressing research question five, one-way between groups ANOVA with post-hoc comparisons was used to investigate the relationship between **level** of social Internet activity and **online** community attachment. This was done by comparing the mean online community attachment factor scores of low, medium and high level users to determine whether significant differences exist. ANOVA tests on items within the attachment to online communities scale were also performed to determine which items influenced the overall result. Figure 4 illustrates the analysis procedure.

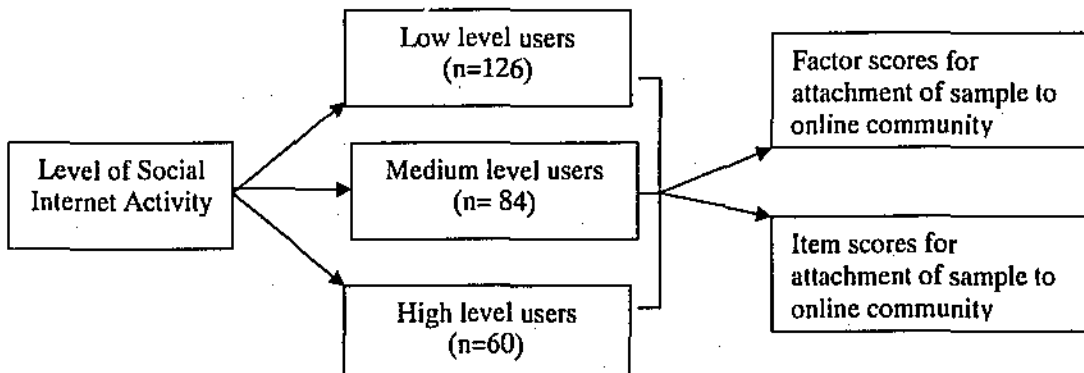


Figure 4. Analysis procedure for Level of Social Activity and Online Attachment

5.4.2.1 Results of ANOVA factor score analysis

In examining the factor scores of attachment to online communities, it was found that level of social Internet activity did not influence attachment to online communities, resulting in the rejection of hypothesis five: As social Internet use increases, attachment to online communities increases among university students.

5.4.2.2 Results of ANOVA item score analysis

Examination of items within the attachment to online communities scale revealed that for the item *I would be sorry to leave my online community*, high level users were more attached to their online communities than medium level users (4.97 high level user vs. 3.97 medium level user, $F= 4.68$, $p= .047$) and low level users (4.97 high level user vs. 3.67 low level user, $F= 4.68$, $p= .023$). Similarly, high level users were more attached to their online communities than low level users for the item *I feel at home within my online community* (4.79 high level user vs. 3.45 low level user, $F=4.70$, $p= .030$).

Additionally, high level users were more attached to their online communities than low level users for the item *I belong to many communities online* (4.44 high level user vs. 3.00 low level user, $F=5.14$, $p=.010$).

5.4.2.3 Summary of ANOVA tests for online community attachment

ANOVA tests revealed that level of social Internet use had no significant impact on the mean online community attachment factor scores within the sample. However, tests on the items within the online community attachment scale revealed that high level users were more likely to agree to the items- *I would be sorry to leave my*

online community and I belong to many communities online than low or medium level users.

5.4.3 Level of social Internet activity and offline community attachment

Finally, to address research question six, one-way between groups ANOVA with post-hoc comparisons was used to investigate the relationship between **level** of social Internet activity and **offline** community attachment. This was done by comparing the mean offline community attachment factor scores of low, medium and high level users to determine whether significant differences exist. The sample was then divided into domestic and international students to determine whether attachment to offline communities differed based on type of residency. ANOVA tests on items within the attachment to offline communities scale were also performed to determine which items influenced the overall result. Figure 5 illustrates the analysis procedure.

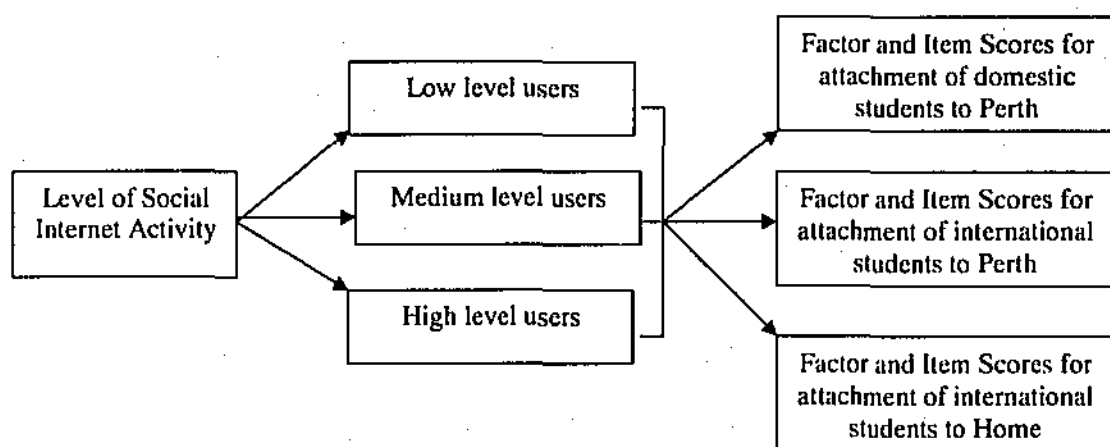


Figure 5. Analysis procedure for Level of Social Activity and Offline Attachment

5.4.3.1 Results of ANOVA factor score analysis

Analysis of the factor scores for the attachment to Perth of domestic students revealed that low level users were more inclined to be attached to Perth than high level users (.197 low level users vs. -.359 high level users, $F= 5.69$, $p= .003$), resulting in the acceptance of hypothesis six: as social Internet use increases, attachment to offline communities decreases among university students.

Level of social Internet use was found to have no significant impact on the factor scores for attachment to Perth of international students and attachment to the permanent place of residence of international students.

5.4.3.2 Results of ANOVA item score analysis

In order to investigate the relationship between the offline attachment to Perth of domestic students and level of social Internet use further, a one-way ANOVA test was performed on the items within the attachment to Perth of domestic students' factor.

These tests reveal that low level users were more likely to agree to five items – *I feel at home in Perth* (5.00 low level users vs. 4.56 high level users, $F= 4.00$, $p= .017$), *I would be sorry to leave Perth* (5.10 low level users vs. 4.13 high level users, $F= 5.69$, $p= .003$), *my personal needs are being met in Perth* (5.04 low level users vs. 4.29 high level users, $F= 3.30$, $p= .031$) *I have an emotional connection to Perth* (4.94 low level users vs. 4.00 high level users, $F= 5.68$, $p= .003$) and *I can exert control over my community in Perth* (3.99 low level users vs. 3.24 high level users, $F= 3.64$, $p= .025$) than high level users.

5.4.3.3 Summary of ANOVA tests for offline community attachment

One-way ANOVA with post hoc comparisons performed on the attachment to Perth factor revealed that low level social Internet users were more attached to Perth than high level social Internet users. This resulted in the acceptance of hypothesis six. In exploring this result, one-way ANOVA with post hoc comparisons on the individual items within the factor attachment to Perth revealed that low level users were more likely to agree to five items relating to attachment to Perth – *I feel at home in Perth, I would be sorry to leave Perth, my personal needs are being met in Perth, I have an emotional connection to Perth* and *I can exert control over my community in Perth* – than high level users.

In contrast, the level of social Internet use was found to have no significant impact on the attachment of international students to either Perth or their permanent place of residence.

CHAPTER 6

Discussion and Conclusion

6.0 Introduction

This chapter consists of three sections. The first section summarises the study. The findings from the previous chapter are then discussed in relation to the research questions and existing literature. In particular, the way in which these findings contribute to the body of knowledge on Internet use and community attachment and how they compare/ contrast to findings of similar studies are discussed. The chapter concludes with a discussion of the limitations of the study and recommendations for future research.

6.1 Summary of the Study

This study was motivated by the lack of current research into the motivations for social Internet use and the impact of social Internet use on community attachment, in particular, the impact of different types and levels of social Internet use on offline and online attachment levels. Consequently, this study examined the motivations for social Internet use and community attachment in relation to three types of social

Internet use: type of communication; type of tools used and type of Internet connection, and one level of social Internet use: number of hours in a typical week spent performing social activities online. The study also aimed to develop a profile of users who are more likely to become attached to an online community, in order to predict online community attachment.

A descriptive, quantitative design was employed and data was collected via a quantitative self-administered questionnaire designed to capture the motivations for social Internet use and community attachment levels of university students attending ECU in Perth. The analysis of the data involved chi square tests and the multivariate techniques- stepwise regression and factor analysis, as well as independent sample t-tests and one-way ANOVA with post hoc comparisons.

The stepwise regression analysis resulted in the identification of seven factors which can be used to help predict online community attachment. A factor analysis resulted in the identification of three underlying factors which motivate students to participate in social Internet activities. Furthermore, independent sample t-tests and one-way ANOVA tests revealed that type and level of social Internet use does affect both online and offline community attachment. The implications of these results are discussed in the following section.

6.2 Discussion

The following discussion seeks to address the research questions by illustrating how the findings fill gaps within the research and add to knowledge and understanding within the area.

6.2.1 Characteristics of the online group

Research Question 1: What are the characteristics of university students who belong to an online community?

While a number of studies have investigated the characteristics of general Internet users (Howard, Raine & Jones, 2001; Pew Research Centre, 2000), the findings from this study look specifically at the characteristics of university students who belong to an online community, in order to investigate what type of people are likely to become involved with online communities. Therefore, while past studies indicate that Internet usage is influenced by demographic factors such as gender, age and income, this study shows that there is little difference between the demographic characteristics of social Internet users based on whether the respondent belonged to an online community. This is an understandable result due to the fact that respondents for this study were recruited from a relatively homogenous group of university students. However, the online and offline groups were found to differ on three aspects: level of computer competency; type of social activity performed online and level of social Internet use. The relationships between these three aspects are discussed below.

Respondents within the online group were found to report a significantly higher level of computer competency than respondents within the offline group. Furthermore, respondents within the online group were found to be more likely to engage primarily in synchronous social activities such as sending instant messages or participating in chat rooms or interactive discussions. In addition, the online group

were also found to be more likely to utilise audio or video tools when communicating and interacting online and were more likely to spend a greater number of hours in a typical week performing social Internet activities.

These findings are supported by empirical evidence which indicates that the level of experience with the Internet impacts on the type of activities performed online, with those users who have had more than three years experience online being more likely to have performed more Internet activities (Pew Research Centre, 2000). Therefore, due to the fact that the online group spend more time performing social Internet activities in a typical week, they are expected to be more experienced and competent with using the Internet and are more likely to have participated in more complex social activities, such as synchronous social activities, and to have used more technologically advanced tools to communication and interact online.

As an increasing number of consumers enter the online environment, they will become increasingly involved with and attached to online communities. The economic and social consequences of these communities, in that consumers may become less involved with traditional marketing media, means that it is vital for marketers to know the characteristics of people who are likely to become involved with online communities in order to address these people and the implications of becoming attached to virtual communities.

While this research indicates that strong relationships exist between belonging to an online community and level of computer competency, type of social Internet activity, and level of social Internet activity, the direction of causation was beyond the scope of this study and could be investigated in further research.

Research Question 2: What are the variables which predict online community attachment among university students?

In order to further address the types of students who belong to online communities, regression analysis was used to determine whether any variables could be used to predict online community attachment. Seven variables were found including: type of communication activity performed online; level of social Internet use; gender and the motivation items (*to contribute to society, to get new points of view, the Internet is exciting and to meet new people*). These variables and their implications for marketers are discussed below.

The findings from this study indicate that the motivation items were the strongest predictors of attachment to online communities, where respondents who agree to these items were more likely to be involved with and attached to an online community. This is supported by research which indicates that motivations and personal values are more significant predictors of Internet use than demographic or psychographic characteristics (Joines et al., 2003).

Part of the attraction of belonging to an online community was found to be the opportunity to perform altruistic social Internet activities, such as *to contribute to society*. This is reinforced by previous empirical studies (e.g. Mesch, 2001) which suggest that individuals with pro-social attitudes are more likely to use the Internet for social interaction purposes. However, this study extends this finding by indicating that respondents, who are motivated by **altruistic** factors to use the Internet, are likely to become involved with and attached to online communities.

The item *to get new points of view* was also found to be a strong predictor of online community attachment. Online communities facilitate the dissemination of diverse opinions and perspectives due to their ability to connect Internet users throughout the world and to provide opportunities for users to share their knowledge and perspectives. For example, individuals may join communities in order to get information, advice or a second opinion on sensitive health issues, which they may not want to visit their general practitioner for. These opportunities may also motivate individuals to become involved with and attached to online communities.

The third strongest predictor of attachment to an online community was found to be the motivation item *the Internet is exciting*. This item indicated that respondents were attracted online communities due to the fact that they found them entertaining and exciting. Future research could be performed on the aspects of the Internet and online communities which respondents find entertaining and exciting.

Another significant predictor of online community attachment was found to be the motivation item *to meet new people*. The nature of the Internet and online communities, in that they are relatively anonymous and allow communication and interaction to take place without the non-verbals cues (Bargh & McKenna, 2003) and judgements which usually accompany offline interactions, mean that it is a less intimidating way to meet new people (Bargh & McKenna, 2003) and allows individuals who have weak or inadequate offline social ties to reinvent their personality (Papacharissi & Rubin, 2000). Furthermore, online communities make it relatively easy to find and meet people with similar hobbies or interests. Therefore,

people who use the Internet to meet new people are likely to become involved with and attached to online communities.

These motivations have important implications for marketers due to the fact that they predict online community attachment. Therefore, if marketers can incorporate tools within their websites which allow consumers' to satisfy their altruistic, interpersonal and entertainment needs they will increase the likelihood of consumers becoming attached to their website and ultimately to their brand and product (Catterall & Maclaran, 2002).

Type of communication activity performed online was found to be another significant predictor of online community attachment. This variable suggests that respondents who primarily engaged in synchronous social Internet activities were more likely to become involved with and attached to online communities. As synchronous activities allow individuals to interact with others in real time, it is considered a more personalised and relational form of communication, than asynchronous activities (Catterall & Maclaran, 2002) and therefore, respondents are more likely to develop stronger online social ties which may increase their attachment to online communities.

The findings from this study also reveal that level of social Internet usage predicts attachment to online communities. This is supported by previous studies which suggest that greater experience with the Internet means that users are more likely to have performed more activities online (see Howard, Raine & Jones, 2001). This

increases the likelihood that they have participated in online communities and therefore increases the likelihood that they will be attached to online communities.

The final predictor of online community attachment identified within this study was gender. The findings from this study indicated that males were more likely to become involved with and attached to online communities. This is an interesting result given that females are often considered more sociable and communicable than males (Jackson et al., 2001). However, while research shows that women are more likely to use asynchronous social Internet activities such as email to communicate with family and friends, males were found to be more likely to use advanced synchronous social Internet activities such as playing online games (Howard, Raine & Jones, 2001), thereby increasing their involvement with and attachment to online communities.

However, caution should be exercised in interpreting these findings due to the fact that this variable was found to be a relatively weak predictor of online attachment. In addition, this result may be a function of the sample in that a large proportion of the sample is comprised of males in the Computer Science and Digital Media degrees. These students are expected to have a higher level of involvement with the Internet and therefore may have a greater degree of involvement with online communities compared to other males within the university population. Future research is suggested to determine whether this finding is a more widely applicable finding.

As previously discussed, the importance of determining the type of people who are likely to become involved with and attached to online communities lies in the implication of this attachment. These implications may mean that consumers are increasingly becoming less exposed to traditional communication and marketing media. Therefore it is essential for marketers to understand these consumers in order to implement strategies to effectively target them.

6.2.2 Motivations influencing social Internet use

Research Question 3: What are the underlying motivations influencing social Internet use among undergraduate university students?

While empirical studies on the motivations for general Internet use indicate that users perform social Internet activities in order to reinvent their personality (Papacharissi & Rubin, 2000), particularly if they have weak offline social ties or belong to a socially unacceptable minority group (Mesch, 2001), the findings from this study reveal that motivations for social Internet use are much broader. Factor analysis revealed three underlying dimensions for social Internet use: **Information exchange, time and entertainment and altruism**. The mean scores for these factors were found to differ on the basis of the respondents user characteristics (demographics, psychographics and usage patterns) resulting in the acceptance of hypothesis one:

H1: Motivations for social Internet use differ based on demographic, psychographic and usage characteristics.

The most salient motivation factor was found to be the **information exchange** factor, which had a mean score of 4.94. This factor indicates that Internet users are attracted to social Internet activities due to the opportunity to share, gather and exchange information with other users. In support of this finding, the primary social activities performed online were found to be sending and receiving emails and instant messages. These activities allow the transmission of information quickly, easily and conveniently between friends and family.

Based on the uses and gratifications approach, the Internet results in two types of gratification: content (information vs. entertainment) and process (gratifications received from performing Internet activities). Stafford et al. (2004) suggest that the primary content gratification on the Internet is information, as while entertainment content exists on the Internet, informational content was found to be a more highly “desired outcome of ... Internet access” (Stafford et al., 2004, p. 287). These findings, in relation to general Internet use supports the findings within this study, which indicate that information exchange is the most salient motivation for social Internet use, within the sample.

Respondents who had a high level of computer competency, who primarily engaged in synchronous activities, utilised audio or video tools and/ or were high or medium level social Internet users were more likely to agree to items within the **information exchange** factor as motivations for social Internet use. As these elements are all characteristics of respondents who belonged to an online community, it was not surprising that the online group were also more likely to agree to the information exchange factor as motivation for social Internet use.

Another underlying dimension for social Internet use was found to be the **time and entertainment** factor. This factor suggests that Internet users are attracted to performing social Internet activities due to its ability to pass time (*nothing better to do; it occupies my time*) and entertain users (*the Internet is exciting; I like to use the Internet*). This factor corresponds to the entertainment content gratification and as indicated by Stafford et al. (2004) is a less salient motivation than the information exchange factor, with a mean score of 4.28.

Males were more likely than females to agree to the **time and entertainment** factor. This can be accounted for by previous research which indicates that males are more likely to use synchronous social activities, such as playing online games, which are entertaining and time consuming, while females use more asynchronous activities which focus on communicating and exchanging information with others (Jackson et al., 2001).

The online group, who, as the results show, were more likely to use synchronous activities, utilise audio/ video tools and be high level, competent social Internet users, were consequently found to be more likely to agree to the **time and entertainment** factor as a motivation for social Internet use, than the offline group. International students were also found to be more likely to agree to the **time and entertainment** factor compared to domestic students. Another avenue for future research could be to address why motivations differ between domestic and international students.

The final dimension revealed within the findings for social Internet use was the **altruism** factor. While this factor suggests that Internet users are attracted to social Internet activities due to the opportunities it provides to perform altruistic social activities, the mean score for this factor was 3.92, indicating that, on average, this factor was a weaker motivation for social Internet use. This result, coupled with the previous motivational factors revealed within this study, suggest that respondents were more likely to go online for personal benefits rather than social benefits and is reflective of the individualistic orientation of young people (Healy, Bradley & Nukherjee, 2004).

Females were found to be more likely to agree to the **altruism** factor as motivations for social Internet use than males. This can be attributed to the fact that females are often more socially and altruistically orientated (Healy et al., 2004).

Additionally, international students were found to be more likely to agree to altruistic motivations, compared to domestic students. While this relationship could be explained by the differences in cultures, where Asian and European cultures tend to be more collectively orientated compared to Western cultures which are often more individually orientated (Cukur, Guzman & Carlo, 2004), it is recommended that future research be performed to investigate this relationship.

In addition, the online group were also found to be more likely to agree to items within the **altruism** factor. Correspondingly, respondents who engaged in synchronous activities, utilised audio and video tools and were classified as high level users were also more likely to agree to this factor.

The online group were found to be more likely to agree to all of the motivations factors than the offline group. This finding can perhaps be attributed to the fact that the online group may be more likely to use the Internet for social activities and may therefore be more likely to agree to motivations for social Internet use, while the offline group may be more likely to use the Internet for asocial purposes such as browsing, online shopping or Internet banking and may therefore be less likely to agree to motivations related to social Internet use. However, this explanation should

be validated with further research which addresses motivations for social Internet use in line with both social and asocial usage patterns.

Identification of the way in which motivations differ based on user characteristics is essential for marketers particularly in the segmentation and campaign/ message development stages, due to the fact that some motivations are more relevant for particular target markets. For example, marketers targeting primarily males may choose to incorporate features into their website which address the **time and entertainment** factor by providing an attractive, entertaining layout. Alternatively, when designing websites targeted at females, marketers may want to incorporate features which address the **altruistic** factor by allowing visitors to help others by providing support, advice or information on discussion boards or forums.

While this research reveals a number of factors which influence the motivations for Internet use, it did not investigate the reasons why these factors influenced motivations. Therefore it is recommended that future research be performed to address this.

6.2.3 Community attachment

Research Question 4: What is the relationship between type of social Internet activity and online community attachment among university students?

While the findings from this study do not identify a significant relationship between type of social Internet use and online community attachment, thereby resulting in the rejection of hypothesis two, three and four, the findings indicated that respondents who used audio or video tools online were more likely to report behavioural attachments to their online communities compared to respondents who did not use audio or video tools online. These tools allow users to overcome one of the main cited problems with the Internet as a social tool in that they allow the exchange of non verbal cues such as voice tone and/ or body language (Bargh & McKenna, 2003). This may facilitate more personalised communication and interaction, thereby resulting in the development of stronger social ties which may be more reflective of ties developed in the offline environment. This may ultimately lead to increased behavioural attachment to online communities as more “real” interactions will result in the development of online friendships (Papachrissi & Rubin, 2000).

Furthermore, as a result of these more real and satisfying interactions, users may be encouraged to seek more opportunities for similar interactions by joining other online communities, thereby resulting in respondents who use audio or video tools being more likely to have a greater involvement with online communities than students who do not use audio or video tools. These results are supported by empirical studies which suggest that use of audio or video tools increase an individual’s involvement with their online community (Clark & Stein, 2003; Papacharissi & Rubin, 2000).

Research Question 5: What is the relationship between level of social Internet activity and online community attachment among university students?

The findings of this study indicated that overall there was no significant difference between the online community attachments of high and low level users, thereby resulting in the rejection of hypothesis four. However, high level users were found to be more attached to online communities than medium or low level users on the affective attachment items *I would be sorry to leave my online community* and *I feel at home within my online community*. These two measures have been used in previous studies as a composite score to measure affective community attachment (Kasarda & Janowitz, 1974), and indicate that high level users feel a greater sense of belonging toward their online communities compared to medium or low level users.

Additionally, high level users were also found to be more likely to agree to the item *I belong to many communities online*. Literature suggests that belonging to communities is an indicator of level of behavioural attachment and states that the more local communities groups or organisations a person belongs to the greater their attachment to their community in general (Clark & Stein, 2003). In applying this principle to the online environment, high level users can be seen to be more involved in online communities and are therefore more likely to be behaviourally attached to their online environment.

Research Question 6: What is the relationship between level of social Internet activity and offline community attachment among university students?

The findings in this study confirmed hypothesis six:

H6: As social Internet use increases, attachment to offline communities decreases among university students.

Domestic students within the study, who were high level social Internet users, were more inclined to have a lower emotional attachment to Perth than domestic students who were low level users. This indicates that use of social Internet activities, which facilitate online communication and interaction, coupled with the global accessibility of the Internet which allows social Internet users to communicate and interact with people throughout the world, can delocalise attachment levels, thereby decreasing respondents' emotional or affective attachments to their offline surroundings, in this case Perth, Western Australia. These findings for social Internet use confirms and further refines the findings of a number of studies which indicates that general Internet use decreases offline community attachment (Kraut et al., 1998; LaRose et al., 2001; McQuillen, 2001).

Interestingly though, it was found that there were no significant differences between the behavioural attachments of high and low level users, as both high and low levels users were likely to agree that all of their close friends live in Perth. This finding can also be linked to arguments put forward by dystopians who suggest that online communities are not real communities and do not facilitate strong social ties (Kraut et al., 1998; LaRose et al., 2001; McQuillen, 2001). Therefore, while high level

social Internet users indicate a decreasing level of emotional attachment to their offline communities the social ties which they form online appear not to be replacing their offline social ties, thereby resulting in respondents indicating that they are still behaviourally attached to their offline community.

Additionally, both high and low level users were likely to disagree to the item *I belong to many communities' organisations in Perth*. This can be attributed to the demographic characteristics of the sample. Young people are often very individualistically orientated and are therefore less likely to be involved in community organisations than older people (Healy et al., 2004) therefore accounting for the low level of attachment to community organisations.

The findings from this study reveal that social Internet use decreases offline community attachment, and has no impact on overall online community attachment. However, respondents who were high level users were found to have a strong sense of belonging and a high level of behavioural attachment to their online communities, while respondents who used audio or video tools were also found to have a behavioural attachment to their online communities. This suggests that there may be other factors impacting on the level of community attachment respondents felt towards their online communities. One such explanation could be that as a result of the newness of the Internet phenomenon and the recent emergence of online communities as forums to socialise with others, respondents' may not currently feel attached to their online environment. In order to investigate this relationship further, future research should study the impact of social Internet activities on online community attachment from a longitudinal perspective in order to identify the effect time has on online community attachment.

6.3 Contributions to Marketing

Much of marketing revolves around understanding and meeting consumer expectations (Stafford et al., 2004). However, as an increasing number of consumers become involved with and attached to online communities, marketers must ensure they are aware of the expectations of this new segment.

The findings from this study reveal the inherent differences between respondents who belong to an online community and respondents who do not belong to an online community. In particular, the study reveals seven predictor variables which can be used to help predict the types of people who are likely to become attached to an online community. This enhances marketers' understandings of the type of consumers who are likely to be attached to online communities and their expectations and further extends knowledge relating to what makes people attached to online communities. This is significant due to the fact that online communities may change the traditional means for socialising. In addition, online community development processes are of interest to marketers they provide potential reference groups, sources of entertainment and an avenue for product promotion.

This study also addresses the motivations for social Internet use. While a number of studies have addressed the motivations for general Internet use, none have looked specifically at what motivates consumers to use the Internet for social activities. Additionally, the study highlights that motivations for social Internet use differ based on demographic, psychographic and usage characteristics. This has important implications for marketers as it provides a greater understanding of why consumers

become involved in online communities and what they are looking for within an online community. Furthermore, the study reveals that different consumers may be motivated by different factors. Therefore, marketers need to address this when selecting segments and developing marketing, promotional and public relations strategies.

Finally, this study contributes to literature relating to community attachment in several ways. This study develops the process of integrating attachment theory with consumer behaviour (Kleine & Baker, 2004) in order to provide marketers with a greater insight into the “net generation”. This process is important as it allows a deeper understanding how communications media impact on attachment levels.

6.4 Limitations and Suggestions for Future Research

In order to address research question two, regression modelling was used to determine whether any variables could be used to predict online community attachment. However, due to the exploratory nature of this model, it is suggested that future research be performed to validate the model and to determine whether any other predictors influence the model. In particular, research should address the relationships between gender and online community attachment and the motivation item *the Internet is exciting* and online community attachment. Future research should also address the relationships between level of computer competency, type of social Internet activity and level of social Internet activity and belonging to an online group, in order to further explain the characteristics of the online group.

In addressing the motivations for social Internet use, a number of differences were found between motivations and user characteristics (gender, residency, level of computer competency, type of social Internet activity and level of social Internet activity). However, this research did not address why these user characteristics influenced motivations. Future research could address this via a qualitative study in order to explain further explain the underlying motivations for social Internet use and why motivations differ on the basis of demographic, psychographic and usage characteristics.

Finally, the findings from this study reveal that social Internet use decreases community attachment. However, as this study was performed as a cross sectional study (due to time restrictions) the impact of time on both online and offline community attachment was not investigated. Future research should investigate this relationship via a longitudinal study in order to determine whether time influences community attachment levels.

6.5 Conclusion

This research investigated universities students' motivations for social Internet use and the impact of social Internet use on community attachment. Significantly, the study identified three underlying dimensions for social Internet use, and determined the characteristics of students which impacted on motivations. The research also provided insight into the types of respondents who were predisposed to becoming involved with and attached to online communities. In particular, it highlighted motivations and type of social activity performed online as significant predictors of online community attachment.

Finally, the research indicates that social Internet use significantly decreases offline community attachment within the sample, adding to and reinforcing the dystopian argument. Recent research (Kleine & Baker, 2004) highlights the importance of integrating attachment theory with consumer behaviour in exploring the Internet as a communication vehicle and its impact for marketers involved with the net generation.

References

Australian Bureau of Statistics. (1999). Education and Training in Australia. Retrieved 28th October, 2004.

<http://www.abs.gov.au/ausstats/abs@.nsf/b06660592430724fca2568b5007b8619/383ee3532581477bca2568a9001393d2!OpenDocument>.

Australian Government Department of Education, Science and Training (DEST). (2004). Higher Education Report for the 2003-2005 Triennium. Retrieved 7th November, 2004.

http://www.dest.gov.au/highered/he_report/2003_2005/pdf/app.pdf.

Bakardjieva, M. (2003). Virtual togetherness: An everyday-life perspective. *Media, Culture and Society*, 25(3), 291-313.

Bakardjeiva, M. & Feenburg, A. (2002). Community technology and democratic realisation. *The Information Society*, 18(3), 181-192.

Bargh, J.A. & McKenna, K.Y.A. (2004). The Internet and social life. *Annual Review of Psychology*, 55(1), 573-589.

Beggs, J.J. Hurlbert, J.S. & Haines, V.A. (1996). Community attachment in a rural setting: A refinement and empirical test of the systemic model. *Rural Sociology*, 61(1), 407-426.

Blanchard, A.L. & Markus, M.L. (2004). The experienced "sense" of a virtual community: Characteristics and processes. *Database for Advances in Information Systems*, 35(1), 65-79.

Bolan, M. (1997). The mobility experience and neighbourhood attachment. *Demography*, 34(2), 225-238.

Brace, N., Kemp, R. & Snelgar, R. (2000). SPSS for psychologists: a guide to using SPSS for windows (version 8, 9 and 10). Houndmills, England: Macmillian Press.

Brehm, J.M., Eisenhauer, B.W. & Krannich, R.S. (2004). Dimensions of community attachment and their relationship to well being in the amenity-rich rural west. *Rural Sociology*, 69(3), 405-430.

Caplan, S.E. (2003). Preference for online social interaction. *Communication Research* 30(6), 625-637.

Catterall, M. & Maclaran, P. (2002). Researching consumers in virtual worlds: A cyberspace odyssey. *Journal of consumer behaviour*, 1(3), 2128-237.

Chen, K, Chen, I. & Paul, H. (2001). Explaining online behavioural differences: An Internet dependency perspective. *The Journal of Computer Information Systems*, 41(3), 59-64.

Churchill, J.A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of marketing research*, 16(1), 64-74.

Clark, J.K. & Stein, T.V. (2003). Incorporating the natural landscape within an assessment of community attachment. *Forest Science*, 49(6), 867-880.

Coakes, S.J. & Steed, L.G. (2001). SPSS analysis without anguish: Version 10.0 for windows. North Sydney: John Wiley and Sons Australia.

Commonwealth Department of Education, Science and Training. (2001). Median age of students by type of enrolment. Retrieved 11th November, 2004.

http://www.dest.gov.au/archive/highered/statistics/characteristics/08_medianage.htm.

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334.

Cross, J. (2003). Conceptualising community attachment. Retrieved 23rd September, 2003. <http://ruralsociology.org/annual-meeting/2003/CrossJennifer.pdf>.

Cummings, Butler & Kraut (2002). The quality of online social relationships. Association for Computing Machinery, *Communications of the ACM*, 45(7), 103-114.

Cunningham, W.N, Anderson, T.W. & Murphy, J.H. (1974). Are students' real people? *The Journal of Business*, 47(3), 399-410.

Cukur, C.S., Guzman, M.R.T. & Carlo, G. (2004). Religiosity, values and horizontal and vertical individualism- collectivism: A study of Turkey, the United States and the Phillipeans. *The Journal of Social Psychology*, 144(6), 613-635.

Dann, S. & Dann, S. (2004). Strategic Internet Marketing 2.0. Singapore: John Wiley & Sons Australia, Ltd.

DeVellis, R. (1991). Scale development. Newberry Park, N.J: Sage.

Edith Cowan University. (2003). Application to undertake research involving human research form. Retrieved 9th June, 2004, http://www.ecu.edu.au/GPPS/ethics/docs/hrec_app_form.doc.

Edith Cowan University. (2004). About Edith Cowan University. Retrieved 13th October, 2004. <http://www.ecu.edu.au/links/about/>.

Fabrigar, L.R., Wegener, D.T., MacCallum, R.C. & Strahan, E.J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 3, 272-299.

Firth, K.J. (1995). Examining the relationship between place attachment and personality. US: UMI Dissertation Services.

Fisher, S., K. Murray, and N.A. Frazier. (1985). Homesickness, health and efficiency in first year students. *Journal of Environmental Psychology*, 5, 181-195.

Franzen, A. (2003). Social capital and the Internet: Evidence from the Swiss panel data. *Kyklos*, 56(3), 341-360.

Garrison, D. (2000). The "net" generation. *Women in Business*, 52(6), 14-18.

Garson, G.D. (2004). Factor analysis overview. Retrieved 29th October, 2004.
<http://www2.chass.ncsu.edu/garson/pa765/factor.htm>

Gerson, K.C., Stueve, C.A. & Fischer, C.S. (1977) "Attachment to place". *Networks and places: Social relations in the urban setting*. New York: The Free Press.

Goldsmith, R.E. (2002). Explaining and predicting consumer intention to purchase over the Internet: An exploratory study. *Journal of Marketing Theory and Practice*, 10(2), 22-28.

Guerrera, O. (2003, August 19). Universities fear for poor students. *The Age*. Retrieved 11th November, 2004.
<http://www.theage.com.au/articles/2003/08/18/1061059778051.html?oneclick=true>.

Hair, J.A., Anderson, R.E., Tatham, R.C. & Black, W.C. (1998). Multivariate data analysis (6th ed.). USA: Prentice Hall.

Hampton, K. & Wellman, B. (2001). Long distance community in the network society: Contact and support beyond netville. *The American Behavioural Scientist*, 45(3), 476-498.

Hanson, W. (2000). Principles of Internet Marketing. Cincinnati, Ohio: South West College Publishing.

Hawkins, D.I., Best, R.J. & Coney, K.A. (2002). Consumer behaviour implications for marketing strategy 4th edition. Boston, MA: BPI Irwing.

Healy, G., Bradley, H. & Nukherjee, N. (2004). Individualism and collectivism revisited: A study of black and minority ethnic women. *Industrial Relations Journal*, 35(5), 451-482.

Howard, P.E.N., Raine, L. & Jones, S. (2001). Days and nights on the Internet: The impact of a diffusing technology. *The American Behavioural Scientist*, 45(3), 383-404.

Jackson, L.A., Ervin, K.S., Gardner, P.D. & Schmitt, N. (2001). Gender and the Internet: Women communicating and men searching. *Sex Roles*, 44(5/6), 363-380.

Joines, J.L., Scherer, W.S. & Scheufele, D.A. (2003). Exploring motivations for consumer web use and their implications for e commerce. *Journal of Consumer Marketing*, 20(2), 90-108.

Kasarda, J.D. & Janowitz, M. (1974). Community attachment in mass society. *American Sociological Review* 39 (1), 328-339.

Katz, J.E., Rice, R.E. & Aspden, (2000). The Internet, 1995-2000. *American Behavioural Scientist*, 45(1), 405-419.

Katz, J.E. & Rice, R.E. (2002). Social consequences of Internet use: Access, Involvement and Interaction. London, England: The MIT Press.

Kavanaugh, A.L. & Patterson, S.J. (2001). The impact of community computer networks on social capital and community involvement. *The American Behavioural Scientist*, 45(3), 496-509.

Kiesler, S. & Sproull, L. (1992). Group decision making and communication technology. *Organisation Behaviour and Human Decision Processes*, 52, 96 – 123.

Kleine, S.S. & Baker, S.M. (2004). An integrative review of material possession attachment. *Academy of Marketing Science Review* 1, 1-39.

Komito, L. (1998). The net as a foraging society: Flexible communities. *The Information Society*, 14(2), 97-106.

Korganonkar, P.K. & Wolin, L.D. (1999). A multivariate analysis of web usage. *The Journal of Advertising Research*, 39(2), 53-69.

Kozinets, R.V. (2002). The field behind the screen: Using the method of netnography to research market-orientated virtual communities. *Journal of Marketing Research*, 39(1), 61-73.

Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T. & Scherlis, W. (1998). Internet Paradox: A social technology that reduces social involvement and psychological well-being? *American Psychologist*, 53(9), 1017-1031.

Kristula, D. (2001). The history of the Internet. Retrieved 22nd September, 2003
<http://www.davesite.com/webstation/net-history.shtml>

LaRose, R. Mastro, D. & Eastin, M.S. (2001). Understanding Internet usage. *Social Science Computer Review*, 19(4), 395-414.

Lee, F.S.L., Vogel, D. & Limayem, M. (2003). Virtual community informatics: A review and research agenda. *Journal of Information Technology Theory and Application*, 5(1), 47-59.

Levy, P. (1997). *Collective intelligence: Mankind's emerging world in cyberspace*. New York: Plenum Trade.

Lui, A.Q., Ryan, V., Aurbach, H. & Besser, T. (1998). The influence of local church participation on rural community attachment. *Rural Sociology*, 63(3), 432-442.

Malhotra, N.K. & Birks, D.F. (2003). *Marketing research: An applied approach* 2nd ed. New York: Pearson Education.

Matel, S. & Ball-Rokeach, S.J. (2001). Real and virtual social ties: Connections in the everyday lives of seven ethnic neighbourhoods. *The American Behavioural Scientist*, 45 (3), 550-567.

McMillan, D.W. & Chavis, D.M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, 14, 6-23.

McQuillien, J.S. (2003). The influence of technology on the initiation of interpersonal relationships. *Education*, 123(3), 616-623.

Mesch, G.S. (2001). Social relationships and Internet use among adolescents in Israel. *Social Science Quarterly*, 82(2), 329-339.

Morgan, F.W. (1979). Students in marketing research: Surrogates vs. role players. *Academy of Marketing Science*, 7, 255-264.

National Office for the Information Economy. (2003). The Current State of Play: Online participation and activities. Canberra, ACT: Australian Government.

Nie, N. (2001). Sociability, interpersonal relations, and the Internet: Reconciling conflicting findings. *The American Behavioural Scientist*, 45(3), 420-435.

O'Shea, L. (2002). Mainstreamies. *American Demographics*, 24(7), 16-18.

Papacharissi, Z. & Rubin, A.M. (2000). Predictors of Internet Use. *Journal of Broadcasting and Electronic Media*, 44(2), 175-196.

Pew Research Centre. (2000). Pew Internet and American Life Project. Retrieved 15th April, 2004

<http://www.pewInternet.org/reports/reports.asp?/report=47§ion=Reportlevel2&Field=level2ID&ID=279>.

Powers, T.M. (2003). Real wrongs in virtual communities. *Ethics and Information Technology*, 5(4), 191-199.

- Putnam, R. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster.
- Rapely, M. & Pretty, G.M.H. (1999). Playing procrustes: The interactional production of a 'psychological sense of community'. *Journal of community psychology*, 27, 695-713.
- Rothenbuhler, E.W., Mullen, L. J., DeLaurell, R. & Ryu, C.R. (1996). Communication, community attachment and involvement. *Journalism and Mass Communication Quarterly*, 73(2), 445-466.
- Sampson, R.J. (1988). Local friendship ties and community attachment in mass society: A multilevel systemic model. *American Sociological Review*, 53(5), 766-779.
- Schiffman, L.G., Sherman, E. & Long, M.M. (2003). Toward a better understanding of the interplay of personal values and the Internet. *Psychology and Marketing*, 20(2), 169-186.
- Strauss, J., El- Ansary, A. & Frost R. (2003). *E-Marketing 3rd ed.* Upper Saddle River, New Jersey: Prentice Hall.
- Stafford, T.F., Stafford, M.P. & Schkade, L.L. (2004). Determining uses and gratifications for the Internet. *Decision Sciences*, 35(2), 259-289.
- Stoll, C. (1995). *Silicon snake oil: Second thoughts on the information highway*. New York: Doubleday.
- Thurstone, L.L. (1947). *Multiple factor analysis*. Chicago: University of Chicago Press.

Verbeke, W. & Bagozzi, R.P. (2002). A situational analysis on how salespeople experience and cope with shame and embarrassment. *Psychology and Marketing*, 19(9), 713-741.

Wellman, B & Gulia, M. (1999). "Net surfers don't ride alone: Virtual communities as communities" *Networks in the global village: Life in contemporary communities*. Oxford, England: Westview Press.

Wellman, B., Quan Haase, A. Witte, J. & Hampton, K. (2001). Does the Internet increase, decrease, or supplement social capital? Social networks, participation and community commitment. *The American Behavioural Scientist*, 45(3), 436-455.

Wellman, B., Salaff, J., Dimitrova, D. & Garton, L. (1996). Computer networks as social networks: Collaborative work, telework and virtual community. *Annual Review of Sociology*, 22, 213-238.

Zikmund, W.G. (2003). Exploring marketing research 8th edition. Cincinnati, Ohio: Thomson/South-Western.

APPENDIX 1: MEASUREMENT INSTRUMENT

1. Approximately how long have you been using the Internet?years.

2. On average, how many hours in a typical week do you spend on the Internet?hours.

Social Internet use is where you engage in Internet activities for non-work purposes, to interact or communicate with other people online. Please answer the following questions in relation to your social Internet use ONLY.

3. On average, how many hours in a typical week do you spend performing **SOCIAL** activities on the Internet?hours

4. In the table below, please indicate which social activities you have performed online in the past week in column (a), the average number of hours spent performing the activity last week in column (b) and the average number of hours spent performing the activity in an average week in column (c).

Social Activity	(a) Ever Used (tick as many as apply)	(b) Time (hours <i>last</i> week)	(c) Time (hours in <i>average</i> week)
Sending/ receiving emails			
Participate in a non-interactive discussion			
Send/ receive instant messages (e.g. msn)			
Participate in an interactive discussion			
Playing online games			
Participate in multi user domains (MUD'S)			
Other (please specify)			

5. What is the **primary** social activity you engage in on the Internet?

6. Please indicate which tools you use to communicate on the Internet (tick as many as apply).

- ☐ Text tools (e.g. keyboard)
- ☐ Audio tools (e.g. microphones, Internet phones etc.)
- ☐ Video tools (e.g. web cameras etc)

7. For the computer which you primarily use to access the Internet, please indicate the type of Internet connection used.

- ☐ Dial up connection (connection made each time Internet is used)
- ☐ Broadband connection (e.g. ECU megalabs, ADSL)
- ☐ Don't know

8. Please indicate by circling the appropriate number the extent to which you would agree or disagree with the following statements, with (1= strongly disagree, 7=strongly agree and the numbers in between representing your degree of agreement or disagreement on each of the following statements) .

"I use the Internet for social activities because...

	Strongly Disagree						Strongly Agree
"It allows me to pass time when I am bored"	1	2	3	4	5	6	7
"It is entertaining"	1	2	3	4	5	6	7
"I can get information from others"	1	2	3	4	5	6	7
"I like to participate in discussions"	1	2	3	4	5	6	7
"It is cheaper than other communication forms"	1	2	3	4	5	6	7
"I often have nothing better to do"	1	2	3	4	5	6	7
"It is easier to interact with others socially"	1	2	3	4	5	6	7
"I just like to use the Internet"	1	2	3	4	5	6	7
"It allows me to exchange information"	1	2	3	4	5	6	7
"I want to belong to a group"	1	2	3	4	5	6	7
"I find it easier to email people than tell people"	1	2	3	4	5	6	7
"It occupies my time"	1	2	3	4	5	6	7
"It is enjoyable"	1	2	3	4	5	6	7
"I enjoy sharing information"	1	2	3	4	5	6	7
"I like to express myself freely"	1	2	3	4	5	6	7
"I want to meet new people"	1	2	3	4	5	6	7
"I can send emails at any time"	1	2	3	4	5	6	7
"I find it exciting"	1	2	3	4	5	6	7
"I want to give my input"	1	2	3	4	5	6	7
"I can communicate with friends/ family"	1	2	3	4	5	6	7
"I like to get new/ more points of view"	1	2	3	4	5	6	7
"I have lots of fun using the Internet"	1	2	3	4	5	6	7
"I want to help/ support others"	1	2	3	4	5	6	7
"I like to help others"	1	2	3	4	5	6	7
"I try to understand others"	1	2	3	4	5	6	7
"I like to contribute to society"	1	2	3	4	5	6	7

Other (Please Specify)

(a) Attachment to Perth

9. Please indicate the extent to which you would agree or disagree with the following statements:

	Strongly Disagree						Strongly Agree
	1	2	3	4	5	6	7
"All of my close friends live in Perth"	1	2	3	4	5	6	7
"I feel at home in Perth"	1	2	3	4	5	6	7
"I would be very sorry to leave Perth"	1	2	3	4	5	6	7
"My personal needs are being satisfied in Perth"	1	2	3	4	5	6	7
"I feel an emotional connection to my community"	1	2	3	4	5	6	7
"I feel that I can exert control over my community"	1	2	3	4	5	6	7
"I belong to many community organisations in Perth"	1	2	3	4	5	6	7

(b) Attachment to your home town

If Perth is your permanent place of residence, go to qu. 12. If Perth is NOT your permanent place of residence, answer the following questions in relation to your permanent place of residence (home town).

10. How long have you lived in your home town? years.

11. Please indicate the extent to which you would agree or disagree with the following statements:

	Strongly Disagree						Strongly Agree
	1	2	3	4	5	6	7
"All of my close friends live my home town"	1	2	3	4	5	6	7
"I feel at home in my home town"	1	2	3	4	5	6	7
"I would be very sorry to leave my home town"	1	2	3	4	5	6	7
"My personal needs are being satisfied in my home town"	1	2	3	4	5	6	7
"I feel an emotional connection to my home town"	1	2	3	4	5	6	7
"I feel that I can exert control over my home town"	1	2	3	4	5	6	7
"I belong to many community organisations in my home"	1	2	3	4	5	6	7

(c) Attachment to your online community

12 Do you consider yourself to belong to an online community? Yes No (go to qu. 14)

11. Please indicate the extent to which you would agree or disagree with the following statements:

	Strongly Disagree						Strongly Agree
	1	2	3	4	5	6	7
"All of my close friends live my online community"	1	2	3	4	5	6	7
"I feel at home in my online community"	1	2	3	4	5	6	7
"I would be very sorry to leave my online community"	1	2	3	4	5	6	7
"My personal needs are being satisfied in my O.C."	1	2	3	4	5	6	7
"I feel an emotional connection to my online community"	1	2	3	4	5	6	7
"I feel that I can exert control over my online community"	1	2	3	4	5	6	7
"I belong to many online community organisations"	1	2	3	4	5	6	7

14. What is your gender?

☐ Male

☐ Female

15. Please indicate your age group.

☐ 18-24

☐ 40-55

☐ 25-39

☐ Over 55

16. Which group describes your annual personal income (in Australian dollars)?

☐ Under \$20 000

☐ \$20 000 - \$49 999

☐ \$50 000 - \$99 999

☐ \$100 000 or more

17. Are you a mature age student or school leaver?

☐ School Leaver

☐ Mature Age

18. Please indicate which year you are in for your current degree.

☐ 1st year

☐ 2nd year

☐ 3rd year

☐ 4th year (double degree's etc.)

19. Are you a permanent Australian citizen/ resident?

☐ Yes (go to qu. 23)

☐ No

20. What is your permanent place of residence?

21. How long have you been in Perth for? years.

22. Do you intend to return to your permanent place of residence once you have completed your studies?

☐ Yes

☐ No

☐ Not sure

23. Please rate, on a scale of 1-10 the degree to which you feel you are competent in using a computer, with one 1 being very incompetent and 10 being very competent.

Very
Incompetent

1

2

3

4

5

6

7

8

9

Very
Competent

10

24. Please rate on a scale of 1-10 the degree to which you feel you are an **extrovert**, a person who is confident in public and likes to make decisions and lead conversations as opposed to an **introvert**, who tends to be shy, does not like speaking in public and lets other people lead the conversation, with 1 being very introverted and ten 10 being very extroverted.

Very
Introverted

1

2

3

4

5

6

7

8

9

Very
Extroverted

10

APPENDIX 2: Factor Analysis of Community Attachment scales

1) Factor Analysis

Factor analysis, using the Maximum Likelihood method with Oblique (Direct Oblimin) rotation (Hair et al., 1995) was used to compute factor scores for each of the community attachment scales.

2) Attachment to Perth

a. Domestic Students

The first scale, attachment to Perth, measured the attachment of domestic students to Perth, Western Australia. Factor analysis of these responses reveals that two factors exist, as shown in table below.

Factor Analysis of Attachment to Perth (Domestic students)

Attachment	Factor Loadings	Communalities
FACTOR 1 (eigenvalue 2.58)		
I have an emotional connection to Perth	.825	.748
I can exert control over my community in Perth	.667	.433
My personal needs are met in Perth	.593	.570
I would be sorry to leave Perth	.558	.481
I belong to many community organisations in Perth	.519	.238
Alpha Coefficient: .79		
FACTOR 2 (eigenvalue 1.78)		
I feel at home in Perth	.723	.703
All my close friends live in Perth	.705	.465
Alpha Coefficient: .69		

Factor 1 is comprised of five items and has an internal reliability of .79. It has a mean score of 4.58 indicating that domestic students are neutral toward or somewhat agree with statements relating to their attachment to Perth. Four items describe an individual's affective attachment to Perth, while the last item- *I belong to many communities online* – describes an individual's behavioural attachment to Perth. The item, *I have an emotional connection to Perth* loads highly (>.8) on this factor, which accounts for 47.89 per cent of the total variance. Due to the fact that factor one is a dominant factor which accounts for a large proportion of the variance within the scale, factor 2 will not be used in further analysis.

b. International Students

The attachment to Perth of international students was measured separately to the attachment of domestic students, in order to analyse the attachment of international students separately. Factor analysis of international students' attachment to Perth revealed one dominant factor, shown in the table below.

Factor Analysis of attachment to Perth of international students

Attachment	Factor Loadings	Communalities
FACTOR 1 (eigenvalue: 4.33)		
I have an emotional connection to Perth	.925	.855
I can exert control over my community in Perth	.809	.654
I would be sorry to leave Perth	.753	.567
My personal needs are met in Perth	.721	.520
I feel at home in Perth	.720	.518
I belong to many communities organisations in Perth	.680	.463
All my close friends live in Perth	.561	.315
Alpha Coefficient: 0.89		

Two items- *I have an emotional connection to Perth* and *I can exert control over my community in Perth* load highly ($>.8$) on this factor. It has an internal reliability of .89, indicating that all the items are internally consistent. The mean score for this factor, 3.59 indicates that international students tended to disagree with statement regarding their attachment to Perth. Furthermore, this factor accounts for 61.8 per cent of total variance.

3) Attachment to permanent place of residence

Factor analysis of international students' attachment to their permanent place of residence revealed one dominant factor. The factor loadings and communalities are shown in the table below.

Factor analysis of attachment to permanent place of residence of International students

Attachment	Factor Loadings	Communalities
FACTOR 1 (eigenvalue: 6.44)		
I have an emotional connection to my home town	.976	.952
I can exert control over my home town	.968	.938
My personal needs are met in my home town	.965	.931
I feel at home in my home town	.949	.900
I would be sorry to leave my home town	.945	.893
I belong to many communities in my home town	.941	.885
All my close friends live in my home town	.921	.848
Alpha Coefficient: .94		

All items are highly loaded ($>.9$) on this factor and it has an internal reliability of .94. The mean score for this factor, 5.27 indicates that international students tended

to have a strong attachment to their permanent place of residence. This factor accounts for 74.62 per cent of total variance.

4) Attachment to online community

Factor analysis of the attachment to online communities scale similarly revealed one dominant factor. This is shown in the table below.

Factor Analysis of attachment to online communities

Attachment	Factor Loading	Communalities
FACTOR 1 (eigenvalue: 6.44)		
I have an emotional connection to my online community	.866	.751
I can exert control over my online community	.839	.704
My personal needs are met in my online community	.827	.683
I feel at home in my online community	.781	.610
I would be sorry to leave my online community	.726	.527
I belong to many communities online	.615	.378
All my close friends live in my online community	.546	.298
Alpha Coefficient: .89		

This factor loads highly (>.8) on three items; *I have an emotional connection to my online community* (.866), *I can exert control over my online community* (.839) and *my personal needs are met in my online community* (.827). It has an internal reliability of .89 and accounts for 62.17 per cent of the variance. Its mean score, 4.09 indicates that students are neutral about their attachment to their online community.

APPENDIX 3: Participant Information Letter

INFORMATION LETTER TO PARTICIPANTS

Internet Usage and Community Attachment Research

You are invited to participate in this research, which is being conducted as part of the requirements for my honours degree in Marketing.

The purpose of the research is to examine the relationship between type and level of social Internet activity and community attachment among university students. This research is important because it will help to further understand the impact of the Internet on the complexities of everyday life, in particular, the impact on community attachment and the feeling of belonging in one's immediate environment. As the study focuses on university students, of different backgrounds, the results will allow a greater understanding of the motivations and community attachment levels of these students, thereby allowing universities to better cater to all students.

If you choose to participate in this project, you will be asked to complete an anonymous questionnaire, which will take you approximately twenty minutes.

The information will be used and collated for analysis and only my supervisors and I will have accessed to the information. Any information or details given for this study will be kept confidential and will only be used for the purposes of this research. You will not be identified in any written assignment or presentation of the results of this research.

Participation in this research is voluntary. If you choose to participate, you are free to withdraw from further participation at any time without giving a reason and with no negative consequences. You are also free to ask for any information, which identifies you to be withdrawn from the study.

Thank you in advance for your contribution to my research

Laura Price
Honours Student, Edith Cowan University
Ph: [REDACTED]
lmprice@student.ecu.edu.au

If you have any questions or concerns regarding this research and wish to talk to an independent person, you may contact my supervisors:

Marie Ryan
Faculty of Business and Public Management
Edith Cowan University
Ph: 9273 8241
m.ryan@ecu.edu.au

Or:

Elaine Leong
Faculty of Business and Public Management
Edith Cowan University
Ph: 9273 8920
e.leong@ecu.edu.au