ATHABASCA UNIVERSITY

TECHNOLOGY ACCEPTANCE, SOCIAL INFLUENCE, AND ATHABASCA UNIVERSITY STAFF LANDING USAGE

BY

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The future of learning.

Approval of Thesis

The undersigned certify that they have read the thesis entitled

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Dedication

I dedicate this thesis to my friends and family. Thanks to my sister Brenda Delaney. She suffered through countless discussions about learning, distance education, and endless questions about grammar. Thanks to my former spouse Michael Ames, who listened when I was frustrated, and calmed my angst and panic during my bouts of imposter syndrome. Thanks to David and Zheny Coombes, and Mary Prodanovic, without their support and encouragement, this thesis would not have happened.

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Abstract

Research demonstrates the importance of social networks and their role in our acquisition of information. Although, popular social network sites are easy to use, low site participation can diminishes their value to its users.

Staff participation is low for Athabasca University's internal social network site, the Landing. This study asked: Do social influences contribute to AU staff acceptance and usage of the Landing? A sequential mixed methods design, consisting of a web-based questionnaire (N=41), and semi-structured interviews (N=5), was used, with AU staff as participants. The Technology Acceptance Model (TAM) was used to assess adoption and usage.

Research using TAM in educational contexts, mainly uses quantitative data, and student participants. This is one of a few university research studies to include qualitative interviews and to use staff as participants. Results indicated social influence was the motivation for logging in to the Landing, but most staff did not return because the site was not perceived as useful or easy to use. To increase perceived usefulness of the Landing, and to increase its usage, this study`s recommendations include providing mentors for new users, and improving the site`s help section.

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Chapter 1 – INTRODUCTION

Athabasca University (AU) is an online higher education institution, and the AU Community—its learners, alumni, and staff—are geographically dispersed across Canada and beyond. The AU community uses a variety of asynchronous and synchronous communication methods for administrative, professional development, educational, and social functions. These include a learning management system (Moodle), email, document sharing (Office 365), video calling (Skype), and web-conferencing (Adobe Connect). Although efficient and useful, these systems do not provide the AU community with an application designed specifically for establishing or maintaining online social connections. Social connections are important, as illustrated by an employee comment from AU's 2011 Employee Engagement Survey. There is "… danger that employees working remotely can feel a bit disconnected from the central vision of the University" (p. 4). Additionally, Dron in his 2012 elgg® presentation, points out that too many "staff are disengaged from our community" and it is difficult to get to know people at AU (p. 14 speaker's notes).

To address this shortcoming, a group of academics created the Landing, AU's community space for social interaction, discussion, collaboration, sharing, and archiving. Anyone within the AU community can access the Landing with their secure AU log-in. The Landing's search and tagging features make it easy to find people or retrieve information on a specific topic. Users can customize their profile page and set the level of information shared with others on the site (Garrett, Thoms, Soffer, & Ryan, 2007). The privacy controls are a unique feature of the open source elgg® based platform upon which the Landing was constructed. Landing users can select who has access to their

posts ranging from specific users or groups, the AU community, and the general public (de Franco, 2009; Dron, 2012). These enhanced and fined-tuned privacy controls were the primary reason for selecting the elgg® system. Because of its extensive features (blogs, photos, groups, subgroups, wikis, etc.), and lack of extensive research and support for development of the user interface, navigating the Landing is not as intuitive as it is for social network sites or learning management systems (LMS). However, these challenges are offset by contextual user support, a discussion group, tutorials, and email help (de Franco, 2009; Dron, 2012). The Landing was designed to make "work and learning at AU a more rewarding and interesting process… a better place to be" (Anderson, 2012, Landing blog, para #3).

Context of the Study

AU's Landing generally falls within the definition of an internal social network site (SNS) and, for the purposes of this study, it is referred to as such. However, it is more than a SNS; it is a hybrid. It combines the features of Twitter, Facebook, and other social media, with some features of learning and content management systems. The Landing's function and use is similar to the staff room, coffee lounge, or water cooler conversations that occur in face-to-face workplaces (Dron, 2012, slide 29, notes). The Landing has no defined purpose other than to provide the AU community with "the ability to create, share and communicate with one another… to learn from and with one another" (Dron, 2014, blog reply, para 5). Staff and students are free to use the tools available on the Landing in their work or learning and they can do this without asking permission.

Use of the Landing provides many potential benefits to faculty, tutors, administrative staff, and to the institution. Staff working from different locations can

make connections with others in the AU community, and maintain these connections by discussing issues, sharing information, and posting pictures, etc. (Ellison, Lampe & Steinfield., 2009). The Landing is a searchable access point for institutional information. It gives AU staff a place to find others with the skills and knowledge to support their projects (M. Chui, et al., 2012).Over time, it gives them the opportunity for increased contact with colleagues in other locations (DiMicco et al., 2008), thus reducing feelings of isolation and disconnection from AU.

The institutional use of the Landing can “unlock the dark matter” (Holmes, 2012, para 6) and serve as a searchable archive for currently inaccessible information stored in users’ email (M. Chui, et al., 2012). Increased Landing usage could replace most email exchanges with archival discussions, FAQ’s for internal communications on topics that regularly require clarification, and potentially reduce the institution’s technology costs by combining several applications into one (Pontefract, 2011).

The Landing was designed as a place to create a community and the space for social interaction, discussion, and collaboration for three distinct geographically dispersed communities:

- Students enrolled in distance education programs offered by AU;
- AU alumni and retired staff who want to maintain contact with the AU community; and
- Faculty, tutors, and administrative staff employed by AU.

This study focuses on the third group collectively referred to as AU staff.

The Landing is a grassroots system designed, implemented, and maintained, for the most part informally, by AU staff wanting a hybrid social network site to enhance

working and learning. Users of the Landing encourage colleagues, students, and alumni to use the site, but this is done with limited institutional support. The result is that the Landing's use is not part of staff work processes, and most do not understand the Landing's usefulness or how to use it. Currently, there is user resistance, lack of participation, and low usage (Malhotra, & Galletta, 1999; Velupillai, 2011; Venkatesh & Bala, 2008; Zhou, 2011).

As with any social network site, lack of participation on the Landing reduces the value, and usefulness of the site to new and current users. To be sustainable, social network sites should appear useful, and they require a critical mass (Ellison, et al., 2009; Qin, Kim, Hsu & Tan, 2011) of diverse members actively using the site. Blogs, wikis, and group postings "only provides [*sic*] value when very large numbers of users participate" (Dron & Anderson, 2009, p. 11). This creates a problem because networks are not useful until they are used, and are not used until they are useful.

The Landing, as it currently exists, may not be self-sustaining. Overall participation is low. Less than one percent of the AU community with a Landing profile contributes regularly. Those that do contribute are mainly a core group of long-time users (Jarvenpaa, Knoll & Leidner, 1998; Qin, et al., 2011), or small groups of new users who are exploring the site or are participating as part of a course.

By implementing social and technological changes, it may be possible to increase Landing usage and thus increase its beneficial effect at the University. For example, AU could explain the norms and social culture of the Landing and provide mentors for new users. They could also change support services, garner increased upper management support and commitment, or introduce other as yet unidentified social interventions.

Before making modifications to the Landing, AU must understand the staff usage of the Landing, identify the reasons for the limited acceptance, and determine why usage is low.

Theoretical Frameworks

In the social sciences, a theoretical framework shapes the study, guides the questions, and helps explain the study's findings (Creswell & Plano Clark, 2011). This study's theoretical frameworks are the technology acceptance model (TAM) and social influence theory.

Technology acceptance model (TAM).

Various theoretical lenses were developed to explain adoption of a variety of innovations. The one most widely used with technological innovations is TAM. And, after almost 30 years it is still considered a "most influential theory" (Marangunić & Granić 2014, p.87), and a "powerful and robust predictive model" (King & He, 2003, p 751).

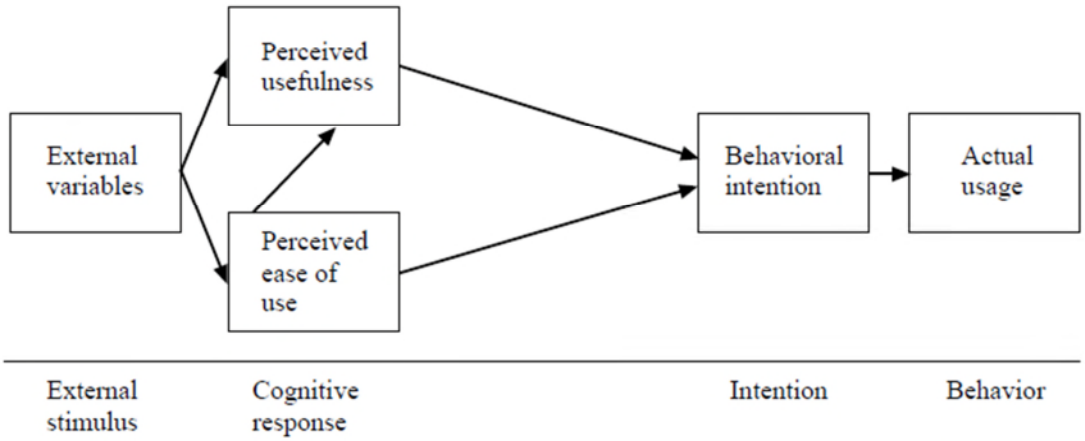


Figure 1 **Technology Acceptance Model (Davis & Venkatesh, 1996, p. 20)**

Davis designed and tested TAM in the mid 1980s during his contract work at IBM. He developed TAM to evaluate user acceptance of and the market potential for

IBM's new PC-based technology applications (Davis & Venkatesh, 1996; Venkatesh, 2000). TAM is based on earlier adaptions from social psychology, notably the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB) (Davis, 1989, Davis, Bagozzi, & Warshaw, 1989; Venkatesh, 1999; Venkatesh & Davis, 2000).

TRA (see Appendix A for diagram) identifies a person's behavioural intention by examining beliefs, attitudes, and social influences (subjective norm) to determine both behavioural intention and actual behaviour (King & He, 2006; Masrom, 2007; Venkatesh & Davis, 2000). TPB (see Appendix A for diagram) uses behaviour beliefs (consequences and attitude to behaviour), normative beliefs (social pressure or subjective norm) and control beliefs (factors influencing ease or difficulty in performing the behaviour). These three beliefs "lead to the formation of a behavioral intention" and it is "useful to consider perceived behavioral control in addition to intention" (Ajzen, 2002, pp. 665-666).

TAM is used to analyze external factors (e.g. system features, user support) and to explores how these factors affect users' "internal beliefs, attitudes, and intentions" and usage of a system (Davis et al., 1989, p. 985). TAM is used to measure two internal belief constructs; perceived usefulness (PU), and perceived ease of use (PEOU) to identify people's intention to use various IT systems within different work contexts, and to determine the subsequent acceptance and usage of these systems (Davis et al., 1989, Venkatesh & Davis, 1996; Venkatesh, 2000; (Yousafzai, Foxall & Pallister, 2007 b).

TAM originally included items related to TRA's attitude variable, but these items were removed because of their confounding influence on behavioural intention (BI) (Davis et al., 1989). Omitting attitude helps to explain the influence of PEOU and PU on the dependent variable behavioural intention (BI) (X. Liu, 2010; Venkatesh, 2000).

Social psychology research identified how social influence effects technology use throughout an institution including work groups, and individuals within a department or faculty (Ellison, Gibbs, & Weber, 2015; Fulk, 1993). To measure these social influences the subjective norm variable was added to create the next Technology Acceptance model named TAM2 (Venkatesh & Davis, 2000). Table 1 lists the TAM variables, plus their abbreviations, and definitions.

Table 1 Technology acceptance model (2) variables' definitions

TAM2 variables and abbreviations	Definitions
Perceived usefulness (PU)	"…the extent to which a person believes that using a technology will enhance her/ his productivity" (Venkatesh, 2000, p. 344).
Perceived ease of use (PEOU)	"The degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320).
Behavioural intention to use (BI)	The "…measure of the strength of one's intention to perform a specified behavior" (Fishbein & Ajzen, 1975, p. 288).
Subjective norm (SN) (social influence)	"…the degree to which an individual perceives that important others believe he or she should use the new system" (Venkatesh, Morris, G. Davis, & F. Davis, 2003, p. 451).
Actual Usage (U)	The measurement of system usage which is either user's self-report (subjective) or analysis of computer usage logs (objective) (Davis, et al., 1989).

Venkatesh and Bala (2008) developed TAM3 by refining existing TAM models and adding intervention strategies for organizations to mitigate non-use issues. TAM3 research verified perceived usefulness as a significant factor in predicting behavioural intention to use technology (Venkatesh & Bala, 2008). They confirmed the importance of experience in technology adoption and that people's attitudes change through use, with this change potentially influencing their decision to continue usage (Venkatesh & Bala,

2008). Anderson, Poellhuber, and McKerlich corroborated this finding in their 2010 study of online undergraduate students using social software. They found a significant relationship between expertise in using the software and wanting to use it (Anderson et al., 2010). People's first focus is on the usefulness of the application and second on whether it is easy to use.

Social influence.

Social influence comes from our contact with friends, family, co-workers, bosses, external suppliers and varies depending on the specific situation. Through common goals or interests, members of an online community also form connections and ties. These ties, varying in strength, are similar to face-to-face contacts. Ties can be sporadic, or for a specific purpose (Wellman & Gulia 1999 cited in Hossain & De Silva, 2009, p. 2).

Social influence is a theoretical construct describing how a person's behaviour is affected by: (a) the opinion of others (compliance represented by subjective norm), (b) belonging to and identifying with a group's influence (identification represented by social identity), and (c) accepting the influence of the group and their values as one's own belief (internalization represented by group norms) (Kelman, 1974; Zhou, 2011). A more familiar term for social influence is peer group pressure where the person being pressured changes his/her behaviour to conform to the expectations of a group (Eckhardt, Laumer, & Weitzel, 2009). Adoption and usage of social network sites are influenced by people's perceptions of a site based on social influence (Dillon & Morris, 1996: Venkatesh & Davis, 2000; Venkatesh & Bala, 2008).

Research Purpose and Questions

The purpose of this sequential mixed methods study is to explore social influence upon staff acceptance and subsequent usage of Athabasca University's Landing site. The quantitative phase of this study uses a modified version of TAM2 (Cowen, 2009; Hossain & de Silva, 2009; Qin, et al., 2011; Venkatesh & Davis, 2000).

The main research question: Do social influences (ties) contribute to AU staff acceptance and usage of the Landing?

Sub-questions: (a) Is there a relationship between the independent TAM variables (perceived usefulness, perceived ease of use, and subjective norm), and the dependent variable (behavioural intention), and AU staff usage of the Landing? (b) Are demographics (age, gender, educational level) associated with the TAM variables and actual usage?

To obtain a better understanding of AU staff perceptions of the Landing the qualitative phase interviews used appreciative inquiry to frame the qualitative question: *What do you feel is working well for the Landing?*

Appreciative Inquiry (AI) is a collaborative "process for facilitating positive change" that involves everyone in the organization (Cockell, & McArthur-Blair, 2012, p. 28). AI focuses on what is working well instead of what is not working to determine what matters to staff (Cockell, & McArthur-Blair, 2012; Whitney & Trosten-Bloom, 2003). Its purpose is to positively (appreciative) reframe the question to what is, while staff answer questions and tell their stories (inquiry). AI looks at the expected outcome (e.g. good communication versus poor communication).

Significance of the Study

Empirical research in this area is lacking as there are few published studies on workplace social network site usage (Cheung, Chiu & Lee, 2011) and, especially within the context of a distributed university. This study, an exploration of AU staff acceptance and usage of the Landing, is designed to understand the nature and degree of participation. There is an expectation that this knowledge will help Landing designers better meet the needs of the users, and increase adoption of this innovation. Conclusions from this study may add to existing research on social network site usage using TAM2 (Cowen, 2009; Venkatesh & Davis, 2000). Increased use of the Landing by the AU community may reduce feelings of disconnection from AU and other as yet to be determined benefits.

Limitations

Limitations are factors *not under the control* of the researcher, which may affect the study results (Mauch & Park, 1998). It is unlikely that this study's results can be generalised to a larger population because of the sample selection. Participant selection is non-random and was purposively selected from a single institution (AU) and specific group (faculty, tutors and administrative staff working at AU) and therefore may not represent other users of internal social network sites (Yuliharsi, Ilsam & Daud, 2011).

Other limitations include non-response bias and non-response error. Non-response bias occurs if most of the responses are from people interested in the topic. This bias is common when web-based questionnaire invitations are sent by email, as was for this study, because a recipient not interested in the study's topic can easily delete the invitational message (Duda & Nobile, 2010).

Non response error occurs when the respondents do not answer all the questions. However, "For survey research 20 percent is a reasonable amount of missing data that does not jeopardise the representativeness of the sample" (Converse & Schuman, 1974 cited in Kripanont, 2007, p. 150). To reduce the effects of non-response error demographic data was collected to determine if non-respondents have significantly different characteristics from the population as a whole (Cothran, 2011).

An identified limitation in TAM studies that may affect the validity of the results is self-reported data (Davis, 1989). There may be a difference between participants' subjective, self-reported usage of the Landing and their objective, actual usage (Davis, et al., 1989; Y.-H. Lee, Hsieh, & Hsu, 2011).

A "halo effect" (Davis, 1989, p. 334), exists for this study's quantitative questionnaire because the TAM items and Likert-scales are presented in a grid format. This format may influence participants' scale ratings because they see their previous answers and they may provide similar answers to all questions (e.g. disagree).

Delimitations

Delimitations are factors *controlled* by the researcher, which may affect the study (Mauch & Park, 1998). It is difficult to replicate a study when the sample is from a specific institution's (AU) staff, and focuses on the use of a particular social network site (Landing). The researcher did not have another person code the interview data, therefore coding lacks measurement of multiple coder reliability (Saldaña, 2013).

Summary and Thesis Overview

This chapter discussed the Landing and AU staff's low usage and introduced the theoretical frameworks for the study. It included the research questions, the study's

delimitations and limitations, and its significance. Chapter Two provides an overview of the Internet and its history, discussions on social influence, the most common types of social network sites, the method of interaction with social network sites (read, like, comment), and TAM research studies relevant to this study. Chapter Three includes the research methodology and design, population and sample selection, plus data collection and analysis processes. Chapter Four presents the results and Chapter Five discusses the study's conclusions and recommendations for future research.

Definition of Terms and Acronyms

Administrative staff: Staff members such as directors, managers, instructional designers, program coordinators, or administrative assistants at AU who do not teach or undertake original research.

Athabasca University (AU) community: Collectively the learners, faculty, tutors, administrative staff, retirees, and alumni affiliated with the university.

Athabasca University (AU) staff: Faculty, tutors, or administrative staff working at the university.

Distributed university: This is a university with physical campuses in more than one location (The Distributed University, N.D. [*web page*]).

Elgg (pronounced aellggh): An open source social software application Athabasca University uses for the Landing.

Faculty: Person teaching and undertaking original research at any level of a higher educational institution, such as a college or university.

Higher educational (HE) institutions: Accredited degree granting colleges and universities in Canada. This study uses the generic term, institution.

Landing: Athabasca University's internal social network site.

Online social networks (OSN): ''…online communities among people with common interests, activities, backgrounds, and/or friendships. Most OSNs are Web-based and allow users to upload profiles (text, images, and videos) and interact with others in numerous ways'' (Schneider, Feldmann, Krishnamurthy & Willinger, 2009, p. 35).

Social influence: "A change of mind in behaviors, thoughts [sic] or feelings from an individual's perspective as revealed by interaction with another individual or a group" (Eckhardt et al., 2009, p. 13).

Social media: Defined by Kaplan and Haenlein (2010) "…as a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content"(p. 61).

Social network sites (SNS): Are described as "networked communication platform in which participants 1) have uniquely identifiable profiles that consist of user-supplied content, content provided by other users, and/or system-provided data; 2) can publicly articulate connections that can be viewed and traversed by others; and 3) can consume, produce, and/or interact with streams of user-generated content provided by their connections on the site" (Ellison & boyd 2013, p. 158).

Social network software: "networked tools that support and encourage individuals to learn together while retaining individual control over their time, space, presence, activity, identity and relationship" (Anderson, 2006, p. 83).

Social networking: A method for interacting with others to establish or maintain contact. Connections can be for personal or professional purposes and uses various media. Examples include face-to-face contact, telephone, email or other technologies including social network sites (Rooksby et al., 2009).

Social ties: Ties are our connections to others, our family, friends, and acquaintances. The perception of closeness determines the degree or strength of a tie. For example, families are strong ties and acquaintances are weak ties (Haythornthwaite, 2002).

Staff: Staff or AU staff describes the collective group of faculty, tutors, and administrative staff.

Technology, technological applications, or systems: Refers to industry specific information systems (Human resources database), applications (Word), or Internet systems (Facebook).

Tutors: Subject matter experts who provide support and feedback on assignments to learners in a college or university setting.

Users: A generic term to encompass all people who use a technological application. This study uses the term to describe the AU community.

User acceptance: A "… demonstrable willingness within a user group to employ information technology for the tasks it is designed to support" (Dillon & Morris, 1996, p. 5).

Chapter 2 – LITERATURE REVIEW

This chapter discusses the Internet, social media, types of social network sites, and the different ways people use online social networks. The chapter provides an overview of research relating to social influence and social ties, and examines TAM history, strengths, weakness, and research relevant to this study.

The Internet, Social Network sites, and people who uses these sites

In 1989, while working at CERN, Sir Tim Berners-Lee developed an "internet-based hypermedia initiative for global information sharing" which he named it the World Wide Web (http://www.w3.org/People/Berners-Lee/; http://info.cern.ch/). Until 1993 when CERN released Berners-Lee's Web-based interface, access to the Internet, using command line coding, was mainly restricted to educational or research institutions. Once the web-based interface was released it was easier for people to use and made the information on the Internet more accessible (http://info.cern.ch/).

As Internet technology evolved, access to and sharing of information progressed from bulletin board systems (BBS) to social network sites (SNS). Among the first easy to use sites focussing on establishing social connections were Classmates in 1995 and SixDegrees in 1997 (Heidemann, Klier, & Probst, 2012; Richter, Riemer, & vom Brocke, 2011). These Internet applications, described collectively as social media, provided people the opportunity to connect and collaborate, to create online content, and add to public repositories of knowledge such as Wikipedia (Heidemann et al., 2012; Kaplan & Haenlein, 2010; Young, N. [CBC podcast], 2012).

Social media tools include, but are not limited to, blogs, wikis, micro-blogs, and social network sites (Hansen, Shneiderman, & Smith, 2011). Institutions such as Best

Buy, Deloitte, IBM, HP, and TELUS use internal social network sites to provide employees working in geographically dispersed locations with a choice of communication methods and to create “a sense of belonging and community” (Chui et al., 2012; TELUS, 2011, 2012; Rooksby et al., 2009).

Social network sites.

Online or Internet based social network sites make it easier for us to connect and communicate, changing how we interact with others personally and professionally for volunteer activities, political interests, and hobbies. Easy to create searchable profiles on social network sites make it simple to find and contact people with similar interests (Ellison et al., 2009).The main types of social network sites are: public, private, focussed, internal/enterprise, and hybrid.

Public sites. These sites (“Massive global services” Ellison et al., 2009, p. 8) are open to anyone. Three of the highly used public social network sites are Facebook, Twitter, and LinkedIn. Facebook provides users the opportunity to keep in touch with family and friends, with many people only using it for personal communications (Moran, Seaman & Tinti-Kane, 2011). Using a maximum of 140 characters per “tweet,” or post, Twitter combines instant messaging, social networking, and micro-blogging services, allowing users to comment on topics of interest (Robbins & Kelton, 2008, p. 37; PCMag.com) and share photos (https://twitter.com/Cmdr_Hadfield). LinkedIn, a venue for online professional networking, is a site where current or former colleagues, classmates, clients, and employers maintain or establish new contacts for future work, sales leads, and professional networking (http://press.linkedin.com/about; DiMicco et al., 2008; Rooksby et al., 2009).

Private sites. Most private sites require a paid membership in the organization. Benefits include member only access to the web site, the organization's publications, conference proceedings, job postings, and professional development workshops. An example is the Canadian Network for Innovation in Education (http://www.cnie-rcie.ca/?q=node/68).

Focused sites. Focused sites are tailored to people's interests (Ellison et al., 2009). Ravelry (www.ravelry.com) is a free site for people who enjoy working with yarn whether using it for knitting, crocheting, spinning weaving or dyeing. Members share patterns and information on tools; they discuss the trials and tribulations of their craft, and use the site to organize their projects.

Internal or enterprise sites. Workplace sites can be described as both internal and enterprise social network sites (ESNSs) (Ellison et al., 2015; Rooksby et al., 2009). Internal sites are institutionally specific with content either open or moderated. Look and navigation are similar to public sites. However, access is restricted to current staff and retirees (Rooksby et al., 2009). ESNSs support collaboration for large global enterprises and are formally sanctioned, with strictly controlled staff-only access. Usage is either "optional, encouraged, or mandated" (Ellison et al,, 2015, p. 9).

Within an internal/ESNS social network sites the features of email, Twitter, Facebook, YouTube, and LinkedIn can be combined into one application as TELUS did in 2010 (TELUS, 2011, 2012). They customized an open source application and developed Habitat Social, a suite of social network site tools (blogs, wikis, videos, and micro-blog). TELUS's Buzz is a 160 character micro blogging social network site similar to Twitter. This is used to find information about corporate activities, coworkers' current

projects, and get answers to questions about work problems or customer service issues. TELUS Tube, an internal site similar to YouTube was developed for staff to post or view videos, share information, and access job-specific instructional videos. Habitat is the main access point where staff shares ideas, discusses issues, and collaborates. Its use reduced the number of software applications within the organization (Pontefract, 2011; TELUS, 2011, 2012).

Hybrid sites. AU's Landing is a hybrid site and an internal site because membership is restricted to the AU community. However, users can "open a window" and permit anyone (including search engines) to view particular contributions they have made. They can also let outsiders comment on items posted, though these are moderated by the owner to prevent spam postings (T. Anderson, Personal communication, June 18, 2015).

Characteristics of people using social network sites.

People who participate in social network sites are described by many names, some colourful, others with potentially negative connotations**.** The peacock, the critic, and the lurker are a few examples (Web Geekly**,** http://tinyurl.com/qeqzdjg; SocialTimes, http://tinyurl.com/ok8cctd). These terms do not accurately describe the nuances and variety of people's interactions within an online community. The ways people interact with a site depends on many things. In any social interaction, face-to-face or online, people behave differently depending on the situation, the people around them, how well they know each other, and the reason for the interaction. This study divides self-identified social network site interaction into three categories.

I *read* others comments but do not participate. A person who only reads comments may have many reasons not to participate. They may be trying to make an informed decision on whether this site is useful, are trying to determine the site's social norms, or are only visiting the site to get information on a specific issue (Lampe, Wash, , & Ozkaya, 2010). The topics may be interesting but outside their expertise or they have no new contributions to make other than what has already been contributed by other site members. People who are only reading still benefit from the site content and may post when they feel they have something to contribute.

I *like* others comments and occasionally add my comments. A person who likes others' comments or occasionally adds one of their own is comfortable with others on the site (Bagozzi & Dholakia, 2002). Adding a comment, particularly on an unfamiliar site, is putting the participant's beliefs out there for all to see and this may be daunting. To most people it is a different experience from comments shared with family and friends on Facebook.

I *add* new content regularly and actively participate in discussions. Adding content, sharing photos and bookmarks, and participating in discussions with others indicates the person has figured out the technical requirements of the site and the site's social norms, and is comfortable commenting on posts or providing new information (Liao & Chou 2012). The person may be the site owner/creator and they are usually familiar with at least some components of site content and discussion topics.

Social Ties

Our social ties consist of the people we know plus their ties and these ties help us access information and complete projects (Haythornthwaite, 2002; Willis, 2008). The

strength and type of social ties varies according to whether they are friends, coworkers, acquaintances, and across groups or in different contexts. These ties help us access information, seek advice, and complete projects. Tie strength depends on frequency of contact, length of time known, emotional investment, and mutual support. It can change when we increase our involvement and decrease when a group project ends (Granovetter, 1973; 1983; Haythornthwaite, 2002). Social ties are latent, weak, or strong.

Haythornthwaite (2005) describes latent ties as "ties that are technically possible but not yet activated socially" (p. 137). Joining a committee, participating in an online forum, or completing a work- related group project are activities described by Haythornthwaite (2002) as "social implementation" (p. 393). These activities initiated by others (forum creator, manager) start the activation process for latent ties. A social network profile with a list of interests and friends encourages and changes latent ties to weak ties (Ellison, Steinfield, & Lampe, 2011). The end of the work project or online forum participation removes the reason for this weak tie's existence. If we wish to maintain these weak ties we need to invest time and effort or these ties will return to latent (Ellison et al., 2011; Haythornthwaite, 2002; Haythornthwaite, 2005).

With weak ties, we share less information because of a lower level of emotional investment and therefore their influence on our decision-making is not as strong. Weak ties are important because their experiences, both personal and business, are different from those we share with our strong ties (Ellison et al., 2009; Granovetter, 1973, 1983; Haythornthwaite, 2002, 2005).

With our strong ties such as family, close friends or a "friendly colleague" (Perry-Smith, 2006, p.91) we have a higher level of closeness and more frequent contact. We

have common interests; we help each other, and influence each other's decisions (Haythornthwaite, 2005). This close connection restricts the information we share either online or face-to-face because strong ties tend to share the same information.

Granovetter's (1973) strength of weak ties theory discusses how the diverse social network of our weak ties act as a "bridge" providing us access to new information and different perspectives (Ellison et al., 2009; Granovetter, 1973, 1983; Haythornthwaite, 2002; Hossain & de Silva, 2009; Perry-Smith, 2006).

The weak ties theory is illustrated in two studies using IBM's internal social network site, Beehive. DiMicco et al. (2008) found that users gained most value from sharing with their "weak ties," mainly coworkers "they did not know well" (p. 714). Rooksby et al. (2009) confirmed DiMicco et al.'s (2008) results as most content sharing occurred with "weak ties," coworkers in other locations or with new connections made on the site (p.13).

Social influence

Different people influence our actions; our friends or family may have more influence on our decisions. For example, in education, students may have a social influence on faculty (T. Brown, n.d.). Venkatesh and Davis (2000) identified social influence as a factor in the use of technology. To determine social influence's effect on technology use the authors included the variable subjective norm in TAM2.

In their 1999 study, Malhotra and Galletta explain that when use of an information system (IS) is based on following managers' instructions people will comply. But social influence that enforces compliance may have a negative effect on the person's attitude about using the new IS. However, when people invested their time to learn a new IS and

discovered the features they want to use, their attitude towards the IS was more positive (see Chapter 1, internalization and identification, Eckhardt et al., 2009).

Technology Acceptance Model (TAM)

History and overview.

Research studies in organizational and educational settings on user acceptance of information systems and technological applications span three decades, from mainframe computer applications to social media (Chutter, 2009; Poellhuber, Roy & Duclos, 2013). TAM is a popular, and likely the most extensively used, model for identifying the acceptance and usage for a variety of information technology (IT) applications (Davis, 1989; Davis et al., 1989; King & He, 2006; Marangunić & Granić, 2014; Venkatesh & Davis, 1996; Venkatesh, 2000; Venkatesh & Bala, 2008).

Within higher educational institutions, the increasing use of learning management systems and other methods of online instruction has expanded the focus of TAM research from mainly students' technology acceptance and usage. TAM studies include faculty members, an area with previous limited research (Ahmad, Madarsha, Zainuddin, Ismail & Nordin, 2010).

Following Davis's initial TAM research at IBM, he and other researchers expanded the work. In 1989, Davis conducted two studies; the first included 120 technology users at a large organization and focussed on their adoption of either an email application or file editor. The second study involved 40 voluntary MBA students using two graphics systems. Davis developed TAM scales for the variables perceived ease of use, and perceived usefulness. Using a survey questionnaire these scales were tested on two groups of study participants. The research goal was to determine whether perceived

usefulness and perceived ease of use were determinants in self-reported system use. Davis's results showed that people adopt and use an application because of its usefulness to their tasks. They tolerate the challenges of a learning curve because of the perceived benefit of these features. However, they will not take the effort to learn if they do not see any benefit to themselves through use of the application.

Davis's conclusions focus on information systems (IS) designers and their implementation process. The author explained that IS needs to consider whether users will perceive the system as useful as this correlates with user acceptance. Davis recommended that future research consider other variables such as intrinsic motivation or behaviour intention as reasons for user acceptance. He states that "practitioners generally evaluate systems not only to predict acceptability but also to diagnose the reasons underlying lack of acceptance and to formulate interventions to improve user acceptance"(1989, p. 335).

TAM was further developed by Davis et al., (1989) and by Venkatesh and Davis (1996, 2000). Over the intervening years many researchers have used TAM, making modifications, removing and adding variables for their specific IT applications, and conducting studies to validate these modifications (Davis, 1989, 1993; Davis et al., 1989; Venkatesh & Bala, 2008; Venkatesh & Davis, 1996, 2000; Venkatesh, Morris, G. Davis & F. Davis, 2003; Venkatesh, Davis & Morris, 2007).

In 2000, Venkatesh and Davis introduced TAM2 which included the variable subjective norm to represent social influence. Subjective norm influences intention to use a technology indirectly via perceived usefulness and helps explain how other peoples' social influence (social ties) may affect our behavior.

Venkatesh and Bala's longitudinal TAM3 study in 2008 included 204 participants at four organizations using a variety of information technology (IT) systems. The data collection occurred after training, one month post implementation, and after three and five months. The authors first reviewed previous research on TAM, IT adoption and use, and identified that the existing models did not address interventions methods organizations could use to mitigate the issues of non-use.

The reason for Venkatesh and Bala's (2008) study was that technology is a major investment and failure to implement is costly. The authors' findings identified that perceived ease of use and subjective norm were predictors of perceived usefulness. They also noted that the influence of perceived ease of use on perceived usefulness was stronger with experience. The strongest predictor of behavioural intention was that perceived usefulness and behavioural intention was a significant predictor of use for all measurement points. The significance of this study as identified by Venkatesh and Bala (2008) was that experience is important to IT adoption. Since people's responses to IT change over time, this may influence their decision to continue usage but perceived ease of use remains a significant factor.

This and other studies identified how technology acceptance and usage are influenced by perceived ease of use and perceived usefulness with usefulness having more of an affect on usage (Davis, 1989; Edmunds, Thorpe & Conole, 2012; Venkatesh & Bala, 2008). This means people use a technology application because of its useful functions, but only when they believe it will help them with their job (Poellhuber et al., 2013).

Strengths and weaknesses.

TAM and its various versions and adaptions has been used in combination with other theories such as self-determination theory (Roca & Gagne, 2008), and sometimes includes additional variables like perceived competence and perceived playfulness (Edmunds et al., 2012). TAM has been adapted for a variety of technologies such as online learning, social networking (Hossain, & De Silva, 2009; J. Lee, Cho, Gay, Davidson & Ingraffea, 2003), corporate e-learning (Y.-H. Lee et al., 2011), and computerized radiology equipment (Cowen, 2009). A few studies include the use of social network sites, social influence or the influence of social ties (DiMicco et al., 2008; Hossain & de Silva, 2009; Rooksby et al., 2009).

Meta-analyses and literature reviews of previous research studies identify what is working for TAM and potential improvements. King and He's (2006) meta-analysis included 88 studies using Davis's (1989) TAM. The authors confirmed the reliability of TAM as an analytic model and its use of the variables for technology adoption: perceived usefulness, ease of use and behavioural intention to use. King and He's (2006) analysis confirmed that perceived usefulness influences intention to use for most technologies. The exception is Internet applications where perceived ease of use influences intention to use. This indicates that results from studies using other applications may not be generalizable for Internet usage studies.

Chuttur (2009) provides a historical review of the technology acceptance model, starting with Davis's 1985 conceptual model. The author explains TAM and TAM2's development processes and scale refinements (Davis, 1989; Davis, et al., 1989; Venkatesh & Davis, 2000). Chutter presents various researchers' theories which contributed either to the development or validation of TAM. The author includes

Fishbein and Ajzen's (1975) theory of reasoned action (prior intention and beliefs may determine behaviour), correlations between perceived usefulness and actual usage, the importance of perceived ease of use, plus self-efficacy and outcome judgements (Schultz and Slevin, 1975; Robey, 1979; Tornatzky & Klein, 1982; Bandura, 1982, cited in Chutter, 2009).

Chutter's review of other TAM research and its adaptions identifies a few limitations. These included self-reported data usage which may not be reliable (Davis, 1989), and because many TAM studies use students as participants, the data may not be generalizable (Yousafzai et al., 2007 b). The author discusses Venkatesh and Davis's (2000) TAM2 study findings with voluntary and mandatory usage. Social influence has an affect on usage in mandatory settings. In many TAM studies technology use is voluntary whereas in most workplaces usage is mandatory (Yousafzai et al., 2007 b) and this may have an affect on voluntary usage research results. Chutter questions whether TAM research is saturated and suggests that future research consider "strengths of the TAM model while discarding its weaknesses" (2009, p.17).

The 2014 literature review by Marangunić & Granić includes 85 research papers from TAM's introduction in 1986 to 2013. The authors categorize the studies as literature reviews, TAM's development and adaption, and modification or use of TAM. Table 2 provides the authors' discussion and summary of the seven meta-analyses/literature reviews, published between 2003 and 2011, two of which are discussed above (see Appendix B).

Table 2 Seven extensive TAM literature reviews Author(s)

Table 1 Seven extensive TAM literature reviews

Author(s)	Review method	Main findings and conclusions
Lee et al. [52]	Analysis of TAM's history and prediction of its future trajectory	Progress and discoveries of TAM in time period 1986–2003; identification of future directions
Legris et al. [53]	Analysis of empirical research of TAM	Results not entirely consistent or clear; significant factors are not included in the model
King and He [48]	Statistical meta-analysis of TAM studies	Valid and robust model with potential of broader applicability
Sharp [72]	Examination of development, extension, and application of TAM	Identification of three specific areas for future research
Chuttur [19]	Analysis of theoretical assumptions and practical effectiveness of TAM	TAM lacks sufficient and rigorous research
Turner et al. [80]	Analysis of TAM in the context of technology usage prediction	TAM usage outside the context in which it has been validated requires thoughtful consideration
Hsiao and Yang [39]	Statistical analysis of TAM studies	Identification of three main trends in TAM application

Note. Marangunić & Granić, 2014, included with permission from lead author. From "Technology Acceptance Model: A Literature Review from 1986 to 2013," by N. Marangunic and A. Granic, 2014, *Universal Access in the Information Society*, p. 84. Copyright 2014 by Springer International Publishing AG.

Marangunić & Granić's discussion on the development and adaption of TAM includes the theoretical foundations, and the importance of perceived usefulness and ease of use in predicting actual system usage. They describe the seminal papers by Davis (1986, 1989), Davis et al. (1989) and Venkatesh and Davis (2000) plus 28 other studies. For example, other studies include variables on self-efficacy (Taylor & Todd, 1995), compare cultural differences (Straub, 2009), or incorporate demographic variables (Venkatesh & Morris, 2000)

Marangunić & Granić examination of 50 papers pertaining to modifications and use of TAM include the seminal papers and other modification studies. These studies

include factors for risk, trust, and gender (Featherman & Pavlou, 2003; Gefen & Straub, 1997; Huang, 2005). Studies using TAM include e-learning, Internet-based IS, and mobile learning (Huang, Lin & Chuang, 2007).

Marangunić & Granić's suggestions for future research are in four sections. Section one provides a few moderating variables that could be included in TAM. The authors identify "spatial and reasoning abilities, processing speed, and memory abilities" (p.90) as a way to explain technology acceptance, plus the interaction between gender and confidence in computer use and computer anxiety. Section two discusses adding variables and using TAM with complex multi-user information systems and in different settings. Additional variables should take into account cultural differences, gender, and "emotion, habit, personality difference, and technology change" (p. 90).

Section three discusses usefulness and actual usage of the systems. Many studies worked from the premise of a positive relationship between actual usage and "satisfaction or performance" (p.90). This is an area of limited research and additional studies need to examine whether the positive premise is correct or not. Section four identifies that many TAM studies do not include a representative sample of older adults; instead research participants were younger with a high educational level. Using a representative sample of older adults may provide research on the use of mobile devices as a "memory aid" (p. 90).

Research studies

Studies related to this research include DiMicco et al.'s (2008) study. The authors did not use TAM, but it is relevant to this study as their research is on internal social network usage within a large organization. The TAM studies include Cowen's (2009)

research on users of a computed radiography (CR) system, Hossain and de Silva's (2009) research on the influence of social ties on users of a community social network site, Y.-H Lee et al.'s (2011) on e-learning, and Edmunds et al.'s (2012) research on technology use for work, education, and social activities.

DiMicco et al. (2008) discussed the results of their qualitative study of Beehive, IBM's internal social network site. The site's features are similar to public sites like Facebook, with user controlled profiles, the option of "friending", photo sharing (p.711), and content which does not have to be organization specific. The goal was to mimic Facebook and "bring this level of user participation and community to our company" (p. 712). Nine months after Beehive went live 67% of 30,000 users were active, defined by the study authors as "contributing content or connecting to another user" (p. 713).

DiMicco et al.'s (2008) findings from the 17 interview participants indicated that Beehive users did not keep in touch or share content with close colleagues. They connected with and learned more about the personal lives of their "weak ties," people they worked with but had not kept in contact with, or coworkers that "they did not know well" (p. 714). Other usage identified by this study's authors was what they described as "climbing" (career advancement) and "campaigning" (support for future projects) (p. 716). A recommendation by DiMicco et al. (2008) for other internal social network sites is that they support users in "discovering new colleagues and finding distant ones through serendipitous exploration and searching around common interests" (p. 719).

Cowen (2009) modified TAM2 for his pilot study. The author's goal was to identify factors affecting short and long term use of a computed radiography (CR) system in a mandatory setting. The study participants were 21 CR users working for a health care

organization in the US. The study's 35 questions for the paper-based questionnaire included TAM questions adapted for the study, demographics, and user participation in the CR implementation process.

The author identified that unlike previous studies in a mandatory setting, in his study there was a low relationship between the influence of perceived ease of use and behaviour intention, and between perceived usefulness and subjective norm. However, consistent with results from other TAM studies that were conducted post-implementation in a mandatory setting, perceived usefulness influenced users' intention to use the CR (Cowan, 2009).

Hossain and de Silva's (2009) study included 30 participants of the "New South Wales Government's Community Capacity Building Network (CCBN)," a rural virtual community (p. 2). The authors used the social information processing model (SIPM) and Davis's 1989 TAM, combining these with Granovetter's (1973) strength of weak ties theory. The authors used the models and theory to determine whether social influence, and specifically strength of social ties, affected users' acceptance of a "new information systems area" within the virtual community that encourages mandatory usage (p. 2). The quantitative survey had five sections for TAM: perceived usefulness, perceived ease of use, attitude toward use, behavioural intention, and actual use. The sixth section included two qualitative questions about social ties that asked participants to "name their ties and whether conversations with these ties influenced their decision to accept the community site" (Hossain & De Silva, p. 10). The results indicated that ties are important to and influenced users' acceptance and usage of the virtual community. Perceived usefulness and attitude were influenced by strong and weak ties. Strong and weak ties had little

influence on perceived ease of use. Behavioural intention to use and actual usage was influenced by strong ties. Hossain & De Silva suggested information sharing about a technology between users and the use of TAM throughout the system design, development, and implementation phases (2009).

Y.-H. Lee et al. (2011) combined Davis's (1989) technology acceptance model (TAM) with Roger's (1995) innovation diffusion theory (IDT) for their study of 566 staff using e-learning systems at five Taiwan industries. The authors did not indicate whether these systems were voluntary or mandatory usage. The questionnaire included participants' demographic information, questions for three TAM variables (PU, PEOU and BI) and the five IDT characteristics ("compatibility, complexity, relative advantage, ability to try and observe" Y.-H. Lee et al., p. 126). The authors' results identified that a) users need to understand the benefit, and relevance of the technology to their job before they will use it; b) if users perceive the e-learning system as complex they tend to indicate it is useful; c) if the users experience difficulties using the system they thought using it would improve job performance; d) the more useful the users perceive the system to be the higher their behavioural intention to use; e) the five IDT characteristics correlated highly with perceived usefulness increasing users' intention to use. The authors identified TAM "as a cost-effective measurement to effectively predict the future use of e-learning systems" (Y.-H. Lee et al., p. 134).

Edmunds et al.'s (2012) study used TAM to determine how people feel about the use of information and communication technology (ICT) for an online course, at work, and for personal use. The term ICT is used generically by the authors to encompass all technology applications. The 421 study participants were taking one of six online work

related courses through UK's Opening Learning. The six courses and codes for the study include: Cisco networking (Tech). Software implementation requirements for business systems (Comp). Team engineering (MEng), Foundations of social work practice (SocW 1), Applied social work practice (SocW 2), or Business organizations and their environments (Biz) (p.74).

The TAM questionnaire includes questions for the variables perceived usefulness and ease of use plus questions on competence and motivation to use. The same questions, with minor wording changes, were used for the three areas of study: course activities (A), work (B), and personal use (C). There were a total of 270 responses for usefulness of ICT and 319 responses for ease of use in these three study areas.

The authors' online course results indicate that the participants found ICT useful. The results varied across the courses as People in the Tech course found ICT more useful those taking SocW 2. In both social work courses participants identified that ICT's were not easy to use whereas this was not the case with the Tech and Biz students. For ICT use at work, usefulness and ease of use of technologies were higher than for the online course or personal use. In addition, through ICT use at work the study participants felt they had an "increased sense of control of work activities, increased personalization, and enjoyment" (p. 79). As with the online course Tech, Comp, and Biz participants found ICTs more useful and easier to use than social work participants did. When using ICT for personal activities the survey participants' perception of ICT was that it was useful and easy to use.

Participants found ICT most useful at work, followed by online courses, and personal use. Ease of use was also higher for work, followed by personal activities and

online courses. In the discussion of their results, Edmunds et al. (2012) indicate participants had a greater sense of personal accountability at work, the potential for better functionality of the work applications (Word/Excel), and the availability of coworkers for immediate help with ICT issues. These factors increase the perception of ease of use.

Research gaps

The qualitative study on the use of an internal social network site at a large organization by DiMicco et al. (2008) did not use TAM. However, the results indicated a potential influence of weak social ties on usage. In Hossain and de Silva's (2009) study of a mandatory online virtual community they modified TAM and included social ties. Their results indicated the influence of both weak and strong ties on usage. In Cowen's (2009) and Y.-H Lee et al.'s (2011) organizational studies the research participants were staff using industry specific applications. This research did not include attitude towards usage and the strength of ties variables. There are limited studies on university staff acceptance and usage of technology. This study will fill the gap in the existing literature as it specifically looks at social influences on Athabasca University staff use of the internal social network site, the Landing.

Summary

This chapter discussed the Internet, social media, and social network site types. It described different approaches people use for interacting with social network sites. Information about social influence and social ties and technology acceptance was presented. The challenges of technology adoption are highlighted with a review of the history of one of the most popular analysis tools—TAM. The chapter concluded with a discussion about TAM's strengths and weaknesses, TAM research studies, and research

gaps. Chapter 3 provides a discussion on the research methods, the sampling strategies for the mixed method design, sample selection criteria, plus the data collection and analysis processes.

Chapter 3 – METHODS

This chapter reviews the study's purpose and research questions. It provides the rationale behind the selection of a mixed methods research design and discusses pragmatism in mixed methods studies. The research population, sampling strategies, and instrumentation for the study are discussed. An explanation of the data analysis process follows and the chapter concludes with a discussion of ethical considerations.

Research Purpose and Questions

This explanatory sequential mixed methods study used two survey methods, a web-based questionnaire and semi-structured interviews, to determine whether social influence affected Athabasca University (AU) staff usage of the internal social network site, the Landing. The main research questions: Do social influences contribute to AU staff acceptance and usage of the Landing? What is working well for the Landing?

The main research question, with social influence as the focus, used the technology acceptance model (TAM) to frame and interpret the results (Cowen, 2009; Hossain & de Silva, 2009). The other question used appreciative inquiry (AI), a positive approach that focuses on staff successes. AI asks "what is working well (appreciative)." It gives staff an opportunity to voice their opinions, and discuss their answers (inquiry) in an iterative process (Cockell, & McArthur-Blair, 2012).

Research Design

A mixed methods study is useful when the results and interpretation of both quantitative (numeric, statistical data) and qualitative (personal experiences, interviews, and observations) research data help in understanding or resolving the research problem (Creswell, 2009; Johnson & Onwuegbuzie, 2004). For example, a mixed method study

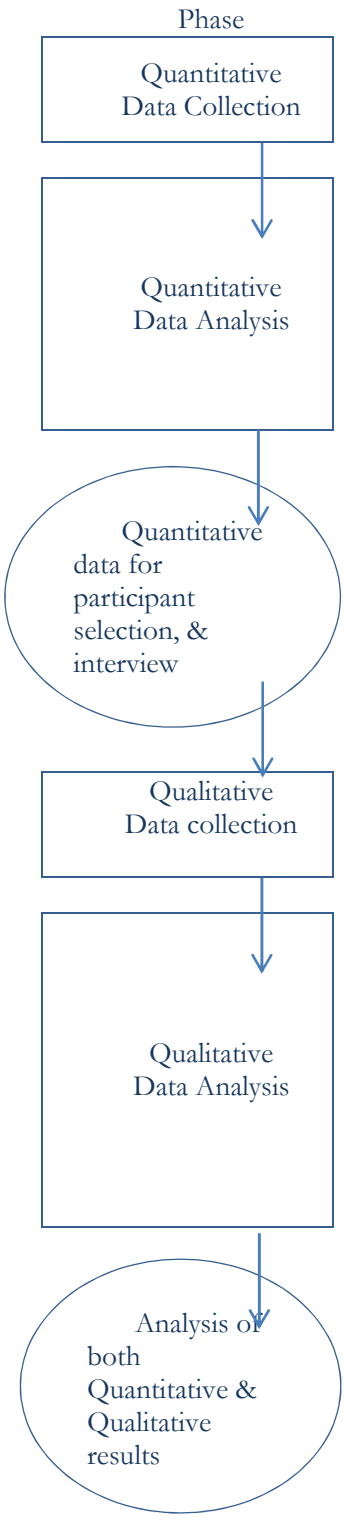
can use interviews to inform the design and delivery of a questionnaire. Alternatively, as in this study, the quantitative TAM2 and other questionnaire data framed the qualitative interview questions (Migiro & Magangi, 2011). This study gave the quantitative data priority over the qualitative data (Creswell & Plano Clark, 2011; Ivankova, Creswell, & Stick, 2006).

In their 2003 meta-analysis, Y. Lee, Kozar, and Larsen recommended including qualitative methods in TAM studies to provide additional data and viewpoints. This was reiterated in Venkatesh, Brown, and Bala's discussion on information systems (IS) research where quantitative methods are the norm. Mixed methods research benefits IS studies by "answering research questions that a single method can not answer, providing better (stronger) inferences, and presenting a greater diversity of views" (2013, p. 49). Y. Lee et al., (2003) and other researchers comments about TAM studies being almost exclusively quantitative research prompted Salajan, Welch, Peterson, and Ray (2011) to included qualitative semi-structured interviews and users assessments of technologies.

Sequential explanatory design.

This study used a sequential explanatory mixed methods design. Quantitative data was collected and analyzed, and then the qualitative data was analyzed (Creswell & Plano Clark, 2011; Ivankova, Creswell, & Stick, 2006). Convenience and identical sampling, with the same individuals participating in the two data collection phases of this study, were used. Athabasca University hosts the Landing (location) and AU staff are the users of the internal social network site (participants) (Collins, Onwuegbuzie, & Jiao, 2007; Onwuegbuzie & Collins, 2007; Teddlie & Yu, 2007). Table 3 summarizes the data collection, mixing, and analysis phases.

Table 3 **Sequential Mixed Methods Design Phases**



Actions	Results
• Web-based questionnaire (N=41)	• Numeric data set
• Data review • Clean data set • Recode variables • Compute TAM variables • Codebook • Non-parametric statistics • SPSS version 18	• Descriptive statistics • Frequencies • Cronbach's Alpha • Comparison between results from this study and other TAM studies
• Purposefully selecting participants (age, job title, gender, Landing usage levels) • Developed interview questions	• Participants (N=5) Interview schedule and protocol
• Semi structured Skype interviews with five participants	• Interview recordings and transcripts
• Transcribe text • Codebook • Theory & data driven codes • Code text and write memos • Excel and paper-based analysis	• Theory, initial and in vivo for first cycle coding • Pattern coding for second cycle • Refine themes and categories • Modify codebook descriptions as required
• Interpretation & explanation of quantitative results • Interpretation & explanation of qualitative results	• Results presented in tables and text • Explain relationship between data and research questions • Discussion of results • Future research

Note: Designing and conducting mixed methods research, J. Creswell ands V. Plano Clark, 2011, p. 121 & 205)

Theoretical methods for the frameworks employed.

The technology acceptance model (TAM) and pragmatism were used as this study's frameworks. As discussed in previous chapters, TAM is frequently used to identify factors which influence acceptance and explain the use of technology (Davis & Venkatesh, 1996; King & He, 2006; Marangunić & Granić 2014).

TAM2's questions for the variables perceived usefulness (PU), perceived ease of use (PEOU), subjective norm (SN), and behavioural intention (BI), as defined in Chapter 1, were modified specifically for the Landing (Cowen, 2009; Hossain & de Silva, 2009, Qin et al. 2011;Venkatesh & Davis, 1996, 2000). (See Appendix C TAM models and Appendix D TAM questions, variables, and scales).

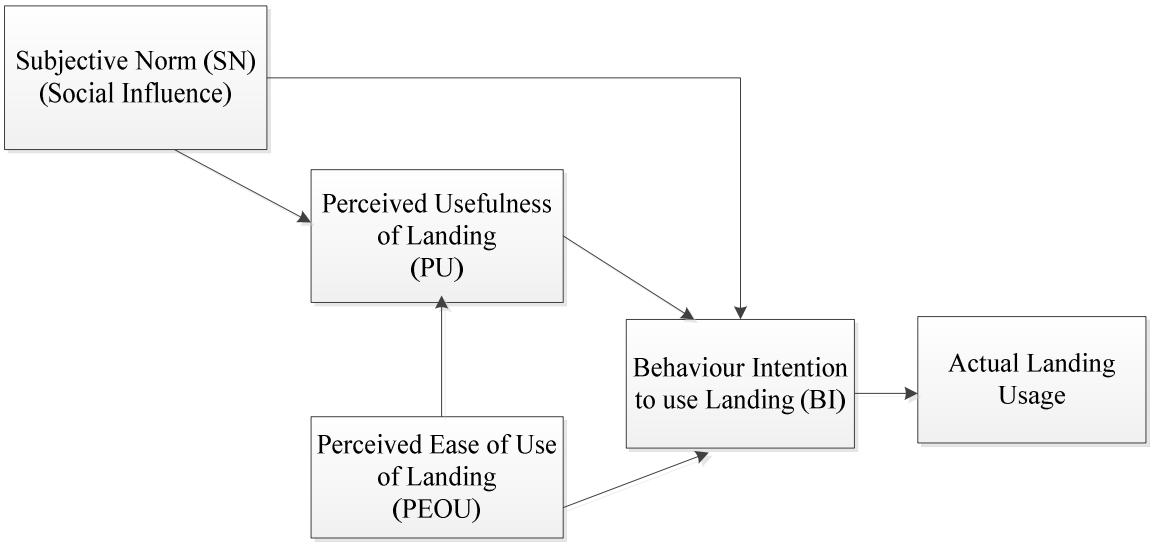


Figure 2 **TAM2 modified for this study (Cowen, 2009; Venkatesh & Davis, 2000)**

This study used the assumptions and methodologies consistent with a pragmatic research paradigm, emphasizing the link between "concerns about the nature of the knowledge that we produce and …about the methods that we use to generate that knowledge" (Morgan, 2007, p. 73). The philosophical aspects of pragmatism as it relates

to research include: understanding the context of the research and qualitative data collection (induction); testing theories and quantitative data collection (deduction); and finding the best explanation for results (abduction) (de Waal, 2001 cited in Migiro & Magangi, 2011, p. 3759). Pragmatism provides researchers the opportunity to use multiple data collection methods, to focus on the research questions and results, and to consider alternate theories or beliefs (Creswell, 2009; Creswell & Plano Clark, 2011; Feilzer, 2010; Venkatesh, Brown & Bala, 2013). Pragmatism is the "best philosophical foundation for justifying the combination of different methods within one study" (Datta, 1994; Howe, 1988 cited in Migiro & Magangi, 2011, p. 3759).

Research Population and Sampling

This study used captive sampling, one of two convenience sampling methods, and it was conducted within a closed population (Duda & Nobile, 2010; Teddlie & Yu, 2007; Vandebosch, 2008). Captive sampling was used because the specific population, AU staff, "are the only ones who can provide relevant in-depth information" (Vandebosch, 2008, par 3) about the Landing. The population was closed because only current Athabasca University (AU) staff members were asked to provide information about their use of AU's internal social network site, the Landing. The sample included all faculty, tutors, and administrative staff working at AU with a valid AU email address and Internet access (Gray & Guppy, 1999). All AU staff are issued an AU email address and encouraged to use it. It is likely that all staff have Internet access, given that they need it to do their work. All members of this population had the opportunity to participate and therefore this study's data could be representative of internal social network use by staff at other universities (Duda & Nobel 2010).

The two data collection methods used in this study were a web-based questionnaire for the quantitative phase (numeric and demographic data) and semi-structured interviews for the qualitative phase (verbal recorded data) (Gray & Guppy, 1999). There was a "nested relationship" between the quantitative and qualitative sample selection in this study, meaning participants selected for the qualitative phase were a subset of participants selected for the quantitative phase (Onwuegbuzie & Collins, 2007, p. 292).

Sampling strategy for questionnaire.

The quantitative data collection began in November 2013 and was completed in January 2014. The first email invitation, sent by a professor at AU (T. Anderson, personal communication, March 31, 2013), included 134 staff that had not logged into the site since the end of October 2012. This request included an incentive (a draw for an iPad) and a follow-up reminder 12 days after the initial invitation (see Appendix E AU Staff Invitations to participate).

There were an insufficient number of usable responses (15) from this request. To increase the response rate, another email request was sent by administrative staff at the Centre for Distance Education. The criterion for this invitation was expanded to all AU staff with a valid AU email address, or approximately 1100 people (L. Jewell, personal communication, January 22, 2014).

Both invitations included information on the study, on options to withdraw, research ethics approval, informed consent, and a link to the web-based questionnaire. A total of 56 people completed the questionnaire. Once the incomplete or blank responses were removed (15) the final number of valid responses was 41 with a response rate of

3.6%. The small sample size reduced the generalizability of the results (Caulfield, 2010), but provides AU information about staff perceptions of the Landing. Relatively low response rates are common for web-based surveys (Ye, 2007).

Shih and Fan (2008) explain that response rates for web-based surveys are on average 10% less than mail surveys. Edmunds et al. (2012) discuss the variability of response rates for online surveys, and cite as an example the UK Open University's meta-analysis. The data from 161 studies indicated responses rates varied from less than 20% to an extreme of 50%. Petchenik and Watermolen's (2011) survey had a response rate of 2%. Survey fatigue is another cause of low response rates resulting from ongoing requests to complete surveys on consumer products or work-related activities in networked workplaces (Fan & Yan, 2010).

Sampling strategy for interviews.

The qualitative phase included participants who completed the web-based questionnaire and volunteered to participate in the interview. The selection criteria for the participants used two sampling strategies, maximal variation, and purposeful selection. Maximal variation sampling is when participants are selected because of their differences, or because they are outliers (Creswell & Plano Clark, 2011; Miles, Huberman & Saldaña, 2014). The selection criteria used was AU job category (faculty, tutors, and administrative staff), age range, gender, and educational level. Purposeful sampling is intentionally selecting people who have experiences relevant to the study (Creswell & Plano Clark 2011; Onwuegbuzie & Leech, 2007). To learn more about staff perceptions of the Landing this selection criterion was based on participant's non-use, occasional use, or frequent use of the Landing.

Instrumentation

Surveys are frequently used in research studies to collect numeric and text data (Creswell, 2009). This study used two survey modes to sequentially collect the quantitative (numeric, questionnaire) and qualitative data (text, interview transcripts). The web-based questionnaire gathered data on general social network site use, Landing usage, demographics and technology acceptance (TAM). The results from the quantitative data were used to select the interview participants and to write the qualitative questions. This design combined two research methods into one study to add value to the research results (Creswell & Plano Clark, 2011; Ivankova, et al., 2006). (See Appendix F Web-based Questionnaires for the two requests)

Quantitative Phase

Web-based questionnaire.

Data were collected using a web-based questionnaire to understand AU staff general social network site usage and specific usage of the Landing. This questionnaire used self-reported usage which has inherent issues, but many TAM studies used this method because collecting actual usage data are rarely possible (Davis, 1989, Chutter, 2009).

LimeSurvey©, a web-based survey application hosted by Athabasca University was used for the questionnaire. For participants, web-based questionnaires with clear directions and common features such as check boxes are convenient and easy to complete (Ye, 2007). For researchers, web-based questionnaires are a confidential method of data collection. LimeSurvey© stored the survey data in one place, and provided the completed survey data as a downloadable file (Beidernikl & Kerschbaumer, 2007; Plano Clark,

Garrett, & Leslie-Pelecky, 2010). The web-based survey method suited this study because it was completed by accessing the Web and had a specific, well-defined participant selection (Beidernikl & Kerschbaumer, 2007).

The questionnaire included four sections. Section A contained the consent to participate in the study and the option to participate in the interview. Participation in this study was voluntary and participants could withdraw at any time. Section B used 14 previously validated TAM questions (Davis. 1989, 1993; Davis et al., 1989; Hossain & de Silva, 2009; Taylor & Todd, 1995; Venkatesh & Davis, 1996, 2000; Venkatesh & Bala, 2008).

The wording of the TAM questions used in other studies was changed to reflect this study's technology (Landing) and specific users (AU staff) (Salajan et al., 2011**;** Yuen & Ma, 2008). There were four questions for perceived usefulness and perceived ease of use, and three questions for behavioural intention and subjective norm (social influence). The questions used a 7- point Likert-scale from *strongly disagree to strongly agree* with a mid-point of neutral (*neither agree nor disagree*) (Yeun & Ma, 2008) (see Appendix D TAM questions, variables and scales).

Section C included questions on frequency of Landing usage and the site features used. This section also included questions on general social network sites used and frequency, method of interaction with social network sites (read, like, comment), hardware and operating systems used, work location (home/office), and collaboration and communication methods (e.g. Skype, email). This information was collected to obtain a picture of participants' knowledge and usage of technology, and to determine what their experiences were with general social network sites.

Section D contained eight demographic questions. These included age, gender, location (e.g. BC), job title, employment status (e.g. full or part- time), years working in higher education and at AU, and educational level. This section was at the end of the questionnaire, because as Muiji (2011) explained “if you annoy respondents at the start, they are unlikely to complete your questionnaire” (p. 44). Participants’ demographics were collected to address non-response bias.

The Web-based questionnaire was pilot tested by three people for grammar, clarity, readability, and time to complete, plus questionnaire functionality using different Internet browsers and operating systems (MAC and WIN). After the pilot, questions were reworded for clarity, and grammatical errors were corrected (Y.- H. Lee et al., 2011). The revisions were then incorporated into the final questionnaire.

Quantitative analysis.

Before starting the analysis, the data was inspected to verify participants answered all the questions and to check for missing data, outliers, or invalid answers. Blank cells indicated the participant either did not answer or skipped the question (missing data). Outliers are data that may not be invalid but are unlikely, for example giving the same answer to all the questions. The TAM questions used a 7-point Likert-scale and “any value other than 1 to 7 is invalid” (McBurney, 2001, p 71). Errors were corrected and recorded in the codebook with an explanation of the criteria used for the decision (McBurney, p 71).

SPSS® version 18, a statistical software application, was used for the quantitative analysis. The analysis included frequencies, descriptive statistics, and cross-tabulations as an additional check for coding errors or outliers (Muijs, 2011). The analysis provided

statistical data about participants' general social network site and Landing usage, plus demographic data (Muijs, 2011). Cronbach's Alpha and other non-parametric statistics were also used for analyzing the TAM data. The results of the quantitative data analysis are presented in Chapter 4.

Integrating the two Phases

At the beginning of the study the researcher determined that a cross section of AU staff, at least one from each staff category—faculty, tutors, administrative staff— should be interviewed. The quantitative data analysis provided additional information for selecting the interview participants. Never logging on to the Landing was an outlier as was never using any social network site. Age, job category, level of education, and gender were added to the interview selection process to determine if these factors had an influence on the Landing's acceptance.

Qualitative Phase

Semi-structured interviews.

For this study, semi-structured interviews, which have some structure but allow for flexibility, were conducted. The use of opened-ended questions provided participants opportunities to expand on their answers, explain personal experiences using the Landing, and discuss colleagues who may have influenced their usage (Creswell, 2009; Guest, Bunce & Johnson, 2006).

The email request sent to the selected participants for the interviews reiterated the information provided in the web-based questionnaire about confidentiality (see Appendix G Invitation to participate in an interview). From the first questionnaire four people indicated their willingness to participate in an interview, but only one responded to the

email request. From the second questionnaire 20 people indicated their willingness and four participants were selected (see Appendix H Interview script and questions).

The researcher conducted the five interviews using Skype and a voice recording application. At the beginning of each interview the researcher reiterated the confidentiality of the study, the participant's right to refuse to answer any questions, and that all identifying information would be removed from the data. The participants provided verbal reconfirmation of consent to participate and agreement to the recording of the interview. To protect the participants' privacy, once the interview recordings were transcribed, the researcher deleted identifying information in the transcripts and assigned a pseudonym.

Qualitative analysis.

"In qualitative research, the researcher is the instrument or the tool for designing, collecting, and analyzing research. Qualitative research...analyses the world through the lenses the researcher brings to bear on the data" (Kuttner & Threlkeld, 2010, para 4). According to Neuman (2006), qualitative data analysis is the process of reading and rereading, and with each cycle the researcher "collects new data and gains new insights" (p. 152).

This study used a "hybrid approach to thematic analysis" for the qualitative analysis (Fereday & Muir-Cochrane, 2006, p. 2). Thematic analysis is defined as a process **"…**for identifying, analyzing and reporting patterns within data" (Braun and Clarke, 2006, p. 79). Two thematic analysis processes were used: 1) deductive coding using this study's four predefined TAM variables; 2) inductive coding, a data-driven

approach which focused on the participants' interview data (Namey, Guest, Thairu, & Johnson, 2007).

The qualitative analysis used themes and codes to categorize text data. A theme is a "specific pattern of meaning found in the data" (Joffe, 2012, p. 209), which identifies data relevant to the research (Braun & Clarke, 2006). It is an "outcome of coding, categorization, or analytic reflection" (Saldaña, 2013, p. 14). Miles et al. (2014) explained that "coding is analysis." During the data analysis the researcher is thinking and reflecting, when reading the transcripts, during the process of coding, and when writing the results (Miles et al., p. 72).

The analysis process included transcribing the interview data, taking notes, and jotting down thoughts as they occurred. The transcripts were read and reread to identify the TAM themes-other themes as they emerged, and to assign codes. Saldana (2013) defines a code as " a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (p. 3). A discussion of the coding types and the analysis process is presented in Chapter 4.

At each stage of the coding and theme development phase the researcher reviewed the data. This was to ensure codes assigned represented what they were meant to, to reduce the potential for "unintentional, unconscious 'seeing' of data that researchers expect to find" (Fereday & Muir-Cochrane, 2006, p.7).

Ethical Considerations

Participants took part in this study voluntarily and could withdraw at any time. They were required to provide consent before completing the web-based questionnaire, before their actual Landing usage data was accessed, and before the interview. Although this study had no risk to the participants, processes were implemented to ensure confidentiality of the data.

Prior to data collection, approval was obtained from Athabasca University Research Ethics Review Board and from the Associate Vice President, Graduate Studies (see Appendix I Research Ethics Board and VP Academic approval). The email request to participate (see Appendix E AU Staff Invitations to participate) provided an overview of the study. It also contained a) an explanation of informed consent for the web-based questionnaire, access to actual data, and for the interviews; b) a statement saying any identifying information would be kept anonymous, and redacted from the interviews and from survey data; c) assurance that data was stored on a separate, password protected, external hard drive and accessible only to the researcher.

Summary

This chapter provided a review of the study purpose, research questions, and a description of population and sample size. It included a discussion about the mixed methods research design and the four phases of this research study as outlined in Table 2. The data collection and analysis processes for the web-base questionnaire and semi-structured interviews were explained. The chapter concluded with a discussion on ethical considerations.

Chapter 4 – RESULTS

This chapter first describes the research participants' demographic information. It explains the statistical analyses used for the quantitative data and discusses these results. This chapter concludes with a discussion of the results from the thematic analysis of the qualitative data.

Quantitative Data Analysis

Fifty-six participants completed the web-based questionnaire. Responses considered unusable, such as blank or incomplete surveys (N=15), were removed from the data sample. For the data analysis, there were 41 useable responses for a response rate of 3.6%. As discussed in Chapter 3, this is a low response rate, but not uncommon for web-based questionnaires given to large populations. Reasonably homogeneous participants that share similarities offset this small sample size. They work at AU, have similar educational levels, and helped in understanding AU staff's common perceptions of and experiences using the Landing (Guest et al., 2006).

The data from Sections C and D of the questionnaire provided perceptions of the 41 participants (see Appendix F Web-based Questionnaires). The statistical analysis for the participants' demographic data included frequencies, descriptives, and histograms. Cross tabulations compared age and gender with education, employment status (e.g. full-time), job category (e.g. tutor), and years working in higher education. These analyses reconfirmed any missing information, calculated the number and percentage of respondents, and provided information about the respondents (Norušis, 2008). Questions that the participants did not answer or were not asked because of their answer to a

previous question were coded as a legitimate skip or coded either as: not SNS user, use not known, did not answer, or no answer.

Descriptive Analysis

Age, gender, education, and employment information.

The participants' average age was 40-49 (41.5%), they are male (55%), and have a PhD or EdD (47.5%). Most respondents worked full-time (74.4%) and have worked in higher education (HE) for more than ten years (68.3%). AU's workforce, based on the respondents' information is comprised of administrative staff (44. 4 %), faculty (38.9%), and tutors (16.7%). Table 4 includes the summary of demographics.

Table 4 Demographics and informational statistics

	Frequency	Percent of category
Age	N= 41	
< 29 - 39	8	19.5
40 - 49	17	41.5
50 - 59	7	17.1
60 - 69	9	22.0
Gender	N=40	
Male	22	55.0
Female	18	45.0
No answer	1	
Education level	N=40	
College	1	2.5
Bachelor's	5	12.5
Master's	15	37.5
PhD/EdD	19	47.5
No answer	1	
AU job category	N=36	
Administrative staff	16	44.4
Tutor	6	16.7
Faculty	14	38.9
Missing	5	
Employment status at AU	N=39	
Full-time	29	74.4
Part-time	8	20.5
Contract employee	2	5.1
No answer	2	
Length of time working in Higher Education	N=41	
3 - 6 years	7	17.1
6 - 10 years	6	14.6
> 10 years	28	68.3

Demographic data was collected to address non-response bias and to determine if the respondents were different from the non-respondents (Bates, 2014, [website, #4.2]; Cothran, 2011). Athabasca University's Annual Report, the only available open access comparison information, provided the number of staff by job category (2014). Thus, this study's representation of administrative staff is comparable (44.4% versus 47.9%), whereas faculty are overrepresented. Tutors are underrepresented which is not surprising, given their typical lack of exposure and connection with the university. Table 5 includes the data used for the comparison.

Table 5 Comparison of staff by job category

.	AU's data		This study's data	
	N	%	N	%
FT & PT faculty	218	19.7	14	38.9
Tutors	358	32.4	6	16.7
Administrative staff *	529	47.9	16	44.4
Total	1105		36	

*AU's definition for this group is professional, management & executive, support & temporary, casual.
Note: For this study administrative staff are defined as "Staff members such as managers, instructional designers, program coordinators, or administrative assistants at AU who do not teach or undertake original research."

The highest percentage of AU staff is faculty in the age range of 50-59 (66.7%). They have a PhD or EdD, and there is minimal split between genders (F=47.1%; M=50%). Staff working in higher education greater than 10 years was also split between genders (F=66.7%; M=72.7%), and the ages ranged from 40 to 69. In the administrative staff job category 47.4 % are male and are less than 39 years of age (57.1%). The difference between job categories and gender is minimal. The age ranges for tutors fall into three categories—less than 39 years old (28.6%), 40 to 49 (13.3%), and over 60 (25%). Table 6 includes data used for this comparison (See Appendix J Crosstab).

Table 6 Comparison between age and gender across categories

			Age		
Education		**College**	**Bachelor's**	**Master's**	**PhD/EdD**
	<29 - 39	12.50%	25.00%	37.50%	25.00%
	40 - 49		17.60%	35.30%	47.10%
	50 - 59			33.30%	66.70%
	60 - 69			44.40%	55.60%
Time worked in HE			**3 - 6 years**	**6 - 10 years**	**> 10 years**
	<29 - 39		37.50%	25.00%	37.50%
	40 - 49		17.60%	23.50%	58.80%
	50 - 59		14.30%		85.70%
	60 - 69				100%
Job category			**admin staff**	**tutor**	**faculty**
	<29 - 39		57.10%	28.60%	14.30%
	40 - 49		46.70%	13.30%	40.00%
	50 - 59		33.30%		66.70%
	60 - 69		37.50%	25.00%	37.50%

		Gender		
Education		**Bachelor's**	**Master's**	**PhD/EdD**
	Female	17.60%	35.30%	47.10%
	Male	9.10%	40.90%	50.00%
Time worked in HE		**3 - 6 years**	**6 - 10 years**	**> 10 years**
	Female	11.10%	22.20%	66.70%
	Male	18.20%	9.10%	72.70%
Job category		**admin staff**	**tutor**	**faculty**
	Female	37.50%	18.80%	43.80%
	Male	47.40%	15.80%	36.80%

Chapter 2 discussed the characteristics of people using social network sites. The data was collected from participants to determine their preferred method for participation on these sites. Figure 3 includes the categories and percentages.

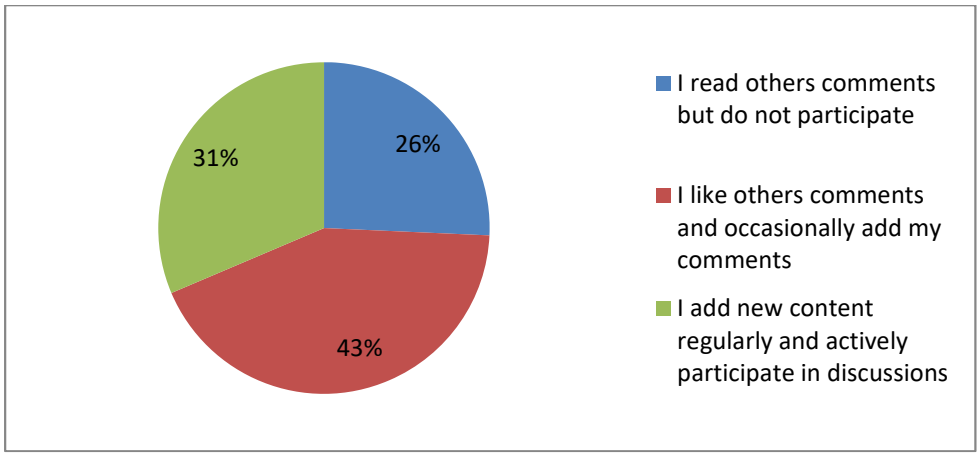


Figure 3 **Three categories of social network site interactions (N=35)**

Landing and public social network site usage.

Specific questions about frequency and usage of the Landing and public social network sites provided additional information about the participants. Fifty-six percent of the participants (N=37) logged into the Landing in the last six-months, but they used it less than once per week (79.3%). The top three Landing features used by participants are reading latest posts (53.8%), joining or creating a group (46.2%), and reading or creating blogs (30.8%).

The variability for usage of public social network sites was extreme, ranging from once per week (31.7%) and several times per day (26.8%). The top three public sites are Facebook (94.4%), LinkedIn (66.7%), and Twitter (27.8%). Table 7 provides the breakdown for this information.

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Table 7 Landing and general online social network site usage

	Frequency	Valid Percent
Landing activity	N=41	
Within the last six months	23	56.1
6 - 12 months ago	8	19.5
More than a year ago	6	14.6
I have never logged in	4	9.8
Landing usage per week	N=29	
Less than once a week	23	79.3
About once a week	2	6.9
2 or 3 times a week	2	6.9
4 to 6 times a week	1	3.4
About once a day	1	3.4
Skipped *(see below)	8	
No answer	4	
Landing Features used	N= 26	
Latest Posts	14	53.8
Site tag cloud	0	
Find People	4	15.4
Blogs	8	30.8
Bookmarks	3	11.5
Event Calendar	3	11.5
Files	7	26.9
Photos	2	7.7
Pinboards	1	3.8
Polls	1	3.8
Wikis	1	3.8
The Wire	5	19.2
Featured this week	2	7.7
Read emails from people or Landing groups	5	19.2
Join or create a group	12	46.2
Feature use unknown	7	
Skipped *(see below)	8	
Other social network sites usage	N=41	
Never	5	12.2
once per week	13	31.7
2 or 3 times per week	6	14.6
Once per day	6	14.6
Several times per day	11	26.8
Other Social Network sites used	N= 36	
Facebook	34	94.4
LinkedIn	24	66.7
Landing (* included in error on survey)	9	25.0
Tumblr	1	2.8
MySpace	2	5.6
Pinterest	8	22.2
Instagram	1	2.8
Twitter	10	27.8
Academia.edu	4	11.1
ResearchGate	4	11.1
Not SNS user	5	

Note: *Skipped refers to the first questionnaire that used skip logic for Landing usage. If participants had not logged into the Landing in over six months they were not asked the questions about frequency of use or features used.

Work location, communication methods, and technologies.

The final section of participants' information included questions related to physical work location, technology preferences, and preferred communication methods. The majority of participants worked from home (60.5%), and used a laptop (92.7%) running the Microsoft's ® operating system (51.2%). Their preferred methods of communication are email (95.1%), face to face discussions (75.6%), and meeting applications such as Adobe Connect (61.0%). Table 8 includes the numbers and percentages for this data.

Table 8 Location, communication and technologies

	Number	Percent of Cases
Work location home/office	N=38	
Access mainly from work	11	28.9
Access mainly from home	23	60.5
Access varies , includes work, home, locations with Wi-Fi	8	21.1
Did not answer	3	
Hardware /tech devices	N=41	
Laptop	38	92.7
Desktop computer	20	48.8
Tablet	22	53.7
Mobile phone	24	58.5
Microsoft operating system	21	51.2
Apple or iOS operating system	15	36.6
Android operating system	15	36.6
Other operating system	2	4.9
Communication methods	N=41	
Face to face discussion	31	75.6
Email	39	95.1
Video calls (e.g. Skype or FaceTime)	14	34.1
Instant messaging (mobile phone texting, SMS)	15	36.6
Meeting application (Adobe Connect, GoToMeetings)	25	61.0
Social network site (e.g. Landing)	9	22.0

Comparison between demographics

Landing features, public social network sites, technological devices, and methods of communication used plus work location was compared with age, gender, and education of the participants.

Landing features used: Some participants in all age groups joined or created a group (46.2%), and viewed the Landing's latest posts (53.8%). People with a Master's degree accessed the latest posts the most (24%). Men (56%) and people with a PhD/Ed (48%) used the widest range of Landing features. Women (44%) also used a range of features, but used the find people function and event calendar (12%) more than men (4% and 0)

Social network sites: There is no gender difference for Facebook use, and only women in this study used Pinterest. Men (36.8 %) used Twitter more than women (18.8%). The public social network sites (41.7%) were accessed more frequently by people in the 40-49 age range (41.7%) and by people with PhD/EdD (51.4%).

Work location: Staff working from home span all age ranges (60.5%). The majority of staff who work at one of AU's physical locations are in the age range 29 to 49 and almost equally split between genders. Women (35.1%) work from home slightly more than men (27.0%) as do those with a PhD/EdD (43.2%).

Technological devices: People between 40 to 49 years of age use the widest variety of tech devices (41.5%). The primary tech tool for women (30 %) was desktop computers, and for men (52.5%) laptops. The majority of people with a Master's degree (30%) and PhD/EdD (47.5%) use laptops. Cell phone use is split between Master's (25%) and PhD/EdD (22.5%). PhD/EdD use tablets (25%) the most.

Communication methods: There are minor differences between age, gender, education, and people's methods of communication. People in the 40 to 49 age group use

face-to-face (f2f) (36.6%), email (39%) and meeting applications (26.8%) the most. The highest categories of use for men was f2f (47.5%), and email (55%), while for women it is email (40%) and meeting applications(35%). All methods of communication are used across the educational levels. People with college or bachelors' degrees use f2f and email (15% for both), plus instant messaging (7.5%) and meeting applications (5%). Those with masters' degrees use meeting applications (27.5%), instant messaging (17.5%) and social network sites (15%). PhD/EdD use f2f (35%), email (45%), video calls and meeting applications (both at 27.5%).

Technology Acceptance Model (TAM)

The purpose for collecting TAM data was to answer the main research question and the sub-questions. Do social influences (ties) contribute to AU staff acceptance and usage of the Landing? Sub-questions: (a) Is there a relationship between the independent TAM variables (perceived usefulness, perceived ease of use, and subjective norm), and the dependent variable (behavioural intention), and AU staff usage of the Landing? (b) Are demographics (age, gender, educational level) associated with the TAM variables and actual usage?

Section B of the questionnaire (see Appendix F Web-based Questionnaires) includes the 14 TAM items that used a 7-point Likert scale (*strongly disagree to strongly agree with a mid-point of neutral*). These items asked respondents to identify their perceptions of the Landing based on perceived ease of use (PEOU), perceived usefulness (PU), social influence of others in their decision to use (SN), and their behavioural intention to use (BI). The wording of the TAM items were not altered from other validated studies (Davis et al., 1989; Masrom,2007; Malhotra & Galletta, 1999; Morris &

Dillon 1997; Venkatesh & Bala 2008; Yuen & Ma, 2008) other than to change the technology application to the Landing (see Appendix D TAM Questions, variables and authors).

Descriptive statistics.

Statistical analysis for each of the four TAM variables used the individual variables and the three or four items within each. For example, PEOU has four items and the calculations for the descriptive statistics are one group. The descriptives included median, mode, mean, standard deviation, skewness, and kurtosis. For comparison purposes the mean for ordinal data were computed because many TAM studies report this value (Hossain & de Silva, 2009; Y.-H. Lee et al., 2011; Willis, 2008).

If data are normally distributed the mean, median, and mode values are the same, and the skewness and kurtosis values are zero (Dawes, 2008; Neuman, 2006). For skewness, if the data are not normally distributed, the values are either negative (skewed to the left), or positive (skewed to the right) (Dawes, 2008; Pallant, 2011).

"Kurtosis refers to the shape of the data around the mean and the tails of the distribution" (Dawes, 2008, p.73). Non-normal distribution values for kurtosis are either positive (longer tails) or negative (shorter tails). Table 9 provides the data values for one of the variables (PEOU), and Figure 4 is the histogram illustrating the data for the item 'I find the Landing to be easy to use' which is not normally distributed (see Appendix K TAM Descriptive Statistics which includes the data for the three other variables and the histograms for each question).

Table 9 TAM descriptives for perceived ease of use

	N	Mean	Median	Mode	Std. Dev	Skewness	Std. Err Skewness	Kurtosis	Std. Err Kurtosis
My interaction with the Landing is clear and understandable	40	2.65	2.50	4	1.25	-.112	.374	-1.672	.733
Learning to use the Landing will be easy for me	37	3.19	4.00	4	1.15	-.391	.388	-.908	.759
I find it easy to get the Landing to do what I want it to do	39	2.62	2.00	2	1.21	.427	.378	-.734	.741
I find the Landing to be easy to use	40	2.5	2.00	2	1.30	.368	.374	-1.256	.733

a. Multiple modes exist. The smallest value is shown

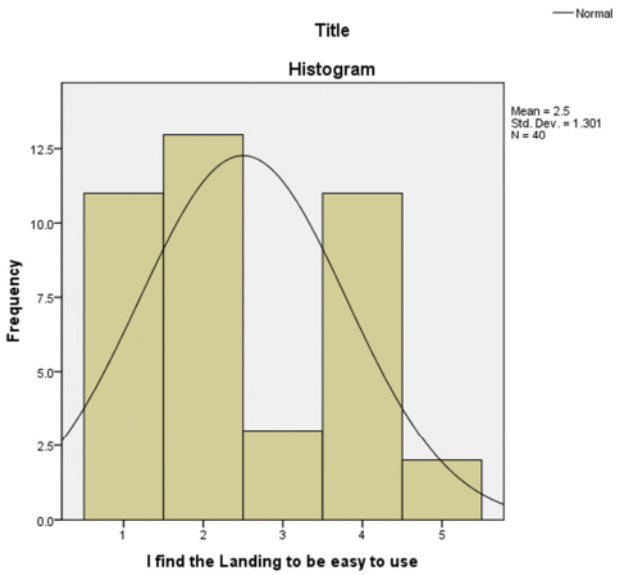

Figure 4 TAM Non-normal distributions

Frequencies include the number and percentage of responses and, for analysis purposes, the Likert-scale data were combined (*disagree, neutral, and agree*). These analyses calculated the number and percentage of cases (Norušis, 2008) for each of the four variables. Most participants did not find the Landing easy to use (60% disagreed).

However, 51.3% agreed learning to use it would be easy (PEOU, four questions). The majority of participants did not consider the Landing useful for their job. Disagreement on it not being useful ranged from 62.5 % to 79.5% (PU four questions). The results for intention to use the Landing are similar. Participants did not have any intention to use the Landing within two weeks following this study, and intention not to use ranged from 62.5% to 70% (BI three questions). Participants did not consider social influence a factor for Landing usage. Rejection of social influence ranged from 55% to 57.5% (SN three questions) (see Appendix K TAM Descriptive Statistics).

A review of the four TAM studies discussed in Chapter 2 was conducted to determine their analysis methods, and compare their results with this study's data. Edmunds et al. (2012) conducted their study using factor analysis, analysis of variance (ANOVA), and linear regression. Y.-H. Lee et al.'s (2011) analysis used structural equation modelling. Hossain & de Silva's (2009) included path analysis, social network analysis, and social network visualization. Y.-H. Lee et al. and Hossain & de Silva included mean for the TAM variables. Cowen (2009) reported the results for Cronbach's alpha and Pearson Product Moment Correlation Coefficient's. Although not specifically stated within these studies, based on the analyses used, it is likely the TAM data was treated as interval and not ordinal data.

Reliability and non-parametric analysis

Likert data analysis uses either interval or ordinal measurement scales. The interval measurement uses Likert-scales, the data resulting from combining Likert-type items (e.g. the 4 items in PEOU) into one variable using sum or mean (Boone & Boone, 2012; Clason & Dormody, 1994). The benefit of Likert-type scales is that analysis of

each response is summed "with other related items to create a score for a group of statements" (Bertram, 2007, p.2). The Likert-type items in this study use ordinal measurement scales. These items are the individual questions with the answers assigned numbers (1 to 7) to denote a relationship (Boone & Boone, 2012; Clason & Dormody, 1994). However, according to Bertram (2007), "there is no way to ensure that participants view the difference between "agree" and "strongly agree" the same as they might view the difference between "agree" and "neutral" (p. 2).

Thus to increase statistical validity of the calculations this researcher chose to use non-parametric statistics (T. Jones, personal communication, July 23, 2013). Cronbach's alpha was used to calculate reliability of the TAM scales. Kendall's tau-b was used for the non-parametric statistical procedure, the correlational analysis of ordinal data (H. Boone & D. Boone, 2012).

Cronbach's alpha.

There are three methods used to determine the internal consistency reliability for scale data such as TAM2. They are inter-item correlations, corrected item-total correlations, and Cronbach's alpha reliability coefficient (Creswell, 2009; How2stats, n.d.). In TAM studies, when determining the degree of reliability, alpha has been, and continues to be, a frequently used method (Cowen, 2009; Davis, 1989; Davis et al., 1989; Edmunds et al., 2012; Y.-H. Lee et al., 2011; Masrom, 2007; Morris & Dillon, 1997; Salajan et al., 2011; Venkatesh & Davis, 2000). Cronbach's alpha value of .70 is cited in many TAM studies as an acceptable level for determining the internal consistency for the items being tested (Nunnally & Bernstein 1994, cited in Guest et al., 2006; Masrom, 2007; Nunnally, 1978 cited in Zhou, 2011).

As Lance, Butts, and Michels' discuss in their 2006 paper, although a Cronbach's alpha reliability score of .70 has become the accepted standard, there is a caveat. The authors explain that Nunnally did not mention a specific analysis method (e.g. Cronbach's), and they provide Nunnally's actual criterion for reliability. For preliminary research, an alpha of .70 is acceptable; for basic research, it should be .80, and for applied research, such as test scores, .90 is the minimum reliability, and .95 is a better level (Nunnally, 1978, cited in Lance, et al., 2006, pp.205-206). However, Zaiontz (n.d.) states that a very high alpha of .95 or more may not be useful; it might indicate that the items are "entirely redundant" (para 5). Outliers can also affect the alpha values making the "…coefficient alpha difficult to replicate from sample to sample. This makes alpha very sample dependent" (Y. Liu, Wu, & Zumbo, 2009, p.17).

Previous studies established the reliability of TAM use with software applications. Davis (1989) combined the data from two experiments within his study and achieved alpha values of .91 for PEOU and .97 for PU. Venkatesh and Davis's study identified that "measurement scales showed high reliability, with Cronbach's alpha coefficients for all four studies and three time periods exceeding .80" (2000, p. 194).

For TAM use with other technologies, computer radiography (CR), information and communication technologies (ICT's), or online communities, three studies validated TAM's reliability. Cowen's (2009) CR study confirmed the reliability of TAM with alpha values ranging from .91 to .94 for the four variables, PEOU, PU, SN, and BI. Edmunds et al.'s (2012) study of ICT's confirmed the reliability of PEOU and PU with alpha values higher than .90. Hossain & de Silva's (2009) study identified that the "original technology acceptance model holds true for the virtual community studied and it could be

possible to generalize this result to any virtual community" with alpha scores ranging from .81 to .92 for PEOU, PU, BI, Attitude, actual usage, and influence of social ties (p. 12).

Using sum or mean, many studies combine the individual TAM variables (e.g. PEOU) to obtain a total value for each variable and conduct the analysis for TAM using these values. In this study, the total value for Cronbach's alpha analysis was not computed. Tavakol and Dennick (2011) describe a test or scale such as TAM with more than one variable. If the entire scale is summed this may inflate the value of alpha, particularly if there are a large number of questions. The authors recommend that "alpha should be calculated for each of the concepts rather than for the entire test or scale" (Tavakol & Dennick, 2011, p. 54).

Cronbach's alpha scores for each of the four TAM variables range from .896 to .985. All inter-item correlation values are positive, and therefore the items measure the same characteristics (Pallant, 2011). The Corrected Items-total correlation is the degree that each item compares with the total; values ranging from .30 to. 70 are considered acceptable. If the value is less than .3 the item should be removed because it is not internally consistent with the other items (How2stats, n.d.).

The Alpha if Item Deleted information is important for determining whether an item is useful to the overall alpha value. For example, if deleting an item significantly increases the alpha, then that item should be removed. If there is little change, then the item remains. Keeping the item is important when doing comparisons between studies because removing it changes the number of items per variable. If one item was removed from PEOU, this study's data could not be compared with data from other studies using

four items (Griffin, 2009, step 5; Pallant, 2011). Table 10 lists the corrected items-total correlation and alpha if deleted values by variable and items.

Table 10 TAM variables Cronbach's alpha statistics

	Cronbach's alpha		Corrected item-total correlation	Cronbach's alpha if item deleted
PEOU	.896	5L My interaction with the Landing is clear and understandable	.704	.891
N=36		5L Learning to use the Landing will be easy for me	.746	.875
		5L I find it easy to get the Landing to do what I want it to do	.788	.861
		5L I find the Landing to be easy to use	.853	.834
PU	.936	5L Using the Landing enhances my effectiveness on the job	.852	.915
N=39		5L Using the Landing in my job helps me to accomplish tasks more quickly	.834	.921
		5L I find the Landing useful in my job	.850	.916
		5L Using the Landing in my job will increase my productivity	.865	.910
BI	.985	5L I intend to use the Landing in the next two weeks	.957	.985
N=40		5L I predict I will use the Landing in the next two weeks	.966	.979
		5L I plan to use the Landing in the next two weeks	.981	.969
SN	.907	5L My peers think I should use the Landing	.756	.916
N=39		5L People who influence my behaviour think I should use the Landing	.782	.895
		5L Colleagues who are important to me think that I should use the Landing	.919	.774

Table 11 data provides verification for reliability of internal consistency by comparing this study's Cronbach alpha values with three other TAM studies.

Table 11 **Cronbach alpha comparisons**

	Salajan et al. (2011) Blackboard	Cowen (2009) Computer radiography	Cothran (2011) Google Scholar	This study
PEOU	.886	.919	.865	.896
PU	.882	.936	.926	.936
SN	.763	.940	.883	.907
BI (ITU)	.885	.910	.839	.985
	N=206	N=21	N=836	N=41

Kendall's tau-b

Kendall's tau-b (τ) is a nonparametric "rank order correlation coefficient" (Muijs, 2011, p. 135) for analysis of ordinal data. It is used to determine whether there is a relationship between ordinal variables and it identifies the strength of dependence between two variables. Kendall's tau-b ranks data and compares how many pairs of data agree, and then subtracts the pairs that do not agree (concordant versus discordant pairs). The values range from -1.00 to +1.00 where 0 indicates no relationship, .30 is a modest relationship, .50 is moderate. .80 is strong; a value greater than .80 is a very strong relationship. Statistical significance is determined by what are called p values, and a low value indicates that "the lower is the probability that we would have found a relationship in our sample if there was none in the population" (Muijs, 2011, p. 126). The p-values in tau-b are more precise than Spearman's rho unless there is a large discrepancy in data, and tau-b is more accurate than Spearman's rho with smaller sample sizes (e.g. <12) (Muijs, 2011).

If a comparison question by question for the 14 TAM2 items was used for calculating Kendall's tau-b there would be a value for each question. In order to determine if there is a relationship between the four variables, one value for each variable was calculated using the mean score. This aggregation of the scales is justified given the

high reliability of the data calculated in the previous section. For example, perceived usefulness (PU) has four items. SPSS was used to compute the mean for the four items. If one of the items had had no values, the mean would be calculated for the three items with values (Markland, 2013).

Calculations show that the relationships amongst the TAM scales data are statistically significant because the sig. values (2-tailed) are less than p=.01 except for one value which is significant at p=.05. A moderate relationship exists between subjective norm and perceived usefulness (τ .543). A modest relationship exists between: a) perceived ease of use and perceived usefulness (τ.360); b) perceived ease of use and behavioural intention (τ .326); c) perceived usefulness and behavioural intention (τ .383); and d) subjective norm and behavioural intention (τ .436). A weak relationship exists between subjective norm and perceived ease of use (τ .285). The values are presented in Table 12.

Table 12 TAM Correlations

Independent Variable	Dependent Variable	Tau-b (τ)	Sig.
Perceived Usefulness (PU)	Behavioral Intention (BI)	.383**	.002
Perceived Ease of Use (PEOU)	Behavioral Intention (BI)	.326**	.007
Subjective Norm (SN)	Behavioral Intention (BI)	.436**	.000
Subjective Norm (SN)	Perceived Usefulness (PU)	.543**	.000
Perceived Ease of Use (PEOU)	Perceived Usefulness (PU)	.360**	.002
Subjective Norm (SN)	Perceived Ease of Use (PEOU)	.285*	.015

**Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Unlike the majority of TAM studies that used interval variables, this study's TAM variables were considered ordinal data. In their study, Salajan et al. (2011) used Kendall's tau for the TAM data, presumably because their data was ordinal. Table 13 compares this

study's data with Salajan et al.'s (2011) data. This study's tau values for the relationship between SN and PEOU, and PU and PEOU are weaker than Salajan et al., but SN to PU is higher. Salajan et al.'s, sample size was significantly higher for each item with a range of N=182 to N=189, and their number of items per variable was different for PU (2) and PEOU (3), but SN (3) was the same (2011).

Table 13 Comparison of Kendall's tau values

		Salajan et al.	This study
PU	PEOU	.529**	.360**
SN	PU	.354**	.543**
SN	PEOU	.375**	.285 *

** at .001 and *at .05

The following semi-structured interview data analysis, from the perspective of the participants uses inductive and deductive thematic analysis.

Qualitative Data Analysis

To determine if participants' jobs influenced Landing usage, job categories were included in the selection process. Two people were selected because of a crossover in job categories. Both were administrative staff; one was also a tutor and the other a student. The outliers included participants' non-use, occasional use, or frequent use of the Landing plus an individual who had never used public social network sites. The quantitative frequency analysis results for gender indicated 55% were men; therefore three women were interviewed to understand whether gender was a factor in adoption.

The five interviews, varying in length from 35 minutes to an hour, were conducted using Skype and a voice recording application. All identifying information was

removed from the transcripts before analysis. To maintain confidentiality and protect the participants' identity, pseudonyms are used throughout.

The participants' interview guides were used for attribute coding which included the interview time and date, and participant's demographic data. Demographic data are referred to as attribute coding as it "provides essential participant information for future management, reference, and contexts for analysis and interpretation (Miles et al., 2014, p. 79).

The analytic memo writing, an ongoing process during data analysis, started during the Skype interviews. This researcher transcribed the data, as this helped in establishing familiarity with the participants' choice of words. As thoughts occurred memos were written about the data (Saldana, 2013). These analytic memos provided a record of the rationale for the selection of words, phrases, and the researcher's musings about any patterns. It was important to record thoughts about the data as they occurred rather than rely on memory (Saldaña, 2013).

Qualitative analysis includes reading and rereading the data to find themes and assign codes. Codes are words or phrases, assigned either to relevant chunks of transcribed data or to the researcher's memos (Miles et al., 2014; Saldana, 2013). During the iterative process of analysis the researcher reviewed the data to ensure assigned codes represented the data (Fereday & Muir-Cochrane, 2006, p.7).

As this was a small sample, Computer Assisted Qualitative Data Analysis (CAQDAS) software was not used. Word was used for the transcriptions and the line by line data analysis; Excel was used for analyzing the codes and recording the data in the codebook (Saldaña, 2013).

The codebook included a theme name and definition, the criteria for inclusion or exclusion, and an example from the transcript data using the theme (Saldaña, 2013). During the analysis the codebook descriptions were revised to clarify their meaning.

The researcher needs to understand that what the participants say during the interviews is shaped by their views (Neuman, 2006; Saldana, 2013). At the same time, the researcher's experiences influenced their interpretations of the data. The data analysis and memo writing was influenced by this researcher's prior work in information technology support (hardware) and as a trainer (WordPerfect and Office applications) at a university. In addition, interpretation of the data was influenced by her experience as an early adopter of the Web (Pine, Mosaic, WebCT, and Facebook).

Participants' demographics

Alice (Bachelors') and Darren (Masters') are in the age range 30-39 (pseudonyms are used to protect participants' privacy). Both have worked in higher education for less than ten years and use the same approach for their social network site interactions; they read and occasionally post. During her time at AU, Alice has worked full-time as administrative staff in different departments and faculties. Darren is a part-time tutor and the only participant who has never used the Landing. Elaine (Masters') is in the age range 50 to 59, with less than six years experience in higher education. She works part-time at AU as administrative staff and is also an AU student. Elaine has the most active level of social network site interaction.

Bob, an AU professor, and Connie a part-time AU tutor and administrative staff, are in the age range 60-69. Both are Ph.D.'s, who have worked in higher education for more than ten years. Bob is the only participant that has never used any public social

network sites and did not answer the question about his approach to social network site interaction. Connie's social network site interaction is limited to reading others' comments. Table 14 includes the participants' demographic information and social network site usage.

Table 14 Interview participants' demographics and social network site usage

Participant pseudonym	Alice	Bob	Connie	Darren	Elaine
age range	30 - 39	60 - 69	60 - 69	30 – 39	50 - 59
gender	F	M	F	M	F
Job category	administrative staff	faculty	tutor/ administrative staff	tutor	administrative staff/student
Number of years working in higher education	6 - 10 years	>10 years	>10 years	6 - 10 years	3 - 6 years
Job status at AU	full time	full time	part time	part time	part time
Education	Bachelors'	PhD/EdD	PhD/EdD	Masters'	Masters'
Landing usage	once or twice 12 months ago	less than once a week	less than once a week	never	about once per day**
Public social network site usage	several times per day	never	once per week	once per day	once per day
Work location	office at AU	home	home	home	home
Social network site interaction	I "like" others comments and occasionally add my comment	No answer	I read others comments but do not participate	I "like" others comments and occasionally add my comment	I add new content regularly and actively participate in discussions

** Elaine identified herself as being a frequent user of the Landing. However, her usage varied and increased during specific AU courses and decreased when other students reduced their participation in the Landing.

Data analysis

In thematic analysis, the researcher looks for themes from the words, phrases, sentences, or even pages of text within the transcript. The participant's words are used to illustrate a predefined theme, or for a new category to be analysed further (Fereday& Muir-Cochrane, 2006). Although the qualitative coding is frequently described as two or

more cycles, for this analysis the first cycle deductive (thematic) and inductive (data-driven) were completed simultaneously (Lapadat, 2010; Namey, et al., 2007).

Data from the interview transcripts that represented any of the four TAM themes— perceived ease of use, perceived usefulness, behavioural intention, and social influence (subjective norm) were extracted. At the same time, the inductive analysis included: a) Initial coding, a method "intended as a starting point to provide the researcher with analytic leads for further exploration" (Saldaña, 2013, p. 101), and b) In Vivo coding which uses a short phrase from the interview transcripts in the participants' "specific language and voices about the topic" (Creswell, 2009, p. 19). Both of these coding methods helped with understanding what was meaningful to participants, and to segment the inductive codes from the text for further examination (Fereday& Muir-Cochrane, 2006, p 7). Through reading, writing memos, and rereading, codes were assigned to words or sentences from the interview transcripts or the analytic memos. The inductive coding resulted in 21 categories and 45 codes (See Appendix L Qualitative Codebook for the codes).

The transition between first and second level coding provided an opportunity for additional reflection, and time to organize the TAM themes and first cycle codes. This included code mapping, arranging the codes into categories, plus using the web application Wordle (www.wordle.net), which provided a visual representation of the codes.

The second cycle method was Pattern coding which is the summarizing and grouping of codes or themes into distinct categories (Miles et al., 2014). The rereading of the transcripts while thinking about the themes, categories, codes and memos, reduced

the number of themes to three (see Appendix L Qualitative Codebook for examples of categories and codes). Figure 5 illustrates the connection between the Landing and the deductive theme (TAM, green arrow) and the three inductive themes (blue arrows).

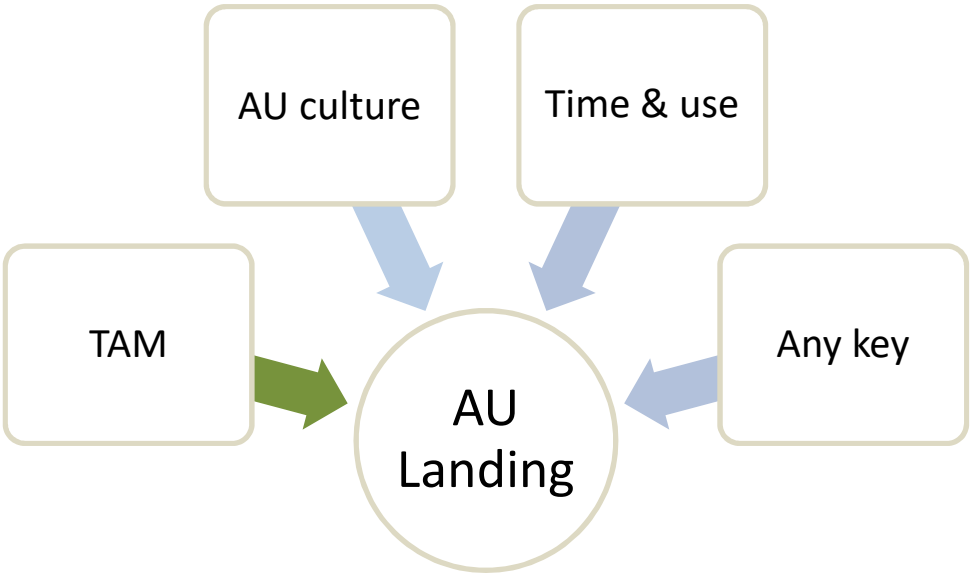

Figure 5 **Qualitative analysis depicting deductive and inductive themes**

Deductive TAM themes.

Table 15 provides a definition for each of the TAM themes used in the analysis and text from the transcripts (see Appendix L Qualitative Codebook for data inclusion and exclusion criteria). This is followed by a description of the results for the four TAM themes.

Table 15 From the TAM model, themes used for analysis

TAM Themes	Definitions for this analysis	Example from interviews
Perceived usefulness (PU)	A person's perception of the Landing's usefulness for connecting with people in the AU community. A place for sharing information or for collaboration.	Elaine "For those courses during those times I'm on there all the time."
Perceived ease of use (PEOU)	A person' perception of how easy it is to login and use the Landing and its various features.	Elaine "...not really that hard to figure out."
Behavioural intention to use (BI)	AU staff's intention to use the Landing now or in the future.	Alice "I have to go take a look"
Social Influence (SI)	AU colleagues in own department may have an influence on a person's decision to use the Landing.	Connie "one professor that is particularly enamoured with it."

Perceived usefulness (PU): Connie and Bob did not indicate they considered the Landing as useful. Although Alice and Darren have either no or limited experience with it, for them the Landing's usefulness would be if it was the central place to share all AU internal changes. Alice stated the importance of "getting that information before students ask us about it" (this comment was made in reference to MOOCs). Elaine identified the Landing features she found most useful: email alerts, groups, and the search function. Elaine used the Landing extensively for several courses and enjoyed the asynchronous aspect of it. She liked having time to formulate answers as part of her course-related discussions with the other students. For synchronous communication, she and her fellow students used an online meeting application.

Perceive ease of use (PEOU): Elaine was the only participant who identified the Landing as easy to use. Connie had logged in a few times but described her experience as "I really have no concept of what it's all about or why anybody would want to use it. I

don't know, it doesn't make sense to me." Bob said he used the Landing about once a week, but has "a hard time with it…it doesn't work I don't think as smoothly as it should…I don't have … inclination to figure it out, it needs to be simpler." Alice had not logged in to the Landing in over a year and could not remember whether it was easy to use or not. Darren had never logged in to the Landing.

Behavioural intention to use (BI): Alice and Elaine were the only participants who indicated their intention to try the Landing again, or return to it. Elaine was not currently using the Landing, as other projects required her attention, but she indicated she would probably use it again as needed. Bob did not answer the question, but indicated he logged into the Landing about once a week.

Social influence (subjective norm/SN): Four participants identified social influence as a factor in their initial attempt to use the Landing. Three of the four participants logged into the Landing because of a recommendation from colleagues within their departments. The fourth person, in addition to department colleagues, was influenced to use the Landing by other students, and professors. Bob believes social ties are important and he uses the Landing because of his colleagues who are early adopters. Elaine explained influence to use the site was mutual "they influence me and I influence them." Connie stated that one professor "is particularly enamored with it…a big fan of the Landing."

Inductive data themes.

Table 16 provides a definition for each of the inductive themes and examples of text from the transcripts. Following the table is a description of the results for the three inductive themes.

Table 16 Inductive data themes with definitions

Inductive Themes	Definitions for this analysis	Example from interviews
Time and use	A participant is using, not using, or moderating time and use of social media.	Participants mention the words time and use or derivatives in relation to social network sites. "Used Facebook; did not understand how to use it; distraction all the time; don't have the time or the inclination to figure it out."
AU culture	A participant's knowledge and perception of the Landing based on Athabasca University's culture and social norms.	"Have heard reference to it; information before students ask us; no one else in department uses it; never heard about it."
Press any key paradox	A participant whose general computer literacy is low. They are unfamiliar with computer terminology, and reading software manuals. They do not know how applications work or the names of the applications they use.	Call up versus login. Moodle and Blackboard used in the context of social network sites. Using some form of cloud based collaboration but not knowing the name (could be Google Docs, OneNote, Evernote, or some other one).

Time and use: This theme resulted from the participants' descriptions and the researcher's memos. The words time and use was mentioned by all participants in different contexts. Two of the participants felt that it is important to disconnect and take time away from using online social network sites. One participant indicated they are not a frequent user "like in terms of like updating my status all the time." Three participants' indicated they controlled their online SNS use because of the time it takes to participate. Four out of the five participants controlled their use by partitioning their online social networks. Three of the participants used Facebook to keep in touch with family, and friends. Two participants used Facebook at work or for volunteer activities and one used it to plan family activities (birthday party). One participant does not spend a lot of time using Facebook but her family does use it "all the time" and this keeps her updated on their lives. Two participants used LinkedIn, specifically for professional contacts, and a third tried but did not understand how to use it. One participant, also an AU student, used

a variety of sites for the study group (Facebook and Twitter), for professional development (Academia.edu) and for hobbies (Pinterest). One participant did not use any public social network sites and stated how people now "have this distraction all the time." He also indicated that computer technology should be kept simple because "it will not work or it will fail at a critical time" and mentioned "I don't have the time" in relation to using the Landing.

AU culture: "*I wonder sometimes if it might be little intimidating for some just in terms of like maybe more professional or faculties or academics are using it that support positions or people don't feel like they can come in and start their own "unimportant discussions"(Alice's opinion of the Landing).*

The respondents' comments indicated that internal communication about the Landing is either being ignored by staff or not shared with staff. The Landing is rarely discussed or promoted within the faculties and departments, and staff does not feel they are being encouraged to use it. One participant had the misperception that she required prior approval to use the Landing at work and due to lack of exposure had the idea that it has "never really been something that I have needed for my job." One participant, an AU tutor for over three years, had never heard about the Landing. His lack of information about the Landing may be because his only contact with AU is with his supervisor and students via email or telephone. However, he does have a valid AU email address and should receive any faculty or general email about the Landing.

Four participants found out about the Landing through word of mouth. Two participants who have worked at AU for over ten years, administrative staff and a tutor, indicated that they "have heard reference to it but not a lot of detail about it (Alice)", and

that someone in the department mentioned “this is a really good spot we should all be using” (Connie). The third participant, working for over three years as part-time AU administrative staff and who is also an AU student, started using the Landing because a professor was “very enthusiastic and positive about the Landing, got class going on the Landing” (Elaine). The fourth participant did not indicate exactly how he found out about the Landing, but he did mention that he used it because of colleagues who do so.

Two participants suggested that the Landing could be used as a hub for internal communication such as new policies. They do not find it easy to locate information on the AU website, and having one shared site, the Landing, versus email or the web would be more useful. One participant said “we could be getting that information (MOOCs) before students ask us about it and we don’t know what it is.”

The participant who used the Landing during specific courses and described herself as a “techie” needed time to figure out the Landing. She mentioned that before posting she wanted to know how to use the tools, how people interact, and what the social rules were. Elaine stated that “once my confidence grows and how to interact and how to use the tools, and you know the social rules, if the topic is interesting to me then I really become quite active.” Another participant preferred to keep it simple, to stick to what works, and therefore continues using email, Skype and Adobe (Bob). Although one participant used the Landing for learning and personal development, she also uses other sites to get a broader perspective on current educational topics.

Press any key paradox: In the early PC days, software instructions used the term *press any key to continue*. This term confused many new users as they could not find the “any” key on the keyboard; it frustrated technical support staff that frequently had to

explain that that key did not exist. This question was so prevalent Compaq released a FAQ—"The term 'any key' does not refer to a particular key on the keyboard. It simply means to strike any one of the keys on your keyboard or handheld screen" (Mevans, 2001).

Throughout the analysis, the researcher frequently used the 'any key' memo when describing the participants' lack of knowledge about the computer applications which they were using, what each application was for, and when they would use one over another. Having taught software courses for over 24 years, this researcher was surprised to find that four of the participants had low technologies knowledge.

Two of the participants were in high school; the other three were settling into their educational careers. One of the high schooler's believed the learning management system he used at university was similar to the Landing. "I forget what the forum was called but sort of kind of like what you're saying" (Darren). Probing revealed he was probably referring to an early version of WebCT or Blackboard.

Of the three already in their educational careers, one enthusiastically embraced computer technology, learned a variety of applications, and used the ones appropriate for each task. She continues to learn and try new web applications, most recently working with mobile technologies. The other two have minimally adopted technological applications, but do not know the names of the applications they use. Connie stated "use telephone conferencing and we used something online which works quite well." And when asked what social network sites he used the most, Bob answered "I use Moodle the most …. but I'm not big on social networks." They may try new applications, but their lack of knowledge may reinforce their desire to stick with the known. Connie discussed

trying LinkedIn "… but I just don't know if I wasn't doing it right or whatever but I just wasn't really happy with the hundreds of people that kept showing up on my page …" Bob explained that he found email difficult to use "it is very finicky and it doesn't work … you lose the email address they don't get your messages."

The four participants with limited application technology knowledge are equally split between gender, are at either end of the age scale (2 < 39; 2<69), and the older participants have PhD's. They are reliant on others for the selection of technology applications, whether computer or web-based, plus instructions on how to use it. They need someone for troubleshooting and to resolve any problems when it is not working. Three participants tried the Landing because it was recommended by colleagues. Alice logged in but didn't see how it was useful for her job and did not go back. Connie logged in a few times "I'll go on I'll look around and think what I'm supposed to do here. I'll get off again." Bob checks the Landing about once a week; however he stated that when "I call up the Landing it doesn't tell me intuitively where to go."

Actual usage data

From the two web-based questionnaire requests, 23 participants provided consent to collect their actual Landing usage. A site administrator completed the data collection using different criterion for the two requests.

The first data included 15 participants with an average time between login of 88 days and a median of 53.5. The shortest timeframe between logins was one day and the longest was 492 days.

The second group included nine participants and their data on Landing features most frequently accessed. The most popular Landing activity is groups: join, create, and

post. The other two are blogs and Landing home page. This data are similar to the questionnaire data which had 46.2% of participants indicating they joined or created a group and 30.8% blogged.

Summary

This chapter explained the analysis process for the quantitative and qualitative data. It included the participants' demographic information and provided a comparison between age, gender, and education. The TAM2 data analysis included descriptive statistics, Cronbach's alpha, and Kendall's tau-b. The qualitative thematic analysis provided information about the four TAM variables and the three inductive themes. Chapter 5 provides a discussion of this study. It explains any limitations, provides recommendations for future research, and offers suggestions for changes to the Landing.

Chapter 5 – DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

A hybrid internal social network site named, the Landing was informally created for the university community by a grassroots group of AU faculty. This site was created because existing communication methods (mainly email, Skype, and Adobe Connect) did not provide staff with a way to establish social connections or ties with colleagues. Social ties, specifically weak ties, a common tie type within internal social networks (DiMicco et al., 2008), are important because they are our major source of new information (Ellison et al., 2009; Granovetter, 1973, 1983; Haythornthwaite, 2002, 2005; Hossain & de Silva, 2009; Perry-Smith, 2006). By using the Landing, a voluntary mechanism for social connections, staffs' feelings of belonging to the AU community (Dron, 2012) can increase.

The Landing was designed as a place for staff to find new information, to connect with others for future work projects, to learn from each other, and as a gathering place for virtual 'water cooler chats' (Dron, 2012). DiMicco et al. suggested that internal social network sites should support users in "discovering new colleagues and finding distant ones through serendipitous exploration and searching around common interests" (2008, p. 719). Since its introduction over five years ago, a core group has frequently used the Landing, but it has had low usage and little acceptance from the majority of AU staff.

This mixed methods study explored social influence's affects on AU staff's acceptance of the Landing and its usage. To determine AU staff perceptions of the Landing, the technology acceptance model (TAM2) was used in conjunction with the appreciative inquiry (AI) method (Davis & Venkatesh, 2000; Cockell, & McArthur-Blair,

2012). The quantitative and qualitative data provided answers to the research questions and provided the personal perceptions of the interview participants.

Chapter 4 presented Kendall's tau data for the TAM variables: perceived usefulness (using the site increases work productivity), perceived ease of use (the site is easy to use), social influence (using the site due to others' opinions), and behavioural intention (to use the site). The tau results, the frequency analysis for TAM, and the deductive qualitative data provided answers to the following the research questions:

1. Do social influences (ties) contribute to AU staff acceptance and usage of the Landing?

a) Is there a relationship between the independent TAM variables (perceived usefulness, perceived ease of use, and subjective norm), and the dependent variable (behavioural intention), and AU staff usage of the Landing?

b) Are demographics (age, gender, educational level) associated with the TAM variables and actual usage?

2. What do you feel is working well for the Landing?

1. Between the variables social influence and behavioural intention, Kendall's tau-b was statistically significant with a p-value of 0.01. Social influences (ties) affected AU staffs' initial intention to use the Landing with a τ.436 (Kendall's tau-b) which is considered a modest relationship (Muijs, 2011), but it did not contribute to subsequent usage. This modest relationship does not agree with the percentage of staff who did not believe social influence had any affect on their use (55% +), nor does it agree with the interview participants' perceptions. The four participants who had logged into the Landing did so because of social influence from colleagues in their departments. Two

of the participants did not try the Landing again, one because she did not believe it would be useful at work, the other because she did not find it easy to use. Of the two participants who used the Landing, one did so because of an obligation to his colleagues and the other because she found it useful for her work and studies.

This study confirms other research findings on how social influence has less affect after people have experience using the system (Anderson et al., 2010; Venkatesh & Bala, 2008; Venkatesh & Davis, 2000). Colleagues influenced staff to log into the Landing, but this influence had less importance after they had logged in one or two times. This study's modest social influence—intention to use results may be because usage of the Landing is voluntary. Social influence has an affect on usage in mandatory settings, usually workplaces (Venkatesh &Davis, 2000; Yousafzai et al., 2007 b), but it has less of an affect when usage is voluntary.

a). As discussed above, the relationship between social influence and behavioural intention was modest. There was a moderate to low relationship between the other TAM variables from the Kendall's tau data values in Table 10. This data indicated a moderate relationship between social influence and usefulness (τ .543). There was a modest relationship between perceived usefulness and behavioural intention (τ.383), perceived ease of use and perceived usefulness (τ.360), and perceived ease of use and behavioural intention (τ .326). There was a weak relationship between social influence and perceived ease of use (τ .285). The frequency data indicated that approximately 60% of staff did not find the Landing useful or easy to use, and they had no intention of using it. The interview participants echoed these results as there was little enthusiasm for the Landing, and many comments such as "what am I supposed to do…" or "I have a hard

time with it." One participant had never used the Landing and was not interested in doing so. There was only one participant who found the Landing useful and easy to use. Usefulness is a primary factor for usage and a main factor that influences intention to use (Cowen, 2009; Davis et al., 1989; Edmunds et.al., 2012; Venkatesh & Bala, 2008; Venkatesh & Davis, 2008). This means AU staff would use the Landing because of its useful functions, but only when they believe it will help them with their job (Poellhuber et al., 2013).

b). Individual TAM items (14 questions) were compared with age, gender, and education. Gender was fairly equally split and the ages ranged between 40 to 49. For education level, there were a modest percentage of respondents with a Masters' or Ph.D./EdD that agreed with the 14 questions. The overall responses were negative, so is it highly unlikely that different demographics have any association with actual usage.

2. Of the five interview participants, one regularly used the Landing and identified what was working well for her—email alerts, the open groups, and the search feature. One participant who used the Landing sporadically indicated that he used the site to find current information from his colleagues who are active on the Landing. Of the remaining three participants one indicated that content sharing and editing via a cloud-based application made more sense to her. Another thought using the Landing for collaboration was a good idea, as long as colleagues also used the site. And the third participant felt that the Landing could be a central repository for AU internal information.

The inductive qualitative data analyses provided the most useful data and resulted in three themes. They were time and use (control of time on and use of a specific site), AU culture (group norms), and the press any key paradox (low technology skills).

The data on time and use confirmed other researchers' findings (Moran, Seaman & Tinti-Kane, 2011) that people partition their use of specific online social network sites for different purposes (e.g. Facebook for family and close friends). The participants in this study also indicated that they try to control the amount of time they are connected. There is a lack of knowledge about the purpose of the Landing, misconceptions about who can use the Landing, and that staff required and were concerned about the need for departmental approval to use the site at work. The lack of knowledge about technology was not related to age, gender, or education. Only one of the five participants was knowledgeable about and experienced with a variety of computer technologies. She knew which task specific application to use, learned how to use it, and knew that the Landing and Moodle were not the same.

Limitations

This study's sample size was small (n=41), but as discussed in previous chapters, the low response rate is offset because AU staff are homogeneous participants. This study did not reach qualitative data saturation because the number of interviews was not adequate. The researcher was the only coder for the qualitative data, and from these codes identified the themes. When the researcher is the only coder, the potential for researcher bias, where results are from only one perspective becomes likely (Caulfield, 2010; Fereday & Muir-Cochrane, 2006). However, in qualitative research, the insights of the original coder are also useful and this often precludes reliable coding by different researchers.

Recommendations for Practice

Currently, AU does not support the Landing nor endorse its usage as a production toolset, and as mentioned by one interview participant, it may not be around much longer. Low usage and resistance is common when, as is the case with the Landing, there is voluntary participation and no management support (T. Anderson, personal communication, October 6, 2015; Velupillai, 2011; Venkatesh & Bala, 2008).

If AU supported the Landing, staff could justify the effort required to learn the system because of the site's continuity, and this would increase site usage. Instead of the current system of Landing staff and supporters as volunteers, working on activities whenever they have free time, AU should allocate staff resources.

To support the Landing, activities that could be undertaken include changing staff perceptions about the site, providing additional help for users, adding AU specific content to the site, and increasing staff awareness. Research indicates that when staff perceives the institution supports and encourages the use of an information technology, this leads to increased staff acceptance (Taylor & Todd, 1995; Venkatesh, 2000; Venkatesh et al., 2003).

This study identified that staff do not know much about the Landing, and that the information they do have, in most cases, is inaccurate. This inaccurate information includes:

- Usage of the Landing is restricted to a specific staff group.
- Permission to use the Landing is required by staff outside this group.
- The site is difficult to use.
- The Landing is not relevant to AU work.

This study also identified that some staff lack necessary skills navigating the Landing or getting help when they need it. When a person with low technology skills tries to use the Landing it is unlikely they will have a good experience. Bad news about inaccurate information, or difficulty using a tool, spreads quickly. By allocating staff resources and providing an easily accessible and understandable FAQ, myths and misperceptions can be corrected.

As discussed in Chapter 1, TELUS staff found it beneficial to have access to training videos for either new or existing work processes. Adding work-related training videos for staff, modifying the Landing's help sections, plus incorporating information for staff on how to tailor the site for their use (Ellison, et al., 2009) may encourage and increase usage. One interview participant indicated that she needs to determine the rules and social norms before using the site. The Landing was designed without boundaries, norms, or rules. It may be useful to AU staff if there was an easy to find explanation about the openness of the Landing.

To increase staff awareness, the methods of advertising the Landing require changes. Currently, emails are sent to all staff, and supporters of the Landing explain the site to colleagues, and students. Automatic filters can easily delete emails before they are read. This may have been the case with the interview participant, a tutor, who had never heard of the Landing. As discussed previously, staff tried the Landing because of a colleague's recommendation but did not return. If AU allocates staff resources all staff emails would include the names of supporters to contact, and the enhancements to the Landing's help and FAQ would be completed.

Although there are very few studies on its use, Venkatesh and Bala (2008) identified peer support as having the potential to increase staffs' understanding of a technology, and its usefulness at work. As mentioned above, staff may lack training in using technology. As a software trainer I have found that people who are unsure of technology prefer, and are more comfortable, learning one-on-one with peer support.

Future Research

This study's quantitative data provided statistical information about AU staff and their Landing usage, and the qualitative data used the participants' voices to provide personal perceptions. Additional studies at either AU or other institutions with internal social network sites should consider the follow topics for future studies.

Using the appreciative inquiry model and the overarching question *what is working well,* conduct a qualitative study with semi-structured interviews. The participant selection should be equally split between gender, and include two or more participants per age group and staff category (faculty, tutors and administrative staff), and non-Landing users. This study could ask specific questions to address AU cultural norms, computer self efficacy, and social tie strength (weak or strong).

Conduct another mixed methods study using a modified version of TAM3 (Venkatesh & Bala, 2008). This study would use the qualitative data to formulate the quantitative phase, and provide additional data about staff perceptions of the Landing. The suggested TAM2 variables to include are the four used in this study (perceived usefulness, ease of use, intention, and subjective norm/social influence). The variable for social influence requires modification to identify tie strength (weak or strong). The study should include the TAM3 variables computer self-efficacy and anxiety, experience (using

the technology), and job relevance. This study could identify if any of these variables specifically affect the Landing usage or usage of internal social network sites generally.

Questions that surfaced in this study which have the potential to become a research study include: 1) Does the different approaches staff have for their internal social network site usage (read, like, or add) affect future usage of the site? 2) Do levels of technological skill affect staff usage of their internal social network site (controlling for ages, genders, and education)? 3) Do geographically dispersed staff want to use an internal social network site to collaborate and participate in virtual watercooler chats with the goal of reducing feelings of isolation?

Significance of the Study

Criticisms of internal social network site use in this study were echoed in other studies. Included among them was a lack of use by colleagues, time constraints when using sites, and management not supporting or encouraging staff to use the site (DiMicco et al., 2008; Rooksby et al., 2009). Findings from this study indicate the importance of institutional support and effective communication, and illustrate the impact group mentality can have on creating and following group norms.

The Landing is AU staffs' place to learn from each other, to share and collaborate; it is a searchable central repository for AU information, and the place for virtual water cooler chats. This site should not be a burden, not just another application to check or use, but should be part of AU's culture. The Landing provides AU the opportunity for creating a culture of sharing. It has the potential to create for all AU staff a sense of belonging and community (Chui, et al., 2012; Dron, 2012).

Concluding thoughts

This study illustrates that using social network sites can reduce our feelings of disconnection when we collaborate with others, we gain access to new information from our weak social ties, and we have more frequent contact with family. This study addresses the potential benefits to staff use of an internal hybrid site like the Landing. This study identifies the challenges encountered by the grassroots' group of AU faculty as they introduced the Landing to the AU community. This included lack of institutional support, misunderstandings about why staff would use the Landing, who could use the site, and lower than expected participation.

The complexities and challenges of conducting a mixed methods study were surpassed by the learning. The nuances of quantitative versus qualitative data—collection, analysis, and findings—were disappointing, surprising, and interesting. It was disappointing that on the whole staffs' attitude toward the Landing was negative, and any benefits to using the site were lost because of the difficulties most staff had using the site. It was surprising to discover that staff had low technologies knowledge. This study answered a few questions about staff usage of internal social network sites, but the interesting part is the questions about acceptance and usage that this study did not answer.

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APPENDIX A – Theories of Reasoned Action & Planned Behaviour Diagrams

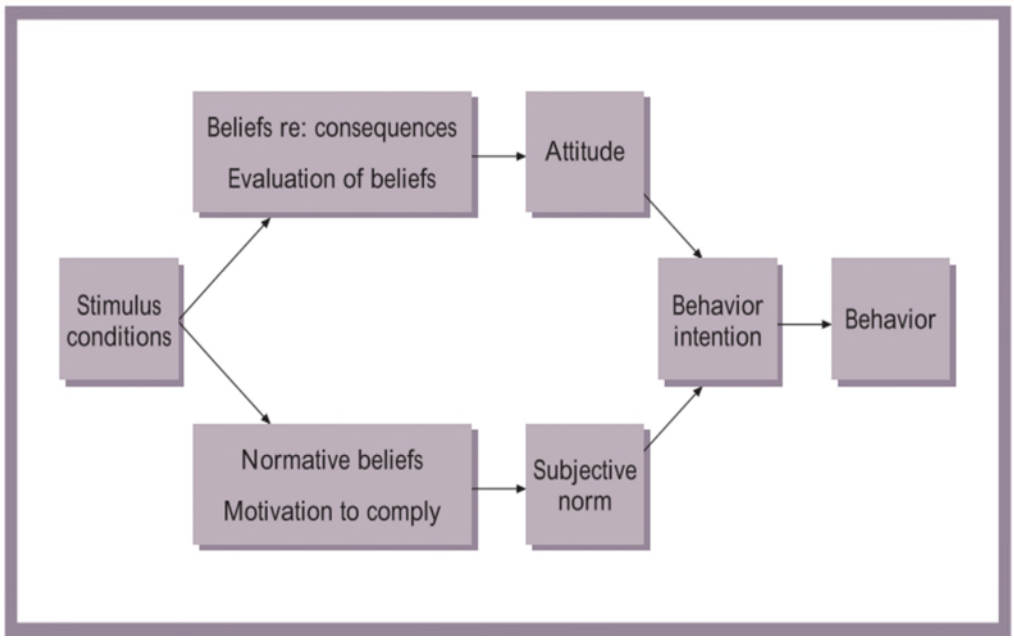


Figure A1 Theory of Reasoned Action (Fishbein &Ajzen, 1975, cited in Morris & Dillon 1997)

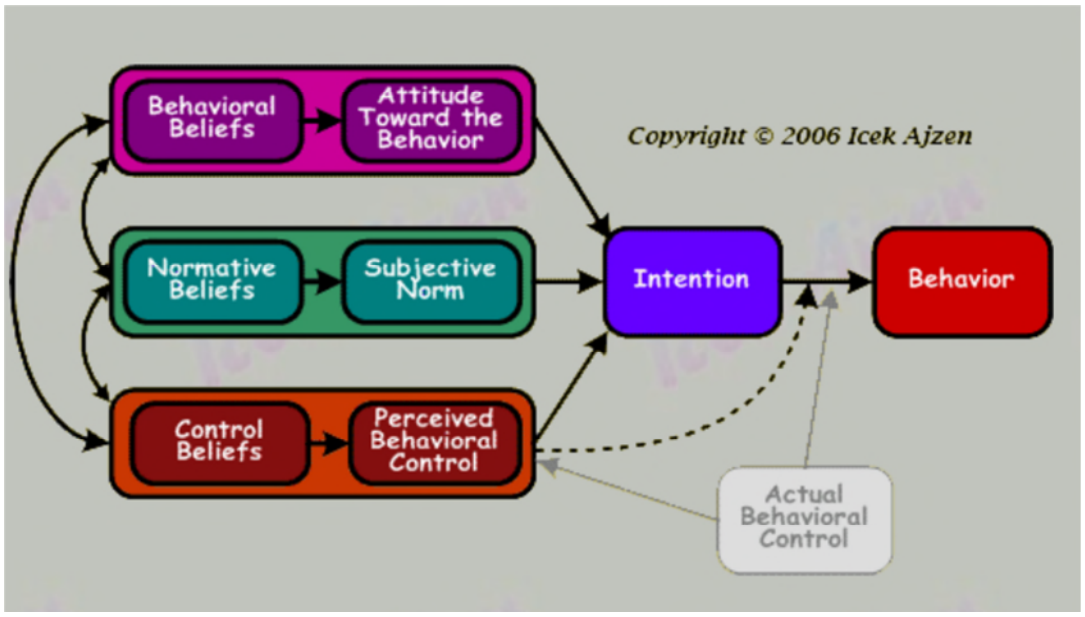


Figure A2 Theory of Planned Behaviour, Icek Ajzen (2006)

http://people.umass.edu/aizen/tpb.diag.html Author's note "You may copy and use this diagram for non-commercial purposes"

APPENDIX B – Author approval to include table

From: Nikola Marangunic < niko/a.marangunic@pmfst.hr>
Sent: May 23, 2015 3:21AM
To: Barbie Bruce

Subject: Re: Masters in Education student- regarding your paper "Technology acceptance model:a literature review from 1986 to 2013"

Dear Barbie,
feel free to use any table or something else from the paper.
Regarding Venkatesh & Bala study, we didn't use it because it is dealing with TAM 3 which was not in our scientific interest.

best regards
Nikola

At 00:12 23.5.2015, you wrote:

Dear Dr. Marangunic and Dr.Granic:

I am completing my MEd (Online Learning) at Athabasca University (AU) in Canada. My thesis uses Davis (1989) technology acceptance model to explore staff usage of AU 's internal social network site for collaboration and information sharing.

At the top of page 84 of your paper is "Table 1 Seven Extensive TAM literature reviews." I would like permission to use this table in my thesis and will follow APA's guidelines for appropriate citing.

I also have a question about your selection of TAM studies. One of the studies I am using in my thesis is not mentioned in your literature review, Venkatesh and Bala (2008) study on TAM 3.

Please contact me if you require additional information.

Sincerely,
Barbie Bruce

APPENDIX C – Technology Acceptance Models

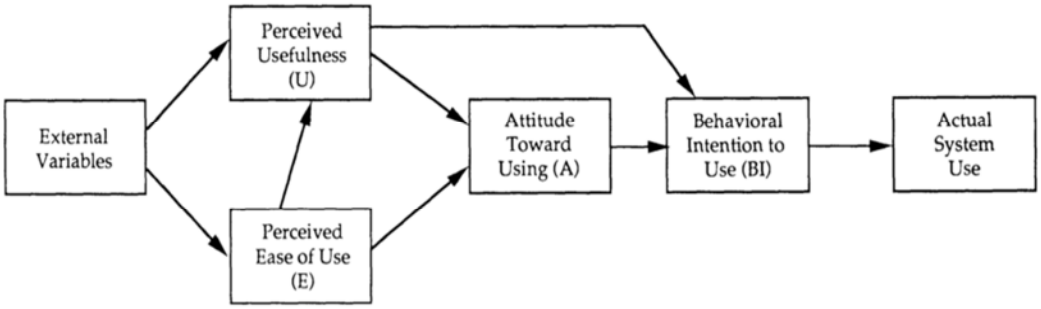


FIGURE 2. Technology Acceptance Model (TAM).

Figure C1 TAM developed by Davis, Bagozzi and Warshaw (1989, p. 985)

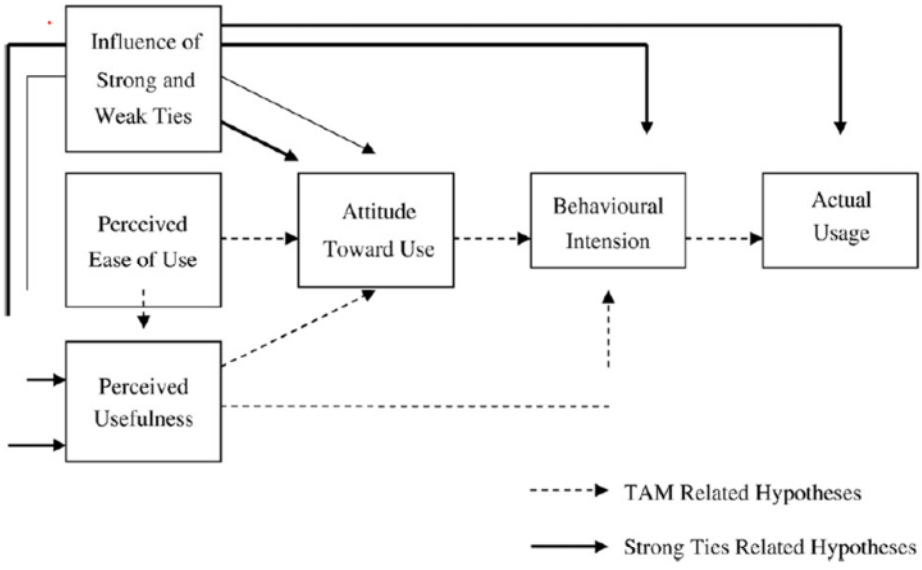
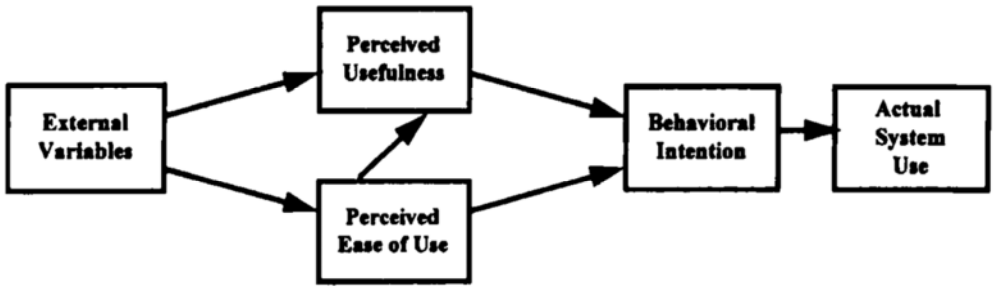


Fig. 9. The extended technology acceptance model.

Figure C2 TAM modified to include strong and weak ties, Hossain and de Silva (2009, p. 16)

Figure 1: Technology acceptance model.



Note: This is the final model without the attitude construct required in Davis, et al. [17]. External variables include system characteristics, training, user involvement in design, and the nature of the implementation process.

Figure C3 TAM without attitude variable Venkatesh and Davis (1996, p. 453

Figure 1 Proposed TAM2—Extension of the Technology Acceptance Model

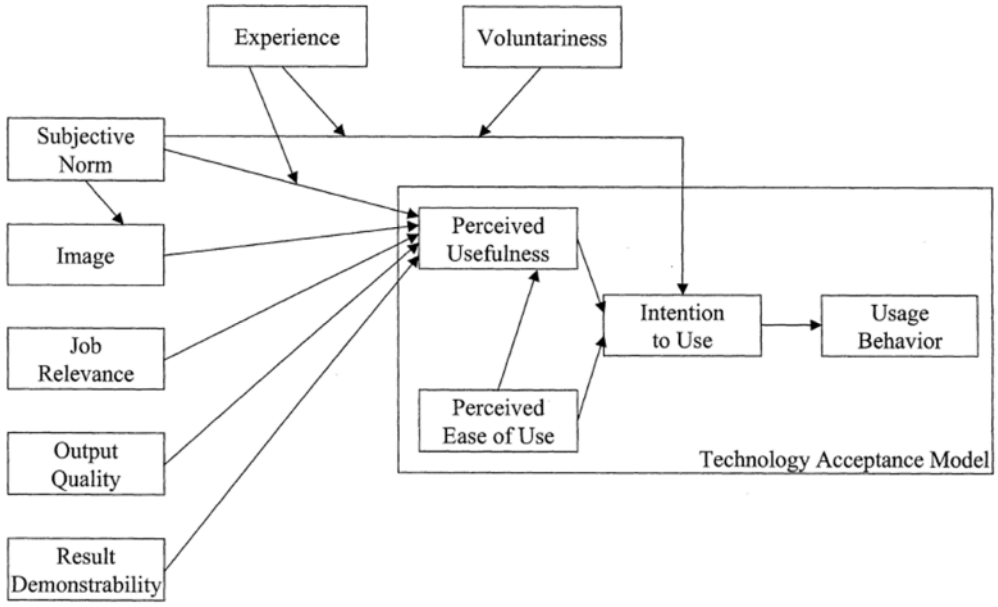


Figure C4 TAM2 developed by Venkatesh and Davis (2000, p. 188)

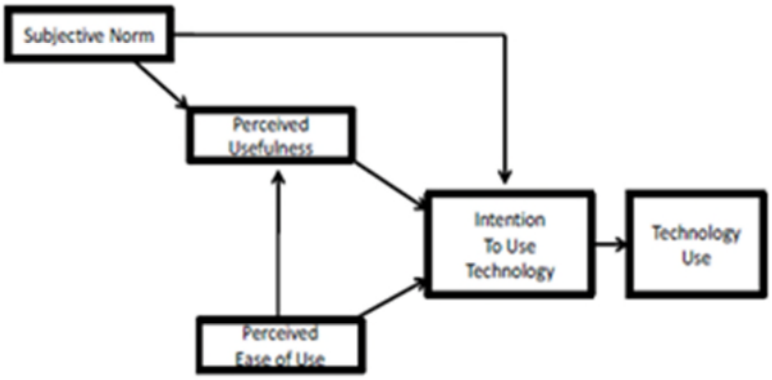
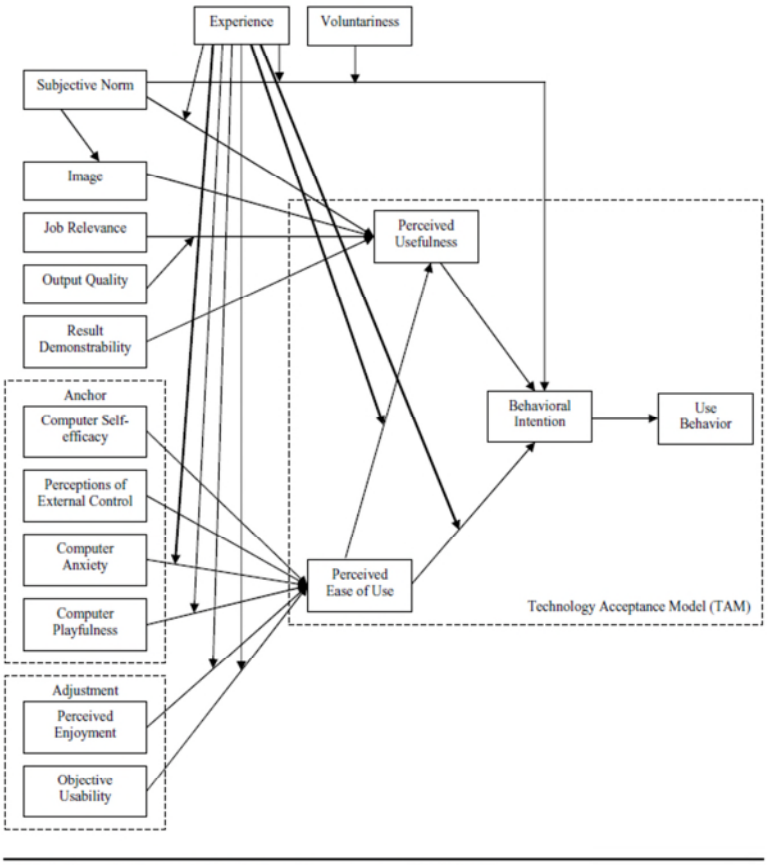


Figure C5 Modified TAM2 in a Mandated Setting (Cowen, 2009, p. 6)

Figure 2: Technology acceptance model 3 (TAM3)[a].



[a]Thick lines indicate new relationships proposed in TAM3.

Figure C6 TAM3 Venkatesh and Bala (2008, p. 280)

APPENDIX D – TAM Questions, variables and authors

Constructs	What it measures	Questions from Author (s)
Actual Usage	Measures users self-report frequency of Landing usage.	Malhotra & Galletta,1999

 # Actual Usage Question

1 How many times in one week do you use the Landing?

Davis, Bagozzi, & Warshaw, 1989; Malhotra & Galletta,1999

1	2	3	4	5	7
Less than once a week	About once a week	2 or 3 times a week	4- 6 times a week	About once a day	More than once a day

The following variables use 7-point Likert type scale for PEOU, PU, SN, & BI

Cowen, 1999; Davis, Bagozzi, & Warshaw, 1989; Venkatesh & Davis, 2000; Venkatesh, Morris, Davis, G. & Davis, F., 2003; Venkatesh & Bala, 2008

1	2	3	4	5	6	7
Strongly disagree	Moderately disagree	Somewhat disagree	Neutral (neither disagree or agree)	Somewhat agree	Moderately agree	Strongly agree

Perceived usefulness (PU)	Measuring the extent that users believe AU's Landing is useful and enhances job performance.	Davis 1989; Malhotra & Galletta,1999; Morris & Dillon, 1997; Venkatesh & Davis, 2000;Yuen & Ma, 2008

 # PU Questions

5 Using the Landing enhances my effectiveness on the job.

9 Using the Landing in my job helps me to accomplish tasks more quickly.

12 I find the Landing useful in my job.

15 Using the Landing in my job will increase my productivity.

Perceived ease of use (PEOU)	Measuring the degree that users believe the SNS is easy to use.	Cowen, 2009; Davis,1989, Malhotra & Galletta,1999; Masrom, 2007; Morris & Dillon,1997; ~~Turner,~~ Venkatesh

Constructs	What it measures	Questions from Author (s)
		& Davis, 2000; Venkatesh & Bala, 2008
# **PEOU Questions** 3 My interaction with the Landing is clear and understandable. 7 Learning to use the Landing will be easy for me. 10 I find it easy to get the Landing to do what I want it to do. 14 I find the Landing to be easy to use.		
Behavioural intention to use (BI)	Measures the extent users intend to use the Landing.	Malhotra & Galletta,1999; Masrom, 2007; Venkatesh, Morris, Davis, G. & Davis, F, 2003; Venkatesh & Bala, 2008
# **BI Questions** 4 I intend to use the Landing in the next two weeks. 8 I predict I will use the Landing in the next two weeks. 13 I plan to use the Landing in the next two weeks.		
Subjective norm (SN)	Measures whether users believe people who influence their decisions think they should use the Landing.	Cowen, 2009; Morris & Dillon,1997; Taylor & Todd, 1995; Venkatesh & Davis, 2000; Venkatesh, Morris, Davis, G. & Davis, F, 2003; Venkatesh & Bala, 2008; Yuen & Ma, 2008
# **SN Questions** 6 My peers think I should use the Landing. 11 People who influence my behaviour think I should use the Landing. 16 Colleagues who are important to me think that I should use the Landing.		

APPENDIX E – AU Staff Invitations to participate

Second data collection request

From: Leanne Jewell <leannej@athabascau.ca>
Date: January 21, 2014 at 3:38:56 PM EST
To: allstaff@athabascau.ca
Subject: [Allstaff] Invitation to Participate: MEd Thesis Research Project
Reply-To: Leanne Jewell <leannej@athabascau.ca>

Dear AU Staff,

My Masters' thesis research project is examining adoption issues with the Landing, AU's internal social network site. This two phase study includes an online survey and a telephone interview. Unfortunately, my original email invitation targeted to specific staff resulted in a very low response and I would like additional participants.

Would you be willing to participate? The time requirement for participation is minimal and includes either completing the 10 minute online survey and/or the 30 minute Skype interview. The criteria for participation: have not previously participated in this research project, is an AU staff member (support, professional, tutors or faculty), and either an inactive or occasional user of the Landing (survey link is at the bottom of this document).

There are no known or anticipated risks if you participate in this study, no known benefits, no deception, and participation or non-participation will have no effect on your employment.

Participation in this two phase study is voluntary, and confidential. There is no obligation and participating in one phase does obligate you to participate in the other phase. At any time you can refuse to answer questions and either exit the online questionnaire or end the interview. You can have all your questionnaire or interview data removed from the study by emailing the researcher within seven (7) days of completion. If you voluntarily agree and provide your email address for the interview or actual Landing usage this data are separate questions. It will be removed from the questionnaire data set, stored on password protected device, used only for the intended purpose (contact interviewee/collect data), and deleted once the information is collected.

Only this study's researcher has access to the anonymized data used to compile results for this study. All data collected for this study is confidential, does not include any identifiable information, and is stored on a password protected computer in a secure home office.

The Athabasca University Research Ethics Board has reviewed and approved this study. Should you have any comments or concerns regarding your treatment as a participant in this study, please contact the Office of Research Ethics at 780-675-6718 or rebsec@athabascau.ca. If you require additional information or clarification, please contact either my thesis supervisor or me.

Sincerely,

Barbie Bruce, Student
Master of Education (Distance Education), Athabasca University

(250) 566-1310 or blbruce@shaw.ca
Dr. Terry Anderson, PhD, Thesis Supervisor
Professor in Distance Education, Centre for Distance Education
Athabasca University
(780) 497-3421 or terrya@athabascau.ca

The link to the study includes consent to participate in both phases, and a confidential place to provide an email for participation in an interview.

Cut and paste this URL if link does not work
https://rsurvey.athabascau.ca/limesurvey/index.php?sid=35991&lang=en

First data collection request and follow-up

Follow-up request to first invitation

From: Terry Anderson [mailto:terrya@athabascau.ca]
Sent: November 25, 2013 2:23 AM
To: Barbie Bruce
Subject: AU Staff invitation to participate in MEd Thesis research study on the Landing - 1 week left!

Dear Colleagues

I am sending this reminder on behalf of Barbie Bruce, a Graduate student in the Master of Distance Education Program. She needs your help in completing her Masters thesis research by completing a short survey - with a chance to win an IPad!!

Although you are probably aware that I am a major supporter of the Landing, please be assured that this is Barbie's study and your frank and honest assessment of this tool (queried in this survey) is critical for both her research and for decision making related to the Landing. I do not have access to your answers and all the information I see, will be anonymized, to protect your privacy. Normally we prefer that graduate student's send this type of request from their own email, but we have a practice at AU, restricting access to employee emails to employees- thus the request is emailed by me, but really it comes from Barbie.

Thanks for your help - we need to know both how new interventions work and why they do not work within our distributed workplace.

Terry

Dear Athabasca staff:

Recently you were invited to participate in an online questionnaire about your acceptance, usage, and personal experiences using the Athabasca Landing. If you have completed this questionnaire, I appreciate and thank you for your participation. However, if you have not completed this questionnaire (it takes approximately 15 minutes), I would appreciate it if you did.

As a thank you for your participation in the online questionnaire, you may enter the draw for one iPad 10 tablet. Your online questionnaire must be completed by *midnight December 2, 2013* in order to be eligible for the December 3, 2013 random draw for one iPad.

A recap the information in the original invitation:

- This is a thesis research study. Participation in either the questionnaire or interview phase of this study or the draw is voluntary, and confidential. There is no obligation, you can refuse to answer questions, exit the online questionnaire, or end the interview. There are no known or anticipated risks if you participate in this study, no known benefits, no deception, and participation or non-participation will have no effect on your employment.
- You voluntarily provide your email address for either the draw or the interview, neither is necessary for your valued contribution. This data are separate questions and will be removed from the questionnaire data set, stored on password protected device, used only for the intended purpose (notify winner/contact interviewee/collect data) and deleted once the information is collected.
- Only this study's researcher will have access to the anonymized data used to compile results for this study. All data collected for this study is confidential, it will not include any identifiable information, and will be stored on a password protected computer in a secure home office.

The Athabasca University Research Ethics Board approved this study on October 9, 2013. Should you have any comments or concerns regarding your treatment as a participant in this study, please contact the Office of Research Ethics at 780-675-6718 or by e-mailing rebsec@athabascau.ca. If you have any questions or require additional information about this study please contact either me or my thesis supervisor.

Researcher: Barbie Bruce
Phone: (250) 566-1310
Email: blbruce@shaw.ca

Thesis Supervisor: Dr. Terry Anderson
Phone: (780) 497-3421
Email: terrya@athabascau.ca

Survey URL: https://rsurvey.athabascau.ca/limesurvey/index.php?sid=36911&lang=en\

First invitation to participate

From: Terry Anderson [mailto:terrya@athabascau.ca]
Sent: November 13, 2013 12:39 PM
To: Barbie Bruce
Subject: AU Staff invitation to participate in MEd Thesis research study on the Landing

I am sending this on behalf of Barbie Bruce, a Graduate student ion the Master of Distance Education Program. She can use your help to complete a short survey - with a chance to win an IPad!!

Dear Athabasca staff:

ATHABASCA UNIVERSITY STAFF LANDING USAGE

Subject: Invitation to participate in MEd Thesis research study on the Landing

I am a student in Master of Education (Distance Education) program at Athabasca University (AU). The purpose of this research is to explore AU staff acceptance, usage, and personal experiences using the Landing.

This study's online questionnaire takes approximately 15 minutes to complete and will be available online until November 25, 2013. You also have the option of volunteering to participate in a telephone interview that will take approximately 30 minutes. Participation in the first phase does not obligate you to participate in the second phase.

As a thank you for your participation in the online questionnaire, you may enter the draw for one iPad 10 tablet. Email addresses provided for the draw will be stored in a password protected data file, used only to notify the winner, and destroyed once the winner is drawn. The *draw for the iPad will be on November 26, 2013.*

Participation in either of phase of this study or the draw is voluntary, and confidential. There is no obligation, and at any time, you can refuse to answer questions and either exit the online questionnaire or end the interview. There are no known or anticipated risks if you participate in this study, no known benefits, no deception, and participation or non-participation will have no effect on your employment.

Only this study's researcher will have access to the anonymized data used to compile results for this study. All data collected for this study is confidential, it will not include any identifiable information, and will be stored on a password protected computer in a secure home office.

The Athabasca University Research Ethics Board approved this study on October 9, 2013. Should you have any comments or concerns regarding your treatment as a participant in this study, please contact the Office of Research Ethics at 780-675-6718 or by e-mailing rebsec@athabascau.ca.

If you have any questions or require additional information or clarification about this study to help you decide whether to participate, please contact either my thesis supervisor or me.

Sincerely,
Barbie Bruce, Student
Master of Education (Distance Education), Athabasca University; (250) 566-1310 or blbruce@shaw.ca

Dr. Terry Anderson, PhD, Thesis Supervisor
Professor in Distance Education, Centre for Distance Education, Athabasca University
(780) 497-3421 or terrya@athabascau.ca
https://rsurvey.athabascau.ca/limesurvey/index.php?sid=36911&lang=en

APPENDIX F – Web-based Questionnaires for the two requests

Acceptance and usage of the Landing (second request)

Staff Usage of the Landing

This questionnaire explores staff acceptance and usage of the Landing at Athabasca University and takes approximately 10 minutes to complete.

I appreciate you taking the time and thank you for participating in this study.

Title of study: Social ties, the technology acceptance model, and staff usage of the Landing at Athabasca University.

Risks and benefits: If you participate in this study there are no known or anticipated risks, no known benefits, no deception, and participation or non-participation will have no effect on your employment.

Right to refuse: Participation in this two phase study is voluntary. Completion of the questionnaire does not obligate you to participate in the interview. You can skip questions, refuse to answer questions and either exit the online questionnaire or end the interview. You can have all your questionnaire or interview data removed from the study by emailing the researcher within seven (7) days of completion. After seven days your data will be merged and cannot be extracted.

Privacy, confidentiality, and anonymity: Participation in this research study is confidential and voluntary. All data are confidential and to preserve your anonymity only summary results from this study will be included. If you voluntarily agree to participate and provide your email address for either the interview, or for the collection of your actual Landing site usage data, these emails are stored as separate questions. These questions will be removed from the questionnaire data set, stored on a password protected device, used only for the intended purpose (contact interviewee/collect data), and deleted once the information is collected. All electronic data collected is treated as confidential and kept on a password protected computer in the researcher's secure home office.

Results of this study: Upon request, participants will be provided a summary of the research results and the full report will be available online from the Dissertations and Theses site, Athabasca University Library.

Consent: I have read and understood the information contained herein. I understand that by selecting "Yes" for the Consent Confirmation question, I am voluntarily agreeing to participate in the interview and/or the questionnaire phase of the study.

Note: This survey *terminates* under two conditions. If you **do not consent** to participate and after completing only the interview information you agree to **exit**.

The questionnaire will be available online until ***January 31, 2014***,

Survey buttons and navigation tips

NEXT - bottom centre right of screen - *Moves to the next screen*

PREVIOUS - bottom centre left of screen - *Moves back to previous questions add to or change answers*

RESUME LATER - bottom left of the screen - *Click to save completed answers, Finish the survey and submit later*

LOAD UNFINISHED SURVEY - bottom right of first screen - *Load and resume the survey where you stopped*

EXIT AND CLEAR SURVEY - bottom right of screen - *Clears the answers so you can start over or exit the survey*

SUBMIT - replaces the "NEXT" button once you answer the last question - *Click to submit survey*

There are 24 questions in this survey

Questionnaire

Section A Consent to participate

1. Consent

Participant confirmation and consent to voluntarily participate in questionnaire

I understand that by selecting "Yes" *I am voluntarily consenting* to participate in either the interview or questionnaire phase of this study.

NOTE: If you select No the questionnaire will terminate

Please choose **only one** of the following:

- ○ Yes
- ○ No

Reminder: Participation in this study is confidential and voluntary. You can refuse to answer questions and either exit the online questionnaire or end the interview. You can have all your questionnaire or interview data removed from the study by emailing the researcher within seven (7) days of completion. After seven days your data will be merged and cannot be extracted.

2. Interview

Agreement to voluntary participation in the interview. At this point a participant can exit, or can continue and complete the questionnaire.

I volunteer to participate in the interview. Please choose **only one** of the following:

- ○ Yes
- ○ No

My email address is:_____

Please write your answer here

The researcher needs your email in order to contact you and schedule the interview. To maintain confidentially this question will be deleted from the online questionnaire immediately after the data is downloaded.

3. Exit Survey

For those who do not wish to proceed and do not wish to complete the questionnaire

Do you wish to **EXIT** and not complete the questionnaire? *

Please choose **only one** of the following:

○ Yes

○ No

Answering **YES *will terminate*** the questionnaire.

Section B Technology acceptance & usage (TAM)

The following questions pertain to your perceptions of the Landing. Please choose the appropriate response for each item:

	Strongly disagree	Moderately disagree	Somewhat disagree	Neutral (neither disagree or agree)	Somewhat agree	Moderately agree	Strongly agree
My interaction with the Landing is clear and understandable	○	○	○	○	○	○	○
I intend to use the Landing in the next two weeks	○	○	○	○	○	○	○
Using the Landing enhances my effectiveness on the job	○	○	○	○	○	○	○
My peers think I should use the Landing	○	○	○	○	○	○	○
Learning to use the Landing will be easy for me	○	○	○	○	○	○	○
I predict I will use the Landing in the next two weeks	○	○	○	○	○	○	○
Using the Landing in my job helps me to accomplish tasks more quickly	○	○	○	○	○	○	○

	Strongly disagree	Moderately disagree	Somewhat disagree	Neutral (neither disagree or agree)	Somewhat agree	Moderately agree	Strongly agree
I find it easy to get the Landing to do what I want it to do	○	○	○	○	○	○	○
People who influence my behaviour think I should use the Landing	○	○	○	○	○	○	○
I find the Landing useful in my job	○	○	○	○	○	○	○
I plan to use the Landing in the next two weeks	○	○	○	○	○	○	○
I find the Landing to be easy to use	○	○	○	○	○	○	○
Using the Landing in my job will increase my productivity	○	○	○	○	○	○	○
Colleagues who are important to me think that I should use the Landing	○	○	○	○	○	○	○

Section C The Landing and other social network site activities

1. Please indicate the last time you logged in or received a notification from the Landing. Please choose **only one** of the following:
   - ○ Within the last six months
   - ○ 6 - 12 months ago
   - ○ More than a year ago
   - ○ I have never logged in

   A notification may be an email from a group or person on the Landing that you follow.

2. How many times in one week do you use the Landing? Please choose **only one** of the following:
   - ○ Less than once a week
   - ○ About once a week
   - ○ 2 or 3 times a week
   - ○ 4 to 6 times a week
   - ○ About once a day
   - ○ More than once a day

ATHABASCA UNIVERSITY STAFF LANDING USAGE

Use means any type of activity pertaining to the Landing. For example, if you read a group email notification or you reviewed the latest posts.

3. Which of the following Landing features do you use? Please choose **all** that apply:
   - ☐ Latest Posts
   - ☐ Site tag cloud
   - ☐ Find people
   - ☐ Blogs
   - ☐ Bookmarks
   - ☐ Event Calendar
   - ☐ Files
   - ☐ Photos
   - ☐ Pinboards
   - ☐ Polls
   - ☐ Wikis
   - ☐ The Wire
   - ☐ Featured this week
   - ☐ Reading AU emails from people you follow or groups you belong to on the Landing (this is an activity, not a feature)
   - ☐ Join or create a group (this is an activity, not a feature)

   Most of these features are visible when you hover over the "Explore the Landing" button.

4. I give permission to the researcher to collect and examine information from my Landing activity log. Please choose **only one** of the following:
   - ○ Yes
   - ○ No

Answering yes to this question indicates your voluntary agreement for the researcher to collect your usage data. Please provide your email.

_____

Your email is needed in order to examine your Landing activity log. To maintain confidentially this question will be deleted from the online questionnaire immediately after the data is downloaded.

5. How often do you access other social network sites? Please choose **only one** of the following:
   - ○ Never
   - ○ Less than once a week
   - ○ Once per week
   - ○ 2 or 3 times a week
   - ○ 3 or more times per week
   - ○ Once per day
   - ○ Several times per day
   - ○
6. Which social network sites do you use? Please choose **all** that apply:
   - ☐ Facebook
   - ☐ LinkedIn
   - ☐ Landing

- ☐ Tumblr
- ☐ MySpace
- ☐ Pinterest
- ☐ Instagram
- ☐ Twitter
- ☐ Academia.edu
- ☐ ResearchGate
- ☐

7. How do you interact with social network sites? Please choose **only one** of the following:
   - ○ I read others comments but do not participate
   - ○ I "like" others comments and occasionally add my comment
   - ○ I add new content regularly and actively participate in discussions

8. Please select the device(s) you use and their operating system (devices include laptops, desktops, tablets, phones). Please choose **all** that apply:
   - ☐ Laptop
   - ☐ Desktop computer
   - ☐ Tablet
   - ☐ Mobile phone
   - ☐ Microsoft operating system
   - ☐ MAC or iSO operating system
   - ☐ Android operating system
   - ☐ Other operating system

9. What do consider your most frequent AU work location? Please choose **all** that apply:
   - ☐ Mainly from AU office
   - ☐ Mainly from home office
   - ☐ Varies and includes work, home, or other locations with WiFi

10. Which methods do you use for collaborating on work projects? Please choose **all** that apply:
    - ☐ Face to face discussion
    - ☐ Email
    - ☐ Video calls (e.g. Skype or Facetime)
    - ☐ Instant messaging (mobile phone texting, SMS)
    - ☐ Meeting application (Adobe Connect, GotoMeeting)
    - ☐ Social network site (e.g. Landing)

Section D Demographics

1. What is your age range? Please choose **only one** of the following:
   - ○ < 29
   - ○ 30 - 39
   - ○ 40 - 49
   - ○ 50 - 59
   - ○ 60 - 69
   - ○ > 70

2. Please choose **only one** of the following:
   - ○ Female
   - ○ Male
3. I live in (city, province, country): Please write your answer here:
   _____
4. What is your employment status at Athabasca University? Please choose **only one** of the following:
   - ○ Full-time
   - ○ Part-time
   - ○ Contract employee
5. What is your job title(s) at Athabasca University? Please write your answer here (You may have more than one title such as tutor, receptionist, coordinator, or professor):
   _____
6. Which faculty, department, or centre do you work in? If more than one, please list all. Please write your answer here:
   _____
7. How long have you been working in Higher Education? Please choose **only one** of the following:
   - ○ Less than one year
   - ○ 1 - 3 years
   - ○ 3 - 6 years
   - ○ 6 - 10 years
   - ○ > 10 years
8. Highest level of education. Please choose **only one** of the following:
   - ○ High School
   - ○ Trade / Technical
   - ○ College
   - ○ Bachelor's
   - ○ Master's
   - ○ PhD/EdD

Thank you for taking the time to participate in this study.

Purpose of this study: In order to make informed decisions about any future changes to the Landing, Athabasca University's internal social network site, potential reasons for the current low staff usage requires investigation. This study will explore whether social ties may influence staff acceptance and usage of the Landing. In addition, the researcher is interested in staff's personal experiences with and views about the Landing.

If you have any questions, require clarification or more information please contact Barbie Bruce(blbruce@shaw.ca) or Dr. Terry Anderson, Thesis Supervisor, at Athabasca University (terrya@athabascau.ca).

Athabasca University's Research Ethics Board has reviewed and approved this study. Should you have any comments or concerns regarding your treatment as a participant in this study, please contact the Office of Research Ethics at 780-675-6718 or by e-mailing rebsec@athabascau.ca. Please submit by 12-31-2014. Submit your survey.

Thank you for completing this survey.

Web-based Questionnaire -- Acceptance and usage of the Landing (first request, with skip logic)

This questionnaire explores staff acceptance and usage of the Landing at Athabasca University and will take approximately 15 minutes to complete.

I appreciate you taking the time and thank you for participating in this phase of the study. One iPad will be awarded to a participant who completes this online questionnaire and voluntarily agrees to enter the random draw.

Title of study: Social ties, the technology acceptance model, and staff usage of the Landing at Athabasca University.

Risks and benefits: If you participate in this study there are no known or anticipated risks, no known benefits, no deception, and participation or non-participation will have no effect on your employment.

Right to refuse: Participation in this study is voluntary, you can withdraw from the online questionnaire at any time, and completion of the questionnaire does not obligate you to participate in the interview. You can skip questions or withdraw from the questionnaire before clicking the "submit" button. Once you click the “submit” button your answers become a permanent part of the data.

Privacy, confidentiality, and anonymity: Participation in this research study is confidential and voluntary. The questionnaire data is confidential and to preserve your anonymity only summary results from this study will be included. If you voluntarily agree to participate in the draw, an interview, or to the collection of your Landing site usage data, your identifiable information (email address) is separated from the survey answers and will be deleted immediately after the data is downloaded. All electronic data collected will be treated as confidential and will kept on a password protected computer in the researcher's secure home office.

Results of this study: Upon request, participants will be provided a summary of the research results and the full report will be available online from the Dissertations and Theses site, Athabasca University Library.

Consent: I have read and understood the information contained herein. I understand that by selecting "Yes" for the Consent Confirmation question, I am voluntarily agreeing to participate is this phase of the study.

The questionnaire will be available online until ***midnight December 2, 2013***, and the **random draw for the iPad is now December 3, 2013.**

There are 24 questions in this survey

Consent

Participant confirmation to voluntarily participate in questionnaire

1 [consent]

I understand that Selecting "Yes" means *I am consenting* to voluntarily participate in this study.

Selecting "No" means I *am NOT consenting* to participate and the questionnaire will not proceed.

Please choose **only one** of the following:

- ○ Yes
- ○ No

Voluntary participation includes collection of your Landing usage information, entering the draw for one iPad, and the interview. The email address you provide for any or all of these three activities is a separate question and will be deleted immediately after the data is downloaded.

Landing use and features

2 [usagetime] Please indicate the last time you logged in or received a notification from the Landing. *

Please choose **only one** of the following:

- ○ Within the last six months
- ○ 6 - 12 months ago
- ○ More than a year ago
- ○ I have never logged in

A notification may be an email from a group or person on the Landing that you follow.

3 [timeweek] How many times in one week do you use the Landing?

Only answer this question if the following conditions are met:
° ((**usagetime.NAOK** == "A1"))

Please choose **only one** of the following:

- ○ Less than once a week
- ○ About once a week
- ○ 2 or 3 times a week
- ○ 4 to 6 times a week
- ○ About once a day
- ○ More than once a day

Use means any type of activity pertaining to the Landing. For example, if you read a group email notification or you reviewed the latest posts.

4 [features] Which of the following Landing features do you use?

Only answer this question if the following conditions are met:
° ((**usagetime.NAOK** == "A1"))

Please choose **all** that apply:

1. ☐ Latest Posts
2. ☐ Site tag cloud
3. ☐ Find people
4. ☐ Blogs
5. ☐ Bookmarks
6. ☐ Event Calendar
7. ☐ Files
8. ☐ Photos
9. ☐ Pinboards
10. ☐ Polls
11. ☐ Wikis
12. ☐ The Wire
13. ☐ Featured this week
14. ☐ Reading AU emails from people you follow or groups you belong to on the Landing (this is an activity, not a feature)
15. ☐ Join or create a group (this is an activity, not a feature)

Most of these features are visible when you hover over the "Explore the Landing" button.

Questions

Landing usage, features used, consent to collect usage data and specific TAM questions.

5 The following questions pertain to your perceptions of the Landing.

Please choose the appropriate response for each item:

	Strongly disagree	Moderately disagree	Somewhat disagree	Neutral (neither disagree or agree)	Somewhat agree	Moderately agree	Strongly agree
My interaction with the Landing is clear and understandable	○	○	○	○	○	○	○
I intend to use the Landing in the next two weeks	○	○	○	○	○	○	○
Using the Landing enhances my effectiveness on the job	○	○	○	○	○	○	○
My peers think I should use the Landing	○	○	○	○	○	○	○
Learning to use the Landing will be easy for me	○	○	○	○	○	○	○
I predict I will use the Landing in the next two weeks	○	○	○	○	○	○	○
Using the Landing in my job helps me to accomplish tasks more quickly	○	○	○	○	○	○	○
I find it easy to get the Landing to do what I want it to do	○	○	○	○	○	○	○
People who influence my behaviour think I should use the Landing	○	○	○	○	○	○	○
I find the Landing useful in my job	○	○	○	○	○	○	○
I plan to use the Landing in the next two weeks	○	○	○	○	○	○	○
I find the Landing to be easy to use	○	○	○	○	○	○	○

	Strongly disagree	Moderately disagree	Somewhat disagree	Neutral (neither disagree or agree)	Somewhat agree	Moderately agree	Strongly agree
Using the Landing in my job will increase my productivity	○	○	○	○	○	○	○
Colleagues who are important to me think that I should use the Landing	○	○	○	○	○	○	○

6 [Datause]I give permission to the researcher to collect and examine information from my Landing activity log. *

Please choose **only one** of the following:

- ○Yes
- ○No

Answering yes to this question indicates your voluntary agreement for the researcher to collect your usage data.

7 [datause email]Please provide your email.

Only answer this question if the following conditions are met:
° ((**Datause.NAOK** == "Y"))

Please write your answer here:

Your email is needed in order to examine your Landing activity log. To maintain confidentially this question will be deleted from the online questionnaire immediately after the data is downloaded.

Demographics

Questions about participants.

8 [age]What is your age range?

Please choose **only one** of the following:

- ○< 29
- ○30 - 39
- ○40 - 49
- ○50 - 59
- ○60 - 69

- ◯ > 70
- ◯ undisclosed

9 [gender]

Please choose **only one** of the following:

- ◯ Female
- ◯ Male

10 [location]I live in (city, province, country):

Please write your answer here:

11 [jobstatus]What is your employment status at Athabasca University?

Please choose **only one** of the following:

- ◯ Full-time
- ◯ Part-time
- ◯ Contract employee
- ◯ Undisclosed

12 [staffjob]What is your job title(s) at Athabasca University?

Please write your answer here:

You may have more than one title such as tutor, receptionist, coordinator or professor.

13 [jobdept]Which faculty, department, or centre do you work in? If more than one, please list all.

Please write your answer here:

14 [yearsHE]How long have you been working in Higher Education?

Please choose **only one** of the following:

- ◯ Less than one year
- ◯ 1 - 3 years
- ◯ 3 - 6 years
- ◯ 6 - 10 years
- ◯ > 10 years
- ◯ undisclosed

15 [education] Highest level of education

Please choose **only one** of the following:

- ○ High School
- ○ Trade / Technical
- ○ College
- ○ Bachelor's
- ○ Master's
- ○ PhD/EdD
- ○ Undisclosed

16 [Access]Please select the device(s) you use, their operating system, and your main AU work location.

Please choose **all** that apply:

- ☐ Laptop
- ☐ Desktop computer
- ☐ Tablet
- ☐ Mobile phone
- ☐ Microsoft operating system
- ☐ Apple or iSO operating system
- ☐ Android operating system
- ☐ Other operating system
- ☐ Access mainly from work site
- ☐ Access mainly from home
- ☐ Access varies and includes work, home, or other locations with WiFi
- ☐ undisclosed

Devices include laptops, desktops, tablets, phones.

17 [commmethod] Which methods do you use for collaborating on work projects?

Please choose **all** that apply:

- ☐ Face to face discussion
- ☐ Email
- ☐ Video calls (e.g. Skype or Facetime)
- ☐ Instant messaging (mobile phone texting, SMS)
- ☐ Meeting application (Adobe Connect, GotoMeeting)
- ☐ Social network site (e.g. Landing)
- ☐ undisclosed

18 [SNSfreq] How often do you access social network sites.

Please choose **only one** of the following:

- ○ Never
- ○ Less than once a week
- ○ Once per week
- ○ 2 or 3 times a week

- ○ 3 or more times per week
- ○ Once per day
- ○ Several times per day

19 [socialsite] Which social network sites do you use?

Only answer this question if the following conditions are met:
° ((**SNSfreq.NAOK** != "1"))

Please choose **all** that apply:

- ☐ Facebook
- ☐ LinkedIn
- ☐ Landing
- ☐ Tumblr
- ☐ MySpace
- ☐ Pinterest
- ☐ Instagram
- ☐ Twitter
- ☐ Academia.edu
- ☐ ResearchGate
- ☐ undisclosed

20 [parttype] How do you interact with social network sites?

Only answer this question if the following conditions are met:
° ((**SNSfreq.NAOK** != "1"))

Please choose **only one** of the following:

- ○ I read others comments but do not participate
- ○ I "like" others comments and occasionally add my comment
- ○ I add new content regularly and actively participate in discussions

Interviews

Participants who agree to participant in interview and their email address.

21 [interview]I volunteer to participate in the follow-up interview. *

Please choose **only one** of the following:

- ○ Yes
- ○ No

22 [intervemail]

My email address for the interview is:

Only answer this question if the following conditions are met:
° ((**interview.NAOK** == "Y"))

Please write your answer here:

The researcher needs your email in order to contact you for the interview process. To maintain confidentially this question will be deleted from the online questionnaire immediately after the data is downloaded.

iPad draw

agreement to participate in draw and provide email

23 [iPad]I would like my name entered into the random draw for one iPad as a thank you for participating in this questionnaire. *

Please choose **only one** of the following:

- ○ Yes
- ○ No

24 [drawemail]My email address for the iPad draw is:

Only answer this question if the following conditions are met:
° ((**iPad .NAOK** == "Y"))

Please write your answer here:

To maintain confidentially this email address will be deleted immediately after the random draw.

Thank you for your time and for completing this online questionnaire.

END message

Purpose of this study: In order to make informed decisions about any future changes to the Landing, Athabasca University's internal social network site, potential reasons for the current low staff usage requires investigation. This study will explore whether social ties may influence staff acceptance and usage of the Landing. In addition, the researcher is interested in staff's personal experiences with and views about the Landing.

If you have any questions or require clarification or more information please contact Barbie Bruce(blbruce@shaw.ca) or Dr. Terry Anderson, Thesis Supervisor, at Athabasca University (terrya@athabascau.ca).

Athabasca University's Research Ethics Board has reviewed and approved this study. Should you have any comments or concerns regarding your treatment as a participant in this study, please contact the Office of Research Ethics at 780-675-6718 or by e-mailing rebsec@athabascau.ca

APPENDIX G – Invitation to participate in an interview (email request)

From: Barbie Bruce [mailto:barbielynnbruce@gmail.com]
Sent: February 04, 2014 9:50 PM
Subject: Request for Interview - thesis research project about the Landing

Thank you for completing the online questionnaire and agreeing to participate in an interview. The purpose of this interview is to explore your experiences with the Landing.

I wish to conduct the interviews any day between now and February 16, 2014. Please provide four days that you are available, the time and your time zone, and telephone number, or Skype ID. I will endeavour to accommodate your first choice and will email you before the interview to reconfirm. During the 30 minute recorded interview, we will discuss your views about and experiences with the Landing.

Preference	Date	Time (include zone)	Call information (Skype or number)
1			
2			
3			
4			

A summary of the information in the January 22, 2014 email Leanne Jewell sent on my behalf is as follows:

This is a thesis research study. Participation in this interview is voluntary, and confidential. There is no obligation. There are no known or anticipated risks if you participate in this study, no known benefits, no deception, and participation or non-participation will have no effect on your employment.

You do not have to answer any questions that you do not want to answer and you can withdraw from the interview at any time. You can retract answers or have your interview data removed from the study by emailing the researcher within seven (7) days of the interview. After seven days, your data will be merged and cannot be extracted.

The survey question containing your email address was removed from the questionnaire data set, and will be deleted from the researcher's email account upon completion of the interview. All information collected in this interview is confidential and non-identifying codes will replace your information and any names you mention during the interview. To preserve your anonymity only summary results from this study will be included.

Only this study's researcher has access to the anonymized data used to compile results for this study. All electronic data collected for this study is confidential, and is stored on a password protected computer in the researcher's secure home office.

Athabasca University Research Ethics Board has reviewed and approved this study. Should you have any comments or concerns regarding your treatment as a participant in this study, please contact the Office of Research Ethics at 780-675-6718 or by e-mailing rebsec@athabascau.ca

If you have any questions or require clarification please contact Barbie Bruce (blbruce@shaw.ca), or Dr. Terry Anderson (terrya@athabascau.ca).

Sincerely,
Barbie Bruce 250-566-1310

Appendix H: Interview script and questions

Consent:

- Do you understand that this interview is voluntary, and confidential?
- Do you agree to the recording of the interview?
- Do consent to participate in this interview?

Interviewer Script: I will ask a few questions first, to initiate discussion but the goal is for you to talk freely. I have an interview guide that I will refer to, to keep me on time and on track. At the end of the interview, I will confirm that all the issues I wish to address have been covered and I will synthesize our interview to ensure I include most of what you said.

Interview research questions – keep focused on *what is working well*

ASK ALL
1. Which social network site do you use the most, & what for (friends, work, volunteer activities) and what do you like about it? (features, ease of use, usefulness) 2. How do you describe your social networking usage? (low to high) 3. Do your colleagues influence your social networking activities and the social network sites you use?
If they have used the Landing ask:
4. What do you feel is working well for the Landing? 5. What change to the Landing would make you want to use it more? 6. Do you consider the Landing as having the potential as useful site for collaborating with colleagues or keeping in touch with work friends in other locations
If they have not used or do not know much about the Landing briefly explain purpose of site, some of the features and potential uses (for all the AU community, post what you want & it does not have to be work related; create private group for discussing work issues; collaborate , keep current on trends; searchable) and then ask: 7. Do you consider the Landing as having the potential as useful site for collaborating with colleagues or keeping in touch with work friends in other locations

Note for interviewer: AI uses positive questions and is facilitated by considering what is working well to determine what matters to staff within an organization (Cockell, & McArthur-Blair, 2012;Whitney & Trosten-Bloom, 2003). For higher education the "positive core is found wherever people are working in ways that enhance learning and enhance the mission and purpose of higher education" (Cockell, & McArthur-Blair, 2012, p. 19).

APPENDIX I – Research Ethics Board and VP Academic approvals

Athabasca University

MEMORANDUM

Office of the Vice President .Academic

Date: October 16, 2013

To: Barbie Bruce – AU MEd Student
From: Alex Kandra - Acting Vice President Academic

Subject: Institutional Permission- REB File #CDE 13-09

You have been approved to contact the utilization of Athabasca University systems to access Athabasca University staff (faculty, tutors, professional and support staff) for recruitment purposes for your research proposal "Social ties, the technology acceptance model, and staff usage of an internal social network site at a Distance Education University" subject to the following conditions:

- Your research proposal has been approved by the Athabasca University Ethics Board (AUEB);
- Staff information is used solely for the purpose outlined in the research proposal submitted to the AUEB;
- Secondary uses of data or subsequent research proposal(s) will require additional approval of AUEB, permission of the staff or former staff and institutional permission if the individual is still an Athabasca University staff;
- Staff participants will be provided with information about how information will be represented in documentation, reports and publications;
- Staff information will not be shared with a third party;
- The nature of communication with staff is that outlined in the research proposal submitted to the AUEB;
- Staff demographic information will be used solely within the research project;
- Documentation such as staff responses to questionnaires, interview responses (written or tape d), observations of individual staff behaviors, etc. will not be used for any purpose other than that outlined in the research proposal submitted to AUEB;
- Staff information will be kept confidential until it is destroyed after a period not in excess of 10 years;
- Use of personal information will be in compliance with the freedom of Information, Protection of Privacy (FOIP) legislation of the province of Alberta, Canada.

I wish you every success with your research project.

cc Research Ethics Board
Registrar
Terry Anderson -Researcher Supervisor- Centre for Distance Education

Athabasca University.
CENTRE FOR DISTANCE EDUCATION

MEMORANDUM -- CDE Research Ethics Committee

DATE: October 9, 2013

TO: **Ms. Barbie Bruce**

COPY: **Dr. Terry Anderson** (Research Supervisor)
Alice Tieulié, Acting Secretary, Athabasca University Research Ethics Board
Dr. Vive Kumar, Chair, Athabasca University Research Ethics Board

FROM: Dr. Marguerite Koole, Chair, CDE Research Ethics Review Committee

SUBJECT **Ethics Proposal #CDE-13-09: "Social ties, the technology acceptance model, and staff usage of an internal social network site at a Distance Education University"**

Thank you for providing the revised application requested by the Centre for Distance Education (CDE) Research Ethics Review Committee.

On behalf of the CDE Research Ethics Review Committee, I am pleased to confirm that this project has been granted FULL APPROVAL on ethical grounds, and **you may proceed with recruitment as soon as AU Institutional Permission has been received** (see below).

AU Institutional Permission: Prior to recruitment, for file purposes only, provide a copy of Athabasca University Institutional Permission, issued from Vice-President Academic, enabling access to AU systems and student or staff contact for research purposes.

The AU Research Ethics office will assist in requesting the institutional permission by forwarding a copy of the final revised/approved ethics application, along with a request on behalf of the researcher. The researcher will be cc'd on all correspondence in that regard.

This approval of your application will be reported to the Athabasca University Research Ethics Board (REB) at their next monthly meeting. The REB retains the right to request further information, or to revoke the approval, at any time.

The approval for the study "as **presented" is valid for a period of one year from the date of this memo.** If required, an extension must be sought in writing prior to the expiry of the existing approval. **A Final Report is to be submitted when the research project is completed.** The reporting form can be found online at
http.//www.athabascau.ca/research/ethics/

As implementation of the proposal progresses, if you need to make any significant changes or modifications, please forward this information immediately to the CDE Research Ethics Review Committee via rebsec@athabascau.ca for further review.

If you have any questions, please do not hesitate to contact the Committee Chair (above), or the Research Ethics Administrator at rebsec@athabascau.ca

1. University Drive, Athabasca, AB T9S 3A3 Canada
P 780.675.6179 Toll free (CAN/US) 1.800.561.4650 (6179)
mde@athabascau.ca cde. athabascai.ca athabascau.ca

APPENDIX J – Crosstab Results

Comparing age, gender, education, employment status, & job category

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
age, five categories * Education, four categories	40	97.6%	1	2.4%	41	100.0%
Gender * Education, four categories	39	95.1%	2	4.9%	41	100.0%

age, five categories * Education, four categories Crosstabulation

% within age, five categories

		Education, four categories				Total
		3 College	4 Bachelor's	5 Master's	6 PhD/EdD	
age, five categories	2 <29 - 39	12.5%	25.0%	37.5%	25.0%	100.0%
	3 40 - 49		17.6%	35.3%	47.1%	100.0%
	4 50 - 59			33.3%	66.7%	100.0%
	5 60 - 69			44.4%	55.6%	100.0%
Total		2.5%	12.5%	37.5%	47.5%	100.0%

Gender * Education, four categories Crosstabulation

% within Gender

	Education, four categories			Total
	4 Bachelor's	5 Master's	6 PhD/EdD	
Gender 1 Female	17.6%	35.3%	47.1%	100.0%
2 Male	9.1%	40.9%	50.0%	100.0%
Total	12.8%	38.5%	48.7%	100.0%

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
age, five categories * Employment status at AU	39	95.1%	2	4.9%	41	100.0%
Gender * Employment status at AU	38	92.7%	3	7.3%	41	100.0%

age, five categories * Employment status at AU Crosstabulation

% within age, five categories

		Employment status at AU			
		1 Full-time	2 Part-time	3 Contract employee	Total
age, five categories	2 <29 - 39	62.5%	37.5%		100.0%
	3 40 - 49	75.0%	12.5%	12.5%	100.0%
	4 50 - 59	83.3%	16.7%		100.0%
	5 60 - 69	77.8%	22.2%		100.0%
Total		74.4%	20.5%	5.1%	100.0%

Gender * Employment status at AU Crosstabulation

% within Gender

		Employment status at AU			
		1 Full-time	2 Part-time	3 Contract employee	Total
Gender	1 Female	77.8%	22.2%		100.0%
	2 Male	70.0%	20.0%	10.0%	100.0%
Total		73.7%	21.1%	5.3%	100.0%

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
age, five categories * Length of time working in Higher Education	41	100.0%	0	.0%	41	100.0%
Gender * Length of time working in Higher Education	40	97.6%	1	2.4%	41	100.0%

age, five categories * Length of time working in Higher Education Crosstabulation
% within age, five categories

		Length of time working in Higher Education			
		3 3 - 6 years	4 6 - 10 years	5 > 10 years	Total
age, five categories	2 <29 - 39	37.5%	25.0%	37.5%	100.0%
	3 40 - 49	17.6%	23.5%	58.8%	100.0%
	4 50 - 59	14.3%		85.7%	100.0%
	5 60 - 69			100.0%	100.0%
Total		17.1%	14.6%	68.3%	100.0%

Gender * Length of time working in Higher Education Crosstabulation
% within Gender

		Length of time working in Higher Education			
		3 3 - 6 years	4 6 - 10 years	5 > 10 years	Total
Gender	1 Female	11.1%	22.2%	66.7%	100.0%
	2 Male	18.2%	9.1%	72.7%	100.0%
Total		15.0%	15.0%	70.0%	100.0%

Crosstabs
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
age, five categories * Either faculty, tutor or admin staff at AU	36	87.8%	5	12.2%	41	100.0%
Gender * Either faculty, tutor or admin staff at AU	35	85.4%	6	14.6%	41	100.0%

age, five categories * Either faculty, tutor or admin staff at AU Crosstabulation
% within age, five categories

		Either faculty, tutor or admin staff at AU			
		2 administrative staff	3 tutor	4 faculty	Total
age, five categories	2 <29 - 39	57.1%	28.6%	14.3%	100.0%
	3 40 - 49	46.7%	13.3%	40.0%	100.0%
	4 50 - 59	33.3%		66.7%	100.0%
	5 60 - 69	37.5%	25.0%	37.5%	100.0%
Total		44.4%	16.7%	38.9%	100.0%

Gender * Either faculty, tutor or admin staff at AU Crosstabulation

% within Gender

		Either faculty, tutor or admin staff at AU			
		2 administrative staff	3 tutor	4 faculty	Total
Gender	1 Female	37.5%	18.8%	43.8%	100.0%
	2 Male	47.4%	15.8%	36.8%	100.0%
Total		42.9%	17.1%	40.0%	100.0%

Appendix K: TAM Descriptive Statistics

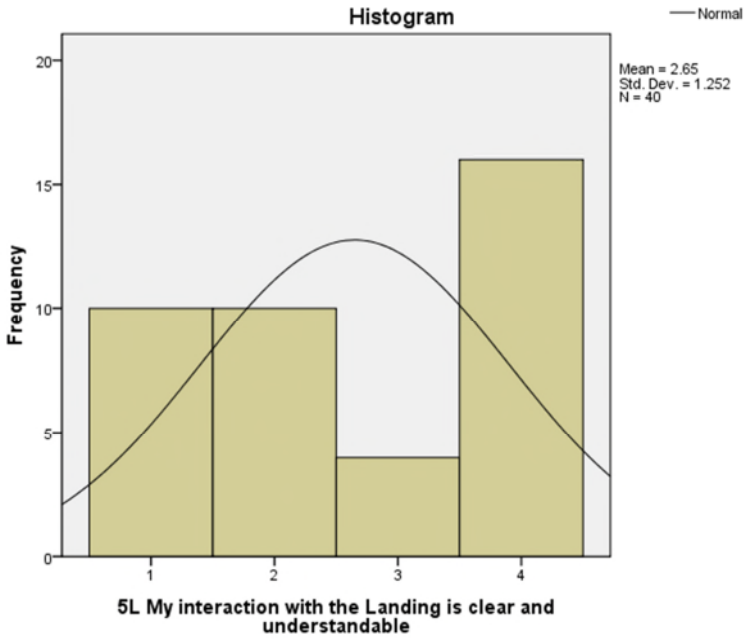
Table K1 **Descriptive statistics Mean, Median, and Mode**

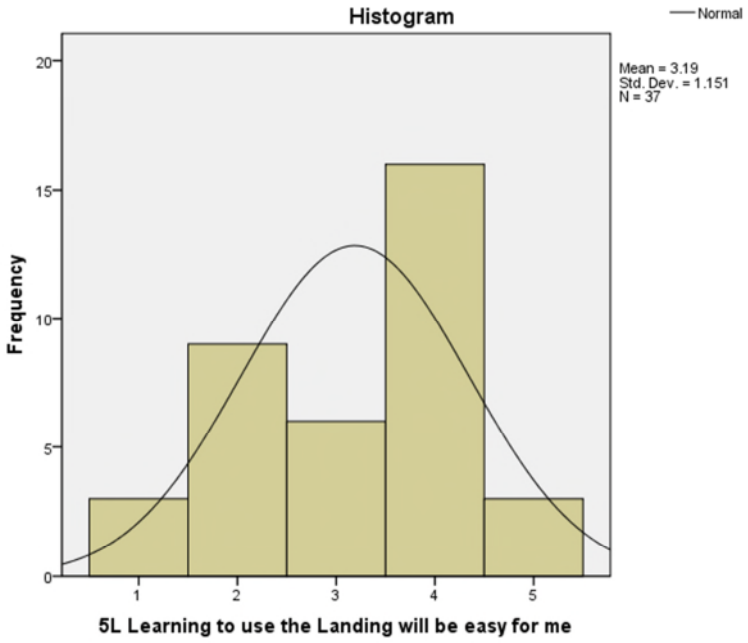
		N	Mean	Median	Mode	Std. Dev	Skewness	Std. Err Skewness	Kurtosis	Std. Err Kurtosis	Range
PEOU	My interaction with the Landing is clear and understandable	40	2.65	2.50	4	1.25	-.112	.374	-1.672	.733	3
	Learning to use the Landing will be easy for me	37	3.19	4.00	4	1.15	-.391	.388	-.908	.759	4
	I find it easy to get the Landing to do what I want it to do	39	2.62	2.00	2	1.21	.427	.378	-.734	.741	4
	I find the Landing to be easy to use	40	2.5	2.00	2	1.30	.368	.374	-1.256	.733	4
PU	Using the Landing enhances my effectiveness on the job	40	2.17	2.00	1	1.13	.649	.374	-.499	.733	4
	Using the Landing in my job helps me to accomplish tasks more quickly	39	1.82	1.00	1	1.07	1.320	.378	1.090	.741	4
	I find the Landing useful in my job	40	2.23	2.00	1	1.25	.544	.374	-1.081	.733	4
	Using the Landing in my job will increase my productivity	40	2	1.00	1	1.24	.849	.374	-.668	.733	4
BI	I intend to use the Landing in the next two weeks	40	2.28	2.00	1	1.47	.828	.374	-.832	.733	4
	I predict I will use the Landing in the next two weeks	40	2.28	2.00	1	1.47	.674	.374	-1.091	.733	4
	I plan to use the Landing in the next two weeks	40	2.25	1.50	1	1.52	.763	.374	-1.019	.733	4
SN	My peers think I should use the Landing	39	2.41	2.00	1[a]	1.19	.325	.378	-1.057	.741	4
	People who influence my behaviour think I should use the Landing	40	2.3	2.00	1	1.31	.500	.374	-1.054	.733	4
	Colleagues who are important to me think that I should use the Landing	40	2.42	2.00	1	1.34	.439	.374	-1.060	.733	4

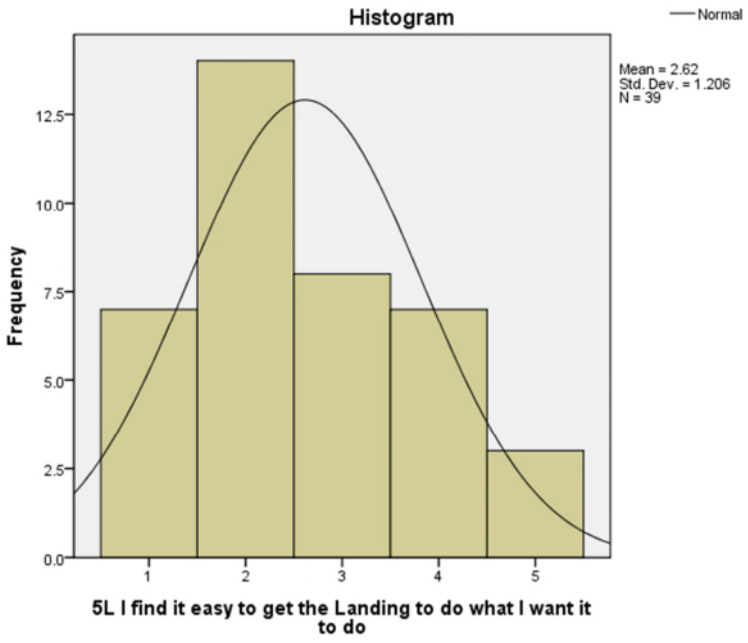
a. Multiple modes exist. The smallest value is shown

TAM histograms

PEOU



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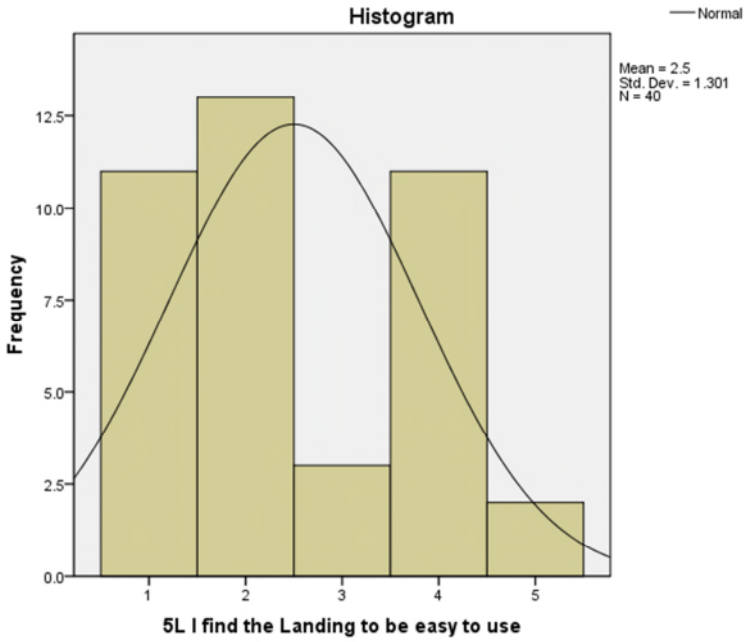
2
3
4
5
5L I find it easy to get the Landing to do what I want it to do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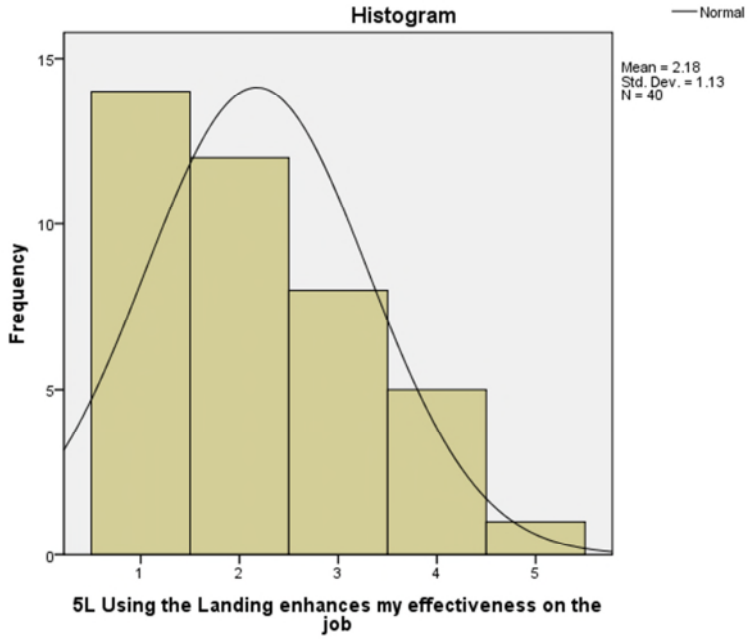
1
2
3
4
5
5L I find the Landing to be easy to use

PU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Mean = 2.18
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Frequency
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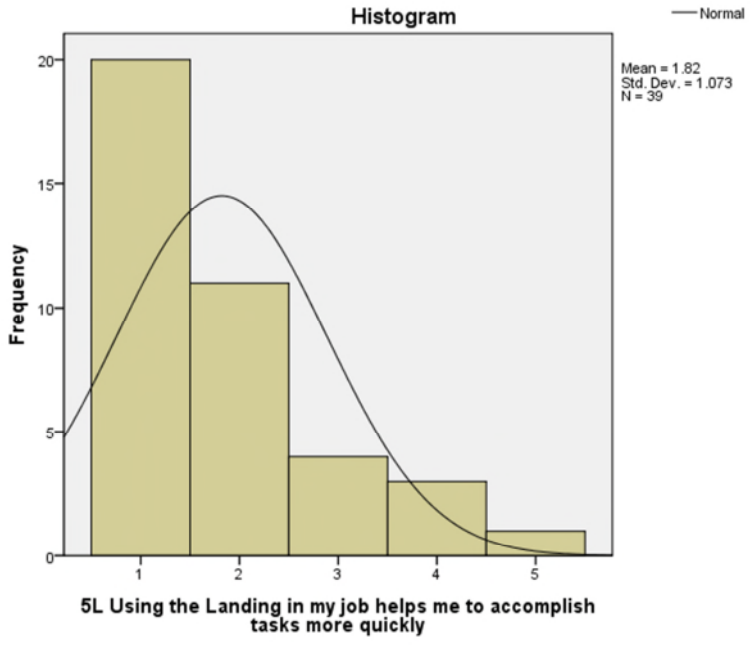
10
5
0
1
2
3
4
5
5L Using the Landing enhances my effectiveness on the job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N = 39
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5
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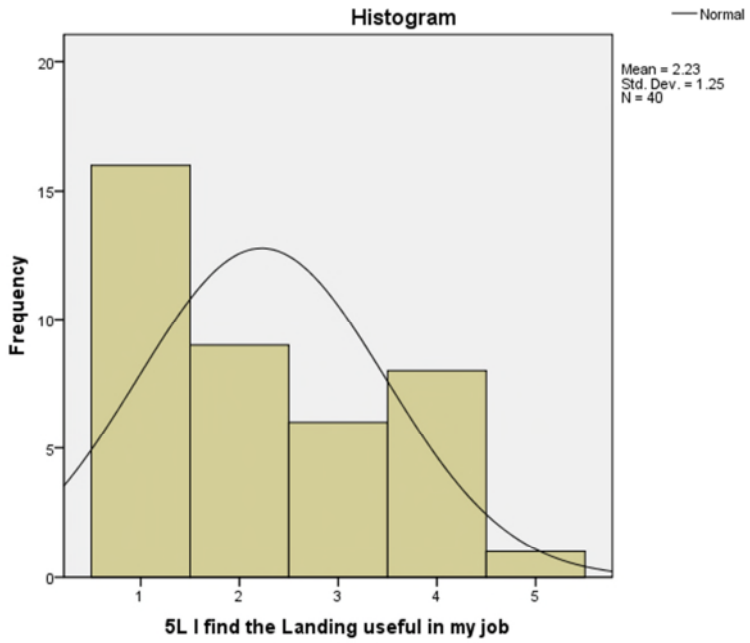
1
2
3
4
5
5L Using the Landing in my job helps me to accomplish tasks more quickly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3
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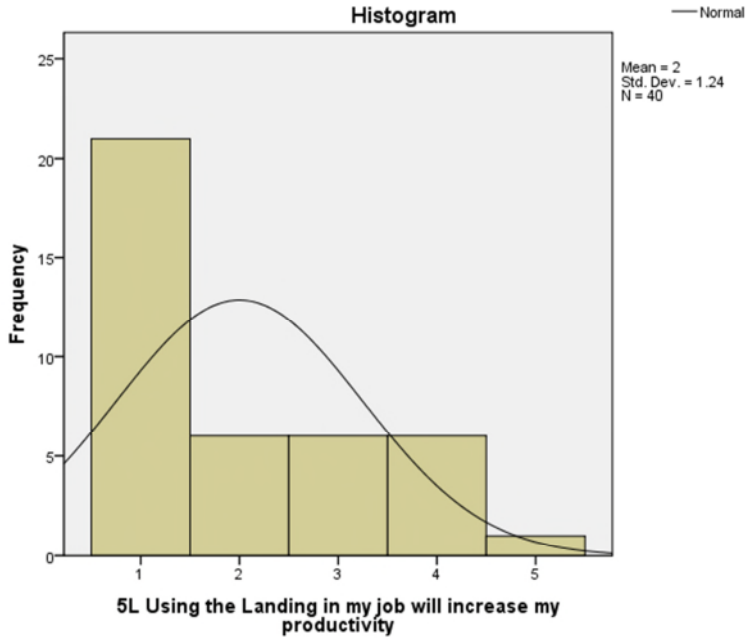
5
5L I find the Landing useful in my job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10
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20
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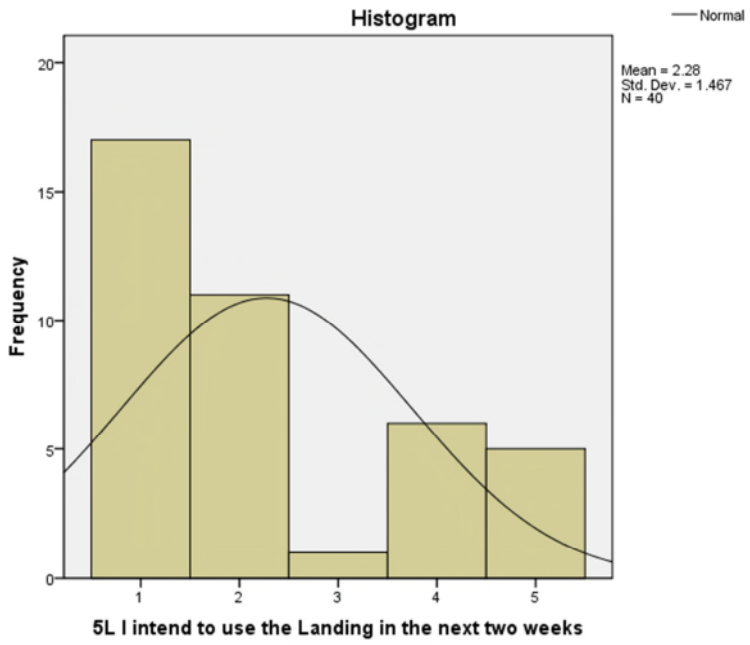
1
2
3
4
5
5L Using the Landing in my job will increase my productivity

BI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1
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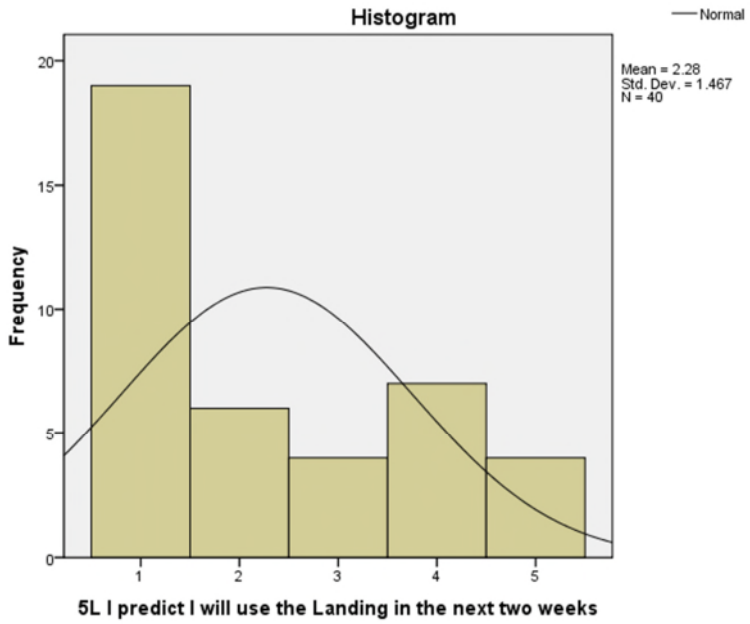
3
4
5
5L I intend to use the Landing in the next two weeks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Std. Dev. = 1.467
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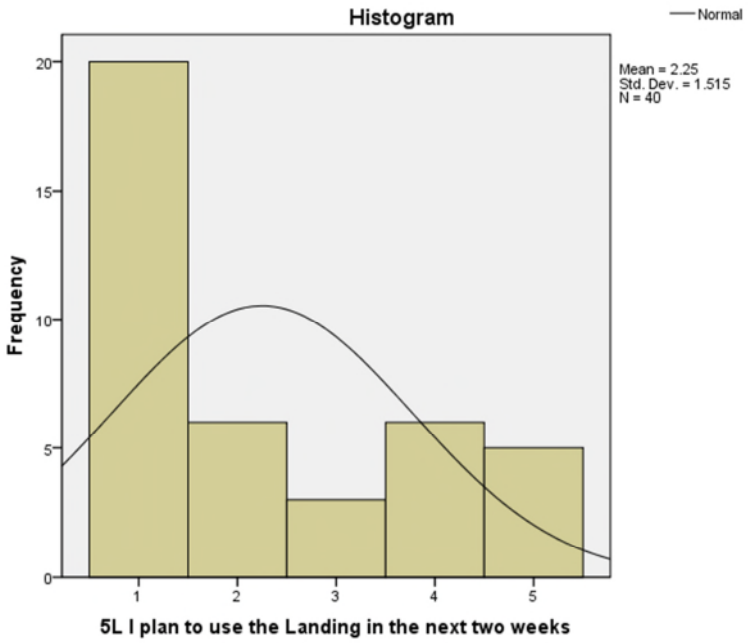
10
15
20
1
2
3
4
5
5L I predict I will use the Landing in the next two weeks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2
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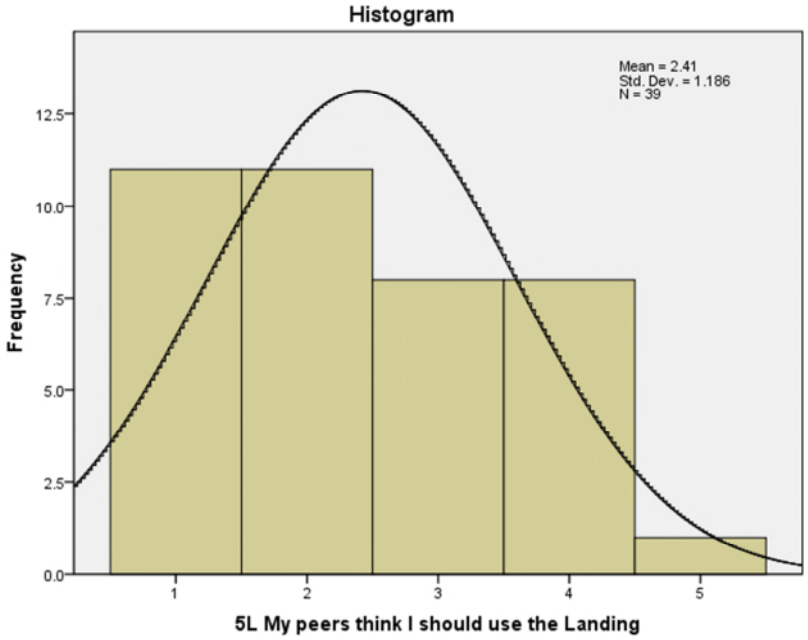
4
5
5L I plan to use the Landing in the next two weeks

SN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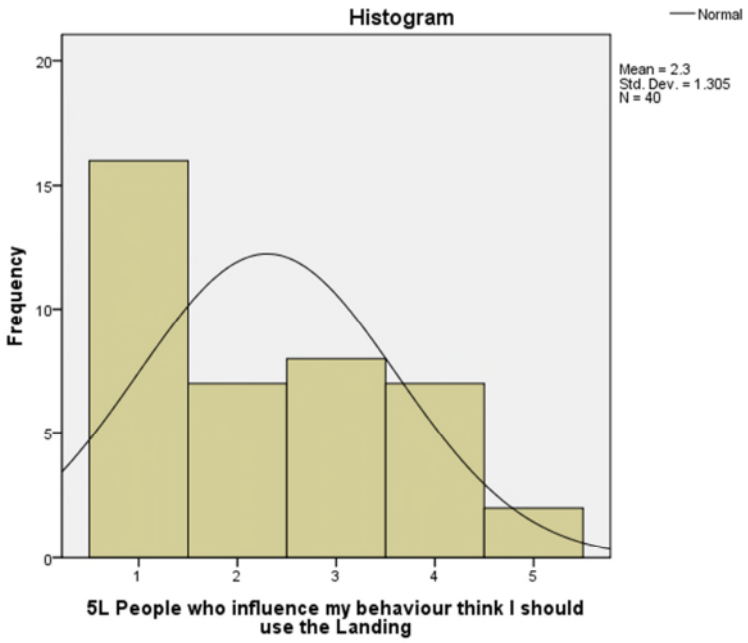
5
5L My peers think I should use the Landing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10
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1
2
3
4
5
5L People who influence my behaviour think I should use the Landing

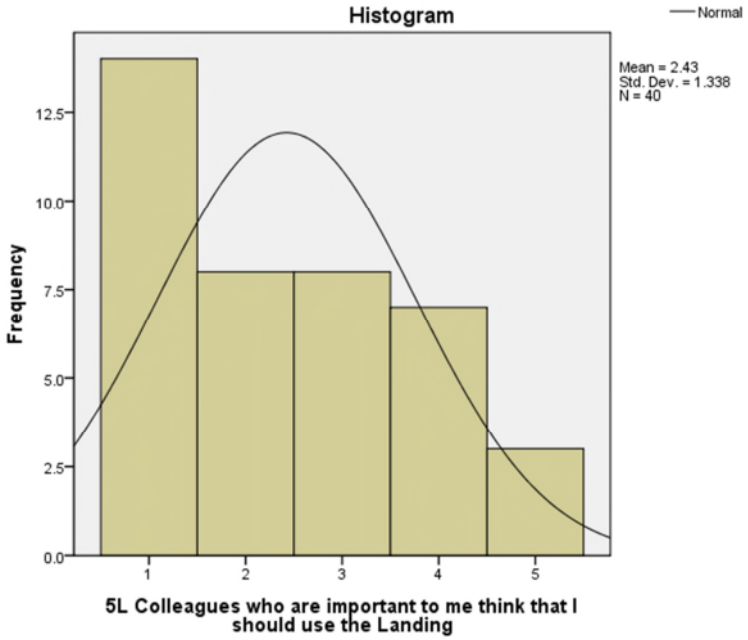
Histogram
Normal
Mean = 2.43
Std. Dev. = 1.338
N = 40
Frequency
12.5
10.0
7.5
5.0
2.5
0.0
1
2
3
4
5
5L Colleagues who are important to me think that I should use the Landing

Table K2 TAM Frequencies and percentages for Likert (in three categories)

			Disagree		Neutral *		Agree	
		N	Frequency	%	Frequency	%	Frequency	%
PEOU	My interaction with the Landing is clear and understandable	40	20	50.0	4	10.0	16	40.0
	Learning to use the Landing will be easy for me	37	12	32.4	6	16.2	19	51.3
	I find it easy to get the Landing to do what I want it to do	39	21	53.8	8	20.5	10	25.6
	I find the Landing to be easy to use	40	24	60.0	3	7.5	13	32.5
PU	Using the Landing enhances my effectiveness on the job	40	26	65.0	8	20.0	6	15.0
	Using the Landing in my job helps me to accomplish tasks more quickly	39	31	79.5	4	10.3	4	10.3
	I find the Landing useful in my job	40	25	62.5	6	15.0	9	22.5
	Using the Landing in my job will increase my productivity	40	27	67.5	6	15.0	7	17.5
BI	I intend to use the Landing in the next two weeks	40	28	70.0	1	2.5	11	27.5
	I predict I will use the Landing in the next two weeks	40	25	62.5	4	10.0	11	27.5
	I plan to use the Landing in the next two weeks	40	26	65.0	3	7.5	11	27.5
SN	My peers think I should use the Landing	39	22	56.4	8	20.5	9	23.1
	People who influence my behaviour think I should use the Landing	40	23	57.5	8	20.0	9	22.5
	Colleagues who are important to me think that I should use the Landing	40	22	55.0	8	20.0	10	25

*Neutral is defined as neither agree or disagree

APPENDIX L – Qualitative Codebook

Table L1 Definitions and criteria for deductive analysis

TAM Themes	Definitions for this analysis	inclusion criteria & example (quote)	exclusion criteria & example (quote)
Perceived usefulness (PU)	A person's perception of the Landing's usefulness for connecting with people in the AU community. A place for sharing information or for collaboration.	Person uses the site regularly and indicates that it is useful for their job, work, or studies. Elaine "For those courses during those times I'm on there all the time." AND "I have email alerts for all the groups I am interested in and they (emails notifications) come to me."	A person' perception that they do not see any benefit to them if they use the Landing. Connie “I really have no concept of what it's all about or why anybody would want to use it".
Perceived ease of use (PEOU)	A person's perception of how easy it is to login and use the Landing and its various features.	The participant indicated the Landing is easy to use. Elaine "...not really that hard to figure out".	A participant indicates they had difficulties using Landing. Bob "... I have a hard time with it…it doesn't tell me intuitively where to go".
Behavioural intention to use (BI)	AU staff's intention to use the Landing now or in the future.	The participant indicated they will use Landing. Alice "I have to go take a look"	A participant indicated they will not use the Landing or did not provide that information.
Social Influence (SI)	AU colleagues in own or other departments may have an influence on a person's decision to use the Landing.	Participant(s) indicated that a co-worker talked about or recommended that they use the Landing. Connie "one professor that is particularly enamoured with it.”	Participant did not identify a specific person who suggested they use the Landing. Alice "I have heard other people referencing it"

Table L2 Inductive analysis sample categories and codes

Categories	Codes
"unimportant support staff"	Academia.edu
Afraid - part of frustration?	anything new
Apprehension	Breaking social norms
awareness	cant do unless told to
Bosses	Changes -to how work tasks are accomplished; told about in advance
control SNS use (or set limits, manage, self-control?)	classmates (strong ties)
Curiosity	colleagues (weak ties)
disconnect -part of control?	entrenched
frustration -afraid part of this?	FB for family
grass roots versus AU approved	grass roots versus AU approved
More people - critical mass	Group work - not being accepted
One place for info	learning on own
Partition SNS use	Like about SNS/features/ease of use/ useful
Perceptions on use of SNS	LinkedIn professional
privacy - part of control	More people - critical mass
segmenting	need approval to use? no approval to use
Sense making of SNS	need to unplug
SNS tools	new technology - ability to use
time - part of control	not discussed in faculties
Unaware of Landing	not encouraged to use
Usage	not told about
	not wanting to appear stupid
	of not being part of the group
	of tech
	Other interests (Pinterest)
	over changes in way things done
	over time
	over who sees what
	Posting - need to disconnect; observer or poster
	Privacy - Control over who sees what
	professors (weak ties)
	reason to Landing; working well, weakness, changes; useful collaboration.
	set limits, manage, self-control
	stay the course versus expand
	tech does not foster this?
	ties in with control and who sees what
	Time - Control over time - too busy to post; need to disconnect
	too busy
	too busy to learn
	too busy to post

Categories	Codes
	too much
	too much noise
	use, usage, not used, not enough users
	with changes
	with tech doesn’t work