

**USER SATISFACTION WITH XERO ACCOUNTING SOFTWARE IN  
AUCKLAND, NEW ZEALAND.**

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## **Abstract**

Xero has been rated as one of the top 10 accounting software in the world (Forbes, 2016). However, there has been very little research undertaken to evaluate the cloud-based accounting software using a structured end-user satisfaction framework. The aim of this study is to evaluate user satisfaction and success with Xero accounting software in Accounting firms and Small & Medium Enterprises (SMEs) in Auckland. The study utilized the End-User Computing Satisfaction (EUCS) model which was developed by Doll and Torkzadeh (1988) to measure the user satisfaction and the software success of the accounting software Xero.

This study includes a sample size of 122 users of Xero from accounting firms and SMEs in Auckland. Data collection was undertaken using questionnaires. This study utilized reliability analysis, descriptive statistics and frequency analysis, t-test, Analysis of variance (ANOVA) and multiple-regression analysis to analyse data. The data analysis for this study was undertaken using the Statistical Package for Social Science (SPSS) software.

The findings of the study suggest that users were satisfied with the software Xero and expressed a belief that the software was effective. The limitation of this study was based on the small sample size of participants; hence, it cannot be concluded that Xero has met the overall satisfaction of its users in Auckland, New Zealand. Practical implications of this study include making this research available to researchers, practitioners and the general public with the possibility that the results can be theoretically applicable and beneficial to its users and providers. In addition, this study can provide researchers and practitioners with results which they can use as a guide to evaluate cloud-based software applications in their academic research and work environment. This study can also encourage the providers to modify the product to further fulfil the needs of its users which could lead to an increase in the value of the software itself. Research implications of this study include extending the EUCS model to evaluate cloud-based software applications in accounting firms and SMEs.

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## **Attestation of Authorship**

“I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.”

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Jemmi Mauricette

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# **Chapter 1. Introduction**

## **1.1 Background**

Web-based and cloud-based software applications have catapulted and revolutionised the development of information systems in the accounting environment (Passerini, El Tarabishy, & Patten, 2012). A web-based software application can be defined as a software system which is primarily based on technology and ethics associated with the World Wide Web that gives precise web resources which include content and services through user interface and web browser (Fowler & Stanwick, 2004; Zuo & Mabon, 2004). On the other hand, a cloud-based software application can be defined as a software program which enables cloud based and local mechanisms to function collectively and relies on distant servers to process information that is accessible through the web browser and with the continuous connection of the internet (Mell & Grance, 2011).

The advent of cloud-based software applications have influenced the development of accounting software used by accounting firms, small and medium enterprises (SMEs) (Marakarkandy & Yajnik, 2013; McHaney, Hightower, & Pearson, 2002). Since the invention of cloud-based accounting software applications, firms and individuals alike have adopted cloud-based software application in their company to facilitate accounting practices and to produce a more efficient and effective working environment (Abdinnour-Helm, Chaparro, & Farmer, 2005; Heilman & Brusa, 2006).

The increasing adoption of cloud-based software application drew much needed attention from researchers and practitioners to develop a suitable and feasible framework to evaluate cloud computing applications. Hence, researchers and practitioners alike began to use frameworks such as User Information Satisfaction (UIS) developed by Ives and Olsen (1983) and End-User Computing Satisfaction (EUCS) developed by Doll and Torkzadeh (1988) to evaluate these applications.

## **1.2 Motivation**

This study was motivated by the following factors. Firstly, an in-depth review of the literature that examined the use of the Doll and Torkzadeh (1988) EUCS model in various countries to evaluate web-based software applications. However, this model has not been used in New Zealand to measure any accounting software applications. Secondly, this research was undertaken because there have not been any studies which have used the Doll and Torkzadeh EUCS model to evaluate the cloud-based software application Xero. Also, the general motivation for this study is to determine the perceived effectiveness of the software application and its impact on user satisfaction. Finally, the study aims to contribute to the existing body of knowledge in the area AIS and how it would influence and encourage research on user satisfaction and software success of cloud-based software applications in the future.

## **1.3 Aim**

The aim of the study is to examine user satisfaction and success with the accounting software Xero in Auckland, New Zealand utilising the End-User Computing Satisfaction (EUCS) model. Furthermore, this study seeks to confirm that the EUCS model is capable of measuring cloud-based AIS which has not been previously undertaken. In addition, this study will provide empirical evidence from the perspective of user satisfaction with the accounting software Xero. The EUCS model developed by Doll and Torkzadeh (1998) has been used in various studies to evaluate web-based software applications within firms across many countries (A Azadeh, Songhori, & Sangari, 2009; Bakke & Stensrud, 2008). Most of these studies have applied a quantitative approach to evaluate EUCS of software applications. Hence, this study will apply a quantitative approach which will involve surveying users of the software Xero in accounting firms and SMEs in Auckland, New Zealand.

## **1.4 Structure**

This study is divided into six chapters. Chapter one discusses the background, aim and motivation. Chapter two provides a review of the extended literature on user information satisfaction (UIS), cloud computing and end-user computing satisfaction (EUCS). Chapter three describes the

methodology, data collection, instruments, questionnaire and data analysis. Chapter four describes the participants and sample, the measures used, analyses and results from the findings and a summary of the results. Chapter five provides the discussion and interpretation of the empirical results obtained and discusses the implications for the study. Finally, chapter six discusses the conclusions, implications, limitations and identifies possible directions for further research of the study.

## **Chapter 2. Literature Review**

### **2.1 User Information Satisfaction**

Information technology (IT) has led to the evolution of information systems (IS), the internet and web-based computerised systems. According to Cyert and March (1963) the aim of any particular information system is to support the operations, management and decision making of an organisation. An IS can be defined as the information and communication technology that an organisation uses, and the manner in which individuals engage with the technology in support of their business processes (Davenport & Short, 1990). During the second half of the 20<sup>th</sup> century, the development of information systems increased. This led researchers and practitioners to search for an ideal variable to evaluate information systems. The variable effectiveness was one of the first variables developed to evaluate IS (Melone, 1990). Researchers such as Srinivasan (1985), Merete et al., (2008) and Ginzberg (1978) adopted the variable to evaluate IS effectiveness in their studies. Results from these studies suggested that the variable effectiveness had shown success in evaluating IS (Ginzberg, 1978; Merete Hagen, Albrechtsen, & Hovden, 2008; Srinivasan, 1985).

Subsequently, researchers and practitioners were encouraged to adopt the variable effectiveness to evaluate IS (Melone, 1990). The evaluation of IS with the variable effectiveness paved the way for the development of new variables to evaluate IS (Cameron, 1986). The constant need for new variables encouraged researchers and practitioners to further explore and develop other variables such as “user satisfaction”, “System quality”, “Information quality”, and “system use” to evaluate IS effectiveness (Delone & McLean, 2003; Ginzberg, 1978).

Nevertheless, it was the development of the variable user satisfaction by researchers and practitioners that has been fundamental in evaluating IS (Ives, Olson, & Baroudi, 1983). These findings have led researchers and practitioners to believe that improvements in the information systems industry were due to the evaluations which were undertaken using the variable user satisfaction (Melone, 1990). Since then, there has been an increasing interest to use the variable

user satisfaction to evaluate IS in other studies (Ives et al., 1983). In addition, the continuous use of the variable user satisfaction by researchers encouraged the development of a standard User Information Satisfaction (UIS) model to evaluate IS applications.

The concept of the UIS was first introduced by Cyert and March (1963) in their study entitled “A behavioural theory of the firm”. The authors emphasised that an IS that is able to meet the information requirements of its users will strengthen the satisfaction with that particular system. On the other hand, if that system fails to provide the required information, users will express their dissatisfaction and will explore alternative options to find a suitable information system. (Cyert & March, 1963; Ives et al., 1983). UIS is a perceptual or subjective measure of system success: it serves as a substitute for objective determinants of information system effectiveness which are frequently not available (Ives et al., 1983). Moreover, UIS can be defined as the association with an IS and its ability to meet the information requirements or needs of its users (Bai, Law, & Wen, 2008; Cyert & March, 1963). Baroudi and Orlikowski (1988) defined UIS as the degree to which users believe the information system available to them meets their information requirements. Ives et al., (1983) refer to UIS as the level at which users of IS have faith in the availability of IS which is provided to them and can meet their information requirements.

Prior to the use of the variable user satisfaction, researchers only used effectiveness as the main variable to evaluate IS. Then user satisfaction was developed as a proxy to measure information systems effectiveness by researchers in the academic environment and by practitioners in the IS industry (Melone, 1990). Thus, for almost two decades from 1960 until 1980, user satisfaction had been the main variable which has occupied and been at the centre of behavioural research in IS. However, user satisfaction was only used from a theoretical perspective to evaluate IS effectiveness. Hence, some researchers and practitioners had suggested adopting the variable user satisfaction to evaluate IS effectiveness from a practical perspective (Larcker & Lessig 1980; Gallagher, 1974). This has provided the motivation for researchers to investigate the measurement of user satisfaction and provide statistical evidence that user satisfaction is a valid and reliable variable to evaluate IS (Jenkins & Ricketts, 1985; Melone, 1990). Consequently, this has also stimulated the inclusion of user satisfaction in empirical academic research and its utilisation by researchers and practitioners to evaluate IS (Jenkins & Ricketts, 1985; Baroudi & Orlikowski, 1988).

During the 1980's, various authors evaluated user satisfaction of IS (Bailey & Pearson, 1983; Baroudi & Orlikowski, 1988; Jenkins & Ricketts, 1985). These authors developed their own instruments and models to evaluate user satisfaction of IS. During this period, one of the first recognisable models of UIS was developed by Ives, Olson and Baroudi in 1983 (Ives et al., 1983; Baroudi & Orlikowski, 1988). The development of the model inspired more research to be undertaken and used by researchers and practitioners to evaluate user satisfaction of IS. Although, it was suggested that Ives et al., (1983) developed the UIS model, increasing evidence also shows that other authors had made valuable contributions to the development of their framework of the UIS model (Ives et al., 1983). Gallagher (1974) was one of the first researchers who made contributions to evaluate user perception of the value of information reports obtained from an IS. Also, other researchers such as Larcker and Lessig (1980), Bailey and Pearson (1983), Ives, Olson, and Baroudi (1983), Jenkins and Ricketts (1985) and Baroudi and Orlikowski (1988) developed their own version of the UIS model in their studies during the 1980's (Melone, 1990; Xiao & Dasgupta, 2002).

Gallagher (1974) evaluated user perception of the value of information systems reports obtained from a medium size IS firm in the U.S. The author developed 15 measures with 5 underlying variables to evaluate the value of the expense and budget (EAB) systems reports. Gallagher (1974) applied a 7-point semantic differential scale measure and estimated dollar value measure to evaluate the value of the EAB systems reports. Results confirmed that the mean score on the semantic differential measure and the estimated dollar value measure were statistically significant to the value of the EAB system reports. Furthermore, Gallagher (1974) executed a correlation analysis between the 5 variables: quantity, quality-format, quality reliability, timeliness, cost and EAB systems reports to measure user perception of the value of EAB reports. The authors found the correlation between the 5 variables and EAB system reports were statistically significant to user perception of the EAB systems reports. However, their study identified a limitation in that the measures in the study evaluated the reports and did not pay attention to the quality of the information service function. Furthermore, the estimate dollar measure had no value to validate the correlation between an estimated and real dollar value of the EAB systems reports. (Gallagher, 1974).

Another contribution to the literature of UIS was undertaken by Bailey and Pearson (1983). The aim of their study was to develop an instrument to measure and analyse computer user satisfaction. Bailey and Pearson (1983) developed a UIS model that represented an important development in the evolution of the variables to measure and analyse computer user satisfaction. In this study, 39 variables were utilised to measure user satisfaction of computerised systems from firms in the U.S. Their instruments were broadly based and included measures of both the system and support quality as perceived by the user. Applying a 4-point semantic differential scale technique, with 1 being “extremely dissatisfied” and 4 being “extremely satisfied”, the computer users were asked to evaluate their satisfaction of the variables. Findings indicated that computer users were less satisfied with variables: “Accuracy”, “Reliability”, “Timeliness”, “Relevancy” and “Confidence in System” to evaluate computers user satisfaction. On the other hand, users were extremely dissatisfied with the variables: “feeling of control”, “Volume of output”, “Vendor support”, “Degree of training” and “Organizational position of electronic data processing (EDP)” to evaluate computer user satisfaction. In addition, findings from a reliability test and correlation analysis suggested that 21 of the 39 variables from this study were reliable measures of computer user satisfaction and confirmed that 21 of the 39 variables were significantly correlated to each other (Bailey & Pearson, 1983).

Jenkins and Ricketts (1985) developed an instrument to evaluate user satisfaction for a turnkey decision support systems (Jenkins & Ricketts, 1985). Turnkey decision support systems are a type of system built end-to-end for a customer that can be easily implemented into a current business process (Jenkins & Ricketts, 1985). The aim of their study was to perform psychometrical testing from five laboratories in the U.S. The authors developed 20 measures with the 5 underlying variables: “procedures”, “systems processing”, “report content”, “report form” and “report value” to evaluate of user satisfaction of the turnkey decision support system. The authors relied on a 7-point semantic differential scale with 1 being “very untimely” and 7 being “very timely”, the users of the turnkey decision support system were asked to evaluate their satisfaction of the 5 variables. Results suggested that the 5 variables were appropriate in evaluating user satisfaction of a turnkey decision support system. Findings from a correlation analysis concluded that the 5 variables were statistically significant to user satisfaction of the turnkey decision support systems. However, the authors identified limitations with their study. Using the scores obtained from the factor analysis



in a regression equation to measure one of the global measures of user satisfaction, the authors concluded that the 5 variables only accounted for 30% of variance in global satisfaction scores. Therefore, the factor analysis did not fully support the factor framework which was initially proposed.

Larcker and Lessig (1980) support the findings of Jenkins and Ricketts (1985) and Gallagher (1974) in their study on user perceived usefulness of information. The aim of their study was to evaluate the capital budgeting decisions of graduate students at the University of Kansas in the U.S. This was achieved by developing the two measures of the variables perceived usefulness of information: perceived importance and perceived useableness to evaluate the capital budget decisions of graduate students. Conducting a correlation analysis between the two measures and capital budget decisions of graduate students, the authors concluded that the measures perceived importance and perceived usefulness were positively and significantly associated with the capital budget decisions of graduate students at the university. In addition, the authors stated that the variables were important for the design of management information systems (MIS), Therefore, the authors tested if the measures were reliable and valid to evaluate user satisfaction of the MIS. Results from a reliability and validity analysis found that the two measures perceived importance and perceived useableness were reliable and valid variables to evaluate user satisfaction of management information systems (Larcker & Lessig, 1980).

Ives, Olson and Baroudi (1983) study was based on a critical analysis of the measures of UIS developed in the studies of Bailey and Person (1988), Gallagher (1974), Jenkins and Ricketts (1985) and Larcker and Lessig (1980). The aim of their study was to review each of the four studies and select the most suitable study for replication and to develop an appropriate framework to evaluate a UIS. The authors also included variables from a survey of managers from a production company in the U.S to extend the number of variables in their study. The authors focused on using the four variables “reliability”, “content validity”, “predictive validity” and “construct validity” to measure the levels of user satisfaction of the variables used from the four studies. The authors applied a 4-point semantic differential scale and found that the 4 variables were effective measures of user satisfaction. In addition, correlation analysis concluded that the 4 variables were significantly correlated to user satisfaction (Ives et al., 1983).

Ives et al., (1983) analysed the 39 variables, 15 measures and 5 variables, 20 measures and 5 variables and 2 measures from the studies of Bailey and Person (1988), Gallagher (1974), Jenkins and Ricketts (1985) and Larcker and Lessig (1980) respectively. Findings from a reliability test suggested that 21 of the 39 variables from Bailey and Person (1988) study were reliable measures of user satisfaction. Moreover, correlation analysis showed that 21 of the 39 variables of user satisfaction were significantly correlated to each other. Therefore, their findings from the correlation analysis were supported by the Bailey and Person (1988) study. Ives et al., (1983) also verified the correlation analysis of the variables used by Gallagher (1974), Jenkins & Ricketts (1985) to measure user satisfaction. They found that variables were statistically significant to user satisfaction of information systems used in both studies. These findings also support the results obtained from the correlation analysis of Gallagher (1974) and Jenkins and Ricketts (1985) in their respective studies as discussed on pages 6 and 7. Thus, the authors concluded that this study provides substantial improvement towards the establishment a standard measure of UIS.

As a result, Ives et al., (1983) established the standard variables for the UIS model which were “end data processing” (EDP), “staff and services”, “information product”, and “user involvement/knowledge” (Ives et al., 1983; Doll & Torkzadeh, 1988). These authors suggested that these UIS variables from this study could be adopted by researchers and practitioners to evaluate user satisfaction of IS. However, according to Ives et al., (1983) the UIS model consisted of instruments which were designed for the traditional data processing setting instead of user satisfaction with a particular application (Ives et al., 1983). Another limitation was that the scale used to evaluate UIS focused more on a semantic differential scale instead of a Likert-scale (Ives et al., 1983). Towards the end of the 1980’s Doll and Torkzadeh (1988) developed End-User Computing Satisfaction (EUCS) model which was an extension of the User Information Satisfaction (UIS) model, developed by Ives, Olson and Baroudi in 1983. In their study, Doll and Torkzadeh (1988) used satisfaction and success as the two global variables representing EUCS.

The EUCS model included the following variables: “content”, “accuracy”, “format”, “ease of use” and “timeliness” (Doll & Torkzadeh 1988). Doll and Torkzadeh (1988) developed the EUCS by simplifying and adding new instruments and variables to the UIS model. In addition, the authors specifically designed this new EUCS model to focus primarily on measuring EUCS of web-based computing systems.

From the 1990's the EUCS model grew in popularity and numerous academic researchers and business practitioners adopted this model to evaluate web-based computerised systems. According to Doll and Torkzadeh (1988), EUCS can be defined as the effective communication between a particular computerised application and the person who interacts directly with the application. End-user satisfaction can be evaluated in terms of both the primary (application) and secondary user roles (inquiry and decision support application). During this focus of attention on user information satisfaction, the platform for computer applications has undergone significant change, particularly with the advent of cloud computing. A summary of these studies is included in Table 1.

**Table 1. Summary of the literature Review on User Information Satisfaction**

| <b>Author (year)/<br/>Country</b>      | <b>Sample Size</b>   | <b>Instruments<br/>evaluated/Software<br/>application used</b> | <b>Statistical<br/>Analysis</b>                  | <b>Number of<br/>measures/<br/>Variables and<br/>Instrument used<br/>for evaluation</b>      | <b>Relationship<br/>between the<br/>variables and<br/>instruments</b>  |
|--|--|--|--|--|--|
| Gallagher<br>(1974)/<br>U.S            | 103<br>managers<br>were selected<br>from a<br>medium size<br>firm. | Expense and budget<br>(EAB) systems<br>reports.                | Correlation<br>analysis.                         | 15 measures and<br>5 variables.<br><br>7-point semantic<br>differential scale                | 5 variables and<br>the EAB system<br>reports were<br>statistically<br>significant and<br>correlated.                       |
| Bailey and<br>Pearson<br>(1983)/ U.S   | 32 middle<br>managers.   | computerised<br>systems from<br>firms.                         | Reliability test<br>and Correlation<br>analysis. | 39 variables.<br><br>4-point<br>semantic<br>differential<br>scale.                           | 21 of the 39<br>variables from<br>this study were<br>reliable and<br>correlated to<br>each other.                          |
| Jenkins and<br>Ricketts<br>(1985)/ U.S | 197<br>participants<br>from 5<br>laboratories.                     | Turnkey decision<br>support systems.                           | Factor Analysis<br>and Correlation<br>analysis.  | 20 measures<br>with the 5<br>variables.<br><br>7-point<br>semantic<br>differential<br>scale. | 5 variables were<br>statistically<br>significant to<br>user satisfaction<br>of the turnkey<br>decision support<br>systems. |

**Table 1. cont...**

| <b>Author (year)/<br/>Country</b>            | <b>Sample<br/>Size</b>   | <b>Instruments<br/>evaluated/Software<br/>application used</b> | <b>Statistical<br/>Analysis</b>                                      | <b>Number of<br/>measures/<br/>Variables and<br/>Instrument used<br/>for evaluation</b> | <b>Relationship<br/>between the<br/>variables and<br/>instruments</b>   |
|--|--|--|--|---|---|
| Larcker and<br>Lessig (1980)/<br>U.S         | 13<br>graduate<br>students<br>from the<br>University<br>of Kansas. | Capital budgeting<br>decisions of<br>graduate students.        | Reliability and<br>validity analysis<br>and Correlation<br>analysis. | 2 measures.<br>7-point semantic<br>differential<br>scale.                               | 2 measures and<br>Capital budgeting<br>decisions were<br>positively and<br>significantly<br>associated. The 2<br>measures were<br>reliable and valid. |
| Ives, Olson<br>and Baroudi<br>(1983)/<br>U.S | 200<br>managers<br>of a<br>production<br>company.                  | User information<br>satisfaction<br>measure.                   | Correlation<br>Analysis.   | 4 variables.<br>4-point semantic<br>differential<br>scale.                              | 4 variables were<br>significantly<br>correlated to user<br>satisfaction.  |

## 2.2 Cloud Computing

Cloud computing was developed by an American psychologist and computer scientist Joseph Carl Robnett Licklider in the 1960s (Miertschin & Willis, 2010; Mwansa & Mnkandla, 2014a) and has played a major role in the development and transformation of the information systems (IS) industry (Mwansa & Mnkandla, 2014b). Cloud computing can be defined as a model for enabling prevalent, favourable, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) (Mell & Grance, 2011). Furthermore, these resources can be rapidly provisioned and released with minimal management effort or service provider interaction (Mell & Grance, 2011, p. 6). Armbrust et al., (2010) refer to

cloud computing as both the applications delivered as services over the internet and the hardware and systems software in the data centres that provide those services (Armbrust et al., 2010).

Cloud computing can be classified into four categories: 1) Private cloud; 2) Public cloud; 3) Hybrid cloud and 4) Community cloud. Private cloud refers to a model of cloud computing where IT services are provisioned over private IT infrastructure for the dedicated use of a single organization. Public cloud is defined as computing services offered by third-party providers over the public Internet, making them available to anyone who wants to use or purchase them. Hybrid cloud is a cloud computing environment that uses a mix of on-premises, private cloud and third-party, public cloud services with orchestration between the two platforms. Community cloud refers to a collaborative effort in which infrastructure is shared between several organizations from a specific community with common concerns (security, compliance, jurisdiction, etc.), whether managed internally or by a third-party and hosted internally or externally. This is controlled and used by a group of organizations that have shared interest (Mell & Grance, 2011; Mwansa, 2015).

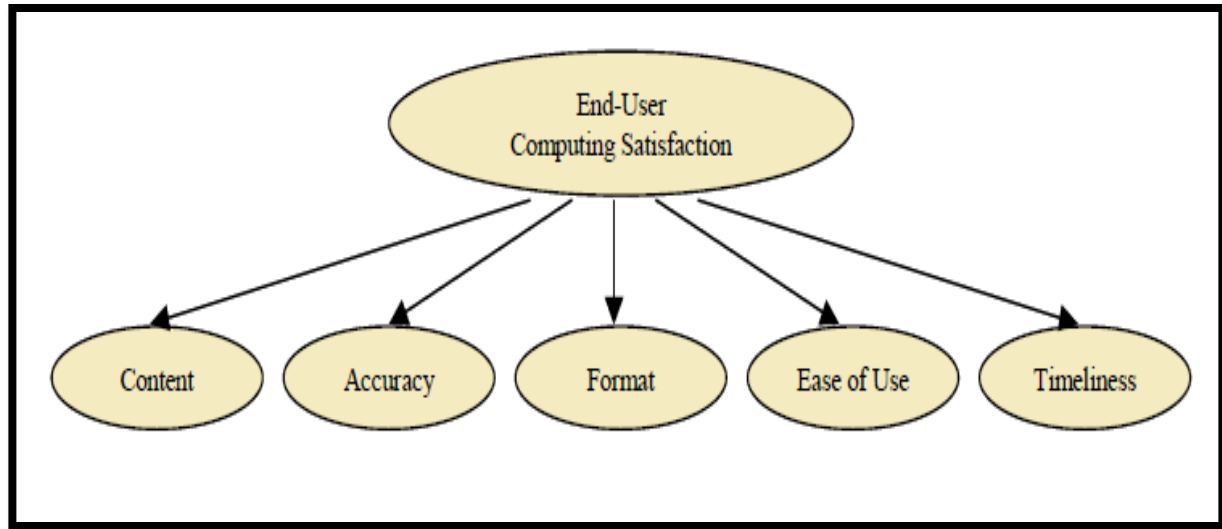
The emergence of cloud computing has also enabled the rapid development of IS and Accounting Information Systems (AIS). Also, it has allowed private accounting firms and Small and Medium Enterprises (SMEs) to upgrade from their traditional methods of operations and introduce modern software within their working environment. In addition, cloud computing has encouraged the growth and enhancement of sophisticated IS and AIS software that has provided greater effectiveness and efficiency within the working environment of web-based systems in general (Chen, Chiang, & Storey, 2012). Moreover, the robustness of cloud computing has brought change from the use of more traditional working instruments and has heavily influenced the new generation of IS instruments (Zhang, Cheng, & Boutaba, 2010). In some instances, cloud computing has contributed significant financial benefits to firms which adopted IS and AIS software, allowing companies to work faster, upscaling work from manual to digital, saving time and producing more accurate and timely results. Furthermore, studies have shown that users of cloud computing have been satisfied with the content of the various IS, AIS and web-based systems software and have benefited from the formats and the ease of use of this software available to them (Nor & Yamin, 2015; Parthasarathy, 1998). Moreover, the development and growing popularity of cloud computing has provided benefits such as reduced hardware failure, software malfunctions which do not result in data loss because of networked backups, it provides more data storage, better

security, infrastructure, accessibility, mobility, quality control, more flexibility, increase collaboration, automatic software updates and sustainability to both users and organisations (Catteddu, 2009; Dudin & Smetanin, 2011).

### **2.3 End-User Computing Satisfaction**

Several researchers have conducted empirical studies (Abdinnour-Helm et al., 2005; Pikkarainen, Pikkarainen, Karjaluoto, & Pahlila, 2006; Xiao & Dasgupta, 2002) and experimental studies (Bakke & Stensrud, 2008; Etezadi-Amoli & Farhoomand, 1996; Nor & Yamin, 2015) which have produced substantial evidence that the Doll and Torkzadeh (1988) EUCS model is a robust model for the measurement of user satisfaction of web-based computerised systems. Moreover, various authors (Abdinnour-Helm et al., 2005; Lee, Kim, & Lee, 1995; Marakarkandy & Yajnik, 2013; Nor & Yamin, 2015) have adopted the EUCS model in their studies and obtained results which support findings from the Doll and Torkzadeh (1988) study.

Nor and Yamin (2015) defined end-user satisfaction with an information system as an overall evaluation of how the end-user has evaluated his or her experience with the information system (Nor & Yamin, 2015). End-User Computing Satisfaction (EUCS) has been used in several studies as a model to measure end-user satisfaction of web-based computerized accounting systems (Tan & Ferreira, 2012). Doll and Torkzadeh, (1988) developed a 12-item EUCS instrument (Xiao & Dasgupta, 2002), and the 5 underlying variables: content, accuracy, format, ease of use and timeliness (Doll & Torkzadeh, 1988). The 5 variables and the 12-item instrument of the EUCS model are presented in Figure 2.1 and Figure 2.2 below.

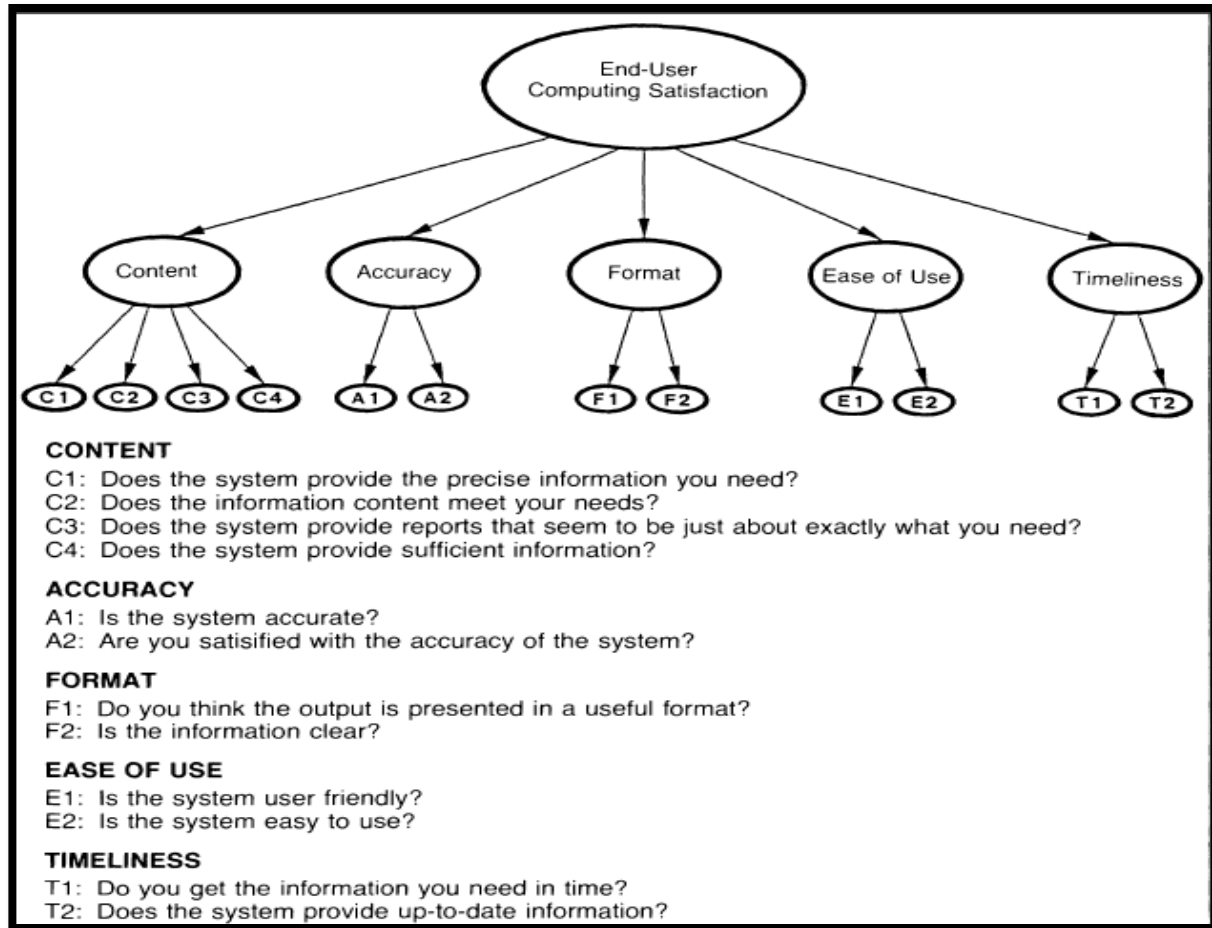


Source: Doll and Torkzadeh (1988)

Figure 2.1 Shows the five principle variables of the EUCS model

As Doll et al., (2004) found that end-user satisfaction within a population does not necessarily have the same meaning across subgroups, control variables and demographics which have played an integral role in hypotheses development in subsequent studies to enable the investigation of construct validity within the population.





Source: Doll and Torkzadeh (1988).

Figure 2.2 Shows the 12-item instrument of the EUCS model.

Subsequent, research has been undertaken to measure EUCS with computerised accounting systems (CAS) (Ilias & Razak, 2011) and (Ilias et al., 2010), web-based information systems (Abdinnour-Helm et al., 2005); (Tarigan, 2009) and (Rahadi, 2010), internet banking (Marakarkandy & Yajnik, 2013) and (Pikkarainen, et al., 2006), internet portals and enterprise portals (Xiao & Dasgupta, 2002) and (Bakke & Stensrud, 2008), information systems (Wang, Xi, & Huang, 2007); (McHaney, Hightower & Pearson, 2002) and (Azadeh, Songhori, & Sangari, 2009), an online website (Prasetyo & Yulia, 2017) and computer users (Heilman & Brusa, 2006). These studies were conducted in a number of different countries such as Malaysia, Thailand, India, Finland, Norway, China, Taiwan, Iran and Mexico.

These studies utilised the Doll and Torkzadeh (1988) EUCS model to evaluate user satisfaction and success of the software applications in their respective countries. Factor analysis from these studies was conducted to test the reliability and validity of the 5 variables: “content”, “accuracy”, “format”, “ease of use” and “timeliness” of the EUCS model. In addition, these studies as well as studies by Ilias and Razak (2011) and Ilias et al., (2010) in Malaysia conducted reliability and validity analysis to test the reliability and validity of the 5 variables of the EUCS model to measure user satisfaction and success of the software application. Moreover, these authors also executed a correlation analysis to identify significant correlation between the 5 variables of EUCS with the respective application from their country of study. Azadeh, Songhori, and Sangari (2009) additionally conducted a two-way ANOVA analysis to measure the relationship between the 5 variables of EUCS and user satisfaction of IS at a power holding firm in Iran. Regression analysis was carried out by Marakarkandy and Yajnik (2013) and Pikkarainen, et al., (2006) to determine the statistical correlation between the 5 variables of EUCS and end-user satisfaction of internet banking in India. A T-test analysis was conducted by the Prasetyo and Yulia (2017) to measure the user satisfaction of the website Tokopedia.com in Indonesia.

Executing the reliability and validity analyses, Abdinnour-Helm et al., (2005); Tarigan (2009) and Rahadi (2010) found that the EUCS model variables scores were reliable and valid for measuring user satisfaction in the web-based information environment in the U.S, Thailand and Indonesia respectively. Marakarkandy and Yajnik (2013) and Pikkarainen, et al., (2006), from their research in an Indian context also found that the 5 variables of the EUCS model were valid and reliable to measure user satisfaction with online internet banking. Similar findings were confirmed by Wang, Xi, and Huang (2007), McHaney, Hightower, and Pearson (2002) and Azadeh, Songhori, and Sangari (2009) in their studies in China, Taiwan and Iran respectively. The three authors found that EUCS variables were reliable and valid to measure user satisfaction of information systems. Heilman and Brusa (2006) in a Mexican context found that the 5 variables content”, “accuracy”, “format”, “ease of use” and “timeliness” of the EUCS model were reliable and valid to evaluate user satisfaction of computer users. In a Norweigan context Bakke and Stensrud (2008) found that all the EUCS variables to be valid and reliable to measure user satisfaction with internet portals. Likewise Xiao and Dasgupta (2002) found the EUCS variables: “content”, “accuracy”, “format”, “ease of use” and “timeliness” were valid and reliable to measure user satisfaction with internet

portals in their study. Moreover, all the studies conducted a descriptive analysis to test the mean of satisfaction between each variable of the EUCS model. The authors found the means scores of the variables were generally satisfactory with the users of the application in each study. Furthermore, Factor analysis from these studies found that the variables of the EUCS model were valid and reliable to measure the user satisfaction of the application in each study.

Findings from correlation analysis were similar in most studies. Correlation analysis from the studies found that the 5 variables: “content”, “accuracy”, “format”, “ease of use” and “timeliness” of EUCS model were significantly correlated to each other (Abdinnour-Helm et al., 2005; Tarigan 2009; Rahadi, 2010; Xiao & Dasgupta, 2002; Bakke & Stensrud 2008; Marakarkandy & Yajnik, 2013; Pikkarainen, et al., 2006; Wang, Xi, & Huang, 2007; McHaney, Hightower, & Pearson, 2002; Azadeh, Songhori, & Sangari, 2009; Heilman & Brusa, 2006; Ilias & Razak, 2011; Ilias et al., 2010; Azadeh, Songhori, & Sangari, 2009; Marakarkandy & Yajnik, 2013; Pikkarainen, et al., 2006; Prasetyo & Yulia, 2017) Furthermore, regression analysis from Marakarkandy and Yajnik, (2013) and Pikkarainen, et al., (2006) found the 5 variables were statistically significant to end-user satisfaction of internet banking customers in India. Similarly, Azadeh, Songhori, and Sangari, (2009) found that the 5 variables of EUCS were significantly positive to user satisfaction of IS at a power holding firm in Iran. In addition T-test analysis from Prasetyo and Yulia (2017) found user (buyers) satisfaction had a positive significance on content, accuracy, format and ease of use on their website Tokopedia.com while user (buyers) satisfaction was not positively significant to timeliness of the website. Also, their studies showed that format and timeliness were not positively significant to users (sellers) satisfaction of the website while content, accuracy and ease of use were positively significant to user (sellers) satisfaction of the Tokopedia.com website in Indonesia. These findings support and defend the generalisability of the EUCS model developed by Doll and Torkzadeh (1988) and are consistent with the findings of Doll, Deng, Raghunathan, Torkzadeh, and Xia (2004), Doll and Xia (1997) and Torkzadeh and Doll (1991). Furthermore, based on the evidence of the use of the EUCS model to evaluate different applications (Abdinnour-Helm et al., 2005; Prasetyo & Yulia, 2017; Rahadi, 2010; Tarigan, 2009), many of these studies have widely suggested that the EUCS model can be adopted to measure software applications (Marakarkandy & Yajnik, 2013; Pikkarainen et al., 2006; Heilman & Brusa, 2006). A summary of these studies is included in Table 2.

**Table 2. Summary of the literature Review on End-User Computing Satisfaction**

| <b>Author (year)</b>         | <b>Country</b> | <b>Sample Size</b>  | <b>Statistical Analysis</b>   | <b>Software Application users</b>    | <b>Relationship of the five EUCS model variables</b>                                    |
|------------------------------|----------------|---|---|--------------------------------------|---|
| Ilias and Razak (2011)       | Malaysia       | 300 registered firms from the Companies Commissions of Malaysia (CCM).            | Reliability and validity analysis, Descriptive analysis, Correlation analysis.                  | Computerised Accounting System users | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |
| Ilias et al., (2010)         | Malaysia       | 269 staff members who used CAS in the private sector of Labuan Federal Territory. | Reliability and validity analysis, Descriptive analysis, Correlation analysis.                  | Computerised Accounting System users | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |
| Abdinnour-Helm et al.,(2005) | U. S           | 176 students who took an introductory psychology or e-commerce program.           | Factor Analysis, Reliability and validity analysis, Descriptive analysis, Correlation analysis. | Web-based information System users   | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |

**Table 2. cont...**

| <b>Author (year)</b>           | <b>Country</b> | <b>Sample Size</b>                                    | <b>Statistical Analysis</b>  | <b>Software Application users</b>  | <b>Relationship of the five EUCS model variables</b>                                    |
|--------------------------------|----------------|---|--|------------------------------------|---|
| Tarigan (2009)                 | Thailand       | 341 participants from end-users of e-library systems. | Factor Analysis, Reliability and validity analysis, Descriptive analysis, Correlation analysis.                      | Web-based information System users | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |
| Rahadi (2010)                  | Indonesia      | 250 pupils from the University of Bina Darma.         | Factor Analysis, Reliability and validity analysis, Descriptive analysis, Correlation analysis.                      | Web-based information System users | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |
| Marakarkandy and Yajnik (2013) | India          | 387 participants from internet banking users.         | Factor Analysis, Reliability and validity analysis, Descriptive analysis, Correlation analysis, Regression analysis. | Internet online banking users      | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |

**Table 2. cont...**

| <b>Author (year)</b>        | <b>Country</b> | <b>Sample Size</b>           | <b>Statistical Analysis</b>   | <b>Software Application users</b> | <b>Relationship of the five EUCS model variables</b>                                    |
|-----------------------------|----------------|------------------------------|---|-----------------------------------|---|
| Pikkarainen, et al., (2006) | Finland        | 268 users of online banking. | Factor Analysis, Reliability and validity analysis, Descriptive analysis, Correlation analysis, Regression analysis.          | Internet online banking users     | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |
| Prasetyo and Yulia (2017)   | Indonesia      | 100 users of online website  | Reliability and validity analysis, Descriptive analysis, Correlation analysis, Regression analysis. T-test and ANOVA analysis | Online Website users              | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |

**Table 2. cont...**

| <b>Author (year)</b>       | <b>Country</b> | <b>Sample Size</b>  | <b>Statistical Analysis</b>   | <b>Software Application users</b> | <b>Relationship of the five EUCS model variables</b>                                    |
|----------------------------|----------------|---|---|-----------------------------------|---|
| Xiao and Dasgupta (2002)   | U.S            | 340 end-user with internet portals at a mid Atlantic university.        | Factor Analysis, Reliability and validity analysis, Descriptive analysis, Correlation analysis. | Internet portals users            | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |
| Bakke and Stensrud (2008)  | Norway         | 70 workers from a multinational consulting firm.                        | Factor Analysis, Reliability and validity analysis, Descriptive analysis, Correlation analysis. | Enterprise portals users          | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |
| Wang, Xi, and Huang (2007) | China          | 156 undergraduate users of the IS from the University of Xi's and Jiao. | Factor Analysis, Reliability and validity analysis, Descriptive analysis, Correlation analysis. | Information System users          | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |

**Table 2. cont...**

| <b>Author (year)</b>                  | <b>Country</b> | <b>Sample Size</b>  | <b>Statistical Analysis</b>   | <b>Software Application users</b> | <b>Relationship of the five EUCS model variables</b>                                    |
|---------------------------------------|----------------|---|---|-----------------------------------|---|
| McHaney, Hightower and Pearson (2002) | Taiwan         | 342 users of information technology from 25 firms.                              | Factor Analysis, Reliability and validity analysis, Descriptive analysis, Correlation analysis.                 | Information System users          | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |
| Azadeh, Songhori and Sangari (2009)   | Iran           | 51 workers from a design and development department of a IS power holding firm. | Factor Analysis, Reliability and validity analysis, Descriptive analysis, Correlation analysis, ANOVA analysis. | Information System users          | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |
| Heilman and Brusa (2006)              | Mexico         | 302 participants from both public and private firms.                            | Factor Analysis, Reliability and validity analysis, Descriptive analysis, Correlation analysis.                 | Computer users                    | 5 EUCS variables correlated. The 5 variables of the EUCS model were reliable and Valid. |

As the IS and technology era began to advance in the 1980's, so did the development and growth of cloud-based AIS. Accounting software developers saw an increasing demand for cloud-based accounting software applications which accounting firms, SMEs were quick to adopt and



implement within their firms. During this period entrepreneurs and technology companies developed several cloud-based accounting software such as Mind Your Own Business (MYOB) which was developed by Christopher Lee in Australia (1991) QuickBooks which was developed by Scott Cook and Tom Proulx in The USA (1983), and Sage 50cloud which was developed by David Goldman, Paul Muller and Graham Wylie in England (1981). These software applications have been used in accounting firms for decades and have still manage to remain relevant in this modern era of more advanced AIS. During that same period several researchers (A Azadeh et al., 2009; Heilman & Brusa, 2006; Hendrickson, Glorfeld, & Cronan, 1994; McHaney & Cronan, 1998; Rahadi, 2010; Tarigan, 2009; Wang, Xi, & Huang, 2007) and software practitioners alike, utilised the EUCS model to evaluate these software packages. The EUCS model had been used widely by academic researchers in various studies for measuring the satisfaction of the end users in a variety of computing environments (Marakarkandy & Yajnik, 2013; Pikkarainen et al., 2006; Xiao & Dasgupta, 2002). However, there have not been any published studies which have utilised the EUCS model to evaluate cloud-based AIS used by accounting firms or SMEs.

One of the most popular cloud-based AIS or accounting software applications used in NZ is Xero which was developed by New Zealand technology entrepreneur Rodney Drury and Hamish Edwards in 2006. Accounting firms and SMEs have adopted and implemented this software in their companies. There are approximately 1.6 million subscribers or users of Xero worldwide with and Xero had annual revenue of 407 million dollars in 2018 (Xero, 2018). The company has established offices worldwide (in New Zealand, Australia, the UK, Singapore, and the US). Xero is the primary accounting software used by over 16,000 accounting firms and has been named the Forbes #1 Innovative Growth Company in 2014 and 2015 (Forbes, 2018). However, there has been little independent research undertaken and published on EUCS of the accounting software Xero. Therefore, taking into consideration the analyses, results, findings, and utilisation of the EUCS model and how it is widely used in a variety of web-based settings from the previous studies above, this study seeks to evaluate user satisfaction with Xero accounting software in accounting firms and SMEs in Auckland. Consequently, this study aims to contribute to the existing body of knowledge in the area AIS by identifying variables which influence user satisfaction amongst users of Xero. The findings are also expected to identify possible opportunities for further development of the software and future research.

## 2.4 Research Hypotheses

Consistent with the Doll & Torkzadeh (1988) and subsequent studies (McHaney, Hightower and Pearson , 2002; Azadeh, Songhori and Sangari, 2009; Bakke and Stensrud, 2008; Xiao & Dasgupta, 2002; Ilias & Razak, 2011; Ilias et al., 2010; Marakarkandy and Yajnik, 2013, Pikkarainen, et al., 2006; Tarigan, 2009 and Heilman and Brusa, 2006), this investigation has adopted the two global variables satisfaction and success, to measure End-User Computer Satisfaction. The hypotheses of this study were based on the Doll and Torkzadeh EUCS model where the two global variables user satisfaction and software success represent the dependent variables (DVs) and where Content, Accuracy, Format, Ease of Use and Timeliness represent the independent variables (IVs). Given that EUCS does not necessarily have the same meaning across subgroups (Doll et al., 2004), subgroups were created for population differences. These subgroups included: gender, age groups, Xero advisors, professional body membership, tenure at the organisation and education level. Therefore, the control variables: gender, age groups, Xero advisors, professional body membership, tenure at organisation and education will form part of the hypotheses to identify whether they influence user satisfaction and the successfulness of the accounting software Xero.

**Table 3. Independent and dependent variables**

| <b>Independent Variables (IVs)</b> | <b>Dependent Variables (DVs)</b> |
|------------------------------------|----------------------------------|
| Content                            | Xero user satisfaction           |
| Accuracy                           | Xero software success            |
| Format                             |                                  |
| Ease of use                        |                                  |
| Timeliness                         |                                  |

Therefore, the present study proposed the following hypotheses which will contribute to the overall user satisfaction and success with the software Xero.

***Hypothesis 1:*** *There will be significant differences in user satisfaction between male and female participants.*

***Hypothesis 2:*** *There will be significant differences in software success between male and female participants.*

***Hypothesis 3:*** *There will be significant differences in user satisfaction between Xero advisors and Xero non-advisors.*

***Hypothesis 4:*** *There will be significant differences in software success between Xero advisors and Xero non-advisors.*

***Hypothesis 5:*** *There will be significant differences between age groups of participants and user satisfaction with the software Xero.*

***Hypothesis 6:*** *There will be significant differences between age groups of participants and Xero software success.*

***Hypothesis 7:*** *Content, Accuracy, Format, Ease of use, and Timeliness will be positively related to Xero user satisfaction.*

***Hypothesis 8:*** *Content, Accuracy, Format, Ease of use, and Timeliness will be positively related to Xero software success.*

## **Chapter 3. Methods Chapter**

### **3.1 Research Methodology**

Methodology describes the broad theoretical and philosophical underpinning to research. Methodology can be defined as a system of procedures used in an area of study or activity (McCarroll, Feng, & Hyman, 2014). According to Gray (2013) methodology depends upon the outlook that the research gravitates towards. This outlook can be positivist, interpretivist or supplementary (Gray, 2013). Quantitative methodology focuses more on a realist ontology, objectivist epistemology and positivist or post-positivist paradigm. In addition, quantitative methodology is considered to be based more on facts rather than thoughts and opinions (Gray, 2013). According to Tuli (2011) quantitative methodology relates to the efforts to achieve social events; to collect and analyse numerical data (Tuli, 2010). In summary, the characteristics of quantitative research methods are as follows (McCusker & Gunaydin, 2015):

- Researcher knows clearly in advance what he/she is looking for.
- Recommended during latter phases of research projects.
- All aspects of the study are carefully designed before data is collected.
- Researcher uses tools, such as questionnaires to collect numerical data.
- Data is in the form of numbers and statistics.
- Quantitative data is more efficient, able to test hypotheses, but may miss contextual detail.
- Researcher tends to remain objectively separated from the subject matter.

According to Sarantakos (2012), Kazdin (2011) and Crowther and Lancaster (2012) quantitative research methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques (Crowther & Lancaster, 2012; Kazdin, 2011).

Empirical studies from Abdinnour-Helm et al., (2005); Tarigan (2009) and Rahadi (2010) on user satisfaction of web-based information systems, Xiao and Dasgupta, (2002) and Bakke and Stensrud (2008) on user satisfaction with Internet portals and Marakarkandy and Yajnik (2013) and Pikkarainen, et al., (2006) on user satisfaction with internet banking have utilised a quantitative research method approach using the Doll and Torkzadeh (1988) EUCS model to evaluate their respective software applications. Consistent, with these studies, this present study will adopt a quantitative research method utilising the Doll and Torkzadeh EUCS model (1988) to evaluate user satisfaction of the Accounting Information System (AIS) software Xero.

From a holistic perspective, the quantitative method approach was selected for the following reasons: First, the researcher was keen to find out how primary and empirical data can effectively evaluate user satisfaction with Xero. Second, to identify factual statistical data, as well as findings and results that can contribute effectively to the betterment and usefulness of user satisfaction with Xero.

### **3.2 Data Collection**

Accounting firms and SMEs in this study were identified by conducting a google search. Initially, the researcher called and sent emails to several firms to find interested participants who would be willing to complete the survey. However, this approach was unsuccessful, and the researcher personally visited each of the firms to speak to representatives of the firms who invited participants from within the firm. This study was approved by the Auckland University of Technology Ethics Committee (AUTEC) on the 22<sup>nd</sup> of January 2019. A copy of the ethics approval for this research is attached in appendix A. Data was collected from a survey, using a questionnaire which was the primary instrument used for data collection. Participants in this study included users of Xero from accounting firms and SMEs in Auckland, New Zealand. The Final sample consisted of 122 participants with a minimum of 1 year or more experience with Xero. The survey was completed within a 3-week period. Each participant was given 3 days to complete their questionnaire. In some instances, participants completed their questionnaire within 1 day. It was expected that participants would take approximately 10 minutes to complete their questionnaire. A copy of the questionnaire is included in appendix B.

### 3.3 Instruments

This study focuses on the application of the EUCS model which was developed by Doll and Torkzadeh (1988). This model consists of five variables content, accuracy, format, ease of use and timeliness in a 12-item instrument to evaluate user satisfaction and perceived successfulness with the accounting software Xero. The 5 variable and 12-item are illustrated in Figure 2.1 and Figure 2.2. This EUCS model was selected because it has been used in studies by (Doll, Deng, Raghunathan, Torkzadeh, & Xia, 2004; Doll & Torkzadeh, 1988; Doll, Xia, & Torkzadeh, 1994). The definition of the five variables of the EUCS model are as follows:

Content is the comprehensiveness of the information from the information system, accuracy is the correctness of the output information, format is the material design of the layout and display of the output contents, ease of use is the ease or difficulty with which the user might act to utilise the capabilities of the information system and timeliness is the availability of the output information at a time suitable for its use (Munap, Ahmad, Hamid, & Beg, 2018, p. 2).

Furthermore, the two global variables user satisfaction and software success will represent the dependent variables in this study. Success is a relative term and in most cases, it is measured based on the criteria used by an individual or an organisation to evaluate the extent to which an action achieve its intended purpose (Feiler & Humphrey, 1993). Therefore, software success will be used as a measure of perceived effectiveness of the software in this study. Meanwhile, user satisfaction is the extent to which users perceive that the software application available to them meet their requirements (Somers, Nelson, & Karimi, 2003, p. 3). User satisfaction will be used as a measure of user perception (feelings and attitudes) of the software Xero in this study (Bailey & Pearson, 1983; Bakke & Stensrud, 2008; Ceccucci, Peslak, & Sendall, 2010).

More importantly, the model has been utilised in several studies in multiple countries and has produced reliable and valid results. Findings from correlation analysis conducted from the studies of Bakke and Stensrud (2008), Abdinnour-Helm et., (2005), Wang, Xi and Huang (2007), Tarigan (2009) and Ilias and Razak (2011) found that the 5 variables of the EUCS model are significantly correlated to each other. Moreover, the EUCS model was selected because the variables were validated in the studies with internet online banking software (Marakarkandy & Yajnik, 2013; Pikkarainen, et al., 2006), information Systems (Wang, Xi, & Huang, 2007; McHaney, Hightower,

& Pearson, 2002) web-based information systems (Abdinnour-Helm et al., 2005; Tarigan, 2009; Rahadi 2010), and enterprise portals (Xiao & Dasgupta, 2002; Bakke & Stensrud, 2008).

Furthermore, the value of Cronbach Alpha of 0.70 and above suggests that the variables from the EUCS model used in these studies are acceptable, valid and reliable to evaluate user satisfaction of Computerised Accounting Systems (Ilias, Razak, Yaso, & Mansor, 2010). Therefore, after careful review of various models, the researcher believes that the EUCS model is most suited to measure user satisfaction of accounting software Xero in accounting firms and SMEs. All the EUCS variables will be used in this research. The evaluation criteria will be based on a Five-Point Likert-type scale. For example, the variables such as content, accuracy, format, ease of use and timeliness will be measured (from One (1) being “poor” Two (2) being “fair” three (3) being “average” four (4) being “good” and five (5) being “excellent”) for each of the variables. The instructions from the survey indicated that all the participants should circle the response which best describes their satisfaction level of the software Xero (Heo & Han, 2003).

### **3.4 Questionnaire**

The questionnaire was divided into two sections. These sections included: demographic questions of the participants and the organisation where they work. The second section consisted of questions pertaining to the software Xero. Section one consisted of 14 questions which included 7 open ended questions and 7 close ended questions. Section two consisted of 17 questions, 14 close ended questions which were from the Doll and Torkzadeh EUCS instrument to evaluate user satisfaction and perceived software successfulness and 3 open ended questions which were included to enhance data collection. The survey comprised a total of 31 questions. Participation was voluntary, and participants were given the option to withdraw from the study at any time prior to submitting the completed survey forms. As this was an anonymous survey, it was not possible to withdraw from the study once the participants had submitted the survey form. By completing the survey form and submitting it, the participants gave their consent to participate in this study.

### **3.5 Data Analysis**

This section details the process of analysing the data collection primarily through questionnaires. This study will use a quantitative data analysis approach to analyse the data collection. Quantitative data analysis is a systematic approach to investigations during which numerical data is collected and/or the researcher transforms what is collected or observed into numerical data (McCusker & Gunaydin, 2015). It often describes a situation or event, answering the 'what' and 'how many' questions you may have about something Gray (2006).

Several quantitative data analyses will be undertaken in this study. Firstly, a confirmatory factory analysis (CFA) will be conducted to test the reliability and validity of the variables in this study. CFA is a special form of factor analysis, most commonly used in social research. It is used to test whether measures of a variable are consistent with a researcher's understanding of the nature of that variable (Doll & Torkzadeh, 1988; Doll et al., 1994; Marakarkandy & Yajnik, 2013; McHaney & Cronan, 1998; McHaney et al., 2002). According to Schreiber et al., (2006) CFA can also be defined as a multivariate statistical procedure that is used to test how well the measured variables represent the number of variables (Schreiber, Nora, Stage, Barlow, & King, 2006). In addition, descriptive statistics and frequency analysis, t-test, ANOVA and correlation analysis which are common analysis undertaken in quantitative research will be executed in this study. These analysis will be used to measure both dependent and independent variables from the EUCS model (Gray, 2006). Furthermore, multiple regression analysis will be performed to determine the value between two or more variables of the EUCS model. These analyses will be undertaken using the Statistical Package for Social Science (SPSS) software.

Finally, this study included three open-ended questions which were based on the feature's participants liked and disliked about Xero and suggestions for improvements. Participants answers to these questions were grouped into common themes and the number of times that the themes were raised by the participants to indicate their significance and contribution to this study.



## **Chapter 4. Results**

### **4.1 Participants & Sample**

The participants were identified by the managers and accounting staff of the firms. A total of 106 registered accounting firms and SMEs were identified in Auckland. The researcher contacted 70 of these firms and 193 questionnaires were distributed. 10 firms did not use the software Xero and participants from 18 firms did not complete and return their questionnaires. The final sample included participants from 42 firms and a total of 122 questionnaires were completed and returned to the researcher. This represented a response rate of 63% of the overall number of questionnaires which were distributed. Some participants completed their questionnaires and returned them via email, while the researcher returned to several of the companies to collect the remaining completed questionnaires. A summary of the firms and participants information is included in Table 4.

**Table 4. Participant and firm distribution**

| <b>Firm Type</b> | <b>Range of Participants</b> | <b>No. of Firms</b> | <b>No. of Participants</b> |
|------------------|------------------------------|---------------------|----------------------------|
| Accounting firms | 1-3 participants             | 28                  | 47                         |
|                  | 4-6 participants             | 8                   | 37                         |
|                  | 7-9 participants             | 2                   | 16                         |
|                  | 10 plus participants         | 1                   | 11                         |
| <b>Subtotal</b>  |                              | <b>39</b>           | <b>111</b>                 |
| SMEs             | 1-3 participants             | 1                   | 2                          |
|                  | 4-6 participants             | 2                   | 9                          |
| <b>Subtotal</b>  |                              | <b>3</b>            | <b>11</b>                  |
| <b>Total</b>     |                              | <b>42</b>           | <b>122</b>                 |

The descriptive frequency analyses of this study are divided into two sections. The first section discusses demographic information about the participants. The second section discusses information about the software Xero.

**Table 5. Descriptive Frequency Analysis for the demographic variables**

| <b>Demographics</b>            | <b>Frequency</b>                | <b>Percentage (%)</b> |
|--------------------------------|---------------------------------|-----------------------|
| Gender                         | 76 Females                      | 62.30%                |
|                                | 46 Males                        | 37.70%                |
| Age                            | 51 Young (30 years or less)     | 41.8%                 |
|                                | 50 Middle (31-50 years)         | 41.0%                 |
|                                | 21 Older (51 years and more)    | 17.2%                 |
| Occupation                     | 99 Accountants                  | 81.1%                 |
|                                | 3 Managers                      | 2.5%                  |
|                                | 3 Directors                     | 2.5%                  |
|                                | 4 Administrators                | 3.3%                  |
|                                | 3 Bookkeepers                   | 2.5%                  |
|                                | 10 Others                       | 8.1%                  |
| Tenure at current job position | 33 Up to 1-year exp.            | 27.0%                 |
|                                | 62 Between 2-5 years exp.       | 50.8%                 |
|                                | 11 Between 6-10 years exp.      | 9.0%                  |
|                                | 16 Eleven (11) plus years exp.  | 13.1%                 |
| Tenure at organisation         | 21 Up to 1-year                 | 17.2%                 |
|                                | 68 Between 2-5 years            | 55.8%                 |
|                                | 10 Between 6-10 years           | 8.1%                  |
|                                | 20 Between 11-20 years          | 16.4%                 |
|                                | 3 Twenty-one (21) plus years    | 2.5%                  |
| Education level                | 24 Postgraduate                 | 19.7%                 |
|                                | 94 Uni Degree                   | 77.0%                 |
|                                | 4 Polytechnic/Technical College | 3.3%                  |

Table 5 shows the details of participants regarding gender, age, occupation, tenure at current job, tenure at organisation, education levels, tenure of using the software Xero, Xero certified advisors, other Xero qualifications, self-employed, employed with an accounting firm, employed with a SME

firm, member of a professional accounting body. Overall, of the sample of 122 participants, 62.30% were female and 37.70% were male. 41.8% of the participants were age 30 or less, 41% were between the ages of 31 to 50 years old and 17.2% of respondents were age 51 or above. Furthermore, 81.1% of the respondents were accountants, 2.5% were directors and managers respectively and 3.3% were administration staff. Moreover, the study showed that 50.8% of the participants have 2-5 years' experience in their current job position, 27% have been in their position for up to 1 year while 13.1% had been in their position for 11 years or more. Also, 55.8% of participants have been employed with their respective organisations between 2-5 years, 17.1% have been at the organisation for 1 year and 16.4% have a tenure of 11-20 years at the organisation. Participants with a university degree level of education accounted for 77% of the sample, postgraduate education level accounted for 19.7% and 3.3% represented participants from a polytechnical college education.

**Table 6. Descriptive Frequency Analysis for the demographic variables**

| <b>Demographics</b>                    | <b>Frequency</b>                  | <b>Percentage (%)</b> |
|--|-----------------------------------|-----------------------|
| Tenure use of Xero                     | 29 Up to 2 years                  | 23.8%                 |
|  | 35 Three to Four (3-4) years      | 28.7%                 |
|  | 23 Five to Six (5-6) years        | 18.9%                 |
|  | 19 Seven to Eight (7-8) years     | 15.6%                 |
|  | 16 Nine (9) plus years            | 13.1%                 |
| Xero certified advisor                 | 41 No                             | 34.4%                 |
|  | 80 Yes                            | 65.6%                 |
| Other Xero qualification               | 108 No                            | 88.5%                 |
|  | 14 Yes                            | 11.5%                 |
| Names of Xero qualifications           | 2 Migration certified             | 1.6%                  |
|  | 1 Payroll and migration certified | 0.8%                  |
|  | 10 Payroll certified              | 8.2%                  |
|  | 1 Xero platinum partner           | 0.8%                  |
|  | 108 None                          | 88.5%                 |
| Self employed                          | 14 Participants                   | 11.5%                 |
| Employed at accounting firm            | 97 Participants                   | 79.5%                 |
| Employed at SMEs                       | 11 Participants                   | 9%                    |
| Member of professional accounting body | 28 No                             | 23.0%                 |
|  | 94 Yes                            | 77.0%                 |
| Names of professional accounting body  | 86 CAANZ                          | 70.5%                 |
|  | 8 CPA                             | 6.5%                  |
|  | 28 None                           | 23.0%                 |

Table 6 shows the participants use of the software Xero was also evenly distributed with 23.8% of respondents claiming to have used Xero for up to 2 years, 28.7% for 3 to 4 years, 18.9% used it for 5 to 6 years, 15.6% for 7 to 8 years and 13.1% had used Xero for 9 years or more. Moreover, Xero

advisors accounted for 65.6% of the total participants in comparison with 34.4% by non-Xero advisors. In addition, an overwhelming 79.5% of participants were from accounting firms, 11.5% stated that they were self-employed and the remaining 9% of participants were employed with an SME firm. Moreover, 77% of participants belonged to a professional accounting body while 70.5% of the sample were members of Chartered Accountants Australia and New Zealand (CAANZ), 6.5% were registered Certified Public Accountants and 23% did not belong to any accounting body. In general, the respondents came from a range of occupations with the job titles such as Accountants, Managers, Directors, Bookkeepers, Administrators and Business advisors, Office workers, Finance executive, Graduate accountant, Business partner, Assistant accountant, Analyst and Student.

## **4.2 Measures**

According to Heilman and Bsrusa (2006) a reliability test refers to the degree to which a test is consistent and stable in measuring what it is intended to measure with the ultimate purpose of finding out if the measurements are free from errors. However, it is not mandatory that the reliability test has to be free from errors (Heilman & Brusa, 2006). Thus, missing information from the data set can still produce relevant results which can be interpreted. Many studies have given their views on good, acceptable reliability scores. According to Bakke and Stensrud (2008) good reliability test scores are usually between 0.8 and 0.7, acceptable reliability are usually scores between 0.7 and 0.6 and questionable reliability scores are usually scores lower than 0.6 (Bakke & Stensrud, 2008). Generally, it is considered that a Cronbach Alpha greater than 0.7 indicates reliability of variables (Doll et al., 2004; Pedhazur & Pedhazur Schmelkin, 1991).

Doll and Torkzadeh (1988) presented the reliability scores of the variables in their study. The reliability score (Cronbach alpha) of each variable was: content=.89. accuracy = .91; format = .78; ease of use = .85; and timeliness =.82. Doll and Torkzadeh (1988) measured the variables with a 12-item measure using a 5-point Likert-type scale which was coded 1=non-existent, through to 5=excellent. The overall reliability score of Doll and Torkzadeh (1988) study was a Cronbach Alpha score of .92. Other studies from Mc Haney et al., (2002) and Heilman (2006) reported a similar overall Cronbach Alpha score of 0.90 and 0.97 respectively which supports the claim that the variables in the EUCS model were reliable measures of user satisfaction and software success.

Hence, the dependent variables and independent variables of this present study were measured using a 5-point Likert-type scale by Doll and Torkzadeh (1988) which was coded from 1= poor, through to 5= excellent. The two global variables Xero user satisfaction and Xero software success which are used as the dependent variables in this study are one-item variable which were measured using a 5-point Likert-type scale coded 1=poor, through to 5=excellent. The sample item for Xero user satisfaction is “Are you satisfied with the software” and the sample item for Xero success is “Is the software Xero successful.”

These variables have been found to be reliable and valid (Doll et al., 2004; Doll & Torkzadeh, 1988; Doll & Xia, 1997; Doll et al., 1994). These variables had reliability scores in the present study (Cronbach Alpha=.86). In addition, Content was measured using a four-item measure by Doll and Torkzadeh (1988) which was coded 1=poor through to 5=excellent. A sample item includes, “Does the software provide the precise information you need”. The measure has been validated in several studies (Doll et al., 2004). The measure has an excellent reliability score in the present study (Cronbach Alpha=.90). Accuracy was measured using the two-item measure which was coded 1=poor, through to 5=excellent. A sample item of this variables is: “Are you satisfied with the accuracy with the software”. This variable proved to be highly reliable in the present study with a Cronbach Alpha score of .96. Format was measured using a two-item measure used by (Doll et al., 1994) which was coded 1=poor, through to 5=excellent. A sample item of this variable includes, “Do you think the output is presented in a useful format”. This variable has been validated in studies in Finland (Pikkarainen et al., 2006), Norway (Bakke & Stensrud, 2008) and Mexico (Heilman & Brusa, 2006). The variable has proven to be very reliable and has a Cronbach Alpha score of .91 in the present study. Also , Ease of use was measured using a two-item measure used by (Marakarkandy & Yajnik, 2013) which was also coded using a 5-point Likert-type scale from 1=poor, through to 5=excellent. The sample items included, “Is the software user friendly” and “ Is the software easy to use” as measures of the variable Ease of use. This variable was validated in studies of other software applications from India (Marakarkandy & Yajnik, 2013) and Taiwan (McHaney et al., 2002) which proved to be a valid variable of user satisfaction. The variable had an excellent reliability in the current study, Cronbach Alpha= .95. Timeliness was the other variable used in the study. The variable was measured using a two-item measure used by (Tarigan, 2009), which was coded from 1=poor, through to 5=excellent. A sample item of the variable is: “ Do you

get the information you need in time”. This variable has been validated in studies from Malaysia (Ilias et al., 2010) and U.S (Xiao & Dasgupta, 2002). The variable had good reliability in the present study (Cronbach Alpha=.85). Overall, the variables of the present study proved to be very reliable with a Cronbach Alpha score of .90. A summary of the variables and their reliability score (Cronbach Alpha) is presented below.

**Table 7. Reliability test of the variables**

| <b>Variables</b>             | <b>Cronbach Alpha score</b> |
|------------------------------|-----------------------------|
| Xero user satisfaction       | 0.86                        |
| Xero software success        | 0.86                        |
| Content                      | 0.90                        |
| Accuracy                     | 0.96                        |
| Format                       | 0.91                        |
| Ease of use                  | 0.95                        |
| Timeliness                   | 0.85                        |
| Overall Cronbach Alpha score | 0.90                        |

The control variables which were used in this study include age which was coded (1=30 years or less, 2=30 to 50 years, 3=51 years and older). Gender was coded (0=male, 1=female). Job tenure was coded ( 1= up to 1-year experience, 2=between 2-5 years’ experience, 3=between 6-10 years’ experience and 4=11 years and more experience). Tenure of Xero use was coded (1= up to 2 years’ experience, 2=3-4 years’ experience, 3=5-6 years’ experience, 4=7-8 years’ experience and 5=9 years and more experience). Other control variables such as Xero advisor, Xero qualifications, accounting firms, SME firms were coded (0=no, 1=yes).



#### 4.2.1. Measurement Model

A confirmatory factor analysis in structural equation modelling (SEM) with analysis of a moment structures (AMOS) version 25 was conducted and followed the recommendations of (Williams, Vandenberg & Edwards 2009) regarding the goodness-of-fit indexes and thresholds: (1) the comparative fit index ( $CFI \geq .90$ ), (2) the root-mean-square error of approximation ( $RMSEA \leq .08$ ), and (3) the standardized root mean residual ( $SRMR \leq .10$ ) (Williams, Vandenberg, & Edwards, 2009). Beyond the hypothesised CFA, the researcher followed common practice (Haar et al., 2018) and tested alternative CFA models where the researcher combined the various dimensions to determine if the theoretically derived constructs best fit the data. The researcher tested the chi-squared differences as per (Hair, 2010). The results are shown in Table 8.

**Table 8. Results of Confirmatory Factor Analysis**

| Model   | Model Fit Indices |    |     |       |      | Model Differences |             |      |              |
|---------|-------------------|----|-----|-------|------|-------------------|-------------|------|--------------|
|         | $\chi^2$          | df | CFI | RMSEA | SRMR | $\Delta\chi^2$    | $\Delta df$ | p    | Details      |
| Model 1 | 108.7             | 58 | .97 | .08   | .04  |                   |             |      |              |
| Model 2 | 560.2             | 76 | .68 | .23   | .09  | 451.5             | 18          | .001 | Model 2 to 1 |

**Model 1**= Hypothesized 7-factor model: Xero user satisfaction, Xero software success, Content, Accuracy, Format, Ease of Use, and Timeliness.

**Model 2**= Alternative 3-factor model: As per model 1, with Content, Accuracy, Format, Ease of Use, and Timeliness all combined.

### **4.3 Analyses and Results**

T-test analysis is used to examine the relationship between control variables and independent variables. Descriptive statistics is used to examine the relationship between dependent and independent variables. ANOVA analysis will be conducted to evaluate the relationship between the control variable age group and the dependent variables, and a correlation analysis will be conducted to measure the statistical significance of the relationship between the 5 IVs and the 2 DVs. Descriptive frequency analysis will be conducted using the two global variables (dependent variables) which will show the overall participant response rate of user satisfaction and software success. Regression analysis will be conducted to evaluate the relationship between two or more variables in this study.

#### **4.3.1 Descriptive frequency analysis**

This study reports the results from the descriptive frequency analysis of the two global variables (dependent variables) and how they were evaluated by the participants. Using the 5-point Likert type scale with 1 being poor through to 5 being excellent, participants were asked “Is the software Xero successful?” and “Are you satisfied with the software Xero?”. Results suggested 53.3% of participants rated the success of the software to be good, 43.4% rated the success of the software to be excellent, 2.5% rated the success to be average and 0.8% rated the success of the software to be fair. The table below shows the overall participants distribution of Xero software success.

**Table 9. Participant distribution of Xero Software Success**

| Category     | No. of Participants | Percentage (%) | Cumulative Percentage (%) |
|--------------|---------------------|----------------|---------------------------|
| Excellent    | 53                  | 43.4           | 43.4                      |
| Good         | 65                  | 53.3           | 96.7                      |
| Average      | 3                   | 2.5            | 99.2                      |
| Fair         | 1                   | 0.8            | 100                       |
| Poor         | -                   | -              | -                         |
| <b>Total</b> | <b>122</b>          | <b>100</b>     | <b>100</b>                |

Results from the satisfaction with the software indicated that 63.1% of participants rated the satisfaction level of the software to be good, 28.7% rated the satisfaction level to be excellent, 6.6% of participants rated the satisfaction level of Xero to be average and 1.6% of participants rated fairly the satisfaction level of the software Xero. There were no participants who suggested that the software had poor success and poor satisfaction levels. Overall, these results suggested that participants were satisfied with the software and also confirmed that the software was successful. The table below shows the overall participants distribution of user satisfaction with the software.

**Table 10. Participant distribution of Xero User Satisfaction**

| Category     | No. of Participants | Percentage (%) | Cumulative Percentage (%) |
|--------------|---------------------|----------------|---------------------------|
| Excellent    | 35                  | 28.7           | 28.7                      |
| Good         | 77                  | 63.1           | 91.8                      |
| Average      | 8                   | 6.6            | 98.4                      |
| Fair         | 2                   | 1.6            | 100                       |
| Poor         | -                   | -              | -                         |
| <b>Total</b> | <b>122</b>          | <b>100</b>     | <b>100</b>                |

#### 4.3.2 Correlation and descriptive statistics analysis

Correlation analysis can be used to determine the strength and direction of the linear relationship between two variables (Pallant, 2013). Moreover, correlation analysis simply measures whether two or more variables are significantly correlated to each other or not. Correlation analysis is presented in Table 11. Descriptive statistics for all the study variables are shown in Table 12 (Used five IVs and two DV).

**Table 11. Correlations of the dependent variables and independent variables**

| Correlation Analysis     |      |     |       |       |       |       |       |       |    |
|--------------------------|------|-----|-------|-------|-------|-------|-------|-------|----|
| Variables                | M    | SD  | 1     | 2     | 3     | 4     | 5     | 6     | 7  |
| 1.Xero user satisfaction | 4.19 | .62 | --    |       |       |       |       |       |    |
| 2. Xero software success | 4.39 | .58 | .75** | --    |       |       |       |       |    |
| 3. Content               | 4.13 | .64 | .69** | .61** | --    |       |       |       |    |
| 4. Accuracy              | 4.43 | .65 | .58** | .60** | .59** | --    |       |       |    |
| 5. Format                | 4.14 | .71 | .58** | .53** | .70** | .52** | --    |       |    |
| 6. Ease of Use           | 4.37 | .64 | .47** | .43** | .48** | .45** | .58** | --    |    |
| 7. Timeliness            | 4.47 | .61 | .56** | .48** | .61** | .65** | .61** | .63** | -- |

N=122 \*p<0.05, \*\*p<0.01

Table 11 shows that the Xero user satisfaction is significantly correlated with Content ( $r=.69$ ,  $p<0.01$ ), Accuracy ( $r=.58$ ,  $p<0.01$ ), Format ( $r=.58$ ,  $p<0.01$ ), Ease of Use ( $r=.47$ ,  $p<0.01$ ) and Timeliness ( $r=.56$ ,  $p<0.01$ ). Xero software success is significantly correlated with content ( $r=.61$ ,  $p<0.01$ ), Accuracy ( $r=.60$ ,  $p<0.01$ ), Format ( $r=.53$ ,  $p<0.01$ ), Ease of Use ( $r=.43$ ,  $p<0.01$ ) and Timeliness ( $r=.48$ ,  $p<0.01$ ). Both the independent variables and dependent variables were significantly correlated to each other. However, Xero user satisfaction and Xero software success in this study was more positively correlated with Content, Accuracy and Format than Ease of use and Timeliness. Using a test of difference between correlation coefficients (Doll & Torkzadeh, 1988), these differences of the variables were found to be significant at  $p<0.01$ .

**Table 12. Descriptive Statistics Analysis for the dependent variables and independent variables**

| <b>Variable (s)</b>    | <b>N</b> | <b>Minimum</b> | <b>Maximum</b> | <b>Mean</b> | <b>SD</b> |
|------------------------|----------|----------------|----------------|-------------|-----------|
| Xero user satisfaction | 122      | 2.00           | 5.00           | 4.19        | .62       |
| Xero software success  | 122      | 2.00           | 5.00           | 4.39        | .58       |
| Content                | 122      | 1.75           | 5.00           | 4.13        | .64       |
| Accuracy               | 122      | 2.00           | 5.00           | 4.43        | .65       |
| Format                 | 122      | 1.50           | 5.00           | 4.14        | .71       |
| Ease of Use            | 122      | 2.00           | 5.00           | 4.37        | .64       |
| Timeliness             | 122      | 2.50           | 5.00           | 4.47        | .61       |

Table 12 presents descriptive analysis which were obtained for the interval scaled dependent and independent variable. The minimum value recorded among the variables was 1.50 and the maximum was 5.00. Results indicates the mean for the seven variables used in this study (Xero software success = 4.39; Xero user satisfaction = 4.19; Content = 4.13; Accuracy = 4.43; Format = 4.14; Ease of Use = 4.37; Timeliness = 4.47). From a holistic perspective, these results suggest that participants of Xero are satisfied with the software and agree that the software is successful i.e. the software achieves its purpose. The minimum value reveals that participants of Xero believe that the satisfaction and success with the software are poor while the maximum value reveals that participants of Xero believe that the satisfaction and success with the software are excellent. The standard deviation suggests that the lowest is Xero software success (.58) and the highest is Format with standard deviation of (.71).

#### **4.3.3 T-test analysis**

***Hypothesis 1:*** *There will be significant differences in user satisfaction between male and female participants.*

***Null hypothesis:*** *There will be no significant differences in user satisfaction between male and female participants.*

In order to confirm hypothesis 1 and 2, an independent t-test analysis was conducted. According to George and Mallery (2010), t-test is used to identify two different means or values. A T-test is a method used for comparing means to find out whether or not there is adequate evidence to infer that the means of the corresponding population distribution also differ. In addition, to conduct an independent samples t-test analysis, a sample must include information from two populations. The two samples must be measured on the same variable of interest. Therefore, a t-test will determine if the mean scores of the two samples distributed are significantly different from each other. There are three types of t-test. The independent t-test which is used to compare means of two different samples. The paired samples t-test which focuses on the individual groups which experience both conditions of the variables of interest and thirdly the one sample t-test focuses on testing if the mean of a distribution is significantly different from some hypothesised value. Therefore, an independent

t-test will be conducted in this study (Cronk, 2017; George & Mallery, 2010). Hence the following results from the t-test analysis are presented below:

**Table 13. T-test analysis of the control variable (gender) with the DVs and IVs**

| T-Test Results         |                     |      |      |                       |      |      |                  |
|------------------------|---------------------|------|------|-----------------------|------|------|------------------|
| Gender                 | Males (n=46) 37.70% |      |      | Females (n=76) 62.30% |      |      | Difference       |
| Variable (s)           | Mean                | SD   | SE   | Mean                  | SD   | SE   | (T-Test)         |
| Content                | 3.97                | 0.75 | 0.11 | 4.22                  | 0.56 | 0.06 | (2.084) p=.039*  |
| Accuracy               | 4.36                | 0.66 | 0.10 | 4.47                  | 0.65 | 0.07 | (0.942) p=.348   |
| Format                 | 3.99                | 0.80 | 0.12 | 4.23                  | 0.63 | 0.07 | (1.983) p=.060   |
| Ease of Use            | 4.03                | 0.73 | 0.11 | 4.41                  | 0.58 | 0.07 | (0.918) p=.360   |
| Timeliness             | 4.28                | 0.67 | 0.10 | 4.59                  | 0.54 | 0.06 | (2.740) p=.007** |
| Xero software success  | 4.30                | 0.66 | 0.10 | 4.45                  | 0.53 | 0.06 | (1.317) p=.190   |
| Xero user Satisfaction | 4.09                | 0.63 | 0.09 | 4.25                  | 0.61 | 0.07 | (1.411) p=.161   |

N=122 \*p<0.05, \*\* p<0.01, \*\*\*p<0.001

The independent t-test analysis conducted showed that there were no significant differences in user satisfaction between male and female participants (F=1.411, p=.161). This result support the null hypothesis that there will be no significant differences in user satisfaction between male and female participants.



***Hypothesis 2:*** *There will be significant differences in software success between male and female participants.*

***Null hypothesis:*** *There will be no significant differences in software success between male and female participants.*

As above, the t-test analysis conducted, showed that there were no significant differences in software success between male and female participants ( $F=1.317$ ,  $p=.190$ ). This result support the null hypothesis that there will be no significant differences in software success between male and female participants.

In addition, t-test results also showed the following independent variables (IVs) above indicated that there were significant differences between male and female participants and the “Content” and “Timeliness” with the software Xero. On the other hand, there were no significant differences between male and female participants and “Accuracy”, “Format” and: Ease of Use” with the software Xero. The following results suggest that female participants rated the content of Xero more highly Mean (M) =4.22, Standard Deviation (SD) =0.56, Standard Error Mean (SE) =0.06 compared to the male participants (M=3.97, SD=0.75, SE=0.11) and this difference 95% Confidence Interval (CI) (-.48, -.12) was significant  $t(120) = -2.084$ ,  $p=.039$ . Also, there was statistical significance between the male and female participants on the IV timeliness of the software Xero. Results showed that overall female participants believe that the software was more timely (M=4.59, SD=0.54, SE=0.06) compared to the male participants (M=4.28, SD=0.67, SE=0.10) and this difference 95% CI (-.52, -.08) was significant  $t(120) = (2.740)$ ,  $p=.007$ . Overall, the sample showed that two of the IVs “Content” and “Timeliness” were statistically significant between male and female participants with the software Xero. On the other hand, three of the IVs “Accuracy”, “Format” and “Ease of use” were not statistically significant between male and female participants with the software Xero.

**Table 14. T-test analysis of the control variable (advisor) with the DVs and IVs**

| T-Test Results                       |                            |      |      |                                |      |      |                 |
|--------------------------------------|----------------------------|------|------|--------------------------------|------|------|-----------------|
| Advisors                             | Xero Advisors (n=80) 65.6% |      |      | Xero Non-Advisors (n=42) 34.4% |      |      | Difference      |
| Variable (s)                         | Mean                       | SD   | SE   | Mean                           | SD   | SE   | (T-Test)        |
| Content                              | 4.15                       | 0.64 | 0.07 | 4.08                           | 0.66 | 0.10 | (0.541) p=.589  |
| Accuracy                             | 4.41                       | 0.66 | 0.07 | 4.46                           | 0.64 | 0.10 | (0.415) p =.679 |
| Format                               | 4.17                       | 0.67 | 0.08 | 4.10                           | 0.77 | 0.12 | (0.545) p =.587 |
| Ease of Use                          | 4.37                       | 0.63 | 0.07 | 4.38                           | 0.68 | 0.10 | (0.399) p =.921 |
| Timeliness                           | 4.46                       | 0.61 | 0.07 | 4.50                           | 0.61 | 0.09 | (0.377) p =.707 |
| Xero software success                | 4.40                       | 0.59 | 0.07 | 4.38                           | 0.58 | 0.09 | (0.171) p =.865 |
| Xero user Satisfaction               | 4.23                       | 0.64 | 0.07 | 4.38                           | 0.58 | 0.09 | (0.895) p =.373 |
| N=122 *p<0.05, ** p<0.01, ***p<0.001 |                            |      |      |                                |      |      |                 |

**Hypothesis 3:** *There will be significant differences in user satisfaction between Xero advisors and Xero non-advisors.*

**Null hypothesis:** *There will be no significant differences in user satisfaction between Xero advisors and Xero non-advisors.*

T-test results also showed in table 14 above indicated that there were no significant differences in user satisfaction between Xero advisors and Xero non-advisors. This result also confirmed the null hypothesis that there will be no significant differences in user satisfaction between Xero advisors and Xero non-advisors.

**Hypothesis 4:** *There will be significant differences in software success between Xero advisors and Xero non-advisors.*

**Null hypothesis:** *There will be no significant differences in software success between Xero advisors and Xero non-advisors.*

As above, the t-test analysis conducted, also confirmed that there were no significant differences in software success between Xero advisors and Xero non-advisors. This result confirmed the null hypothesis that there will be no significant differences in software success between Xero advisors and Xero non-advisors.

Furthermore, table 14 above presents the results of an independent t-test to examine whether there are significance differences in the IVs between Content”, Accuracy”, “Format”, “Ease of Use” and “Timeliness. The following results revealed that there were no significant differences in the response to the IVs “Content”, Accuracy”, “Format”, “Ease of Use” and “Timeliness” between the demographic variables Xero advisors and Xero non-advisors.

#### **4.3.4 Analysis of variance (ANOVA)**

**Hypothesis 5:** *There will be significant differences between age groups of participants and user satisfaction with the software Xero.*

**Null Hypothesis:** *There will be no significant differences between age groups of participants and user satisfaction with the software Xero.*

In order to confirm hypothesis 5, an analysis of variance (ANOVA) was conducted. ANOVA analysis can be defined as a procedure utilised to compare variation of two or more groups of variables to find out if there is sufficient evidence to indicate that the variation of the corresponding variables differs to each other (Pallant, 2013). According to Cronk (2018) ANOVA is a process that determines the percentage of variability given to each of many components. It compares the means of two or more groups of members that differ on a single independent variable (Cronk, 2017). Hence the following results from the ANOVA analysis are presented below.

The ANOVA analysis conducted showed that there were no significant differences between the age groups of participants and user satisfaction with the accounting software Xero ( $F=1.19$ ,  $p=.31$ ). This result support the null hypothesis that there will be no significant differences between age

groups of participants and user satisfaction with the accounting software Xero. Post Hoc analysis (SNK) showed that participants of Xero between the ages of 31-50 years (middle age) had significantly higher satisfaction with mean score of (M=4.24), Followed by ages 30 years and less (young age) with a (M=4.22) and 51 years and more (older age) with a mean of 4.00. This result supports the null hypothesis that there are no significance differences between the age groups of participants and user satisfaction with the software Xero.

***Hypothesis 6:*** *There will be significant differences between age groups of participants and Xero software success.*

***Null Hypothesis:*** *There will be no significant differences between age groups of participants and Xero software success.*

As above the ANOVA analysis conducted, showed that there were no significant differences between the Age groups of participants and the success with the accounting software Xero ( $F=.30$ ,  $p=.74$ ). Post Hoc analysis (SNK) showed that participants of Xero between the ages of 31-50 years (middle age) had a higher satisfaction with a mean score of (M=4.44), Followed by ages 30 years and less (young age) with a (M=4.37) and 51 years and more (older age) with a mean of 4.33. This result supports the null hypothesis that there are no significant differences between the age groups of participants and Xero software success.

#### **4.3.5 Regression analysis**

In order to confirm hypothesis 7 and 8, a regression analysis was conducted. According to Cronk (2018) regression analysis refers to the relationship between two or more variables. Simple linear regression which permits the prediction between two variables. An independent variable can be used to predict the value of a dependent variable. Multiple linear regression permits the prediction of the value of two or more variables and thus independent variables can be used to predict the value of a dependent variable. This is important because analysing all the IVs simultaneously allows us to better understand if there are dominant IVs amongst the five variables examined in the present study.

**Table 15. Regression Coefficients for Independent variables predicting Xero user satisfaction and Xero software success.**

| Variables                     | Xero User Satisfaction | Xero Software Success |
|-------------------------------|------------------------|-----------------------|
| Step 1: Controls Variables    |                        |                       |
| Education                     | -.20*                  | -.18*                 |
| Professional body             | .08                    | .02                   |
| Tenure at Org.                | -.17                   | -.09                  |
| R <sup>2</sup> change         | .07*                   | .04                   |
| Step 2: Independent Variables |                        |                       |
| Content                       | .43***                 | .32**                 |
| Accuracy                      | .28**                  | .39***                |
| Format                        | .09                    | .11                   |
| Ease of Use                   | .07                    | .10                   |
| Timeliness                    | .03                    | -.13                  |
| R <sup>2</sup> change         | .51***                 | .45***                |
| Total R <sup>2</sup>          | .58***                 | .49***                |
| Adjusted R <sup>2</sup>       | .54***                 | .46***                |
| F Statistic                   | 16.971***              | 13.670***             |

N=122 \*p<.05, \*\*p<.01, \*\*\*p< .001 Standardized regression coefficients, all significance tests were single-tailed.

***Hypothesis 7: Content, Accuracy, Format, Ease of use, and Timeliness will be positively related to Xero user satisfaction.***

The present study on user satisfaction hypothesised that content, accuracy, format, ease of use, timeliness would be positively related to user satisfaction. Table 15 indicates that two of the

independent variables content and accuracy were significantly related to user satisfaction, the standardised coefficients beta was .43 and the significance was .000 ( $\beta=.43$ ,  $p=.000$ ) and ( $\beta=.28$ ,  $p=.007$ ) respectively. There was no significant relation between format, Ease of use and timeliness ( $\beta=.09$ ,  $P=.341$ ), ( $\beta=.07$ ,  $p=.421$ ) and ( $\beta=.03$ ,  $p=.798$ ) and user satisfaction. From the  $R^2$  Change figures in Step 2, indicates that content, accuracy, format, ease of use, timeliness accounts for 51% of the total variance for user satisfaction ( $P<.000$ ). Also, this model indicates that education of the participants is significantly related to user satisfaction ( $\beta= -.20$ ,  $p=.030$ ). All the control variables accounted for 7% of the total variance. The model for user satisfaction was significant, accounting for decent amounts of variance: user satisfaction ( $R^2=.58$ ,  $F=16.971$ ,  $p=.000$ ). In general, these findings do not fully support the hypothesis, however, there was a significantly positive relationship between the variables content and accuracy with user satisfaction. On the other hand, there was no significant positive relationship between the format, ease of use and timeliness variables with user satisfaction. This shows that the variables of content and accuracy did influence user satisfaction i.e. the software achieves its purpose.

***Hypothesis 8: Content, Accuracy, Format, Ease of use, and Timeliness will be positively related to Xero software success.***

A regression analysis was done using the same control variables, independent variables and the dependent variable Xero software success. Regression Coefficients for Content, Accuracy, Format, Ease of use, Timeliness predicting Xero software success. The present study hypothesised that content, accuracy, format, ease of use, and timeliness are positively related to Xero software success. Table 14 indicates that the two the independent variables content and accuracy were significantly related to Xero software success, the standardised coefficients beta was .43 and the significance was .000 ( $\beta=.32$ ,  $p=.003$ ) and ( $\beta=.39$ ,  $p=.000$ ) respectively. There was no significant relation between format, ease of use and timeliness ( $\beta=.11$ ,  $p=.295$ ), ( $\beta=.10$ ,  $p=.261$ ) and ( $\beta=-.13$ ,  $p=.236$ ) and Xero software success. From the  $R^2$  Change figures in Step 2, indicates that content, accuracy, format, ease of use, timeliness accounts for 45% of the total variance for the success with the software Xero ( $p<.000$ ). Also, this model indicates that education of the participants is

significantly related to user satisfaction ( $\beta = -.18, p = .054$ ). All the control variables accounted for 4% of the total variance. The model for Xero software success was significant, accounting for decent amounts of variance: Xero software success ( $R^2 = .49, F = 13.670, p = .000$ ). In general, findings were similar as hypothesis 7 of the regression analysis, which indicated that there was a significantly positive relationship between the variables content and accuracy with software success and there was no significant positive relationship between the variables format, ease of use and timeliness with software success.

#### 4.4 The open-ended questions.

Additionally, this study invited the participants to engage by completing three open-ended questions which included:

1. What is one thing you like most about Xero?
2. What is one thing you dislike about Xero?
3. What is one thing you would like changed or improved with Xero?

A summary of the responses from the participants is included in Table 16.

**Table 16. A summary of the responses from the participants.**

| Responds to Questions | Q1  | Q2 | Q3 |
|-----------------------|-----|----|----|
| No. of Participants   | 116 | 95 | 86 |
| Response rate (%)     | 95  | 78 | 71 |

N=122



**Table 17. Participants responses to Q1: “What is one thing you like most about Xero?”**

| <b>Themes (likes)</b>   | <b>No. of participants</b> | <b>Percentage (%)</b> |
|---|----------------------------|-----------------------|
| <b>User characteristics</b>   |                            |                       |
| User friendly/ Easy to use  | 39                         | 33.6                  |
| Easy to learn and useful support resources                                  | 6                          | 5.2                   |
| <b>Subtotal</b>   | <b>45</b>                  | <b>38.8</b>           |
| <b>Information technology characteristics</b>                               |                            |                       |
| Cloud-based software (general).   | 16                         | 13.8                  |
| Accessibility (online).   | 13                         | 11.2                  |
| No need to undertake a backup of data.                                      | 3                          | 2.6                   |
| <b>Subtotal</b>   | <b>32</b>                  | <b>27.6</b>           |
| <b>Software application characteristics</b>                                 |                            |                       |
| Ability to generate financial reports and download reports in excel format. | 14                         | 12.1                  |
| Receiving live bank feeds.  | 11                         | 9.5                   |
| Regular and Frequent software up-dates.                                     | 8                          | 6.8                   |
| Simplicity of accounting features and functions.                            | 6                          | 5.2                   |
| <b>Subtotal</b>   | <b>39</b>                  | <b>33.6</b>           |
| <b>Total</b>  | <b>116</b>                 | <b>100</b>            |

Q1 obtained a 95% response rate. From the information collected, the overwhelming consensus from participants was that Xero is readily accessible cloud-based software with online access from anywhere with internet connection. Participants appeared to prefer not having to back up their information themselves. Participants also responded that the software Xero is user friendly which supports the finding that ease of use was a reliable and valid variable in the EUCS model, and also participants responded that Xero is easy to learn with useful support resources. The support resources specifically identified included the online videos from the Xero company. More specifically, participants positively responded to the frequent up-dates to the software which enhances and simplifies accounting features, the presentation of accounts payable and receivables. As well as regular up-dates which improve general features with the software for example, formatting and downloading reporting in Microsoft excel. Other features which the participants positively responded to about Xero included the ability to receive live bank feeds which simplifies the recording and coding process of transactions. Also, the software allows business activity reports to be generated quickly and easily. In addition, participants liked the ease of uploading invoices and copying bills as well as the ability for Xero to generate financial statements with the appropriate accounting notes (using templates provided). More importantly, participants expressed the view that clients were able to understand and operate the software efficiently.

**Table 18. Participants responses to Q2: “What is one thing you dislike most about Xero?”**

| <b>Themes (Dislikes)</b>  | <b>No. of participants</b> | <b>Percentage (%)</b> |
|---|----------------------------|-----------------------|
| <b>Accounting characteristics</b>   |                            |                       |
| Difficulty in generating and creating consolidated accounting reports for multiple firms.           | 17                         | 17.9                  |
| Difficulty in customising features and functions of accounting reports                              | 17                         | 17.9                  |
| Difficulty in configuring and formatting accounting reports options after being changed or upgraded | 10                         | 10.5                  |
| <b>Subtotal</b>   | <b>44</b>                  | <b>46.3</b>           |
| <b>Other characteristics</b>  |                            |                       |
| Difficulty in operating the payroll and inventory functions.  | 12                         | 12.6                  |
| Low speeds and goes offline without internet access.  | 12                         | 12.6                  |
| Difficulty in calculating GST, Lack of multiple GST and tax clearing accounts.                      | 10                         | 10.5                  |
| High levels of subscription fees.   | 9                          | 9.5                   |
| Does not accommodate firms with a large number of transactions.                                     | 5                          | 5.3                   |
| Others.   | 3                          | 3.2                   |
| <b>Subtotal</b>   | <b>51</b>                  | <b>53.7</b>           |
| <b>Total</b>  | <b>95</b>                  | <b>100</b>            |

Results from Q2 obtained a 78% response rate. Participants have expressed disappointment with the high level of subscription fees. Participants also stated dissatisfaction with the payroll and inventory functions of Xero not being user friendly as well as how easy it is for clients to delete

online bank statements lines. In addition, participants expressed their disappointment with the software's inability to generate consolidated reports such as trial balance, balance sheet and profit and loss statements for multiple entities. Participants shared negative views towards Xero being unable to support multiple payables, receivables or GST tax clearing accounts. Furthermore 5.3% of the participants expressed disappointment with the imposed transactions limit. More specifically, participants expressed their dislike with the software reports not being easy to be customised after the options of accounting reports, report format and user interface have been changed or upgraded by the providers. Some participants were disappointed that the software can sometimes operate at low speeds and internet issues can allow the software to go into offline mode which slows down work progress. In some instances, participants were concerned that they could not operate with the software offline due to Xero being a cloud-based software which means internet connection is needed for the software to function. Also, participants found that Xero has difficulties in calculating good and services tax (GST) on customs imports invoices as well as the software having a lack of multiple GST accounts. Other issues raised by the participants were; the inability to identify whether journals and invoices were manually or automatically entered into the software. Participants expressed their concern with the clients having the ability to delete online banking transactions which can cause discrepancies. Finally, some participants had difficulties using bank feeds with credit cards.

**Table 19. Participants responses to Q3: “What is one thing you would like changed or improved with Xero?”**

| <b>Themes (changes or improvements)</b>   | <b>No. of participants</b> | <b>Percentage (%)</b> |
|---|----------------------------|-----------------------|
| Improvements to generate and create consolidated accounting reports for multiple firms.   | 17                         | 19.7                  |
| Improve customised features and functions of accounting reports and notes in financial statements.  | 14                         | 16.2                  |
| Changes and improvements with payroll and inventory functions.  | 12                         | 13.9                  |
| Improve accounting reports and report formatting and search functions.  | 10                         | 11.6                  |
| Lower subscription fees.  | 9                          | 10.5                  |
| Inclusion of an email component within the software, to send and receive email messages as well as chatting space to communicate live with clients and other staff. | 5                          | 5.8                   |
| Improvements to calculate GST and adding multiple GST accounts and tax clearing accounts.   | 4                          | 4.7                   |
| Improvements for the software to generate and add assets when required rather than creating an entirely new asset. And the ability to sell part of an asset.        | 4                          | 4.7                   |
| Ability to receive journals directly from accounts payable and receivables ledgers.   | 4                          | 4.7                   |
| Changes to improve automatic bank transfers, bank feeds and improve multi-currency calculation.   | 4                          | 4.7                   |
| Integration of human resource features.   | 2                          | 2.3                   |
| Improved ability to export data to other accounting software.   | 1                          | 1.2                   |
| <b>Total</b>  | <b>86</b>                  | <b>100</b>            |

Results from Q3, obtained a 71% response rate. Findings from participants suggested changes which included simplifying and enabling payroll and inventory functions to be more user friendly. Moreover, participants stated that providers can improve customised features with the software. The findings showed that participants suggested improvement to the accounting features of the software, notes in financial statements and the facility to produce consolidated group statements. Also, the ability for Xero to provide reports for multiple companies and up-dates of financial reports were mentioned frequently as an area of improvement for the Xero. Consistent with the feedback in the previous sentence, participants suggested improvements to accounting reports and report formatting and search functions. Further, suggestions were made to improve options to generate and add assets when required rather than creating an entirely new asset as well as the ability to sell part of an asset. Another suggestion included improving GST calculation options and adding multiple GST and tax clearing accounts. Furthermore, participants have suggested that the software include features such as multi-currency calculation, automatic bank transfers and allowing bank feeds to be connected through online banking and Xero. Other improvement suggested by the participants is the ability to receive journals directly from accounts payable and receivables ledgers. Additionally, participants suggested the integration of various human resource management features to Xero. This would enhance and facilitate the process of filing income tax for clients. More importantly participants have expressed a preference for the inclusion of an email component within the software which allows to send and receive email messages as well as chatting space to communicate live with clients and other staff in general. Finally,

participants suggested improvement with the data export to other accounting software function for example MYOB.

## **4.5 Summary of the results**

In general, the results of this study showed that participants are satisfied with the operation and effectiveness with the software. Results from reliability and correlation analysis scores between the two global variables and 5 variables of the EUCS model have confirmed that participants were satisfied with the software (see table 6). Moreover, confirmatory factor analysis was used to measure the underlying EUCS model. This reports that measures of the five variables (content, accuracy, format, ease of use, and timeliness) of the EUCS model provide consistent measurement of user satisfaction with Xero. This was also confirmed by the descriptive statistics analysis which showed that the average score of each of the variables using the 5-point Likert-type scale was above 4 (good). Hence, these results further confirm the robustness of the EUCS model and how it can be used to measure user satisfaction and software success of similar cloud-based accounting software.

More importantly, the results showed that participants expressed their preference for the content and accuracy variables for both user satisfaction and success with Xero, this was reflected from the high significance values of these variables from the regression analysis (see table 15). Hence, the general consensus of participants is that the software is reliable and valid given the high value scores of the measures used to evaluate the EUCS model variables; content, format, accuracy, ease of use and timeliness.

The EUCS model variables were not significantly correlated to age groups, tenure at organisation, and professional body membership while the variables were significantly correlated to education levels of participants. This further provides confirmation that some variables contributed to better user satisfaction and the success with the software Xero than others. Furthermore, the results from the confirmatory factor analysis, correlation analysis, regression analysis and regression coefficients showed that they were the best analyses in predicting good correlation significance and user satisfaction and success with the software. The t-test and ANOVA analysis showed that gender, advisors, non-advisors and age groups presented good mean scores of 4 and above for

content, accuracy, format, ease of use, timeliness, Xero software success and Xero user satisfaction. Moreover, the t-test also showed little significant correlation between these variables, however, it showed that there were significant differences between the variables content and timeliness with male and female participants.

The results of the open-ended questions from the study allowed participants to provide some reasons for the level of satisfaction they have expressed. The responses to these open-ended questions have highlighted more detail of what participants like most about the software, as well as the major concerns and what they would like to see changed or improved. Also, participants have suggested that there are functions and other aspects of software that can still be improved to meet the overall satisfaction of its participants. Consequently, the results of these questions could provide researchers and practitioners with further reassurance that the EUCS model can be used to evaluate cloud-based software applications in a practical setting.



## **Chapter 5. Discussion**

### **5.1 General**

The EUCS model has played an integral role in evaluating web-based software applications from a practical and theoretical perspective. (Doll & Torkzadeh, 1988; Doll et al., 1994). From a practical perspective, the EUCS model has been applied to measure end-user satisfaction of numerous web-based software applications (Tarigan, 2009; Wang et al., 2007; Xiao & Dasgupta, 2002). However, the EUCS model has not been used to evaluate any well-known reputable cloud-based accounting software. The contribution of this study was to apply the EUCS model developed by Doll and Torkzadeh (1988) to evaluate the cloud-based accounting software application Xero.

In this present study, the two global variables (dependent variables) user satisfaction and software success and the five independent variables content, accuracy, format, ease of use and timeliness of the EUCS model were used to evaluate the accounting software Xero. The dependent variable software success was used as a measure of perceived software effectiveness in this study. In the first step of the analysis phase of this study, a reliability and validity test of the variables was conducted, and the Cronbach Alpha scores suggested that the variables of the EUCS model were reliable and valid to evaluate user satisfaction with the software Xero. In addition, a correlation analysis was conducted with the variables of the EUCS model which showed that the variables were significantly correlated to each other. These results are consistent with the results obtained in the studies by a number of researchers (Ali Azadeh, Sangari, & Songhori, 2009; A Azadeh et al., 2009; Bakke & Stensrud, 2008; Doll & Torkzadeh, 1988; Doll et al., 1994). It must be noted that these variables produced high reliability and validity scores and excellent significant correlation, thus confirming that the variables of the EUCS model were robust and we proceeded with further analysis in this study.

Overall, results from this investigation found that 91.8% of participants returned a good or excellent user satisfaction rating with the software and 96.7% of participants returned a good or excellent

rating for the perceived level of software effectiveness (success) with Xero. In addition, results from the study suggested that content, accuracy, format, ease of use and timeliness accounted for 51% of the total variance of user satisfaction ( $p < .000$ ). This finding confirms that user satisfaction was strongly influenced by the perceived content, accuracy, format, ease of use and timeliness of Xero. Likewise, content, accuracy, format, ease of use and timeliness accounted for 45% of the total variance for the success with the software Xero ( $p < .000$ ). This finding suggests that the participants expressed the view that the variables contributed to the perceived effectiveness of the software.

In addition, Xero user satisfaction and Xero software success were positively influenced by the education levels of participants. This evidence suggests that participants with a higher educational background predominantly with undergraduate and postgraduate qualifications tend to be more satisfied and consider the software more effective.

## **5.2 Hypotheses**

This section will discuss the influence of the demographic variables including gender, Xero advisors/Xero non-advisors and age groups with user satisfaction and software success and the five independent variables content, accuracy, format, ease of use and timeliness. Overall, the results confirmed the five independent variables of the EUCS model, and the two dependent variables were significantly correlated to each other in the study.

### **Hypothesis 1**

The results showed support for null hypothesis 1, there will be no significant differences in user satisfaction between male and female participants. However, results also showed that there were significant differences between male and female participants with the variables content and timeliness. On the other hand, there were no significant differences between male and female participants with the variables format, ease of use and accuracy.

The results from the open-ended questions could explain reasons why there were significant differences between male and female participants with content and timeliness of the software Xero. These reasons may coincide with the participants responses to what they dislike about the software. With regards to the content, some participants have expressed their dissatisfaction with the inability

of the software to generate and create consolidated reports for multiple firms. Also, some participants might have been unhappy with the lack of ability to use multiple GST and tax clearing accounts and the inability for the software to accommodate firms with a large number of transactions. In relation to timeliness, it could be that these participants may have had issues with the low speeds of the software and its dependency on internet access. In addition, female participants had significantly higher scores than males for the variable timeliness. One reason for this, could be that female participants had more years of experience with the software than males. Also, with regards to content, female participants had a significantly higher score with the content of the software than males. This can suggest that a greater percentage of males were dissatisfied with the features of the software than females. This finding is supported by the results from the open-ended questions which similar characteristics were expressed by the participants with regards to what they dislike about the software. Overall, the participants showed high levels of user satisfaction, similar to the results in other studies (Parthasarathy & Bhattacharjee, 1998; Prasetyo & Yulia, 2017).

## **Hypothesis 2**

The results showed that there were no significant differences between male and female perceptions of software effectiveness (success). Thus, the result confirms the null hypothesis. Overall, this result could suggest that male and female participants perceived the software to be effective.

## **Hypothesis 3**

The results showed support for the null hypothesis 3, which proposed that there were no significant differences in user satisfaction levels between Xero advisors and Xero non-advisors. Moreover, there were no significant differences between Xero advisors and Xero non-advisors with the independent variables content, accuracy, format, ease of use and timeliness. The result of this hypothesis could be suggesting that the different levels of expertise and experience with Xero do not appear to influence or contribute to the perceived levels of user satisfaction with the software. It can be concluded that it might be (1) Xero is so easy to use by anyone, therefore, we need Xero advisors or (2) ease of use is relative to the level of use or ease of use is relative to the level of training.

#### **Hypothesis 4**

The results showed support for the null hypothesis 4, which proposed that there were no significant differences between Xero advisors and Xero non-advisors regarding perceived software successfulness. Moreover, there were no significant differences between Xero advisors and Xero non-advisors with the independent variables content, accuracy, format, ease of use and timeliness. Also, this could mean that anyone with a sound knowledge of the software would find Xero effective. Therefore, it can be concluded that user support and friendliness is relative to the level of certification.

#### **Hypothesis 5**

In addition, this study found support for the null hypothesis 5, which hypothesised that there were no significant differences between age groups of participants and user satisfaction with the software Xero. The result suggests that the age did not significantly affect the levels user satisfaction with the software Xero.

#### **Hypothesis 6**

The study provided support for the null hypothesis 6, which hypothesised that there were no significant differences between age groups of participants and Xero software success. This is a similar result with hypothesis 5. Therefore, it can be concluded that age was not relevant or did not contribute to better levels of perceived software successfulness.

#### **Hypothesis 7 and 8**

The results from hypotheses 7 and 8 showed that content and accuracy contributed more significantly to user satisfaction and the software success than the other variables of format, ease of use and timeliness. Hence, it can be said that content and accuracy were the dominant variables in this study. Consequently, it can be concluded that the participants believe that content and accuracy had a more significant contribution on user satisfaction and the success with the software than the format, ease of use and timeliness. These results were consistent with other studies which showed that content and accuracy were consistently significant to user satisfaction than format, ease of use and timeliness (Prasetyo & Yulia, 2017). Based on the responses from the open-ended questions, the results suggested that the participants are satisfied with the content of the financial

reports and live bank feeds generated with the software; and (2) participants may have been satisfied with the content of reports downloaded in excel format. In addition, these results from hypotheses 7 and 8 confirmed that since there is no need for the participants to back up data themselves, hence they may have found the information to be more accurate because it is automatically backed up by the software. These were similar views expressed by the participants with regards to what they like about the software in the open-ended questions.

### **5.3 Open-ended questions**

It is important to understand that while there were good response levels to the open-ended questions, participants do not share the same levels of knowledge with regards to the software Xero and this has had an influence on what the participants like, dislike and their suggestions for improvements of the software.

The results of open-ended questions are based on what participants like, dislike and what changes or improvements that could be made to the software, have made a valuable contribution to this study. Generally, there were good response rates to what users like about the software with 45 participants suggesting they like Xero because it is user friendly, easy to learn and the software provides useful support resources. In summary participants indicated they liked that the software is cloud-based as it is accessible from anywhere with online and internet connection. There was also support for the capability to generate financial reports and download reports in excel format and use live bank feeds. Eight participants liked being able to receive regular and frequent up-dates and six users enjoyed the simplicity of accounting features and functions. These were some of the most notable and frequent responses concerning what participants like about the software.

On the other hand, 44 participants expressed the views that they encountered difficulties in generating consolidated accounting reports, customising the features and functions of the reports as well as configuring and formatting the accounting reports options after being changed or upgraded. One possible reason for these concerns is a lack of training of the software functionality for users to learn and use the features and functions of the accounting reports to the best of their ability. Hence, ongoing good training sessions or having good training courses for users might eliminate the difficulties for them to customise, configure and format reports after they have been upgraded.

Other reason for these difficulties may be that firms do not place emphasis on training their staff to improve their ability and knowledge to configure and format the reports options after they have been changed or upgraded. This conclusion is supported by the finding that 88.5% of users are not Xero certified. In terms of the difficulties in generating accounting reports, it can be argued that the providers of Xero could not get the software to generate consolidated reports for multiple firms. Hence this is an area that can be improved to further increase the satisfaction levels of users and could improve the perceived effectiveness of the software.

Fourteen participants have expressed their dissatisfaction with the payroll and inventory functions. These participants may have been comparing their experience with a similar software for example QuickBooks or MYOB. Another reason might be that these participants have not been able to make the transition from using other cloud-based or web-based software to using Xero. Also, it might be that these participants have encountered difficulties in using Xero because they have not taken any training courses to learn these functions. This could help improve the overall capability of users to utilise these payroll and inventory functions. This conclusion is supported by the finding that only 8.2% of the participants in this study were certified in payroll.

Twelve participants responded that the software sometimes operated at low speeds or goes offline with poor internet connection. These participants have expressed their dissatisfaction with these aspects of the software. Possible reasons for this finding include; First, it could be that the users are operating the cloud-based software in an area with frequent internet failure. Second, maybe that these users are connected to a low speed modem or network which allows the software to operate at low speeds and makes the software go offline occasionally. Thirdly, it may be that these participants are comparing the speed of the software to another similar desktop-based software which did not require internet services. Finally, it may have been that these participants were within the older age group of 51 years and older which include 17.2% of the sample who were more acquainted with the traditional desktop web-based software which they found to have been more reliable because it is connected to server via a network. However, taking these arguments into consideration, it can be concluded that the traditional desk top software applications do not have the advantages that a modern-day cloud-based software like Xero has such as place independent (accessibility from anywhere) and backing up data online.

Nine participants suggested that the software was too expensive. Currently Xero offers three suitable business monthly plans which include the starter plan where users pay \$27.50 per month and have access to send up to 5 invoices and quotes, enter up to five bills and reconcile up to 20 bank transactions amongst others. The standard plan for \$60 per month which allows users to send invoices and quotes, enter bills and reconcile bank transactions. And the premium plan which cost \$75 per month which allows users to send invoices and quotes, enter bills, reconcile bank transactions, handle multiple currencies (Xero, 2018). Although participants have expressed the view that Xero is expensive to operate, this argument cannot be generalised because it is unclear whether participants are comparing the cost of operating cloud-based software with equivalent cost of operating a desk-top software. Hence this can provide an opportunity for further research to make a comparison of the cost of operating Xero compared to the cost of operating a desktop system.

Ten participants responded that they had difficulties in calculating GST and that the software has limited GST and tax clearing accounts. The difficulties that these participants have expressed with GST accounts might be because of the lack of knowledge of these accounts. In addition, it could be that these participants have not learned and/or are not able to calculate GST. On the contrary, it might be that the software does not have the necessary accounts needed to calculate GST or does have a lack of multiple GST accounts as indicated by these participants. As a result, it can be concluded that the software lacks the functionality to accommodate multiple GST and tax clearing accounts. This finding could provide an opportunity for further investigation.

Five participants indicated that the software does not accommodate firms with large volumes of transactions. At present, Xero offers up to 1,000 transactions per month to its users and also Xero recommends a maximum number of 4,000 tracked inventory items per organisation (Xero, 2018). In addition, the number of transactions a firm or user has access to depends on the subscription fee or the monthly plan which the firm or the individual has. Nevertheless, there are companies which have exceeded 1000 transactions and their customer-base might be increasing. Hence, it can be understood why these participants have expressed concern with the software as it will force clients to seek an alternative software. This finding suggest that providers should consider a further plan option to their software to increase the number of transactions for its users. On the other hand, if these users continue to experience this issue, they can consider using an alternative cloud-based software which accommodates more transactions.

A total of 53 participants have suggested changes or improvement to the functionality of the accounting software. Suggestions or improvements with accounting reports, customised features, notes in financial statements, report formatting, search functions and cash flow templates might suggest that these participants were unaware or unfamiliar with the export to excel and report writer features and functions with the software. Participants who suggested changes and improvements to payroll and inventory functions may have done so due to the complexity of functions which require greater levels of training. Thus, firms could provide better training resources to its users which could assist them to facilitate the use of these functions and would help to increase user satisfaction of the software.

Moreover, participants have suggested for the inclusion of an email component within the software, to send and receive email messages as well as chatting space to communicate live with clients and other staff. At present, Xero offers users the option to send invoices to their respective clients. However, there is no comprehensive email service where users and clients can have free flowing communication from within the software. Integrating an email component to the software can be of benefit for users. This could enable users to communicate directly with their clients using the software on a transaction process concerning their clients. Nevertheless, if the providers were to implement this function, it could have financial repercussion for the users which can result with an increase in subscription fees or monthly payments. These results can benefit both the users and the providers of the software. The results could enable the providers to have a better understanding of what exactly the users like most as well as dislike most about the software and what are the ways in which they can continue to satisfy the needs of their users and improve on the major concerns of its users.



## **Chapter 6. Conclusion**

### **6.1 Conclusion**

As indicated previously in this study, there has been very little research undertaken to evaluate the cloud-based accounting software and in particular Xero. The aim of this study was to evaluate user satisfaction with Xero accounting software in accounting firms and SMEs in Auckland. This is the first known study to use the End-User Computing Satisfaction (EUCS) model developed by Doll and Torkzadeh (1988) to evaluate user satisfaction with Xero. The main findings of this study revealed reliability and validity analysis confirmed that the EUCS model was valid and reliable model to measure user satisfaction of the accounting software Xero. In addition, correlation analysis results confirmed that all the variables of the EUCS model were significantly correlated to each other. However, the variables content and accuracy had significantly higher overall user satisfaction and success with the software Xero than format, ease of use and timeliness. The study showed that gender had greater levels of satisfaction and success with content and timeliness than with the format, ease of use and accuracy. Moreover, the age, tenure and advisors of the participants do not significantly correlate with the success and satisfaction of Xero. However, education levels of participants were highly significantly correlated to success and user satisfaction of Xero. This can be explained because undergraduate and postgraduate qualifications accounted for 77% and 19.7% of participants respectively. Based on the results of this study, it can be concluded that users from the accounting firms and SMEs in Auckland were generally satisfied and found the software Xero to be successful. This implies that the EUCS model can further be utilised by researchers and practitioners to evaluate similar cloud-based software in accounting firms and SMEs in New Zealand and other countries. Overall, the study found that 91.8% of participants returned a good or excellent user satisfaction rating with the software and 96.7% of participants returned a good or excellent rating for the perceived level of software effectiveness (success) with Xero.

Finally, the results from open-ended questions of the study confirmed users were satisfied that the software was cloud-based, user friendly, easy to learn as well as having the ability to generate

financial reports and download excel in excel format and live bank feeds amongst others. On the other hand, there was dissatisfaction with the software not being able to generate and create consolidated accounting reports for multiple companies, customizing features and functions, configure and format accounting reports options after being changed or upgraded. Also, the results confirmed that users expressed dissatisfaction with the payroll and inventory functions, low speeds and the software going into offline mode without internet, difficulties to calculate GST, lack of multiple GST accounts and tax clearing accounts and some users stated that the software is too expensive. Finally, in order for users to operate effectively with Xero, it is necessary for users to acquire adequate training to maximise the capability to use the software. In addition, to avoid internet failure and low speeds with Xero, users should have access to good internet connection. Also, to further meet the needs of users, the providers of Xero could include another pricing plan of over a 1000 transactions per month as well as aggregating features to the software to generate consolidated accounting reports for multiple companies and to have multiple GST accounts.

## **6.2 Contribution**

With the increased use of cloud-based software applications by accounting firms and SMEs. Xero has been one of the leading accounting software applications in New Zealand. In recent years the software has grown in popularity both locally and internationally with over 1.5 million subscribers. Xero founded by Rodney Drury and Hamish Edwards in New Zealand is one of the most recognised small business accounting software application in the world today. However, the research community and practitioners have made little attempts to evaluate the software. Therefore, this study is dedicated to contributing to the existing knowledge on the extensive list of literature which have used the EUCS model to evaluate software applications. Further, the study has contributed to the academic research accounting spectrum and the research community in general by evaluating a cloud-based accounting software rather than a web-based software as evaluated by the authors mentioned in this study (Abdinnour-Helm et al., 2005; Marakarkandy & Yajnik, 2013; McHaney et al., 2002; Pikkarainen et al., 2006; Xiao & Dasgupta, 2002). From a practical perspective, it is hopeful the results of this study can assist the providers of Xero with some insights into user satisfaction with the software and understanding what the users like and dislike about Xero which can lead to realistic and practical improvements and changes to the

software. Finally, since this research is related only to Auckland, New Zealand, the researcher believes that the results of this study can be a blueprint for researchers and practitioners to adopt the EUCS model to evaluate cloud-based accounting software applications within their study and work setting in New Zealand as well as abroad.

## **6.3 Implications**

### **6.3.1 Theoretical implications**

Given the EUCS model has been valid and reliable as confirmed from the literature reviewed in the past studies (Abdinnour-Helm et al., 2005; Doll & Torkzadeh, 1988; Doll et al., 1994; Pikkarainen et al., 2006). It has now been confirmed as a valid and reliable model to evaluate user satisfaction of Xero. Moreover, this study has explained the theoretical aspect of EUCS model, empirically tested the model, analysed quantitative primary data and interpreted the data. Consequently, the approach to this study can be replicated in other studies which aim to evaluate cloud-based software.

### **6.3.2 Practical and research implications**

From a practical perspective, this study can be of benefit to researchers, practitioners, users and the providers of the software Xero. First, researchers and practitioners can apply this research approach to their studies knowing that the EUCS model is a reliable and valid framework for measuring user satisfaction and the perceived effectiveness (success) of Xero. Second, this study provides researchers and practitioners with results which they can use as a guide to evaluate cloud-based software applications in their academic research and work environment. Although, the results of the study have limited generalisability, the findings could provide a basis for comparison for researchers who are willing to use the EUCS model in their studies.

In, addition, the results of this study can assist the providers of Xero to further meet the needs and improve satisfaction of their users. Based on the results, the providers can achieve greater success with the software by integrating and enhancing more accounting features which will contribute to increased user satisfaction. Furthermore, providers could further develop some functions such as payroll and inventory which would make the software easier to navigate and might improve user friendliness.

Taking into consideration the results of this study, providers of the software can be more aware of how participants perceive the software key variables, content, accuracy, format, ease of use and timeliness and their influence on user satisfaction and the success of the software. This might encourage the providers to modify the product to further fulfil the needs of its users which could lead to an increase in the value of the software itself. Finally, the research implications of this study include extending the EUCS model to evaluate cloud-based software applications in accounting firms and SMEs.

## **6.4 Limitations**

This study has used the EUCS model to evaluate the cloud-based accounting software Xero in Auckland, New Zealand. Therefore, there are some limitations. First, based on the sample size of participants, it cannot be concluded that Xero has met the overall satisfaction of its users in New Zealand. Consequently, because this study was conducted specifically in one geographic location in New Zealand, the results cannot be generalised. The majority of participants were from accounting firms as a consequence another limitation of the study was the small number of participants from SMEs. As a result, this may have affected the ability to obtain a balance perspective of user satisfaction and success of the software Xero from the participants in this study. These limitations may serve as a catalyst to pursue future research.

## **6.5 Future research**

Given that the EUCS model has shown significant user satisfaction and has had success in evaluating the cloud-based accounting software Xero in this study, future research might consider conducting further studies to evaluate Xero throughout New Zealand with larger sample sizes. This would enhance the generalisability and increase the opinions of users are satisfied with the software and that it has been an overall success in New Zealand.

In addition, future research can look to utilise the EUCS model to evaluate similar cloud-based accounting software applications used in different countries. Also, a comparative study can be conducted to evaluate two or more cloud-based accounting software for example Xero and MYOB. This would perhaps provide researchers and practitioners with more insights of feasibility

of the EUCS model and how users react to their satisfaction and what thoughts they share on the success of cloud-based software. This would enable providers of Xero to enhance their application which would increase users' needs and satisfactions. Future research can look to evaluate more specific functions as mentioned by participants in this study which will improve Xero user satisfaction. Future research can look to increase measurements techniques such as multidimensional scales which perhaps might extract more concise and detailed information about the users of Xero. Finally, future research can focus on the modification of the EUCS model by including precise questions concerning the functions of the software which can help to obtain a better evaluation of the software Xero (Pikkarainen et al., 2006).

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## Appendix A:

The logo for Auckland University of Technology (AUT) features the letters 'AUT' in a bold, white, sans-serif font against a black rectangular background.

TE WĀNANGA ARONUI  
O TĀMAKI MAKAU RAU

### Auckland University of Technology Ethics Committee (AUTEC)

Auckland University of Technology

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20 February 2019

Paul Wells

Faculty of Business Economics and Law

Dear Paul

Re Ethics Application: **19/13 User satisfaction with Xero accounting software used by accounting staff in accounting firms and small and medium enterprises (SME's) in Auckland.**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Subcommittee (AUTEC).

Your ethics application has been approved for three years until 20 February 2022.

#### Non-Standard Conditions of Approval

1. Devise a method whereby completed surveys can be delivered. For example, into a drop box at reception, or using a reply-paid envelope, rather than giving them 'to the manager'.

Non-standard conditions must be completed before commencing your study. Non-standard conditions do not need to be submitted to or reviewed by AUTEC before commencing your study.

#### Standard Conditions of Approval

1. A progress report is due annually on the anniversary of the approval date, using form EA2, which is available online through <http://www.aut.ac.nz/research/researchethics>.
2. A final report is due at the expiration of the approval period, or, upon completion of project, using form EA3, which is available online through <http://www.aut.ac.nz/research/researchethics>.

3. Any amendments to the project must be approved by AUTEK prior to being implemented. Amendments can be requested using the EA2 form: <http://www.aut.ac.nz/research/researchethics>.
4. Any serious or unexpected adverse events must be reported to AUTEK Secretariat as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEK Secretariat as a matter of priority.

Please quote the application number and title on all future correspondence related to this project.

AUTEK grants ethical approval only. If you require management approval for access for your research from another institution or organisation, then you are responsible for obtaining it. You are reminded that it is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.

For any enquiries, please contact [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz)

Yours sincerely,



Kate O'Connor

Executive Manager

**Auckland University of Technology Ethics Committee**

Cc: rkp5619@aut.ac.nz; jemmimaucicette@gmail.com; Jarrod Haar

## Survey questionnaire

### Section A

**Please answer the following question in written form, then circle the appropriate number in box most favourable to you for the questions below.**

- 1) Age.....
- 2) Gender.....
- 3) Occupation.....
- 4) What is your current position in your organisation?  
.....
- 5) How many years in current position?  
.....
- 6) How many years at the current organisation?  
.....
- 7) What is your highest level of education/qualification?  
.....
- 8) How many years have you used Xero?  
.....
- 9) Are you a certified Xero advisor? Yes ☐ No ☐
- 10) Do you hold any other Xero qualification? Yes ☐ No ☐

If yes, please state the qualification .....

- 11) Are you self-employed? Yes ☐ No ☐

12) Are you employed with an accounting firm? Yes ☐ No ☐

13) Are you employed with a Small and Medium Enterprise (SME) firm? Yes ☐ No ☐

14) Do you belong to a professional accounting body (s)? Yes ☐ No ☐

If yes, please state which accounting body .....

## Section B

Questions related to accounting information systems application software Xero on a scale of 1 to 5 with 1 being poor and 5 being excellent please answer the following questions by circling the appropriate number to each question in the table below. NB: There is no right or wrong answer.

|  | Scale  |        |           |        |             |
|--|--------|--------|-----------|--------|-------------|
|  | (Poor) | (Fair) | (Average) | (Good) | (excellent) |

### General

|                                  |   |   |   |   |   |
|----------------------------------|---|---|---|---|---|
| Is the software xero successful? | 1 | 2 | 3 | 4 | 5 |
|----------------------------------|---|---|---|---|---|

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| Are you satisfied with the software xero? | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|

### Content

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| Does the software provide the precise information you need? | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| Does the information content of the software meet your needs? | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| Does the software provide reports that seem to be just about exactly what you need? | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| Does the software provide sufficient information? | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|

**Accuracy**

|                           |   |   |   |   |   |
|---------------------------|---|---|---|---|---|
| Is the software accurate? | 1 | 2 | 3 | 4 | 5 |
|---------------------------|---|---|---|---|---|

|  |   |   |   |   |   |
|--|---|---|---|---|---|
| Are you satisfied with the accuracy of the software? | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|

**Format**

|  |   |   |   |   |   |
|--|---|---|---|---|---|
| Do you think the output is presented in a useful format? | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|

|                           |   |   |   |   |   |
|---------------------------|---|---|---|---|---|
| Is the information clear? | 1 | 2 | 3 | 4 | 5 |
|---------------------------|---|---|---|---|---|

**Ease of use**

|                                |   |   |   |   |   |
|--------------------------------|---|---|---|---|---|
| Is the software user friendly? | 1 | 2 | 3 | 4 | 5 |
|--------------------------------|---|---|---|---|---|

|                              |   |   |   |   |   |
|------------------------------|---|---|---|---|---|
| Is the software easy to use? | 1 | 2 | 3 | 4 | 5 |
|------------------------------|---|---|---|---|---|

**Timeliness**

Do you get the information you need in time?      1           2           3           4           5

Does the software provide up-to-date information?      1           2           3           4           5

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What is **one** thing you like the most about Xero?

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What is **one** thing you dislike about Xero?

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What is **one** thing you would like  
changed or improved with Xero?

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## **Participant Information Sheet**

Date Information Sheet Produced:

26th November 2018

Project Title

User Satisfaction with Xero Accounting Software used by Accounting Staff in Accounting Firms and Small and Medium Enterprises (SMEs) in Auckland.

### **An Invitation**

I am Jemmi Mauricette an International Student pursuing a Master's in Business specializing in Accounting at Auckland University of Technology (AUT). I am currently conducting research which is based on user satisfaction with Xero accounting software used by accounting staff in accounting firms and Small and Medium Enterprises (SMEs) in Auckland.

### **What is the purpose of this research?**

The aim of this study is to measure user satisfaction with Xero accounting software in accounting firms and SMEs in Auckland. Thus, this study aims to contribute to the existing body of knowledge in the area Accounting Information Systems (AIS) by identifying factors which influence User Computing Satisfaction (UCS) amongst users of Xero. The findings are also expected to identify possible opportunities for further research.

### **How was I identified and why am I being invited to participate in this research?**

You have been identified by your manager because this research focuses primarily on users who work with the accounting software Xero and with at least 1-year experience of using the software.

**How do I agree to participate in this research?**

Your participation in this research is voluntary and your choice to participate will neither advantage nor disadvantage you. You can withdraw from the study at any time prior to submitting the completed survey forms. As this is an anonymous survey, it would not be possible to withdraw from the study once you have submitted the survey form. By completing the survey form and submitting it, you have given your consent to participate in this study.

**What will happen in this research?**

Your participation involves completing a survey (questionnaire), which is expected to take approximately 10 minutes. Your participation will be deeply appreciated and will certainly contribute significantly to the success of my research and my understanding of the usefulness of Xero.

**What are the discomforts and risks?**

There are no expected risks.

How will these discomforts and risks be alleviated?

Participants are free to withdraw from the survey at any time.

**What are the benefits?**

I am conducting this survey in partial fulfilment of the requirements of my Master of Business Accounting qualification.

**What compensation is available for injury or negligence?**

N/A

**How will my privacy be protected?**

All your responses will be anonymous; thus, your identity will not be disclosed. Once you have completed this survey, it will be kept with my supervisor in a secure location and once the research is done, it will be destroyed after 6 years.

**What are the costs of participating in this research?**

It is expected that participants would complete the survey in 10 minutes.

**What opportunity do I have to consider this invitation?**

Participants will be required to complete this questionnaire within 2 to 3 days upon receiving the survey form.

**Will I receive feedback on the results of this research?**

Results of this research will be provided on request to Dr. Paul Wells via email [paul.wells@aut.ac.nz](mailto:paul.wells@aut.ac.nz).

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr. Paul Wells via email at 0274765519 or via email [paul.wells@aut.ac.nz](mailto:paul.wells@aut.ac.nz).

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, Kate O'Connor, [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz), 921 9999 ext 6038.

**Whom do I contact for further information about this research?**

Please keep this Information Sheet for your future reference. You are also able to contact the research team as follows:

Mr. Jemmi Mauricette at 02108281680 or via email [rkp5619@aut.ac.nz](mailto:rkp5619@aut.ac.nz)

Researcher Contact Details: Mr. Jemmi Mauricette at 02108281680 or via email [rkp5619@aut.ac.nz](mailto:rkp5619@aut.ac.nz) or [jemmi.mauricette@gmail.com](mailto:jemmi.mauricette@gmail.com)

Project Supervisor Contact Details: Dr. Paul Wells via email at 0274765519 or via email [paul.wells@aut.ac.nz](mailto:paul.wells@aut.ac.nz).

**Approved by the Auckland University of Technology Ethics Committee on 20<sup>th</sup> February 2019, AUTEK Reference number 19/13.**