Adoption of Advanced Accounting Software for Business Entities

385ACC ADVANCED STUDY FOR ACCOUNTING AND FINANCE

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Word Count : 6,962 words

ABSTRACT

Background

Accounting is essential for a company, and accounting software is continuously enhanced with the advancement of modern technology. Technological advancements have positively influenced the accounting field in recent years. The objective of this study is to analyse the advantages of utilising advanced accounting software for business entities as well as the potential obstacles that may arise during the implementation of such software.

Methods

This study employed a deductive approach and collected secondary data through archival research to establish the relevance of the research questions. Research results will be systematically categorised based on the obtained data outcomes. The research findings will be methodically categorised and examined, utilising the acquired data and literature review.

Results

Implementing advanced accounting software offers substantial advantages for business entities, including enhanced efficiency, accurate reporting, and informed decision-making. Despite these benefits, a lack of awareness is a significant barrier to adoption. Efforts to increase familiarity with these technologies among business entities have shown limited success. Before organisations adopt advanced accounting technologies, strategic planning is essential to align the software with business objectives to avoid inefficiencies and failures. Prioritising strategic planning ensures optimised operational efficiency and effective risk management, thereby maximising the benefits of advanced accounting software adoption for business entities.

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1 INTRODUCTION

1.1 Research Background

Accounting is a crucial component of business operations. Every firm, regardless of its size, is indispensable without it. As accounting technology has evolved over the centuries, the requirements for accounting software have also changed. Compared to the past, the time-consuming and error-prone problems of manual bookkeeping have improved. Nowadays, accounting software fulfils a broader purpose than traditional accounting tasks. It uses accounting technology to automate monotonous tasks and increase productivity, allowing accountants to focus on more important and fulfilling tasks and significantly improving the efficiency and accuracy of accounting practices (Thomson Reuters, 2022).

Advanced accounting software consists of cloud-based solutions with real-time access that simplify tasks through automation and artificial intelligence (AI). At the same time, integration with third-party applications will centralise data, making decision-making more efficient. Personalised and predictive analytics will provide deeper insights to support decision-making, while enhanced security features will counter growing cyber security threats. Overall, accounting software is constantly evolving to meet the demands of a dynamic business environment and improve efficiency, security, and decision-making processes, resulting in a complete performance improvement (Gridlex, n.d.).

1.2 Research Objective

Accounting, as a vital component of any company, must evolve alongside today's technological landscape. The advancement of technology has prompted the continuous upgrading of accounting software, which has brought certain challenges to enterprises in choosing appropriate accounting software. The objective of this study is to comprehend the benefits provided by accounting software to business entities, as well as identify potential challenges encountered during the adoption of advanced accounting technologies. By doing so, this research seeks to offer valuable insights that empower business entities to make informed decisions regarding the adoption and utilisation of advanced accounting software.

1.3 Research Question

The following research question intends to offer a better understanding of the research objectives:

Research Question 1: What are the benefits of advanced accounting software for business entities?

Research Question 2: What are the key challenges in implementing and utilising advanced accounting software for business entities?

1.4 Thesis Structure

The study will be structured into five main chapters. The first chapter serves as an introduction, providing the background of accounting technology development and the research purpose for this research to establish a clear understanding of this research. The second chapter emphasises the literature review to comprehensively support the study by understanding the benefits and challenges associated with advanced accounting systems. The third chapter outlines the research methodology. Drawing from the research philosophy perspective, the philosophical assumption is that the adoption and use of information technology have a positive impact on business entities. This serves as a research framework for developing an appropriate research method to answer the research questions. Chapter Four focuses on the findings and discussions. This section discusses the analysis that was conducted using the research methods described in Chapter Three. The conclusion is the final chapter of this study. It summarises the main findings from Chapter Four, reflects on any limitations of this research, and provides recommendations for future researchers.

2 LITERATURE REVIEW

This literature review chapter uses a thematic approach to conduct a critical review of research articles on important aspects and challenges that businesses should consider in the early stages of accounting software adoption and implementation. This chapter will first review advanced accounting software in this modern business environment and its benefits to business performance. Finally, some of the challenges that companies overcome in order to implement and use accounting software will be explored.

2.1 The Advantage of Implementing Advanced Accounting Software for Business Entities

In today's increasingly digitalised world, business owners often rely on a variety of tools to help them manage all aspects of their business operations. Computerised accounting programmes are widely used in practice. There are software solutions for everything from project management to logistics, customer service, and internal collaboration. The main advantage of accounting software is that the speed of calculation, accuracy, completeness, and timeliness are far greater than manual accounting. It can also provide the company's basic financial information in a timely manner. Of course, there are also some weaknesses and shortcomings, such as potential fraud and security issues, technical problems, etc. (Leonard, 2019). Additionally, computerised accounting systems provide deep insights into financial performance, which serve as a basis for strategic decisions and future planning. Automatic calculation effectively reduces unnecessary human errors. Accurate accounting information can influence every aspect of a company's operations (Pham, 2023).

2.1.1 Investment Costs in Accounting Technology

According to Dimitriu and Matei (2014), the relevant research and reports were reviewed by practitioners. They mainly present the important benefits that can enhance organisational capabilities and some issues that practitioners may face, and they discuss the impact of cloud accounting as an integration of cloud technology and accounting. Cloud accounting has been shown to make accounting workflows faster and more efficient. One of the most impressive benefits is cost reduction. Traditional accounting software requires an upfront investment in software and hard drives. Cloud accounting, on the other hand, is based on a subscription model, and all pricing plans cover the essentials of accounting with room for expansion. This achieves cost savings on unnecessary expenses such as licences, maintenance, hardware, and even information technology (IT) staff. In different years, Dimitriu and Matei (2015) mainly studied the perspectives of business owners and accountants on these technologies. They point out several advantages of cloud-based

software and list what they consider to be the most important points. The study shows that by adopting cloud accounting, companies can avoid high costs and time-consuming processes, allowing them to focus more on innovation and the development of their businesses. Small and medium-sized enterprises (SMEs), in particular, generally do not have an additional or sufficient budget to finance the initial investment in computer software and infrastructure. Cloud service providers enable them to utilise IT systems at the same level as their more advanced competitors. In this way, SMEs can significantly improve their competitiveness in the market. It is worth noting that companies can select scalable services based on current needs and change the appropriate package at any time as the business expands.

A study conducted by Molnar and Schechter (2010) examines the relationship between security costs and security benefits when switching to a cloud architecture. There are two types of cloud infrastructures, namely self-hosted infrastructures (private cloud) and cloud-hosted infrastructures (public cloud). Although private clouds are more controllable and secure than public clouds in an ideal security scenario, meeting their security requirements comes at a huge cost. The more common and economical option is the public cloud. The resource elasticity offered by public cloud providers eliminates the upfront costs of setting up a self-hosted infrastructure, and tenants only pay monthly. The tenant thus achieves cost savings, while the cloud provider spreads the costs across many tenants. However, shared cloud environments raise concerns about collateral damage, as an attack on one tenant could spread and harm other tenants.

The above-mentioned literature reviews emphasise that the adoption of cloud accounting effectively reduces the upfront and indirect costs of companies, thereby improving their business efficiency and capability. However, the security aspects of cloud accounting have always been a concern for businesses, such as hacker attacks, network outages, and other issues.

2.1.2 Security Concerns on Accounting Technology

Cloud providers have established certain security standards to demonstrate that they are reliable and authorised to provide these cloud and security-related services, such as automatic backups that are performed regularly, and each cloud provider has strict and extensive agreements on its service levels with its own network providers. External cloud service providers do indeed have a higher level of security than their internal computers. And it is recommended to test the possibility of cloud services through a limited trial period before deciding to adopt cloud services to ensure that they are suitable for the long-term development of the organisation (Dimitriu & Matei, 2014; 2015).

According to Flaherty (2017), cloud computing is starting to take hold in the accounting software industry. Many companies and entities are still wary and have concerns about cloud computing transitions, but most of these issues have improved significantly over time in recent years. Cloud accounting, whether from a physical or virtual perspective, can be considered a secure option while delivering cost savings, convenience, and user-friendly interfaces. Storing data in the cloud can ensure that the original files are lost due to various reasons. At the same time, the security measures implemented on the servers provided by the cloud service provider, such as the increased use of firewalls and intrusion detection software, are sufficient to ensure the security of data stored in the cloud. In addition, the account login technology provided by cloud accounting providers can help improve internal management, achieve different distribution of usage rights, and pass secondary verification. This is primarily a protection measure against direct intrusion by hackers.

Bhuriya and Sharma (2019) revealed the advantages and disadvantages of introducing cloud computing in companies. They recognise some advantages, such as cloud computing being much cheaper than traditional desktop software, which not only significantly reduces IT costs but also eliminates the need to worry about storage and backup issues. While cloud technology is convenient and accessible, it also comes with the potential for outages and technical issues. It is advisable that companies choose a reliable cloud service provider before adopting this technology to ensure that the security measures set up on the servers meet their requirements. In addition, they concluded that the integration of technology with cloud accounting has become a new trend for the future. To keep pace with the evolution of the times, companies should start adopting cloud computing with a limited number of applications in order to gradually grasp cloud computing while recognising its hazards.

The above literature reviews further support the first argument and raise concerns about the potential security of cloud accounting. Despite extensive explanations from cloud service providers, users still have concerns about security and information storage.

2.1.3 Quality of Accounting Data

The recent development of innovative accounting technologies has restructured accounting procedures to enhance their precision, efficiency, and availability. This is a process of redefining the job of accountants, shifting it towards a more advisory function and expanding its scope. Accountants can efficiently generate extensive reports by simply using their fingers, effectively assessing data to enhance company decision-making or develop strategic strategies for their

businesses (Ballinger, 2023). The accounting information system uses information technology to gather, store, and combine all accounting data to execute accounting functions. It aims to ensure the accuracy and completeness of the company's financial information, so that relevant personnel can make timely decisions based on the information obtained (Fontinelle, 2023). In the study conducted by Setiyawati and Doktoralina (2019), an attempt was made to determine the effects of the introduction of information technology (IT) in accounting. The authors concluded that the use of IT in accounting and the application of good governance principles have a significant positive impact on the quality of accounting information. They believe that the more effectively IT abilities are applied, the greater the quality of accounting information reporting. A similar study conducted by Ghasemi et al. (2011) shows that using IT in accounting systems can significantly reduce the time it takes to provide management with the required financial information while ensuring the accuracy of reporting. This allows management to make decisions quickly and easily to maximise benefits.

The above literature review shows that technological intervention in accounting has proven to be effective in significantly reducing the time to produce accurate financial reports and decision-making efficiency. This is further evidence that the use of computerised systems enables companies to manage business systems more efficiently and create opportunities.

2.2 The Key Challenges of Implementing and Utilising Advanced Accounting Software for Business Entities

The importance of technology in business, regardless of size, cannot be overstated in the current competitive landscape (Joe, 2021). Choosing a suitable accounting system is critical for a business. When switching to a new accounting software, there are always risks and challenges that every organisation must consider, regardless of size, industry, and underlying business goals (Kanagasundaram, 2022; Thomas, 2024).

2.2.1 Lack of Knowledge on Advanced Accounting Technology

According to SAHA et al. (2020), the study examines the perspective of several professional accountants in Bangladesh regarding the challenges and expectations of adoption. The results of the regression analysis show a positive correlation between cloud accounting and enhanced company performance. The cloud-based accounting system is not only accountable for daily financial activities but can enhance financial performance by analysing accounting transaction records, and facilitating user decision-making. However, the main challenges to cloud accounting adoption and implementation in Bangladesh were found to be the lack of understanding of cloud

accounting and concerns about the lack of accessible high-speed internet. In particular, concerns about the lack of understanding of cloud accounting outweigh concerns about security. This will be a major challenge in the adoption of cloud accounting in Bangladesh. The authors suggest that the people concerned should be trained accordingly to increase awareness and confidence in cloud accounting. Especially SMEs are constantly faced with the problem of a lack of technical talent and resources (Marcelino-Sádaba et al., 2014). Science and technology are developing rapidly, and only those who constantly acquire new knowledge can better adapt new technologies and products. The Indonesian higher education system deliberately enables future accountants to learn various accounting software to keep up with future trends. The higher education system intends to train future accountants to learn various accounting software so that students can develop an education model that prefers information technology to keep up with future trends (Utami & Yulianto, 2019). Choosing the right accounting software can help your business grow. The accuracy of accounting software gives managers more confidence in the timely use of the software, which facilitates decision-making (Shteb Al-Wael Nibras, 2014).

The above literature mentions that one challenge of implementing new accounting software is the lack of understanding of the new technology, while addressing this challenge by providing recommendations to encourage the integration of technology into education.

2.2.2 Resistance to Change

Kurniawan and Diptyana (2011) investigated the factors influencing the selection of advanced accounting software among 45 Indonesian SMEs. The study cannot refute the fact that seven variables (price, functionality, stability, flexibility, implementation, user, and owner desire) have a direct impact on accounting software selections. However, the survey discovered that new accounting technology are not particularly appealing to SMEs. Because the owners feel that the transaction volume of SMEs is not large and that data processing does not demand a lot of time. They prefer to present financial reports in Excel, but only for financial reports that lack strategic planning.

This literature reveals the attitudes of SMEs towards new technology. The reason for their refusal to change is a lack of awareness about the benefits of technology for business achievement, and they are unwilling to devote time and effort in embracing it. Further reference is made here to the lack of awareness of new accounting technologies and the importance of customised strategic planning before adopting new accounting technologies.

2.2.3 Strategic Planning Before Adopting More Advanced Accounting Technology

It is necessary to take the time to develop and implement new accounting software. The average duration of an accounting software or Enterprise Resource Planning (ERP) implementation can range from three to six months, depending on the size of the organisation (rinehimerbaker, 2017). Khattak et al. (2013) conducted a study on the challenges faced by organisations in adopting ERP, and it was confirmed that the critical success factors for ERP implementation are strong leadership management, proper employee training, organisational culture, business process redesign, and ease of use. Strategic planning increases corporate performance by combining data with processes or activities other than inventory, budgeting, and record-keeping processes, as well as merging accounting and business management (Kashyap, 2024). The example provided by Abu-Musa (2005) disclosed that before the unification of the Nigerian economy in 2004, most banks were eager to implement a system changeover by completely converting their old applications. The abrupt changeover did not give them time to master their new programme, which led to a number of problems. According to the study, changing software should be considered as an important strategic decision and the best choice should be made based on the strategic direction of the organisation. Before strategic planning, it is essential to analyse the provider's background. Subsequently, the planning process should align with the strategic requirements of the organisation. Finally, the selection of software should be based on the specified goals (Marcelino-Sádaba et al., 2014).

The preceding literature review highlights the drawbacks of rushing a system conversion and emphasises the importance of strategic decision-making in the selection of new software. Therefore, organisations should take a strategic approach when implementing software changes to ensure that they align with overall strategic goals.

2.3 Literature Gaps

This literature review chapter discussed some of the advantages and challenges when adopting advanced accounting software. However, there are still certain gaps in the literature that need to be filled. Additionally, the results may be less accurate because some of the literature is out of date. Furthermore, the scope of the literature review may be insufficient to cover the important elements of the research questions. As a result, additional research is required.

3 RESEARCH METHODOLOGY

This section on research methodology covers the first three layers of the of research "onion": philosophies, approaches, and strategies used to design a research study and related to the research questions (Saunders et al., 2009). The research question for this study was the benefits of adopting advanced accounting software and the barriers that organisations faced when adopting it.

3.1 Research Philosophy

3.1.1 Relevance of Philosophical Perspectives to Business Research

The research 'Onion' demonstrated that there were four main research philosophies relevant for business students: positivism, realism, interpretivism, and pragmatics. The concept of positivism originated from the fundamental understanding of science. The conviction was that reliable data would be produced through the observation of facts. These hypotheses underwent testing and validation, either in their entirety or partially, or they were disproven, subsequently contributing to the advancement of the theory (Saunders et al., 2009).

3.1.2 Ontological assumptions and Epistemological assumptions

Research philosophical assumptions were also referred to as philosophical perspectives. Ontological assumptions served as the foundation of a research project. They mainly pertained to the researcher's philosophical assumption in relation to their ideas about knowledge of reality, and epistemological assumptions would be based on that knowledge to design the process and the methods used to investigate it (Trivedi, 2020). According to a study by Silberzahn et al. (2018), even when using the same data, the results could vary significantly when researchers had different assumptions.

3.1.3 Objectivism and Subjectivism

Ontology was divided into two basic philosophical positions: objectivism and subjectivism. Objectivism was the belief that the knowledge of reality existed and was true and could be independently verified by anyone with the same result. In contrast, subjectivism places great emphasis on the crucial role of personal experience and perception in the development of knowledge by interpreting and analysing external phenomena to evaluate their impact on human perception (Trivedi, 2020).

3.1.4 Research Philosophy of This Study

The philosophical assumptions in this study were that the adoption and use of information technology had a positive impact on organisation. In this case, the ontological assumption of objectivism was that the positive impact of IT on businesses was a tangible, measurable phenomenon that existed regardless of perception. However, subjectivism placed greater emphasis on individual viewpoints and empirical evidence of new technology within the organisation. On the other hand, the epistemological assumption had to be validated through verification to obtain reliable knowledge. Therefore, positivism was conducted in this research to find the truth.

Whenever philosophical assumptions were made, the framework for fundamental research was formed. The subsequent phase in research methodology was to decide the research approach to be applied.

3.2 Research Approaches

Research approaches involve researchers deciding how to conduct their research. Research methods included inductive and deductive approaches. Both approaches sought to gain insight into the external world by employing premises and discoveries to ascertain its veracity. The primary distinction between the inductive and deductive approaches was in their respective objectives, resulting in fundamental differences in the methodology adopted (Dovetail Editorial Team, 2023).

3.2.1 Inductive Approach

Inductive research was a strategy that followed a "bottom-up" approach, beginning with observations of research formwork, and then collecting and analysing data to generate theories and conceptions. Inductive research was used more for exploratory investigations or when existing research on a specific problem was limited. Inductive research offered considerable flexibility, allowing researchers to modify their theories and hypotheses in response to their findings without any imposed limits (QuestionPro, 2023). This approach was most effective when the research problem was confusing, but the limitation was that the accuracy of this approach might not have been entirely reliable as it had not been validated (Streefkerk, 2023).

3.2.2 Deductive Approach

The inductive approach sought to formulate a theory, whereas the deductive approach sought evidence to evaluate an established theory. In contrast, the deductive approach employed a "top-down" approach. First, a theory or hypothesis was utilised to subsequently conduct tests through

observations and data collection, and finally validate it. The research design and methods were derived from the initial research plan so that the research was structured and organised, making it easier for the researcher to collect and analyse the data more objectively and consistently, so that the deductive approach was often used in confirmatory research (QuestionPro, 2023). An inherent constraint of the deductive approach was that arguments were exclusively grounded on premises that were logically sound. Errors in the underlying assumptions of an argument could be deceptive, resulting in misleading conclusion (Dovetail Editorial Team, 2023).

3.2.3 Research Approach of This Study

This paper conducted short-term research (three months of research). The deductive approach was more suitable for this study because the time consumed by the deductive approach was less than that of the inductive approach. At the same time, the finding had more credibility because it had been verified, effectively reducing errors resulting from assumptions.

Once the research approach had been determined, the next priority was to identify the most appropriate research method to be employed in this study.

3.3 Research Method

The research methods were strategies and specific procedures for organising data collection and analysis to answer the research question. Before choosing a data analysis approach, the initial step was to strategize the data collection process. Three variables were used in the selection of data: qualitative or quantitative, primary, and secondary, and descriptive and experimental (McCombes, 2023).

3.3.1 Data Collection

Qualitative and quantitative data were the types of data needed for research. Qualitative research usually consists of collecting feedback from specific users through a small sample of participants. It was subjective, had no clear framework, and was aimed at understanding rather than testing. Therefore, qualitative research was better suited to understanding concepts, opinions, or experiences. Quantitative research, on the other hand, usually involves extensive surveys with questionnaires on a broad basis. Quantitative research was characterised by its objectivity and structured nature and was particularly well-suited to confirming or testing certain theories or hypotheses. The two methods of data analysis were also different: Qualitative data referred to

descriptive information expressed through language. Quantitative data referred to information that could be quantified or measured, especially in terms of numerical values (Indeed, 2023).

Primary data referred to the first real-time data collected directly during the research work. This was a time-consuming process, but it was tailored to the specific needs of the researcher. Secondary data referred to information obtained from earlier primary data sources. The most significant advantage of using secondary data was that it reduced the cost and duration of the research process. Secondary data could also lead to surprising results from experiments. For example, researchers could access large datasets (e.g., data from government surveys) that they could not manage on their own (BYJU'S, 2022).

The research question for this study was: What were the benefits of accounting software for businesses, and what were the biggest challenges in implementing and using accounting software for businesses? It was neither purely qualitative nor quantitative. It was a mixed question, as both descriptive and measurable answers were sought. In addition, the collection of secondary data was considered in this study as it was efficient and could save a lot of time compared to the collection of primary data through experiments, surveys, or interviews. According to George (2024), secondary research could be qualitative or quantitative in nature. Therefore, this study used secondary data in the context of mixed-methods research, which combined quantitative and qualitative approaches to obtain and describe more comprehensive knowledge from the participants' perspective.

3.3.2 Archival Research

There were various types of research strategies, such as experiments, surveys, case studies, action research, and archival research. Due to the data selection mentioned above, archival research was the most suitable for this study.

Archival research was a research method that involved the identification and acquisition of evidence containing records from the recent past or the past, also known as historical documents. Research papers, documents, data (including electronic data), artefacts, audio and sound recordings, and other resources could serve as sources for archival research. Archival research was about finding patterns in primary sources, coding the information needed, analysing, and interpreting it, and discovering contradictions and answers. By focusing on the changes over time to answer the research questions. As the data may have been collected for many reasons, analysing secondary data was an inevitable part of archival research that used information from historical records (Pearce-Moses, 2005). In archival research with secondary data, researchers were more likely to

quickly gather both qualitative and quantitative data to support their theory than in other research approaches.

There were certain limitations to this research method. For example, the nature of the records and documents, the integrity of the data, and the difficulty of access might not have fulfilled the researcher's requirements for accurate answers or objectives. Therefore, careful planning and the availability of appropriate data were required before using archival research methods and researchers are required to thoroughly review an extensive collection of historical documents, ensuring comprehensive coverage, and preventing the oversight of crucial content (Algorhythms, 2023).

3.4 Research Ethics

Research ethics were delineated by rules of conduct that explicitly emphasised the significance of ethics in ensuring the trustworthiness and accuracy of research, as well as the methods employed to gather data in a study. Clear criteria should have been established to determine which actions were considered acceptable and which were considered inappropriate (Resnik, 2020). Ethical research was approved (Appendix A) to ensure that this study was conducted according to strict ethical principles. As this research source was based on secondary data, the researcher paid high respect to all authors by not misappropriating their ideas. It was ensured that a comprehensive understanding of the opinions of others was presented with full citations, and the interests of others were not infringed.

4 FINDINGS AND DISCUSSIONS

This findings and discussions chapter was conducted using the research methodology mentioned above. The purpose of this findings and discussion chapter is that the researcher needs to evaluate and analyse relevant data, relate them to the literature review chapter to address the research question, and present arguments to support the conclusions (Rucker, 2016). This study addresses the gaps mentioned in the literature review chapter above and will be supplemented and verified in this chapter. The findings were relevant and correlated to the research questions, as below:

1. What are the benefits of advanced accounting software for business entities?
2. What are the key challenges of implementing and utilising advanced accounting software for business entities?

4.1 Findings and Discussion

4.1.1 Finding 1: Implementing advanced accounting software will deliver advantages to business entities

Shkurti and Muça (2014) conducted a survey among young professionals in major Albanian companies with the aimed of understand the perceived advantages and obstacles of applying cloud computing technology. The study concludes that cloud computing is not a recent development and is backed by substantial data evidence. Although several accounting software package providers have also recognised the advantages of cloud computing over traditional accounting software packages, such as cost efficiency, time savings, data security, easy accessibility, and an effective backup system. Nevertheless, the use of this technology is still not widespread in the accounting industry. In Appendix B, the authors conclude that accuracy, processing time, completeness, and consistency are essential to a quality report (Table 2). Effectively achieving these criteria will improve information quality and decision-making using the accounting information system. In the meantime, the author's results show that most respondents believe that implementing and using cloud computing technology can effectively reduce various costs (saving hardware and software costs, reducing IT costs) and also create opportunities for product development capabilities (Table 3). Simultaneously, it also said there will be some obstacles when implementing the new software, especially security concerns (Table 4). However, the authors also found that cloud accounting computing can effectively enhance data security and has been used in many industrial fields in Albania in recent years. Such as the telecommunications industry, government, educational institutions, etc. This indicates that cloud accounting can actually be trusted.

Cost savings from advanced accounting systems are agreed upon. The findings presented are consistent with the strengths outlined in Research Question 1 of the literature review chapter, which implementing cloud accounting can save expenses on hardware and software (Molnar & Schechter, 2010; Dimitriu & Matei, 2014) and enable organisations to concentrate on creativity and expansion of their businesses (Dimitriu & Matei, 2015).

The findings indicate that in addition to cost savings, the quality of accounting data is the primary factor for organisations to implement accounting information systems. This finding is also supported by Fontinelle (2023) and Ghasemi et al (2011) mentioned in the literature review chapter. The accuracy and comprehensiveness of information are conducive to managers making timely decisions.

Furthermore, security is regarded both as a challenge and an advantage. This finding aligns with the content discussed in the literature review chapter in "Safety Issues" (2.1.2). The cited concerns about security are inevitable, yet obviously do not impede its advantages. That can only achieve a deeper knowledge by making an attempt to accept.

4.1.2 Finding 2: Lack of awareness of advanced accounting technology

Based on the data source of Tarmidi et al. (2014), Appendix C provided in the reference report shows that nearly 70% of the respondents are not familiar with this technology (Table 5). To ensure relevance, most respondents focused on accounting practitioners. They used a questionnaire to examine the level of knowledge on the expansion of the accounting industry and the perceived challenges and causes for the lack of adoption of cloud computing among SMEs in Malaysia. However, only 33% of the respondents who said they were familiar with cloud computing confirmed that cloud accounting is more economical and has lower maintenance fees than traditional software and considered cloud computing as a business process transformation strategy (Table 6). However, the research results found that the primary factors hindering the adoption of cloud computing by SMEs are a lack of familiarity with the technology and a lack of awareness regarding its associated advantages (Table 5). In this regard, both service providers and the government have implemented measures to increase knowledge of advanced technology among accounting practitioners and SMEs. However, the impact of these efforts appears to be small, and exposure to technology is considered critical to fully understanding its benefits.

A similar survey was conducted by Ciger and Kınay (2017), and they targeted Certified Public Accountants (CPAs). The study found that positive factors for CPAs to choose cloud accounting

include efficient data storage, a user-friendly interface, and automatic system updates. However, the reason most CPAs don't have an option is that they have a limited understanding of technology and are unwilling to change their existing planning processes. It is worth mentioning that more than half of the respondents expressed their willingness to transition to cloud-based accounting software if the organisation decides to adopt cloud accounting.

The finding is consistent with the literature review chapter. According to SAHA et al. (2020), which identified a lack of advanced accounting technical knowledge as a major implementation challenge. Moreover, Kurniawan and Diptyana (2011) argue that certain consumers exhibit a lack of awareness regarding the advantages of technology, leading them to be content with the status quo and unwilling to make any changes. Although they recognise the transformative potential of technology, they still face challenges when using it. Furthermore, people who embrace technology have reaped the benefits. This assertion was corroborated in the literature review chapter. There is another piece of evidence to support the notion that the implementation and utilisation of accounting practices can yield benefits for firms, including time and cost savings (Molnar & Schechter, 2010; Dimitriu and Matei, 2014; 2015). Also, there is no need for concern regarding data storage problems (Bhuriya & Sharma, 2019).

The finding according to Shkurti and Muça (2014) in (Appendix B, Table 1). More than half of the respondents declared that their knowledge of cloud computing technologies was acquired through their academic education. Education establishments are paying more and more attention to the advancement of information technology in the accounting sector. This finding is aligned with the literature review chapter that Utami and Yulianto (2019) highlighted. Aiming to offer advanced accounting education, incorporate technology into the financial and accounting sectors, and emphasise digital transformation while encouraging the ongoing growth of its students. Efforts from an educational standpoint can successfully mitigate the risk of future accountants lacking appropriate knowledge about emerging technologies.

4.1.3 Finding 3: There is a need for strategic planning before adoption a more advanced accounting technology

Shveda et al. (2021) have conducted research that shows that the accounting software market is constantly growing and becoming more diverse. Therefore, managers need to carefully evaluate the particular characteristics of accounting software in accordance with the strategic needs of the organisation in order to effectively improve business performance. Based on Appendix D, after

evaluating the advantages and disadvantages of accounting software, the author concludes that the advantages of using software exceed the disadvantages. Therefore, it is imperative to implement suitable and effective accounting software.

Moreover, Bishop (2016) conducted a study and concluded that implementing strategic alignment to match application packages to business needs can improve company performance. SMEs frequently allocate limited time and effort to the implementation of an accounting system. Appendix E indicates the necessary features required by SMEs considering the software. By effectively integrating necessary functions and aligning them with business goals, firms can avoid unnecessary diversions. However, the utilisation of incompatible corporate strategies and commercially available software packages can result in a system failure that impedes flexibility and certain business operations. Ultimately, it may be required to change the accounting package all over again, which would be impractical. SMEs should adopt a strategic approach and carefully strategize the accounting software packages they require in order to prevent unwanted future costs and complications.

This finding is aligned with the literature review chapter (2.2.3). In summary, there is a need for strategic planning before adopting a more advanced accounting technology. Effective implementation of advanced accounting technologies necessitates the formulation of a thorough and logical strategic plan that includes the organisation's objectives, available resources, and the needs of stakeholders. These factors are vital in ensuring the successful adoption of advanced accounting technologies and their seamless integration into the enterprise. Hence, it is crucial for firms to uphold optimal strategy alignment while deploying accounting software. In particular, the findings are aligned with Khattak et al. (2013), which indicate that strategic adjustments cannot only maintain the efficiency of internal operations but also integrate accounting and business management, leading to unanticipated performance improvements.

4.2 Summary

This chapter uses archival research to extract secondary data as a data source that has validated the benefits of advanced accounting technology to business entities as well as the major challenges in implementing and using advanced accounting software. This study found that adopting advanced accounting systems can reduce the unknown costs of technology development and create additional unidentified business opportunities. In addition, business entities can more easily acquire precise and high-quality data reports, which increases stakeholder confidence in their development.

The challenges associated with adopting and utilising modern accounting software also include a lack of familiarity with advanced technologies and an unwillingness to embrace change. The lack of technological literacy among accountants and management could lead to their resistance to adopting new methodologies, potentially resulting in inefficiencies and a greater amount of time dedicated to data collection. Moreover, it is essential to engage in strategic planning prior to using more sophisticated accounting technologies. Strategic planning empowers firms to efficiently implement and prepare for the future, thereby reducing potential problems and guaranteeing a smooth transition to sophisticated accounting systems. In conclusion, despite the presence of certain difficulties and barriers, the aforementioned literature and data indicate that modern accounting software offers significant advantages. Therefore, it is advisable to promote the adoption of this technology.

5 CONCLUSION AND RECOMMENDATIONS

Finally, this conclusion chapter provides a summary of the impact of technological changes in accounting software on the accounting industry and elucidates the perspectives of business entities regarding advanced accounting systems. The study utilised secondary data through archival research to validate the benefits of advanced accounting systems and those concerns when adopting advanced accounting software, as mentioned in the literature review chapter and validated in the findings and discussion chapters.

5.1 Major Finding:

The major findings in this research are as follows:

5.1.1 Implementing advanced accounting software will deliver advantages to business entities

Adopting advanced accounting software offers substantial advantages to business entities. By leveraging sophisticated tools, organisations can enhance efficiency and achieve highly accurate data reporting, empowering accountants and management to gain profound insights into financial performance and make informed decisions. Integration capabilities enable businesses to optimise processes, leading to cost savings, time efficiencies, and potential reductions in labour expenses. While security concerns exist, extensive evidence supports the safety of cloud-based solutions; however, complete elimination may not be possible. Nonetheless, the advantages of advanced accounting software far outweigh any potential drawbacks, making widespread adoption highly beneficial.

5.1.2 Main challenges in implementing advanced accounting software is lack of awareness

The potential benefits that cloud technology provides are significant, but the rate of implementation of this technology remains relatively low. Lack of technology awareness poses a significant barrier to adoption decisions, and there is a requirement to enhance familiarity with and instruction on advanced accounting technologies. Although research shows that educational institutions, governments, and service providers have tried to make changes, the results have been modest.

5.1.3 There is a need for strategic planning before adoption a more advanced accounting technology

Adopting advanced accounting technology that aligns with the strategic requirements of the organisation can significantly enhance business performance. Integrating software functionalities

with business objectives not only prevents future system malfunctions but also significantly enhances operational efficiency. In contrast, insufficient strategic planning prior to the use of advanced accounting technologies can result in inefficiencies, disruptions, escalated expenses, and potential implementation failures. To mitigate these risks and maximise the benefits of technologies, organisations must prioritise strategic planning that aligns software selection and implementation with their overall business goals and operational needs. To optimise operating efficiency and minimise risks, it is necessary to maximise the benefits of these technologies.

5.2 Reflect and Limitations

This study utilised archival research as a data source and identified various limitations via the completion of the Findings and Discussion chapter. The present research does not undertake an in-depth study of any specific industry or nation. However, the range of information related to cloud computing is very broad, and this study was conducted as a short-term study of three months, which may have resulted in the exclusion of some data and bias in data collection. Although this study tried to select as recent a data source as possible from secondary sources, the speed of technological advancement is immeasurable coupled with some access restrictions makes it challenging to obtain the most up-to-date facts from secondary sources.

5.3 Research Recommendation

Based on the above limitations, several recommendations for future investigations are proposed. In light of constraints in time and data sources, future researchers should undertake more focused investigations in order to obtain evidence-based conclusions that can substantiate them. Furthermore, the rapid pace of technological advancements may be beyond the capacity of the current literature to address and sustain it adequately. It is recommended that future researchers conduct primary data research to obtain more intuitive and clear data information.

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APPENDIX

Appendix A

Research Ethics Approval

Read this first

You should only use this checklist if you are carrying out a low risk research project through PSB Academy: This applies to:

- Undergraduate students.
- Taught postgraduate students.
- Members of staff evaluating service-level quality e.g. reviewing course delivery.

The term "project" applies to all research projects within PSB Academy.

Introduction to research ethics

Respect

One of the important qualities of a good researcher is to respect the people and their opinions that may form part of your research project. People who contribute their views to your research need to feel comfortable about what will happen to the information they give you, especially if your project is looking at an area which is confidential. As a general rule all research data should be treated confidentially and should not be discussed with colleagues, or participants referred to by name or in a demeaning manner. Respect also implies that you have taken the time to think through the research, to ensure you have good internal and external validity for the questions, and that the information you ask for will fulfil your research objectives. Are you are asking the right people the right questions?

Risk

You need to consider your personal safety during the research project and the safety of any other people involved in it. The ethical approval process is intended to help you identify risks to you and others.

For example, would the research you are carrying out:

- Endanger you by requiring data to be collected in unsafe places or by giving away personal data about yourself?
- Upset participants with research material that they may find distasteful?
- Damage the participants' job prospects by confidential data about them becoming known to others because your research makes it easy for them to be identify or because you accidently leaking information about them?
- Be reported and presented in a way that protects you and your participants from potential criminal or legal action?

Most risks can be minimised by taking sensible precautions. For example, if you are meeting people who you do not already know, you should always do so in a public place and let your Supervisor or a friend know who you are meeting, where you are and when you will return. Similarly, if you need to tell your participants how they can communicate with you, use your University email address, not your personal one. Is there is a risk to the participant in taking part in the research. For example, are you are distracting participants from doing their normal job, when their employer expects them to be doing something more important?

You have to limit the risk for the participant, by making sure they will not experience any come back from their employer because they helped you with your project.

It is also not normal practice to post up a questionnaire on the Internet. One reason why this is not a good idea is the fact that you may not know who is replying to your questionnaire, or whether their responses are valid or reliable. You are not allowed to send e-mail requests to staff, students or other people to participate in your research unless they have made a specific request.

Rights

As researchers we need to let those involved in our research understand what is expected of them, their rights including the right to withdraw from the research, and our obligations towards them and towards the data we collect about them. The responsibility for acceptable behaviour in this area lies with you and not with the University. Indeed, it is a disciplinary offence to misuse research data or to fail to abide by the University's Ethics policy.
This means that you must have ethical approval before you start your research project. If you do not do this, there will be disciplinary consequences for you and the research will be declared invalid. Special additional conditions may also apply to research carried out in your Faculty so check that you have followed those too.
Routes
The questions in the following checklist offers a guided pathway through the various issues surrounding your research that need to be addressed and researcher behaviour that would be expected from all of our students and staff. You will need to complete the checklist and receive approval before you begin to collect any data. It is not acceptable to produce it after you have collected your data or finished your project and you will be penalised if this occurs.
No living participants

The following diagram gives an overview of the routes through ethical approval. If there are no living participants involved in the research, then you are likely to be able to complete the Low Risk Research Ethics Approval Checklist and use Principal Investigator Certification (PIC) to state that there is no need for ethical approval. You still need to go through the checklist and answer the questions but the likely outcome is you can use the PIC declaration.

Living participants

If you intend to use living participants in your research, then you need to complete the Low Risk Research Ethics Approval Checklist and there is no guarantee that you will be able to use the PIC declaration.
Most projects, especially at undergraduate level, will involve using data that has already been collected which is called secondary data. In these cases, completion of the questionnaire is very straightforward.

Some projects might use a survey to collect anonymous data, i.e. data that cannot be traced back to named or identified individuals either from other students or from other groups of people. In this case, a participant information leaflet about the project needs to be prepared and offered to all participants in the study even though you will not take their contact details. The participant information leaflet needs to be pre-approved by the research Supervisor or the Faculty Research Leader before any data is collected and will need to be included in the dissertation or report.

Some projects might ask individuals to be interviewed to provide data. In these cases, the interviewees will need to provide what is called "informed consent". The researcher will need to make sure that all interviewees have completed informed consent forms before being interviewed and they will also need to be given participant information leaflets at the time when informed consent is requested.

It is not normal practice to collect data for undergraduate or master level research projects from children under 18 years of age, the mentally ill or participants under medical supervision. There are special regulations and legal requirements about these groups which must be followed. If you are planning to use any of these groups as a source of data in your research then this must be specially cleared with your Supervisor as participants from these groups cannot themselves give informed consent.

This means more work because these two leaflets have to be drafted and approved by research Supervisors or the Department Research Leader before any contact is made and therefore before any data is collected so this method of research requires a long development time and very good advance planning. Data collected in this way has to be stored securely. Again, a conversation with your Supervisor or the Department Research Leader may be necessary to cover this. It also needs to be destroyed after the research is completed and again this will need to be confirmed. You will need to convince interviewees that the information that they share with you will be treated confidentially and show to us that this is the case. Finally, the findings from research conducted in this way are normally shared with research participants in two ways:

- Interview transcripts may be sent to interviewees for confirmation.
- Summary findings of the research project should be offered to all participants.

Record keeping

It is also not acceptable to record interviews without getting permission or consent from the interviewees (so this might form part of your informed consent form). You need to provide details of how the information collected is confidential or not, how it will be used, stored and the disposal method. It is not a good idea to interview without seeking the prior informed consent of participants and having evidence of that consent. It is also not good practice to collect data and not "verify" by sending back transcripts of interviews to participants. Finally, the issue about the destruction of the data once the project is completed needs to be clarified.

All of this is intended to protect you. For example, if someone later says that they did not agree to being recorded or suggests that you have leaked confidential information about them. You need to be able to show that you have protected yourself and looked after any material very carefully.

In all cases the survey that will be used and the interview questionnaire or protocol needs to be signed off by Supervisors before they are used. It is also good practice to test them, not least to find out where the problems might be. In addition, when you write up your research, you can talk about the testing process as a demonstration of good practice, which for students may count towards your marks.

Frequently Asked Questions

Can I begin work before the project is ethically approved?
No. Primary data collection cannot begin until you have established that your project does not need ethical approval using this checklist or you have received written approval from your Faculty Research Ethics Leader.

What will happen if I proceed without approval or falsely self-certify research ethics approval?

Collecting primary data in the absence of ethical approval or falsely self-certifying the level of risk associated with a project will constitute a disciplinary offence.

For Students – this means disciplinary action resulting in immediate failure in any module or project associated with the research and potentially dismissal from the University.

For Staff – This means disciplinary action, which may potentially lead to dismissal.
If you do not have ethical approval, the University's insurers will not cover you for legal action or claims for injury. In addition, you may be debarred from membership of some professional or statutory bodies and excluded from applying for some types of employment or research funding opportunities.

What happens if the project changes after approval?
If after receiving ethical approval your project changes such that the information provided in this checklist is no longer accurate, then the ethical approval is automatically suspended. You must re-apply for ethical approval immediately and stop research based on the suspended ethical approval.

What about multi-stage projects?
If you are working on a project which involves multi-stage research, such as a focus group that informs the design of a questionnaire, you need to describe the process and focus on what you know and the most risky elements. If the focus group radically changes the method you are using then you need to re-apply for the ethical approval.
What is Principal Investigator Certification (PIC)?
If you answer No to all the questions in the low risk ethical approval checklist then it is likely that your project has a low ethical risk. You may sign the Principal Investigator Certification part of the checklist and proceed with your project using good ethical practices. If you are a student, your Supervisor needs to countersign to show they agree with your judgment. They may require some restrictions or changes to your project to reduce the ethical or other risks, which would be recorded on the PIC declaration.

What do I do with the completed checklist?

Appendix A

Students should discuss the checklist as it relates to the project with your Supervisor. Once s/he countersigns the PIC declaration at the end to say that this is a low risk project then you may begin your project. However, you must keep hold of the checklist and associated documents, as you need to bind it in to your final project report.
Staff should complete the checklist. If all your questions have "No" responses, then you need to sign the PIC declaration and you can proceed with your project. If you were unable to answer all the questions with a No, then you need to talk to your Faculty Research Ethics Leader. This may result in changes to your project or research design to maintain it as low risk. If this is the not the case then you may have to complete either seek approval through the Medium-High or Medical ethical approval routes before begin your project.

If you have any questions about the checklist or the questions on it, please consult your Research Supervisor.

Low Risk Research Ethics Approval Checklist

Applicant Details

Name: [redacted]

E-mail: [redacted]

Department: PT Barts A&F

Date: 22/01/2024

Course: 385ACC ADVANCED STUDY FOR ACCOUNTING AND FINANCE

Title of Project: Adoption of Advanced Accounting Software for Business Entities

Project Details
Summary of the project in jargon-free language and in not more than 120 words about the Research Objectives, Research Design (e.g. Experimental, Desk-based, Theoretical etc) and Methods of Data Collection:

Accounting being a crucial aspect of company, must keep up with the pace of technology in this day and age. Accounting software is also continually being upgraded. Integrated accounting software can effortlessly manage diverse business needs and assist businesses in achieving the most efficient, easy, accurate, and bring comprehensive performance benefits. The research utilized secondary data sources to gather information on the adoption of accounting software in business entities and allowed for a comprehensive analysis without primary data collection.

There are two research question as follow:

Research Question 1: What are the benefits of advance accounting software for Business Entities?

Research Question 2: What are the key challenges of implementing and utilising advance accounting software for business entities?

Risk to Participants

1) Will the project involve human patients/clients, health professionals, and/or patient (client) data and/or health professional data? Yes (No)
2) Will any invasive physical procedure, including collecting tissue or other samples, be used in the research? Yes (No)
3) Is there a risk of physical discomfort to those taking part? Yes (No)
4) Is there a risk of psychological or emotional distress to those taking part? Yes (No)
5) Is there a risk of challenging the deeply held beliefs of those taking part? Yes (No)
6) Is there a risk that previous, current or proposed criminal or illegal acts will be revealed by those taking part? Yes (No)
7) Will the project involve giving any form of professional, medical or legal advice, either directly or indirectly to those taking part? Yes (No)
8) If you answered Yes to any of these questions, this may not be a low risk project.
   If you are a student, please discuss your project with your Supervisor.

Risk to Researcher

1) Will this project put you or others at risk of physical harm, injury or death? Yes (No)
2) Will project put you or others at risk of abduction, physical, mental or sexual abuse? Yes (No)
3) Will this project involve participating in acts that may cause psychological or emotional distress to you or to others? Yes (No)
4) Will this project involve observing acts which may cause psychological or emotional distress to you or to others? Yes (No)
5) Will this project involve reading about, listening to or viewing materials that may cause psychological or emotional distress to you or to others? Yes (No)
6) Will this project involve you disclosing personal data to the participants other than your name and the University as your contact and e-mail address? Yes (No)
7) Will this project involve you in unsupervised private discussion with people who are not already known to you? Yes (No)
8) Will this project potentially place you in the situation where you may receive unwelcome media attention? Yes (No)
9) Could the topic or results of this project be seen as illegal or attract the attention of the security services or other agencies? Yes (No)
10) Could the topic or results of this project be viewed as controversial by anyone? Yes (No)

11) If you answered Yes to any of these questions, this is not a low risk project. Please:
    If you are a student, discuss your project with your Supervisor.
    If you are a member of staff, discuss your project with your Faculty Research Ethics Leader or use the Medium to High Risk Ethical Approval route.

Informed Consent of the Participant

1) Are any of the participants under the age of 18? Yes (No)

2) Are any of the participants unable mentally or physically to give consent? Yes (No)

3) Do you intend to observe the activities of individuals or groups without their knowledge and/or informed consent from each participant (or from his or her parent or guardian)? Yes (No)

4) If you answered Yes to any of these questions, this may not be a low risk project. Please:
If you are a student, discuss your project with your Supervisor.
If you are a member of staff, discuss your project with your Faculty Research Ethics Leader or use the Medium to High Risk Ethical Approval route.

Participant Confidentiality and Data Protection

1) Will the project involve collecting data and information from human participants who will be identifiable in the final report? Yes (No)

2) Will information not already in the public domain about specific individuals or institutions be identifiable through data published or otherwise made available? Yes (No)

3) Do you intend to record, photograph or film individuals or groups without their knowledge or Informed consent? Yes (No)

4) Do you intend to use the confidential information, knowledge or trade secrets gathered for any purpose other than this research project? Yes (No)

5) If you answered Yes to any of these questions, this may not be a low risk project:
If you are a student, discuss your project with your Supervisor.
If you are a member of staff, discuss your project with your Faculty Research Ethics Leader or use the Medium to High Risk Ethical Approval or Medical Approval routes.

Gatekeeper Risk

1) Will this project involve collecting data outside University buildings? Yes (No)

2) Do you intend to collect data in shopping centres or other public places? Yes (No)

3) Do you intend to gather data within nurseries, schools or colleges? Yes (No)

4) Do you intend to gather data within National Health Service premises? Yes (No)

5) If you answered Yes to any of these questions, this is not a low risk project. Please: If you are a student, discuss your project with your Supervisor.
If you are a member of staff, discuss your project with your Faculty Research Ethics Leader or use the Medium to High Risk Ethical Approval or NHS or Medical Approval routes.

6) Is there any other risk or issue not covered above that may pose a risk to you or any of the participants? Yes (No)

7) Will any activity associated with this project put you or the participants at an ethical, moral or legal risk? Yes (No)

8) If you answered Yes to these questions, this may not be a low risk project. Please:
If you are a student, discuss your project with your Supervisor.
If you are a member of staff, discuss your project with your Faculty Research Ethics Leader.

Appendix A

Principal Investigator Certification

1) If you answered No to all of the above questions, then you have described a low risk project. Please complete the following declaration to certify your project and keep a copy for your record as you may be asked for this at any time.
2) Agreed restrictions to project to allow Principal Investigator Certification
3) Please identify any restrictions to the project, agreed with your Supervisor or Faculty Research Ethics Leader to allow you to sign the Principal Investigator Certification declaration.
4) Please ensure that you tick all the boxes below and sign this checklist.
5) Students must get their Supervisor to countersign this declaration.

I believe that this project does not require research ethics approval. I have completed the checklist and kept a copy for my own records. I realise I may be asked to provide a copy of this checklist at any time.

I confirm that I have answered all relevant questions in this checklist honestly.

I confirm that I will carry out the project in the ways described in this checklist. I will immediately suspend research and request a new ethical approval if the project subsequently changes the information I have given in this checklist.

Signatures of student/staff:

Date: 22/1/2024

Signature of Student's Supervisor:

Date: DR TAN KJ 22/1/2024

I have read this checklist and confirm that it covers all the ethical issues raised by this project fully and frankly. I also confirm that these issues have been discussed with the student and will continue to be reviewed in the course of supervision.

Appendix B

Table 1. Source of information

Source of information	Answers	Percentage (%)	Cumulative percentage
University studies	38	57.6	57.6
Professional training	5	7.5	65.1
Other source	23	34.9	100
Total	**66**	**100**	

Table 2. Quality of data/information

Factors	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Average rating (points)
Accuracy	0	1.5	18.2	48.5	31.8	4.11
Processing time	0	3	24.2	30.3	42.5	4.13
Completeness	0	0	13.6	41	45.4	4.31
Consistency	1.5	7.6	25.8	27.3	37.8	3.92

Table 3. Benefits of cloud computing

Benefits	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Average rating (points)
Hardware cost savings	4.5	7.6	22.8	39.4	25.7	3.74
Software cost savings	3	7.6	12	47	30.4	3.93
IT staff cost savings	3	12	30.3	30.3	24.4	3.6
Ability to lunch new products and services	10.6	6	31.2	32	20.2	3.43

Table 4. Barriers of cloud computing

Barriers	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	Average rating (points)
Information Reliability	6	7.6	10.6	36.4	39.4	3.75
Information Security	0	6	7.6	30.4	56	4.27
Integration with existing systems	4	7.6	3	52	33.4	3.49
High costs	6	15	12	29	38	3.52
Company policies	9	4.5	24	30.5	68	3.44

Appendix C

Table 5. Reasons for not using cloud computing ($n = 230$).

Reason		Freq	%
1.	Frankly I have never thought about using/not using 'cloud computing'	109	47.8
2.	Because I don't know exactly what can I do with 'cloud computing'	93	40.8
3.	Just don't feel OK about it (a general feeling of skeptic)	84	36.8
4.	Because when the confidential data can be disclosed and published, the data on internet can be accessed easier by hackers	83	36.4
5.	Because I do not trust any of Internet-based services which may be attacked by a group of hackers to steal data	45	19.7
6.	Because using 'cloud computing' is not popular and I am not sure about its future that can be succeed/failed	32	14.0
7.	Because I always think that the owners of Internet can always control and fetch my data whenever they want	28	12.3
8.	Because I don't need 'cloud computing'	21	9.2
9.	Because I don't trust 'cloud computing'	12	5.3
10.	Because I don't have access to high speed internet to be able to use 'cloud computing'	12	5.3

Table 6. Reasons for using cloud computing ($n = 99$).

Items		Frequency	%
1.	Lower costs (Saving money through lower total costs and reduced upfront investment)	38	38.4
2.	Updates (timely patches, updates and security settings can be rapidly rolled out or adjusted)	36	36.4
3.	Speed to deploy (Time to develop, test, deploy, and procure components goes down with clouds)	25	25.3
4.	Audit and evidence-gathering (clouds can readily analyze possible breaches and generate logs)	22	22.2
5.	Better security (Access to a cloud provider's security infrastructure)	19	19.2
6.	Elasticity (The ability to grow and shrink capacity with demand)	18	18.2
7.	Wide set of services (Cloud providers offering additional services such as message busses, mailing and payment systems, image manipulation, and large-scale storage)	17	17.2
8.	Resources concentration (cheaper and easier to control access to one large facility than many smaller ones)	17	17.2
9.	Just like clouds (Generally positive feeling about utility computing)	9	9.1
10.	Standardized interfaces (large cloud providers can offer a standardized, open interface to managed security services providers)	9	9.1
11.	Resilence (ability of clouds to reallocate resources for authentication, encryption, etc)	7	7.1
12.	Market differentiation (Security concerns motivate providers to improve security practices)	5	5.1
13.	Scale (advanced security measures are more affordable when done on a large scale, allowing cloud providers to invest more in security)	4	4.0

Appendix D

Table 7. Advantages and disadvantages of accounting software

Advantages and disadvantage of separate accounting software					
Cloud accounting software		Commercial accounting software (Peachtree)		Enterprise accounting software	
Pros	Cons	Pros	Cons	Pros	Cons
Lower operational costs (investment, maintenance is absent), this type of accounting software is cheaper then purchasing software	Stable demand in access to the internet connection	Offer a set of the most widespread features to perform accounting tasks	Comparable high cost	Easy to install on a system and deploy to end-users quickly	Comparable high cost
Higher reliability	There is the risk of data confidentiality (hacking – there is no guarantee that data is 100% safe)	Affordability for companies' owners – the average cost	There is a small but real possibility to lose information if the system is attacked by computer viruses in case it is not enough protected	Easy to customize	There is a small but real possibility to lose information if the system is attacked by computer viruses in case it is not enough protected
Higher accuracy (fewer mistakes). Much easier tools then other types propose	Technical problems	There is no demand in well-experienced skills	Increasing of productivity	Meet almost all user requirements	The necessity of high qualified personals
Pay only for subscription	Vendor lack-in/ lack-of control	High level of security	Flexibility and timeliness	Increasing productivity	On-going support
24/7 access and possibilities to recover data (restore)	In some cases limits to the data that can be freely store	Low risk	The necessity of high qualified personals	Management information	Mistakes in data entry can throw off a whole set of data
Collaboration	A lack of specialized tools	Flexibility and timeliness	Mistakes in data entry can throw off a whole set of data	Flexibility and timeliness	Can be inflexible

Appendix E

Table 8. Business imperatives mapping table

	Business imperatives								
	Low costs	Innovation and new products	Product / service / business diversification & new markets	Product / service differentiation	Mobility	Pro-active management	De-skilled workforce	Customer-centric strategy	Process efficiency
Accommodation of number of users	X				X			X	
Software package integration	X	X		X	X				X
Customer database management	X								
Ease-of-use interfaces	X						X		
Web-based platform availability		X		X				X	
Online customer support		X		X					
Accommodate different product and income streams			X						
Bills of materials and inventory management			X	X					
Remote access					X	X			
Security and protection					X				
Real-time information						X			X

Key: X = Functionalities that might be a requirement for SMEs to attain their business imperatives