

# “Nexus between accounting and information systems and SMEs` operational efficiency in South Africa”

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# NEXUS BETWEEN ACCOUNTING AND INFORMATION SYSTEMS AND SMES' OPERATIONAL EFFICIENCY IN SOUTH AFRICA

## Abstract

Accounting information systems are critical to any business but especially important to small and medium-sized enterprises (SMEs). Such systems are vital to their performance and success. Unfortunately, SMEs make poor decisions, leading to a shortage of accounting information. Hence, this study aims to investigate the impact of accounting information systems on SME operational efficiency in South Africa. Using purposive sampling, data were collected from 109 out of 150 retail SME owners or other appropriate representatives. A quantitative research design that falls under the positivist paradigm was used. The Statistical Package for Social Sciences (SPSS) software version 20.0 was utilized to analyze the collected data, specifically through descriptive and regression analysis. The study found a significant positive correlation between accounting information systems and SME operational efficiency ( $r$ -value = 0.579), which had a  $p$ -value of 0.0005, according to the intensity of the association with  $r$ -value. The study recommends that SME management implement excellent accounting principles into their operations. Furthermore, because SMEs may be unable to afford complicated accounting systems, SMEs functioning in the same region should implement a resource-sharing strategy to reduce expenses.

## Keywords

accounting and information systems, small and medium-sized enterprises, operational efficiency

## JEL Classification

M41, O32, L25

## INTRODUCTION

Small and medium-sized enterprises (SMEs) are typically recognized as the essential generators of economic expansion; however, they confront various challenges (Msomi & Olarewaju, 2021). SMEs are the pillars of any expanding economy. They are also a key supplier of employment, wealth accumulation, and poverty reduction in emerging nations (Ncube & Zondo, 2022). Because of their scale and organizational framework, SMEs are adaptive and inventive (Naidoo, 2021). It is believed that small and medium enterprises, which make up 97% of South Africa's economy, also account for 32% of the nation's total employment (Ungerer & Buys, 2021). Although SMEs make up just that portion of the GDP, the challenges that SMEs face in South Africa are often overlooked.

The growth of these businesses depends on their ability to acquire finance and accounting systems. Unfortunately, there is a low percentage of survival among SMEs, particularly throughout the first five years in business (Msomi & Olarewaju, 2021). According to Msomi and Maharaj (2022), many South African small businesses fail during their first year of existence, which accounts for the fact that five out of every seven companies do not survive through the first year. Those companies that can endure this failure rate will still face dangers to their financial viability (Naidoo, 2021).

Every business's primary purpose is to generate profits through improved efficiency and increased profitability or by quick market domination expansion (Ungerer & Buys, 2021). As a result, SME performance may be improved to contribute to the growth. The management of these enterprises must increase their abilities to observe and use advantages, identify difficulties, and choose and make suitable modifications to strengthen SME operational efficiency (Ncube & Zondo, 2022). Even so, the major management responsibilities are oversight, controlling, and increasing the business's capital. SMEs must utilize current accounting information systems in order to achieve these goals.

The issue with SME viability is not always attributable to a shortage of resources; instead, it is due to a lack of finance and accounting education and training, which might be a significant obstacle to their progress and lead to poor operational efficiency (Msomi & Olarewaju, 2021). Large corporations can employ specialists to handle their accounts. Unfortunately, because SMEs cannot acquire the assistance of professional accountants, this study focuses on identifying important factors that will help SME owners develop and survive. Owners and employees of SMEs should be able to utilize and retrieve database information and handle several activities, including report creation, budget assessment, and tax information processing (Olawajaju & Msomi, 2021). SMEs must consider adopting solid basic accounting education and having it backed by tailor-made accounting information systems for simplicity of use by the owners or employees. The creation of training programs to address these issues would go a fair distance toward assisting these enterprises and acquiring the requisite accounting information systems capabilities to avert potential failures at a preliminary phase (Alawaqleh, 2021).

Many SMEs use accounting information systems. From a strategic perspective, accounting information systems (AIS) are essential for a business (Putri & Maghfiroh, 2022). AIS is a system for gathering, storing, and processing accounting and financial data for decision-makers (Esmeray, 2016). Strong internal control systems and a reliable accounting system are essential in every business, regardless of size. Solitary entries in their records multiply because of the SMEs' incapacity to control the difficulties of a complex accounting system, leading to incorrect records (Alawaqleh, 2021). Most SMEs use accounting information without recognizing how crucial it is to their daily operations (Ismail & King, 2007). Even the need to create a system for such accounting data is complex for them to justify.

Thus, this study is focused on determining if AIS affects the operational effectiveness of SMEs and how one may encourage those companies to create AIS that best matches their operations. It aims to fill a vacuum in the literature by focusing on the influence of AIS on SMEs' operational efficiency, which includes decision-making, productivity, profitability, accounting procedures, and barriers to applying accounting practices. Additionally, most earlier studies on the AIS and its effectiveness focused on information from large businesses and financial institutions like banks. However, minimal studies have focused on AIS and SME operational efficiency in South Africa. Thus, conducting such a study is urgent and vital.

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## 1. LITERATURE REVIEW

The scholarly literature contains evidence of an association between AIS and the operational efficiency of SMEs. AIS has now become a crucial component for SMEs across all industries in order to compete with increasing competitiveness and satisfy client demands. The primary reason for producing accounting information is to improve decision-making and performance (Green-Douglas, 2020). However, Alfartoosi and Jusoh

(2021) asserted that for financial reporting to be effective, it requires relevance, comprehensiveness, and be reliable, among other requirements. In addition, accounting information systems play a significant role in managing and implementing an organization's internal control system. According to Ha (2020), an automated AIS helps management judgments. Even so, Esmeray (2016) suggests that SMEs must establish their accounting systems to produce accurate, dependable, and timeously accounting information. SME owners should inte-

grate AIS into their judgment procedures. It is further stated that SMEs must continue to engage in conversations with their accountants to ensure elevated and generally acceptable accounting practices (Arif et al., 2020).

Accounting information is significant because it enables businesses to manage their short-term issues in critical areas such as costs, expenditures, and cash flow by providing data to assist surveillance and management (Green-Douglas, 2020). Small and medium-sized enterprises have a variety of operational efficiency difficulties and must immediately implement accounting information systems to promote productivity and boost the quality of their present system. A majority of SMEs confronted the probability of failure due to management incompetence, gross incompetence, poor management, limited system capacity to satisfy customer requirements, learning failures, unsatisfactory personnel, regulatory deficit, inefficiency, feeble economic conditions, scarce resources and organizational support, and dearth of technical skills (Alfartoosi & Jusoh, 2021).

Small businesses typically rely on spreadsheets, manual data input, and the postal service (Dyt & Halabi, 2007). SME owners and managers lack accounting and information technology expertise. They are intimidated by their inexperience with computer utilization. They assume more technical and systemically training will be required. On the other hand, Arif et al. (2020) and Ncube and Zondo (2022) assert that SME owners fear that once they commit to one program, they will be unable to switch, either contractually or due to the difficulty of adjusting. If they believe they can exist without software, many SMEs, such as property owners, single traders, contractors, and self-employed, are unwilling to invest in accounting information systems. Simple computer programs such as table sheets are sufficient to assist in their day-to-day activities. Yixuan and Arumugam (2021) say that SMEs must use suitable AIS to enhance their operational efficiency and profitability.

Chaturvedi and Sharma (2021) analyzed the impact of the accounting information system on the operational efficiency of a selection of fast-moving consumer goods (FMCG) firms based in India. The analysis used a survey design with 400 individuals

as the sample population. A total of 177 participants that completed and returned questionnaires were analyzed to compile the study's findings. The data were examined utilizing a straightforward linear regression model, and hypotheses were tested with a confidence level of 95%. The findings demonstrated that the accounting information systems directly influence the operational efficiency of selected FMCG firms in India.

Likewise, Okour (2016) examines the effectiveness of AIS and its implications on the operational efficiency of the companies in Jordan. These companies provide goods and services for sale to the public. The research sample included 42 Jordanian firms operating in various industries, all listed on the Amman Stock Exchange (ASE) at the end of 2012. According to the findings, accounting information systems used in industrial firms appeared to have an exceptionally high level of success in fulfilling the requirements for planning and controlling. The data also demonstrated that most choices made by firms were based on the individual perspectives of executives, with assistance from boards of directors affected by those executives' perspectives.

Correspondingly, Ironkwe and Nwaiwu (2018) investigated the influence of the accounting information systems on both financial and non-financial metrics of company performance in Nigeria. The study conducted interviews with 16 different companies to collect both quantitative and qualitative data. In addition, from 2011 to 2014, responses to surveys and information from the Nigerian Stock Exchange were compiled. The data were evaluated with the assistance of the SPSS, which used multiple linear regression methods. According to the empirical findings, AIS has a considerable and favorable influence on the metrics of financial and non-financial measures made by companies in Nigeria.

Trabulsi (2018) investigated AIS influence on business efficiency. Using 137 questionnaires, the study gathered information from SMEs in Saudi Arabia. This information was then analyzed with partial least squares to test the proposed hypotheses and assess the data. The findings indicated that the implementation of accounting information systems has a direct effect on business performance over-

all and with all of its aspects, such as eliminating costs, maintaining quality, and effectiveness of judgment calls.

On the other hand, Patel (2015) investigates how AIS affects the number of activities that get done inside an enterprise. This study included only secondary information for the exploratory analytic strategy. The literature research findings indicated a powerful and significant connection between the AIS of enterprises and the operational efficiency of these businesses. The study concluded that effective AIS eventually led to better managerial decisions, more effective internal control structures, increased precision of financial reporting, enhanced performance controls, promoted financial transaction processes and financial performance, and assisted the company in becoming more productive overall.

The literature review has indicated a positive connection between accounting information systems and operational efficiency and how accounting information systems have positively impacted SME operational efficiency. Therefore, the purpose of this study is to investigate the impact of accounting information systems on the operational efficiency of SMEs in KwaZulu-Natal.

## 2. METHODOLOGY

This study adopts a quantitative research approach, applying the positivist paradigm. The population comprised 150 small and medium retail enterpris-

es registered with Small Enterprises Development Agency (SEDA) in Durban, KwaZulu-Natal. The sample was drawn from a population of 150 enterprises. The sample size was deemed correct using the online Check Market sample size calculator. The Yamane equation, which is utilized in statistical analysis, was also employed.

This study aimed to investigate the effect of accounting information systems on SME operational efficiency. The data collection process included a closed-ended questionnaire using a five-point Likert scale. The owners of SMEs filled out the questionnaires and provided their responses. Participants in the survey included owners of the enterprise and the sales staff. Individual SMEs had four participants for 27 SMEs that were approached to collect data from 109 samples. Quantitative analytical methods were utilized to analyze the data acquired for this study. Following this, the Statistical Package for Social Sciences (SPSS) software version 20.0 was utilized to analyze the findings.

## 3. RESULTS

### 3.1. Business type

The study assessed the business type of the respondents. Table 1 reveals that the start-up stage is represented by 19 owners (17.3%), pre-profit is represented by 20 (18.2%), 19 are profitable and growing (17.3%), and established but stressed type is represented by 52 businesses (47.3%).

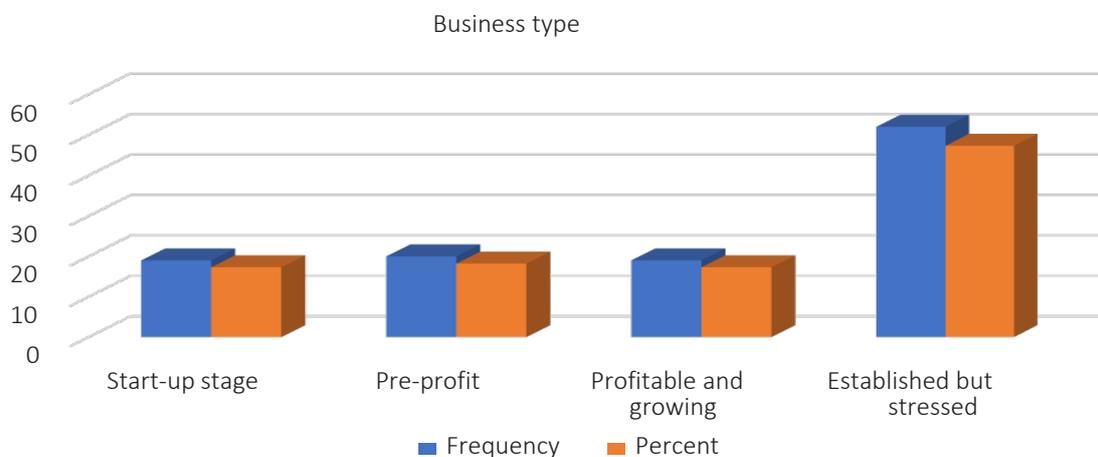


Figure 1. Business type

**Table 1.** Business type

Business type	Frequency	Percent
Start-up stage	19	17.3
Pre-profit	20	18.2
Profitable and growing	19	17.3
Established but stressed	52	47.3
Total	110	100.0

A further statistical analysis was done to demonstrate the business type distribution of the survey respondents; Figure 1 illustrates this distribution.

Figure 1 shows a peak regarding established but stressed enterprises (business type). Whereas the lowest business type were enterprises at the start-up stage and profitable and growing, equally at 17.3%. Lastly, the pre-profit business types of enterprises in the survey represented 18.2%.

### 3.2. Business lifespan

The respondents were asked to indicate their business life span. The findings of this study revealed that 42 (38.2%) less than one year, 54 (49.1%) within 1-3 years, 13 (11.8%), and 1 (0.9%) over ten years. The business lifespan of the SME owners is presented in Table 2.

**Table 2.** Business lifespan

Business lifespan	Frequency	Percent
Less than one year	42	38.2
1 to 3 years	54	49.1
4 to 8 years	13	11.8
Over ten years	1	0.9
Total	110	100.0

A supplementary statistical analysis was accompanied to demonstrate the business life span distribution of the survey respondents (Figure 2).

Figure 2 shows the highest business lifespan between 1-3 years. Enterprises with over ten years of business lifespans are a minority of less than 1% in the survey. This indicates that the study is dominated by businesses within 0-3 years of business life span, with a moderate of 11.8% of businesses' life span within 4-8 years.

### 3.3. Business turnover

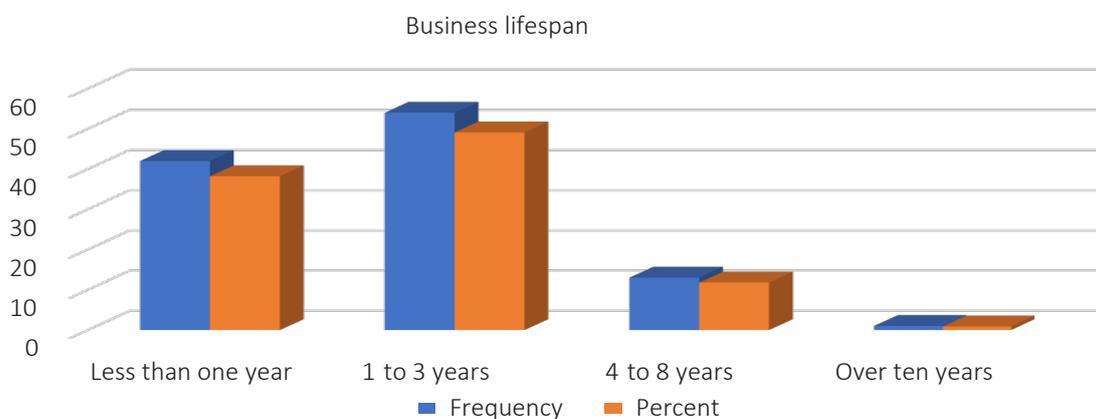
The respondents were requested to indicate the annual turnover of their enterprises. The findings presented that 44 (40%) under R10 000, 40 (36.4%) between R10 000-R24 999, 17 (15.5%) between R25 000-R49 999, 8 (7.3%) between R50 000-R74 999, 1 (0.9%) above R100 000. The business turnover of the SMEs is shown in Table 3.

**Table 3.** Business turnover

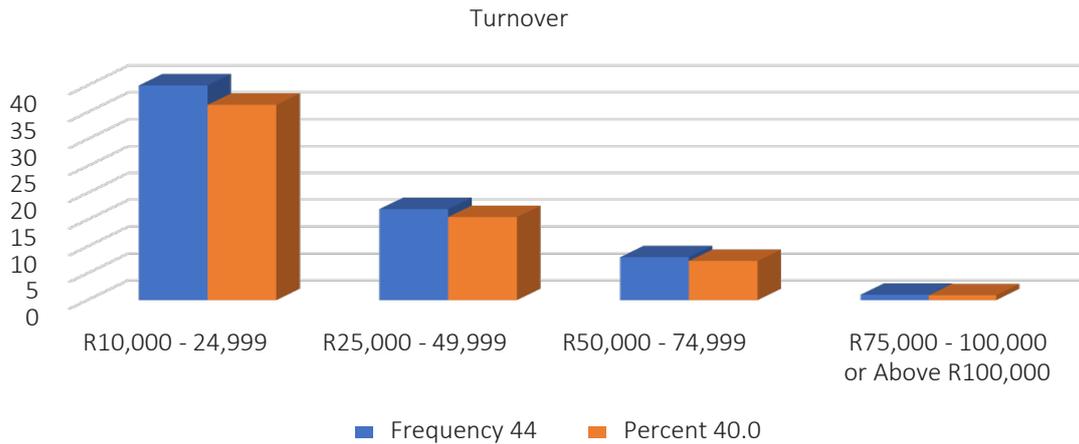
Turnover	Frequency	Percent
Under R10,000	44	40.0
R10,000 - 24,999	40	36.4
R25,000 - 49,999	17	15.5
R50,000 - 74,999	8	7.3
R75,000 - 100,000 or Above R100,000	1	0.9
Total	110	100.0

An additional statistical analysis was conducted to illustrate the business turnover distribution of the survey respondents. Figure 3 illustrates this distribution.

Figure 3 reveals a peak in the business turnover of R10 000-24 999. Whereas the business turnover



**Figure 2.** SME business lifespan



**Figure 3.** Business turnover

between R75 000-R100 000 was only a minority of 1%. This indicates that the SMEs in this area do make a turnover as they normally make between ten thousand and twenty-four thousand.

### 3.4. Linear regression between AIS influence on the operational efficiency of SMEs

Linear regression was utilized to examine the AIS influence on the operational efficiency of SMEs. In order to determine the impact that AIS has on the economic performance of SMEs, a regression model was developed. The findings of the statistical analysis are presented in Table 4.

Table 4 presents a summary of the regression analysis that was carried out to determine the impact that AIS has on the operational efficiency of SMEs operating in KwaZulu-Natal. The analysis showed that the value of  $R^2$  was 0.329. The findings of this study deduced that AIS is responsible for 32.9% of the variance in SME operational efficiency. The accounting information systems and operational efficiency have a significant linear association, as indicated by the statistics ( $df = 1, 105$ )  $F = 53,034$ ,  $p$ -value 0.005. According to the findings of this investigation, the independent variable AIS is a significant predictor of operational efficiency ( $B = 0.579$ ,  $p$ -value = 0.005).

**Table 4.** Effects of AIS on SME operational efficiency

Variables	B	Beta	T	p-value	$R^2$	F	df	P-value
Constant (AIS)	15.317		6.388	< 0.005				
operational efficiency	0.789	0.579	7.282	< 0.005	0.329	53.034	1, 105	< 0.005

Merely 20% of small firms that have previously adopted accounting information systems have significantly improved operational efficiency over the previous five years. Moreover, they have enjoyed increasing sales volume and profit margins throughout their existence. This lends confidence to the perception that accounting information systems contribute positively to a business’s operational efficiency.

### 3.5. Pearson correlation coefficient analysis between AIS and SME operational efficiency

The strength of the association between AIS and the operational efficiency of SMEs was calculated and analyzed using Pearson’s correlation coefficient. There was a significant positive relationship ( $r$ -value = 0.579) between accounting information systems and the operational efficiency of SMEs, which had a  $p$ -value of 0.0005, according to the intensity of the association with  $r$ -value.

A Pearson correlation coefficient analysis was carried out to determine the nature of the connection between AIS and the operational efficiency of SMEs. Table 5 presents the findings.

The findings of the Pearson correlation coefficient, presented in Table 5, demonstrate a statistically

**Table 5.** Correlation between AIS and SME operational efficiency

Construct A	Construct B	Pearson's correlation (r)	p-value
Accounting Information System (AIS)	SMEs → Operational efficiency	0.579**	< 0.005

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

significant link between AIS and SME operational efficiency ( $r = 0.579$ ,  $p\text{-value} = 0.005$ ). The fact that there is a positive relationship between constructs A (AIS) and B (SME operational efficiency) is evidence that the two constructs are connected directly to one another. This indicates that small enterprises have to carefully consider putting into place their accounting information systems.

## 4. DISCUSSION

Findings showed that the current accounting system significantly positively affects SME operational efficiency. The positive correlation indicates that the higher the soundness of accounting systems deployed on the operations, the higher the business performance and vice versa. This is based on the principle that good accounting practice will lead the business to account accurately for all its incomes, expenditures, assets, and liabilities from one period to another. This result corroborates with the findings of Adhikari (2020), Muneer et al. (2017), and Beg (2018), who asserted that the mode of accounting adopted, the accounting information system adopted, and the use of accounting information were also found to have significant positive effects on SMEs operational efficiency. These positions were also supported by Grande et al. (2011), Green-Douglas (2020), Thuan et al. (2022).

However, Siyanbola et al. (2019) found an indirect effect of sophisticated AIS on operational efficiency, acting through prospector strategy. Since most SMEs cannot afford to deplore sophisticated accounting information systems on their operations due to the high cost of automation, there is every need for facility sharing by SMEs operating within

the same locality. The findings conclude that AIS coordinates SME operational efficiency, as most rely on AIS for decisions that affect their performance and operations. Suppose the culture of a business is receptive to the introduction of innovative AIS. In that case, it will result in a broader understanding of the business's operations and provide an avenue for more adaptability and vitality in the pursuit of improved output.

An accounting information system is a tool that supports finance and operations departments in enhancing organizational and operational efficiency, which is particularly crucial in this era of global technology innovation. AIS helps improve organizational effectiveness by analyzing and reporting on financial data (Alawaqleh, 2021). It was determined that an accounting information system leads to significant improvements in both the financial reporting and decision-making processes. Managers who want to preserve a competitive edge due to rapid technological improvements, increased awareness, and exacting demands from consumers and business owners must have accounting information systems. This tool is essential to their success (Ahmed & Schleich, 2022).

Gofwan (2022) found a clear correlation between accounting information systems and the financial success of SMEs. It is generally accepted that AIS, like other information systems, is vital in managing day-to-day corporate operations. The ability of a business to effectively report data both internally and externally, as well as financial statements and trends, all of which have a substantial bearing on the organization's overall success, is considerably aided by accounting information systems.

## CONCLUSION

This study aimed to determine whether there is a connection between accounting information systems and SME operational efficiency in South Africa. The results proved that accounting information systems and the operational efficiency of SMEs have a significant positive link ( $r\text{-value} = 0.579$ ). The primary goal of accounting information systems is to regulate the organization's information to prevent and

eliminate fraud and errors, as well as to meet organizational goals and improve operational efficiency. Internal control is required for the system to generate the expected accounting information.

Small businesses should consider implementing accounting information systems because there is a significant correlation between accounting information systems and operational efficiency. This helps businesses save money – productivity increases when these technologies are used correctly. When a company's culture is open to new accounting information systems, it leads to a more holistic view of the business. It allows for greater flexibility and dynamism in pursuing better findings.

## AUTHOR CONTRIBUTIONS

Conceptualization: Thabiso Sthembiso Msomi, Sanele Phumlani Vilakazi.

Data curation: Thabiso Sthembiso Msomi, Sanele Phumlani Vilakazi.

Formal analysis: Sanele Phumlani Vilakazi, Thabiso Sthembiso Msomi.

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Validation: Sanele Phumlani Vilakazi.

Writing – original draft: Thabiso Sthembiso Msomi, Sanele Phumlani Vilakazi.

Writing – review & editing: Thabiso Sthembiso Msomi, Sanele Phumlani Vilakazi.

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