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POLITICS & INTERNATIONAL RELATIONS | RESEARCH ARTICLE

An implementation of SAP enterprise resource planning – A case study of the South African revenue services and taxation sectors

Oluwasegun Julius Aroba^{1,2}* and Abdultaofeek Abayomi³

Abstract: A SAP enterprise resource planning (ERP) is a software system that assists organizations in automating and managing fundamental business processes for ideal performance. This research study aims to ameliorate the business operation problems of the South African Revenue Services (SARS) and Taxation sectors. Involving tax sectors in the preliminary stages of SAP ERP design and implementation saves SARS' clients some resources such as money and time while also allowing various departments to improve their tax technology ecosystem. To address the associated financial, operational, technical, and compliance challenges, an ERP implementation requiring significant support from strategy execution is suggested. This proposed model for designing and implementing an ERP with a case study of the South African Revenue Services (SARS) and other taxation sectors, the benefits of ERP system within the taxation sector, implementation challenges, and proposed solutions are presented in this article while utilising data from a survey that was

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PUBLIC INTEREST STATEMENT

This study helps South African Revenue Services, which serves taxpayers as well as SARs employees, enhance its present electronic data interchange system. For the 50 survey responses, Cronbach's Alpha technique was used to assess the research responses. Also, the absence of interaction between SAP ERP mobile applications will improve the flow of operational operations and real-time reporting throughout the firm for both taxpayers and SARs employees. Tax evasion, tax fraud, under/over payment of taxes, inefficient record keeping, and verification of tax documents are some of the tax challenges that can be greatly minimised with the implementation of SAP ERP system.







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conducted for 50 SARS employees and taxpayers outside the organization. The proposed ERP system will enhance the connectivity of all operations within the SARS with a central access to all departments rather than having silos of business operations. From our analysis, the Cronbach report of 0.85 obtained, which is greater than 0.7 minimum, shows that it fits the proposed solution of a SAP ERP mobile app for inclusivity in the operational processes for both SARS employees and other taxpayers.

Subjects: Economics; Finance; Business, Management and Accounting; Industry & Industrial Studies

Keywords: Enterprise resource planning (ERP); South African Revenue Services (SARS); SAP business integration; taxation sector; system inclusion

1. Introduction

SAP Enterprise Resource Planning (ERP) system coordinates the flow of data between a company's business processes by providing a single source of truth and streamlining operations across the enterprise. Entities realize the value of scoping and budgeting for tax during the early stages of designing an enterprise resource planning (ERP) system (Bartolome, 2022). Thus, many organizations are constantly looking for strategies to upgrade outdated or overly complex systems to drive profitability by quickly responding to market forces and behaviours as well as e-filling disintegration challenges (van der Vyver & Rajapakse, 2012). The collection of taxes is a critical activity to boost the economy of a country. In South Africa, the South African Revenue Services (SARS) is accountable for collecting revenue for the government through taxes from taxpayers. Its purpose is to administer the country's taxation system and customs services and enforce obedience to legislation. It is governed by the SARS Act 34 of 1997, which identifies it as an organ of the state within the public administration, but as an institution outside the public service. SARS is known for effectively managing the tax regime in South Africa (Aroba, 2023).

Its vision is to build a smart, modern revenue services body with unquestionable integrity, trusted and admired by the government, organisations, and the general public who do business with them. To make intelligent human and artificial intelligence system, SARS must be proactive and able to respond to new environmental challenges while ensuring that it achieves the organizational objectives of ensuring the well-being of South Africans (SARS, 2010, 2021). During the COVID-19 pandemic, SARS realized the need to swiftly adapt their operating model as the pressure was very acute for tax administration. Therefore, the revenue collection body saw a need to adopt a SAP ERP in order to improve its existing system (Anwana & Aroba, 2022).

ERP is a system that combines various software applications such that it coordinates business processes across several departments such as finance, procurement, distribution, supply chain management, and other departments, while it improves the effectiveness and efficiency of an organization by integrating its financial information (Parkins, 2020). A SAP ERP system is essential towards making business processes and operations simpler so that businesses can be more efficient and effective (Budiman et al., 2021). However, most administrative and business operations including the line of business, customer-facing, and asset management departments of an organization are automated and supported by ERP solutions across various industries (Grant Thornton, 2022). SAP ERP can also assist in keeping all company's data, financial information, and other valuable information with the best security systems (Jiwon, M. 2022) while also capable of revealing gaps in a system. For instance, South Africa's value added tax system disadvantages the poor by collecting more income tax from them than the nation's upper elite. This study's main goal and objective is to assess the South African revenue and taxpayer system as currently operated and identify some inherent challenges in order to prevent inconsistent operational connectivity throughout all its operational processes while proffering a SAP ERP system. Such



a SAP ERP system can be adopted by other nations' revenue services bodies that shares similar operational challenges with South Africa.

2. Literature review

One of the valued organizational control systems is the Enterprise Resource Planning (ERP), providing profits from simultaneous competencies for large corporations (Nketekete, 2021). An all-inclusive set of management tools that can connect customers and suppliers into a complete supply chain, make decisions using tried-and-true business procedures and provide high levels of cross-functional integration between sales, marketing, manufacturing, operations, purchasing logistics, finance, new product development, and human resources would enable people to run their businesses efficiently with a high level of customer satisfaction (Yosevine et al., 2021) and productivity. Similarly, a business system software package enables enterprises to manage the effectiveness and efficiency of resource usage by providing a total integrated solution to the needs of organizational information processes.

According to previous studies, governments have implemented ERPs to increase tax revenue for development (Lippert, 2022)). These systems assist in resolving various problems with tax administration, such as taxpayer registration, taxpayer accounting systems, revenue accounting systems, taxpayer compliance, collection and transactions reconciling, exemption maintenance, refund processing, case management, e-government, audit and appraisal, taxation, responsibilities, intelligence and risk management, management reporting, and systems' administration (Mohammed et al., 2021; Eilu, 2018; Lugonja, 2018; Ojeka et al., 2016). These integrated ERP systems bring all business processes into a single entity and enable revenue collection companies to adapt the ERP features to suit their requirements (Godwin, Yunfei, and Owusu, 2021).

In addition, tax compliance has been a success, mostly in developed countries than developing countries. According to Lesejane (2021), one of the significant issues that influence the regulatory environment for Small, Medium, and Micro enterprises (SMMEs) is complying with tax regulations and the cost of complying, which often leads to most SMMEs participating in illegal activities such as tax evasion; while tax legislations are also complex and rates of taxes are high. Thus, Le et al. (2021) suggested that SMMEs fully understand that they must ensure compliance with the required tax laws and are registered for tax purposes, tax declaration, tax calculation, tax payment, and complying with other requirements on tax administration as required by the tax law and other mandatory laws such as Companies and Intellectual Property Commission. According to Baijoo (2022), SARS has the entire government and presidential support to combat tax evasion and other fraudulent activities associated with tax. This reveals that SARS and taxpayers have challenges mainly with tax evasion and tax fraud by taxpayers. However, Fritz and Botha (2022) have indicated that whistleblowing is one of the essential tools to prevent fraud and corruption in tax as it can play a vital role in reducing tax evasion. On the other hand, SARS have indicated that tax practitioners should advise taxpayers to avoid tax evasion and comply with tax laws (Kamdar, 2021). In addition, to curb tax evasion and avoidance, the governments of Lesotho and South Africa, for instance, have entered the SARS system on their types of tax which may be income and value added tax (Nketekete, 2021).

The ineffectiveness of a nation's tax system has been shown to increase tax fraud, including tax evasion and noncompliance. The main issue was the non-tax compliance behaviour, which is a problem faced by many countries in the world and may negatively impact the economic development of the country (Oladipo et al., 2022). Mart and Cosefret (2021) suggest that if the chances of being caught evading tax are low, the fine and penalties are usually small. However, those who are dishonest and greedy will report lower income or choose not to report all income received. This is supported by Nwokoye et al. (2022), which states that taxpayer evades tax if they know that the tax system is unjust, while another vital factor in not complying with tax laws is the rate of tax charged by the government. The high rate of tax and cost of complying indeed encourages noncompliance (Rabiu & Mustafa, 2020) while also reducing the access to tax fairness for upcoming businesses (Oluka et al., 2021).



However, Alm and Kasper (2022) have argued that in most countries, the percentage of audited income tax returns is less than 1% of the total returns and, penalties on tax evasion rarely exceed the unpaid taxes, while non-compliance increases when taxpayers feel that there exists an unequal distribution of income and equity (Vincent, 2021). In South Africa, there is an unequal distribution of wealth and some components of the systems are at the disadvantage of the poor because they spend most of their disposable income. Besides, dealing with tax issues consumes a lot of time for taxpayers, which taxpayers consider as wasted rather than utilising such time to run their businesses. Thus, basically complying with tax is not only a financial burden but also involves other factors which include time and focus in order to minimize errors.

Before the year 2020, there was a considerable gap between cryptocurrency (bitcoin) operations and SARS. In order to ensure that citizens pay taxes on their Bitcoin revenue, SARS investigated and implemented a Blockchain technology solution. However, this new approach also requires investors to disclose their losses, which could result in a tax advantage (Hartley, 2018). Blockchain technology can enhance the organizational ventures by reconstructing information integrity, growing undertaking transparency, and decreasing undertaking costs by efficiently increasing financial transparency (Hayes, 2022). The asymmetry in the direction of different supply phases can lead to value-added tax (VAT) related fraud and underreported VAT which can be prohibited by the blockchain request to the VAT system (Cho et al., 2021). The SARS reports that the standard of life and tax burden of other South Africans differ significantly from their own. To manifest a clear separation between them, in 2021, SARS undertook 25 lifestyle audits worth more than R450 million (Writer, 2022). In addition, the case studies revealed that blockchain technology needs some improvements.

Nonetheless, administrative taxes SAP ERP systems must be effectively implemented to be a crucial part of recent tax administration. An organization can consequently evaluate a system's performance based on an ERP's proper operation. ERP accommodates changes in business operating conditions, integrates the company's information and data, combines the functions of applications that the company needs to operate, integrates it, and enables the company to standardize business processes.

3. Methodology

In this current research, the qualitative research method is deployed as it includes a questionnaire survey, analysis, and descriptions. This method uses four research questions and a case study in this particular research. A set of conceptual and practical actions that make the world visible make up qualitative data, a situated activity that situates the observer in the world. By these methods, the real world is reduced to a collection of recordings, discussions, and interviews. At this level, interpreting, organic methodology is used in qualitative research. This means that qualitative researchers look at occurrences in their natural surroundings and try to understand the meanings that people attach to them. In order to generate value, qualitative research depends on truth and meaning. When conducting exploratory research studies to create ideas, qualitative researchers frequently gather data on the ground at the location where people experience the issue under study (Schutte et al., 2019). A qualitative approach is relevant for this research statistics to support our findings, as shown in Figures 1–4. However, Table 1 shows the questionnaire developed for the taxpayers (users) concerning SAP ERP implementation systems to enhance the proposed solution operational methods in the taxational sectors.

Technology is changing every day, thus businesses and organisations must keep pace with the latest developments. SARS has implemented an information technology system to target tax-payers in South Africa. Nevertheless, SARS is always looking forward to modernizing its systems and processes to provide digital and streamlined services to the public, rebuild trust and confidence in the tax collector while combating tax evasion and fraud in the South African taxation system. SARS has thus declared that it will use data-driven insights, artificial intelligence, and self-learning computers (Villiers, 2020) in their day-to-day operations. To detect under- and non-declaration of various taxes, they have implemented machine learning models that use different



Figure 1. The impact on SARS and tax sector operations.

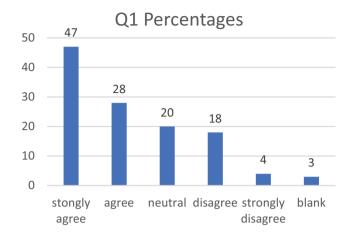


Table 1. Sample questionnaire administered to respondents								
Questions	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree			
(i). Has the SAP ERP system positively impacted SARS and Taxation office operational services?								
(ii). Does SAP ERP implementation offer more effective ways to manage SARS and Taxation sectors activities?								
(iii). Is the SAP ERP implementation system more efficient when compared to the Traditional system in terms of tax processing cohesiveness?								
(iv). Will SAP ERP implementation improve the service delivered in SARS and Taxation operations in real-time?								

asset and income stream data sources. This is because, among the most incredible methods to boost an economy is to digitize taxpayer information collection and use real-time models (Timothy et al., 2023; Aroba, 2022; Aroba, Mabuza, et al., 2023; Aroba, Naicker, et al., 2023; Mzekandaba, 2022; Aroba et al., 2021).

4. Research questions

To further our study, questionnaires were distributed to some South African Revenue Services Taxpayers and SARS employees. The number of respondents that were part of the data gathering was 50, while the questions that were part of the research focused on the following:

- (i) How has the ERP system positively impacted SARS office operational services?
- (ii) How does ERP implementation offer more effective ways to manage SARS tax activities?



- (iii) Is the ERP implementation system more efficient when compared to the traditional system in terms of tax processing cohesiveness?
- (iv) Will ERP implementation improves the service delivered in SARS Taxation operation in realtime?

Each respondent was given five options to pick from for each topic, which decided whether they agreed, disagreed, or otherwise about all the questions that were posed.

5. Results obtained from the implementation of erp using the case study of South Africa Revenue Services (SARS) and taxation sectors

After analysing the completed questionnaires, it was discovered that the sampled people's opinions on the deployment of the SAP ERP system and the conventional ERP system varied. According to the survey, some respondents still favour the traditional method of processing and administration of tax in the SARS. However, other taxpayers and SAR employees in the operation divisions of the administration of taxational procedures are content with the suggested ERP system for tax processing. The percentages of quarter results from Q1 to Q2 of 50 SARs workers and SARs taxpayers users who work at various operational levels as practitioners and users are shown in the Figures 1–4 and Table 2.

5.1. Reliability of Cronbach Alpha Result

This research also carried out a validity test, as shown in Tables 2 and 3, to verify the internal consistency and reliability of the questionnaire items. Thus, according to Pallant (2007), for an element to be regarded as reliable, the scale's Cronbach's Alpha coefficient, which demonstrates that the items are homogeneous and measure the same constant, should be 0.70 or above.

In Tables 2 and 3, the measuring scale's reliability test result is 0.85. Given that Cronbach's alpha reliability score for each construct is more than 0.70, it can be said that all the items for each construct have very high reliability (Nunnally, 1978). The questionnaire is, therefore, a reliable measurement tool.

The analysis of the responses obtained from the questionnaire administered to the 50 respondents are shown in Figure (1-4). In Figure 1, Q1 analysis shows that 47% strongly agree and 28% agree with the SAP ERP implementation systems as a major impact on SARS and Tax sector operations, while in Figure 2, Q2 analysis shows that 49% strongly agree and 20% agree that SAP ERP is a major positive tool that enhances the procurement of goods and services. According to Figure 3, Q3 30% strongly agree with the relevance of the SAP ERP deployment system, whereas 22% agrees. Figure 4 shows that Q4 48% strongly agree and 38% agree that implementing SAP ERP will increase the system's ability to deliver operations in real time.

5.2. Case study findings and discussions

In South Africa, tax is the most significant source of revenue for the government (SARS, 2022). Recent statistics have shown that for the period ending March 2022, SARS was able to collect a total amount of ZAR1,884.9 trillion which is ZAR344.4 billion more as compared to the previous year of ZAR1,540.5 trillion and an amount of ZAR321.1 billion offset which resulted in net revenue of ZAR1,563.8 trillion. The breakdown (in percentages) of the ZAR1,884.9 trillion collected by SARS for the year-ended 2022 which includes different types of taxes is shown in Figure 5 (SARS, 2022).

6. ERP implementation

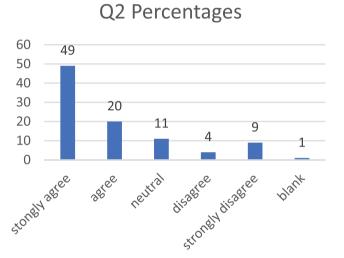
Implementing SAP enterprise resource planning (ERP) involves evaluating how organizations' operations are being currently carried out, establishing a strategy, determining how to carry it out, deploying and evaluating ERP software, managing data, managing change, providing user training, and providing post-maintenance support (Andrew, 2020). Selecting the ideal ERP system that will serve any organizational needs is challenging. It takes a great deal of planning and consideration to develop such systems well enough to offer values to companies and organisations as it will affect all departments therein (Avalara. com, 2022). The ERP will not only have influence on departments but it will also impact compliance.



Table 2. Cronbach's alpha coefficient outline and related result								
Items	Cronbach Alpha	Std. Alpha	G6 (smc)	Average R				
All items	0.8148	0.8158	0.7813	0.5338				
Q1excluded	0.7984	0.7931	0.7332	0.5696				
Q2 excluded	0.7533	0.753	0.6766	0.4918				
Q3 excluded	0.7746	0.7795	0.6914	0.5368				
Q4 excluded	0.7737	0.7634	0.7105	0.5282				

Table 3. Cronbach's alpha result						
Construct	Cronbach's Alpha	No. of Items				
Questions	0.85	5				

Figure 2. Effective ways to manage SARS and taxation sectors activities.



Many entities are unaware of how substantial compliance is in ERP decisions, from the core ERP selected, each module included, as well as third-party solutions integrated. Observation is essential in both tax collection, administration, and reporting decisions, and a challenge will arise if adequate time and decisions are not taken before implementing ERP system in order to adequately support the complexity and peculiarity of each organization (Aroba & Mnguni, 2023; Aroba, Chinsamy, et al., 2023).

6.1. A case study of SARS

A director of SARS was suspended for defrauding the tax revenue collecting body of ZAR5.7 million. Thereafter, a company and its director were found guilty by the Bloemfontein Regional Court, South Africa, for claiming a false Pay-As-You-Earn (PAYE) credit of ZAR5.7 million. In their report, SARS highlighted that an investigation by auditors reported a PAYE credit submitted to nullify a tax debt to the value of ZAR5.6 million. In this particular PAYE fraud, the company was fined an amount of ZAR100,000 for 5 years, and the directors had an option to pay R500,000 or be jailed (Dev Discourse, 2021). This case study shows that there are still gaps in SARS and the taxation sector since there are some individuals and companies that continuously defraud the government and evade tax, such that the SARS business processes and system are ineffective and inefficient in preventing and detecting fraud promptly.

Through ERP implementation in the SARS and Taxation, SARS has been able to deploy a mobile application (MobiApp) that assisted a lot during the COVID-19 pandemic since there were many



Figure 3. The SAP ERP implementation system relevance.

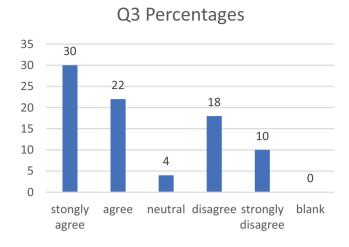


Figure 4. The SAP ERP implementation improve the system delivery.

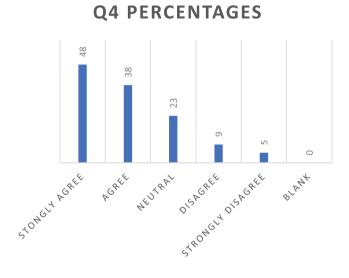
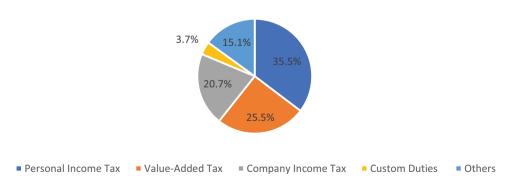


Figure 5. SARS net revenue for year ended march 2022 (SARS, 2022).

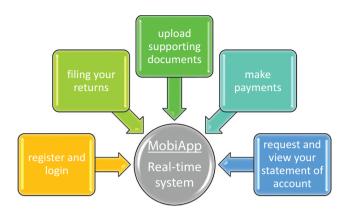




restrictions introduced (Fagbola et al., 2023). The SARS MobiApp can be described as a mobile



Figure 6. SARS MobiApp realtime system functionalities.



channel where a client can fill and file income tax returns. It is easy-to-use and install from the App Store on any internet enabled smartphone (Fagbola et al., 2023). Using this MobiApp, clients are able to register, complete, and submit current year's returns and account for returns from prior years. A modified version of the SARS MobiApp with real-time system is shown in Figure 6.

The real-time system is going to make business processes, tax collection, tax payment, and administration easier for SARS and taxpayers as it is going to record and process every transaction that takes place on the Mobile Application (MobiApp) which is integrated with all the other taxation sectors. Real-time system allows the MobiApp to process and verify all-supporting documents when filing tax returns, thus making the process faster while also promptly detecting fraudulent taxpayers. This system also helps with tax calculation and automatic tax refunds for overpayments thus capable of mitigating tax non-compliance and fast-tracking detection of tax evasion.

7. Conclusion

This study assesses the revenue and taxpayer system use in South Africa by identifying some inherent challenges in order to prevent inconsistent operational connectivity throughout all operational processes while proffering SAP ERP system. The curative questions were around the critical interrogation of the current SAP ERP system that is used in the SARS and Taxation office for the employees and the taxpayer comparisons to the traditional system and their activities. The COVID-19 pandemic revealed how crucial cloud-based, digital, and automated systems are thus satisfying tax executives' need to work remotely and frequently on short notice in order to efficiently collect and manage taxes. Implementation of SAP enterprise resource planning (ERP) system in SARS was investigated, and from the analysis of data collected from SARs employees and taxpayers based on their responses to varied constructs, the Cronbach's Alpha coefficient demonstrates that the items are homogeneous with the result of 0.85 obtained. The SARS and taxation sectors need to adopt the SAP ERP implementation and continue to upgrade and upscale it, in order to contribute to the pertinent and business-related foundations for digital transformation of corporate tax functions. This is necessary for a positive impact, more effective and efficient ways to improve South Africa Revenue Services operations, tax collection, and management. As real-time reporting enhances tax transparency, confidence in the data for planning purposes, effective compliance, and tax reporting, which are crucial parts of financial reporting digital transformation. Future tax reporting will be based on transactional data; thus, SAP ERP transformational mobile app designed will enhance crucial business operations, and implementing SAP ERP will increase the system's ability to deliver operations in real time. With the present electronic data interchange (EDI) requiring complete revamp and dynamic modifications to enable functional real-time procedures, the operation flow is a result of the policymakers in SARs and the taxpayers. However, our findings show that in order to improve the connectivity of all departmental mechanisms involved, through the implementation of SAP ERP Mobile app recommendation to fit into the National Development Plan (NDP) 2030 framework, policymakers need to always review and consider their current operational processes and procedures towards continuous improvement.



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Disclosure statement

No potential conflict of interest was reported by the author(s).

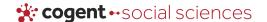
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