

ASHLEY LATCHU, SHAWREN SINGH

EXPLORING FACTORS HINDERING PERFORMANCE OF INFORMATION SYSTEMS IN THE SOUTH AFRICAN PUBLIC SECTOR- EVIDENCE FROM THE ZONDO COMMISSION

University of South Africa, Florida, South Africa

This article seeks to ascertain issues in the Commission of Inquiry popularly known as the Zondo Commission that consequently hinder and impede the performance of information systems in the South African public sector. The novelty of this study lies in its thematic perspective on factors that disrupts the public sector from attaining objectives that are spelt out in the South African national strategic goals. Zondo commission final reports are used to explore intrinsic aspects which could explain current threats to information systems. The Zondo Commission covered the period from 2018 to 2022 and reports are available on the State Capture Commission website. The study employs a qualitative research approach by analysing data from the Zondo Commission reports. A qualitative software, Atlas.ti 9 is utilised to demystify macro factors thwarting information systems from operating efficiently and effectively. The usage of the standard software package Atlas.ti 9 is for the purpose of automating the coding procedures for this study by employing specified rules to enable promptness and efficiency in handling vast amounts of textual data, as well as organise, filter, and sort that data. In order to provide direction for this automated analysis, a coding schema is used that identifies the codes or keywords that should be looked for within the text, and should be based on an initial human evaluation of the sample textual data. The textual codes are arranged into relatively high codes or constructions. The coding schema is tested by employing a separate sample of texts in order to check for accuracy and adequateness. The emerging themes from the thematic analysis showed that destabilisation of the public entities' business systems and structures, non-penalisation of offenders, overstating of tender values and lack of goal congruency were the main reason that affected performance of information systems. The study recommends that government employ robust procurement and monitoring systems.

Keywords: Governance, Zondo Commission, South Africa, Public sector, Information Systems

Introduction

The ongoing Fourth Industrial Revolution has changed the landscape on how business entities execute their operations through massive and rapid technological transformations which has affected the architecture of information systems (IS) in organisations [25]. There is no doubt that the future of organisations is heavily depended on incorporation of robust IS to pursue their strategic goals. The lockdowns during COVID-19 pandemic saw corporations migrating from physical to digital ecosystem to ensure business continuity [25]. However, digital transformations raise issues of confidentiality emanating from data provided by key stakeholders such as customers.

Information systems have numerous benefits for government and public entities. One of the significant benefits is improved decision-making. Information systems provide real-time data, which enables government officials and public entities to make informed decisions. For instance, in the healthcare sector, electronic health records (EHRs) enable healthcare practitioners to access patient information, including medical history, allergies, and medication, among others. This information enables healthcare practitioners to make informed decisions regarding patient care [24].

Another benefit of information systems in government and public entities is improved service

delivery. Information systems enable government officials and public entities to provide services more efficiently and effectively. For instance, in the education sector, learning management systems (LMS) enable teachers to create and deliver course content, track student progress, and provide a personalized learning experience. This improves the quality of education and enhances student outcomes [12].

Furthermore, information systems improve the transparency and accountability of government and public entities. According to [16], the use of information systems in government and public entities is critical in promoting transparency and accountability, as it enables the public to access information on the operations and performance of these entities. The use of information systems in government and public entities also promotes accountability, as it enables these entities to track their performance against their stated objectives and identify areas where improvements are needed. For instance, in the finance sector, financial management information systems (FMIS) enable government officials to track budgetary allocations, expenditures, and revenue collections. This information enables government officials to monitor the financial performance of the entity and ensure accountability [28].

The government of South Africa has made efforts to ensure that they are prepared for the digital transformation. The information technology enabling

infrastructure in South Africa include the Ministry of Public Service and Administration (MPSA), Department of Public Service and Administration (DPSA), the State Information Technology Agency (SITA), the Government Information Technology Officers Council (GITOC), the Auditor General and the Department of Planning, Monitoring and Evaluation (DPME) [8]. The MPSA is supported by DPSA, and in charge of technologies in the public sector, it ensures that best practises and norms are set and promoted with an aim of providing excellent functioning of public entities for better service quality to the public [8]. The SITA is governed by the SITA Act 88 of 1998 with a mandate of promoting efficiency in public sector and deliver quality service to the general public through the use of information technology, and IS within a secure digital space [8]. The SITA falls under the auspices of the DPSA. The GITOC is a critical platform that support digitisation in government and public sector and the information technological officers at national and provincial level are tasked in bringing to fruition the vision of integrating technologies in government and public entities business operations [8]. The DPME is entrusted with the mandate of ensuring that they are continuous improvement in performance of government and public entities for the purpose of achieving national strategic goals [8]. The next section reveals literature on IS.

Literature review

IS play a critical role in the efficient and effective operation of government and public entities. They enable the collection, storage, processing, and dissemination of information, which is essential for decision-making and service delivery. Information systems have been used in various government and public entities, including healthcare, education, transportation, and finance, among others. Government and public sector organizations increasingly rely on information systems and technology to efficiently provide services to citizens and function effectively. Several studies have examined the performance and role of these systems in the government and public sector.

Governments around are using IS in their operations for various tasks. Within government organizations, information systems have been shown to streamline operations and work processes. Enterprise resource planning (ERP) systems have been adopted to integrate data and automate back-office functions like human resources, finance, and asset management [15]; [30]; [21]. For example, the Integrated Government Financial Management Information System (IGFMIS) has been implemented in Kenya to facilitate budgeting, expenditure management, and reporting across government agencies [22].

Research also highlights the benefits of implementing data-driven management and business intelligence systems based on big data analytics [5].

Predictive data analysis has improved strategic decision-making in areas like healthcare, transportation, and public safety [1]. For instance, some cities in Asia and Europe have leveraged artificial intelligence and big data to monitor public infrastructure, detect traffic incidents and optimize traffic flow in real-time [17].

The performance of IS in government and public sector is influenced by a variety of elements, of which organisational culture is a significant component. The common ideas, beliefs, and practises that shape the behaviour and activities of individuals inside an organisation are known to as organisational culture. The cultural dimension in an organisation influence the adoption, implementation, and maintenance of information systems in government and public entities. For instance, a culture that values innovation and technology can promote the adoption and effective use of information systems [14]; [10].

Another factor is leadership and management support. Leadership and management support refer to the extent to which leaders and managers in government and public entities support the adoption, implementation, and maintenance of information systems. Leadership and management support can influence the success of information systems by providing resources, incentives, and training for staff. For instance, leadership and management support can the uptake and successful utilisation of IS in public entities through creating a conducive and enabling environment [19]. Furthermore, the availability of resources, including funding, infrastructure, and personnel, can influence the performance of information systems in government and public entities. Adequate resources are required for successful IS deployment and maintenance. Lack of finance, for example, can lead to insufficient deployment and maintenance of IS, resulting in dismal performance and restricted benefits [29].

In addition, one of the important elements influencing the effectiveness of IS in government and public entities is efficiency. According to [26], the efficiency of information systems can be measured by their ability to perform their functions in a timely and cost-effective manner. The level of automation, quality of data, and user training are critical factors that influence the efficiency of information systems in government and public entities. The level of automation refers to the extent to which the information system can automate its functions, reducing the need for manual intervention. The quality of data refers to the accuracy, completeness, and consistency of data stored in the information system. User training is also critical in ensuring the efficient functioning of information systems in government and public entities, as it enables users to effectively utilize the system.

The effectiveness of IS is another key factor that influences their performance in government and public entities. The effectiveness of information systems can be evaluated by their ability to achieve their intended

objectives. According to [3], IS effectiveness in public sector is influenced by several factors, including the alignment of the IS to strategic goals, data quality and the extent of user adoption. The alignment of the IS with the strategic goals ensures that there is support to the entity's core functions. The quality of data ensures that the information system can provide accurate and reliable information, which is critical in decision-making. User adoption is also important in ensuring the effectiveness of information systems in government and public entities, as it determines the extent to which the system is utilized by its intended users.

Despite the numerous benefits of information systems in government and public entities, they also face several challenges. One of the significant challenges is the cost of implementation and maintenance. Information systems require significant investments in infrastructure, software, and personnel, which can be costly for government and public entities, especially those with limited resources [29]. This hindrance is often related to the lack of funding by the government. According to [6]; [13] funding constraints limit the ability of these entities to acquire and maintain information systems, resulting in outdated and inefficient systems. Inadequate funding also limits the ability of government and public entities to train their staff on the use of information systems, resulting in low user adoption.

Another challenge is the lack of technical expertise and skills. Information systems require specialized technical skills, which may not be readily available in government and public entities. This can lead to ineffective implementation and maintenance of information systems, which can result in poor performance and limited benefits [27]. According to [4], the lack of technical expertise limits the ability of government and public entities to effectively design, develop, and implement information systems. Inadequate technical expertise also limits the ability of these entities to effectively maintain and upgrade their information systems. This inevitably affects the output of the information systems.

Resistance to change is a challenge that hinders the performance of information systems in government and public entities. This is often encountered when introducing new information systems, as staff may be hesitant to adopt new technologies or change their work processes. Resistance to change may result in low user adoption, which can negatively impact the performance of information systems in government and public entities [9].

Inadequate infrastructure is a challenge that hinders the performance of information systems in government and public entities. According to [23] inadequate infrastructure limits the ability of government and public entities to effectively implement and utilize information systems. Inadequate infrastructure may include a lack of reliable electricity supply, poor internet connectivity, and inadequate hardware and software resources.

The infrastructure may be unavailable, obsolete, or of poor quality. These infrastructure challenges may result in system downtime, which negatively impacts the performance of information systems in government and public entities.

Furthermore, information systems may face security and privacy concerns. Information systems contain sensitive information, including personal and financial data, which can be targeted by cybercriminals. This can lead to data breaches, which can compromise the confidentiality and integrity of information systems [11]. These breaches can be massive and too expensive to mitigate if they occur. With the current surge in hackers, government systems face a risk of disruption and this can be considered a vice to the systems in the modern technological era [20]. Despite the challenges highlighted in the literature, the South Africa also have some systemic issues that poses challenges to the performance of IS. One of issues is state capture in government and public entities which form the basis of analysing performance of IS in the South African context for this present study.

The Commission of Inquiry into state capture (CISC) was formed in response to the corrective measures recommended in a report penned by the former Public Protector of South Africa in 2016 following allegations of misconduct that implicated ex-President Jacob Zuma and the Gupta [7]. The purpose of CISC was to investigate President Zuma's alleged breach of the Executive Ethics Code by allowing the Gupta to influence the appointment process in the cabinet and public sector entities, to ascertain if Gupta and their related companies received special favours necessitated by President Zuma and Cabinet interference and establish whether the Gupta were corruptly awarded tenders by the public sector entities [7]. The CISC was chaired by Justice Zondo and hence the inquiry was coined the Zondo Commission. The CISC unearthed information on alleged malpractices in the public sector and hence this study sought to establish issues that hinder performance of IS in South African public sector. The study reviewed scholarly articles published between 2017 and 2023 to provide an up-to-date analysis of the challenges faced by IS in the public sector. The next section describes the philosophical assumptions, data collection and analysis methods employed.

Data and methodology

In the context of studying the emerging issues affecting the performance of IS in public entities in South Africa, an interpretivist research philosophy was considered more appropriate. This is because the research topic involves understanding how individuals interpret and give meaning to their experiences with IS. It also involves taking into account the context and the perspective of the documented reports from CISC, which is better suited to qualitative research methods.

An interpretivist approach allows for a more nuanced understanding of the issues affecting the performance of IS in South African public sector. The interpretivism stance enables an exploration of the experiences and perspectives provided in the CISC reports [2]. The study utilises documentary data in the form of CISC reports published in 2022 to gain a comprehensive understanding of IS performance. The analysis of CISC reports followed a systematic approach. Initially, all reports were read thoroughly to gain a comprehensive understanding of the challenges hindering performance of IS. Key themes and emerging issues related to the performance of IS in public entities in South Africa were identified. This approach is good for the study because it allows a more detailed exploration of the findings to highlight factors affecting IS performance in South African public sector [18]. Ethical consideration was taken into account to uphold academic integrity and ensure credible sources are incorporated in the present study.

Findings and discussion

The themes that annotated factors hindering performance of IS in the South Africa public sector are discussed as follows:

Destabilising the public entities business systems and structures

The findings from the CISC reports showed that business operations structure of public entities were deliberately destabilised to facilitate unethical practices. The destabilisation process involved conniving of top management and board representatives to ensure they had firm grip on the procurement processes with an overall aim of obtaining tenders illegally for self-enrichment. Some procurement procedures were centralised to ensure that the powers be lay a claim to tenders of substantial values. Quick procurements were open to abuse as the decision makers would select preferred candidates that they would derive benefits from. The process meant that the centralised decision making on procurements would allow abuse of the process through side-lining corruptive players who weren't compliant to the tender procedures with the intention of getting bribes. The implication of such practices would delay the procurement of key IS and hence hammering performance of the public entities. The weakening allowed room for overpricing and rent-seeking behaviour.

Non-penalisation of offenders

The CISC reports highlighted those who were found committing malpractices that included misconduct were politically side-lined by the presidium and there was impunity for offenders. Political protection encouraged inefficiency in public sector entities and resources were misallocated to satisfy the perpetrators. Protection of offenders also cascaded to the board who would shield the wrongdoers by dismissing and interfering with internal disciplinary processes. This impunity had the potential of

diverting funds meant for improving functionality of IS to corruptive activities.

Overstating of tender values

Public entities in connivance with service providers of information technologies would overvalue services or oversupply beyond what is required by the organisation. A case unearthed in the CISC findings involved a public entity paying for 2200 computers when it had 1100 employees. Another aspect demonstrated that there was no security to safeguard 450 rented computers which disappeared under the watch of the public entity and couldn't be located. The service provider for rented computer continued to receive rentals without the public entity benefiting from the contract. Delays in finalising tender processes meant that public entities continued to suffer financially as a result of shoddy contracts. The tendering process of information technology services followed no due diligence resulting in some service providers being side-lined. The process at times were marred by intimidation of information officers coming from management. The advertised tenders were flouted by the decision makers to suit their preferred organisations.

Lack of goal congruency

The evidence in CISC reports displayed lack of goal congruency which showed that some key personnel in the decision making process acted in a manner that jeopardised the interests of public entities to achieve their strategic goals. This prejudiced public entity to suffer financial losses by favouring expensive service providers of IS over cheap ones, which demonstrated a clear abuse of public office. The findings depicted that there was corruption which necessitated tenders to be awarded to undeserving bidders.

Conclusion

Information systems are playing a critical role in the efficient and effective operation of government and public entities. They enable the collection, storage, processing, and dissemination of information, which is essential for decision-making and service delivery. IS have numerous benefits, including improved decision-making, service delivery, and transparency and accountability. The purpose of the study was to ascertain various factors in the Zondo Commission reports that hindered performance of IS. Amongst the factors included destabilisation of the public entities' business systems and structures, non-penalisation of offenders, overstating of tender values and lack of goal congruency. Governments must implement robust procurement systems and monitoring mechanisms to close loopholes that may potentially be abused and hinder public sector entities from achieving their strategic objectives. The study is limited to documentary data provided in CISC reports in 2022. Further research is needed to understand emerging technologies that can be leveraged to enhance performance of IS in government and public sector.

REFERENCES

1. **Adenyi, N.A.O., Okolo, N.C.A., Olorunsogo, N.T. and Babawarun, N.O.** 2024. Leveraging big data and analytics for enhanced public health decision-making: A global review. *GSC Advanced Research and Reviews* 18(2), pp. 450-456. DOI: 10.30574/gscarr.2024.18.2.0078
2. **Alharahsheh, H.H. and Pius, A.,** 2020. A review of key paradigms: Positivism VS interpretivism. *Global Academic Journal of Humanities and Social Sciences*, 2(3), pp. 39-43.
3. **Al-Ghazi, A., Shen, J., Fosso Wamba, S., Cui, T. and Li, M.,** 2021. A Strategic Alignment Perspective of Public-Sector Organisations in Saudi Arabia in the Digital Transformation Age (Quantitative Study).
4. **Al-Rahbi, Y., Al-Harrasi, S. and Al-Wahaibi, S.,** 2012. Technical factors affecting the adoption of e-government.
5. **Aziz, N.F.** 2023. Data analytics impacts in the field of accounting. *World Journal of Advanced Research and Reviews*, 18(2), pp. 946-951. DOI: 10.30574/wjarr.2023.18.2.0863
6. **Benson, M.B. and Cole, A.,** 2011. Hospital information systems in Nigeria: a review of literature. *The Journal of Global Health Care Systems*, 1(3), pp. 1-26.
7. **CISC.** (2022). Commission of Inquiry into State Capture Reports. Available at: <https://www.statecapture.org.za/site/information/reports>
8. **DPSA.** (2012). Public Service Corporate Governance of Information and Communication Technology Policy Framework. Available at: http://www.dpsa.gov.za/dpsa2g/psictm_documents.asp.
9. **Foli, M.,** 2019. Analysing Change Resistance to an Information Systems-Supported Process in a South African Public Hospital.
10. **Galliers, R.D., Madon, S. and Rashid, R.** 1998. Information systems and culture: Applying 'stages of growth' concepts to development administration. *Information Technology for Development* 8(2), pp. 89-100. DOI: 10.1080/02681102.1998.9525296.
11. **Gupta, B.B. and Agrawal, D.P.** 2021. Security, privacy and forensics in the enterprise information systems. *Enterprise Information Systems* 15(4), pp. 445-447. DOI: 10.1080/17517575.2020.1791364
12. **Hidayati, U., Sumarni, S., Suprpto, S., Ma'rifatini, L., Hanun, F., Taufik, O.A. and Warnis, W.** 2023. The effect of system reliability, information sharing and service quality on e-learning net benefit in public sector organizations. *International Journal of Data and Network Science* 7(3), pp. 1397-1404. DOI: 10.5267/j.ijdns.2023.3.024.12
13. **Ioannou, K., Kitsios, F. and Kamariotou, M.** 2022. Digital Transformation Strategy and Organizational Change in the Public Sector: Evaluating E-Government IS and User Satisfaction. In: *Lecture notes in business information processing*. pp. 247-257. DOI: 10.1007/978-3-030-95947-0_17
14. **Janson, A., Dickhaut, E. and Söllner, M.** 2022. Designing for Cultural Values: Towards a Theory-motivated Method for Culture-sensitive Adaptation of Information Systems. *Proceedings of the ... Annual Hawaii International Conference on System Sciences/Proceedings of the Annual Hawaii International Conference on System Sciences*. DOI: 10.24251/hicss.2022.567
15. **Jayamaha, B.H.V.H., Perera, B.A.K.S., Gimhani, K.D.M. and Rodrigo, M.N.N.** 2023. Adaptability of enterprise resource planning (ERP) systems for cost management of building construction projects in Sri Lanka. *Construction Innovation*. DOI: 10.1108/ci-05-2022-0108
16. **Kim, S. and Cho, K.** 2005. Achieving Administrative Transparency Through Information Systems: A Case Study in the Seoul Metropolitan Government. In: *Lecture notes in computer science*. pp. 113-123. DOI: 10.1007/11545156_11
17. **Kitchin, R., Lauriault, T.P., & McArdle, G.** (2017). Knowing and governing cities through urban indicators, city benchmarking and real-time dashboards. *Regional Studies, Regional Science*, 4(1), 6-28.
18. **Latchu, A.** 2022. Exploration of Corporate Governance Challenges in Public Sector Information Systems- An Auditor General Perspective. *Deleted Journal* 18(1), pp. 465-473. DOI: 10.34190/ecmlg.18.1.828
19. **Lessa, L. and Boudreau, M.C.,** 2011. Effects of information system intent of managers on information systems implementation: case of selected e-government projects in two city administrations in Ethiopia.
20. **Li, C.-Y., Huang, C.-C., Lai, F., Lee, S.-L. and Wu, J.** 2018. A Comprehensive Overview of Government Hacking Worldwide. *IEEE Access* 6, pp. 55053-55073. DOI: 10.1109/access.2018.2871762
21. **Meiryani, N., Fernando, E., Hendratno, S.P., Kriswanto, N. and Wifasari, S.** 2021. Enterprise Resource Planning Systems: The Business Backbone. DOI: 10.1145/3466029.3466049
22. **Njihia, A.W.** 2015. DETERMINANTS OF PERFORMANCE OF INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEM IN PUBLIC SECTOR IN KENYA: A CASE OF NATIONAL TREASURY. *the Strategic Journal of Business & Change Management* 2(2). DOI: 10.61426/sjbcem.v2i2.164
23. **Nkohkwo, Q.N.A. and Islam, M.S.,** 2013. Challenges to the successful implementation of e-government initiatives in Sub-Saharan Africa: A literature review. *Electronic Journal of e-government*, 11(1), 252-266.
24. **Rimpilainen, S.** 2015. A Review of Electronic Health Records Systems Around the World. DOI: org/10.17868/65328
25. **Ross, P., Maynard, K.** (2021). Towards a 4th industrial revolution. *Intelligent Buildings International*, 13(3), 159-161.
26. **Sala, E.E. and Subriadi, A.P.,** 2023. Hot-Fit Model to Measure the Effectiveness and Efficiency of Information System in Public Sector. *Journal the Winners* 23(2), pp. 131-141. DOI: 10.21512/tw.v23i2.7423

27. Sharon, S.D. 2004. Training the IT-Savvy Public Manager: Priorities and Strategies for Public Management Education. *Journal of Public Affairs Education* 10(1), pp. 5-17. DOI: 10.1080/15236803.2004.12001342
28. Vahedi, M., & Arvand, H. (2020). The Role of Information Systems in Decision-making and Public Policy Making. *Journal of Management and Accounting Studies*, 8(2), 11–14. DOI: 10.24200/jmas.vol8iss2pp11-14
29. Zaid, N.A. and Yusof, M.M. 2022. An Evaluation of a Training Management System Adoption in A Public Sector: A Case Study. *Asia-Pacific Journal of Information Technology and Multimedia* 11(02), pp. 18-39. DOI: 10.17576/apjitm-2022-1102-02
30. Zhang, F. 2022. Design and Implementation of Enterprise Resource Planning Management System. 2022 IEEE Conference on Telecommunications, Optics and Computer Science (TOCS). DOI: 10.1109/tocs56154.2022.10016077

ЭШЛИ ЛАТЧУ, ШАВРЕН СИНГХ

ИССЛЕДОВАНИЕ ФАКТОРОВ, ПРЕПЯТСТВУЮЩИХ РАБОТЕ ИНФОРМАЦИОННЫХ СИСТЕМ В ГОСУДАРСТВЕННОМ СЕКТОРЕ ЮЖНОЙ АФРИКИ - ДАННЫЕ КОМИССИИ ЗОНДО

Университет Южной Африки, Флорида, Южная Африка

Целью данной статьи является выяснение проблем, поставленных Комиссией по расследованию обвинений в захвате государства, коррупции и мошенничестве в государственном секторе, включая государственные органы, которая более известна как Комиссия Зондо или Комиссия по захвату государства. Комиссия выясняла, в том числе и причины, которые препятствуют и затрудняют работу информационных систем в государственном секторе Южной Африки. Новизна данного исследования заключается в его тематическом взгляде на факторы, мешающие государственному сектору достичь целей, изложенных в национальных стратегических целях Южной Африки. Итоговые отчеты Комиссии Зондо используются для изучения внутренних аспектов, которые могут объяснить текущие угрозы информационным системам страны. Работа Комиссии Зондо охватывала период с 2018 по 2022 год, отчеты доступны на сайте Государственной Комиссии по захвату государства. В исследовании используется качественный исследовательский подход путем анализа данных из отчетов Комиссии Зондо. Качественное программное обеспечение Atlas.ti 9 используется для выяснения макрофакторов, мешающих информационным системам работать эффективно и результативно. Использование стандартного пакета программного обеспечения Atlas.ti 9 предназначено для автоматизации процедур кодирования путем применения определенных правил, обеспечивающих быстроту и эффективность обработки огромных объемов текстовых данных, а также их организации, фильтрации и сортировки этих данных. Чтобы задать направление работы автоматического анализа, используется схема кодирования, которая идентифицирует коды или ключевые слова, которые следует искать в тексте. Схема основана на первоначальной оценке образца текстовых данных, проведенных исследователем. Текстовые коды организованы в относительно более высокие коды или конструкции. Схема кодирования тестируется на отдельной выборке текстов с целью проверки точности и адекватности. Выявленные темы тематического анализа показали, что дестабилизация бизнес-систем и структур государственных предприятий, отсутствие наказания правонарушителей, завышение стоимости тендеров и отсутствие соответствия целям были основными причинами, влияющими на работу информационных систем. В исследовании рекомендуется, чтобы правительство использовало более надежные системы закупок и мониторинга.

Ключевые слова: деятельность органов государственной власти, Комиссия Зондо, Южная Африка, государственный сектор, информационные системы

Ashley Latchu. Mr Latchu is currently pursuing his Doctorate in Philosophy (UNISA) with research on corporate governance in the public sector. He has a Masters Degree in Computer Science (UNISA), Honours Degree in Computer Science (UNISA), and Bachelor's Degree in Computer.

Mr. Latchu = ORCID ID <https://orcid.org/0000-0002-5458-2072>

E-mail: ashleylatchu@gmail.com

Эшли Латчу. В настоящее время г-н Латчу работает над докторской степенью по философии (UNISA), исследуя корпоративное управление в государственном секторе. Он имеет степень магистра в области компьютерных наук (UNISA), степень с отличием в области компьютерных наук (UNISA) и степень бакалавра в области компьютерных наук.

Shawren Singh. Prof Shawren Singh PhD, is an associate professor in the School of Computing at the University of South Africa (UNISA). He has spent more than 20 years teaching and researching in the Information Systems space. His current research has focused on digital scholarship and e-Government. He is the Chair of Information Systems in the School of Computing at the University of South Africa.

Prof Singh = ORCID ID <https://orcid.org/0000-0001-5038-0724>

E-mail: singhs@unisa.ac.za

Шаврен Сингх. Профессор Шоурен Сингх, доктор философии, доцент Школы вычислительной техники Южно-Африканского университета (UNISA). Он провел более 20 лет, преподавая и занимаясь исследованиями в области информационных систем. Его текущие исследования сосредоточены на цифровой науке и электронном правительстве. Он является заведующим кафедрой информационных систем в Школе вычислительной техники Южно-Африканского университета.