



Exploring E-Procurement Adoption in the Context of a Developing Country: The Case of Lesotho

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Abstract. An E-Procurement system allows organizations to automate and streamline the internal procurement processes and also allow them to integrate and share information with their suppliers and customers for better business results. Despite these and other benefits promised by E-Procurement systems, their adoption remains a challenge in most organizations in developing countries, and in Africa in particular. This could be partly because of the fact that the phenomenon has not received sufficient attention in Africa, and as a consequence, adoption is enacted in a manner that is exclusive of contextual challenges the organizations face. It is also not clear whether E-Procurement benefits in literature do translate into actual benefits by African public organizations. The purpose of this study is therefore to identify the perceived benefits and contextual challenges posed during the implementation of an E-Procurement system in the Lesotho electricity sector. Following an interpretivist approach, grounded in the study context; the study identified two key perceived benefits of efficiency and transparency. The challenges faced includes the organizational lack of adequate training, system failure, employee resistance and lack of project management skills by top management. There were consistent reports of a lack of expertise from the external market to address implementation issues and that perceived knowledgeable agents such as consultants were not able to deliver what was tasked of them.

Keywords: E-Procurement · Adoption · Developing countries · Lesotho

1 Introduction

The use of information technology systems to automate procurement processes such as ordering and tendering, with the objective of improving efficiency, quality and transparency within such processes is now an important aspect for all organizations. This process, known as E-Procurement integrates and links buyers and sellers by automating the requisitioning, approval, ordering and account management processes [1]. The use of these systems has been associated with stronger search abilities, faster and more accurate data transmission and better information that assists inter-organisational integration leading to low communication and coordination costs. As such, E-Procurement is now regarded as a strategic tool that can be used to optimise the business operations [2].

Despite these benefits, there remains minimal adoption of E-Procurement systems in organizations in developing countries, particularly in Africa [3]. As for those that have adopted the technology, they report minimal benefits from its use [4]. This could partly be because the phenomenon has not received sufficient attention in Africa, and as a consequence, adoption is enacted in a manner that is exclusive of political, legal, social, and cultural contextual factors. According to Jarzabkowski (2004, 10), ‘while communities may have some broad similarities, each community has specific social interactions that constitute a unique interpretative context’. This is truer on the African continent where different countries and even tribes have different interpretive repertoire and challenges. On this note, this study explores perceived benefits and challenges associated with E-Procurement systems in public organizations in the developing country context. The study is situated in the Kingdom of Lesotho and the case is a public institution hereby named LesothoOrg which automated its procurement processes in 2010. This study is arranged as follows: Sect. 2 will provide a literature review on E-Procurement and how it has been perceived in other African countries. Section 3 describes and discusses the research approach, paying attention to how the data was collected and analysed. The report on the field research findings are documented in Sect. 4. An extrapolation of the field research findings in the context of the literature is made in Sect. 5. Finally, Sect. 6 concludes and provides recommendations and future research work.

2 Theoretical Background

2.1 E-Procurement

A procurement process is defined as the whole process of acquiring goods or services. It begins with the request to acquire an item or service by the user department, approved by the head of that department, and goes through to receiving the goods and ultimately disposing that item after its useful life. This process is guided by procedures and rules set out to achieve procurement performance [10]. Procurement is a subset of supply chain management process which includes activities such as goods and services sourcing, order processing, invoicing, inventory management and customer service [11]. When the procurement process becomes automated (E-Procurement), it becomes an important strategic focus that is perceived as having the potential to improve the organizational performance, increase process efficiency, reduce the purchasing activity cost and improve process transparency [2, 12]. An E-Procurement system allows organizations to automate and streamline the internal procurement processes and also allow them to integrate and share information with their suppliers and customers for better business results [13–15]. The use of these systems have been associated with stronger search abilities, faster and more accurate data transmission and better information that assists inter-organisational integration leading to low communication and coordination costs.

Studies on E-Procurement have been in various industries although most have rested in the manufacturing domain. For example, Abdullah and Halim [16] investigated the impact of dependency among supply chain members on the diffusion of an E-Procurement adoption system; and Li [17] investigated the major determinant factors for the successful adoption of E-Procurement by Chinese manufacturing enterprises. From the hospitality sector, Au et al. [18] explored the key factors that are associated with the low adoption of E-Procurement specifically in the hotel industry in Hong Kong, a major tourism destination in Asia. Their findings show that (1) technical factors, (2) perceived benefits, (3) conflicts between hotel owners and management, (4) resistance to change, (5) product diversity, and (6) rumours were the main factors that determined adoption.

2.2 E-Procurement in Africa

Although the body of knowledge on E-Procurement is vast, there remains limited attention paid to the adoption and implementation of the innovation in Africa. And as a consequence, Africa's lessons on E-Procurement could potentially be based on the developed economies context which is significantly different from the African context. Studies in Africa on E-Procurement have been conducted in the Nigeria building sector and there is report of technical and infrastructure challenges which are common barriers in most developing countries [4]. This is a problem because innovations such as E-Procurement are reliant on an IT infrastructure that is reliable, accessible, and of high-speed. Technical and infrastructure include telecommunication infrastructure, networks, Internet services, hardware and software which could be perceived as costly and therefore deter adoption [19]. Other findings in Nigeria include political, social, and cultural issues. Their findings show that organisations failed to see the evidence of the benefits of E-Procurement and hence there was minimal top management support [4]. Top management support and commitment is important and has often been considered crucial in the adoption and deployment of technology, as they provide the financial resources necessary and cultivating an organisational climate conducive to the adoption of the technology and for the management and achievement of organisational goals, values and beliefs [20, 21]. In most cases, top management is granted if they can perceive the benefits of adoption and less of the challenges of innovation such as the costs involved in respect of the adoption of technology, for example, for hardware, software, Internet access, or the availability of alternative technologies and developmental innovations [22, 23].

Other challenges that potentially affect management's intention to support the adoption of a new innovation include their perception of the complexity and compatibility of the innovation with organizational goals. Innovation complexity has an effect on adoption because the more difficult an innovation is to understand and more difficult to implement, the less likely will be adopted, but if less complex, a faster adoption is predicted [24, 25]. Despite the perceived complexity and cost involved in adopting an innovation, if it is perceived to be compatible with the organization's strategy it can be adopted. Compatibility of an innovation refers to 'the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters' [24]. Technological incompatibilities

between organisations may pose challenges that inhibit organisations from adopting E-Procurement systems [26]. The organisational legacy systems may not be technically compliant with E-Procurement systems and thus forcing organizations to change such applications before acquisition and implementation. Decision to change legacy systems normally take a lot of discussions and time to conclude. Technical skills to implement and support the systems may also be a barrier of adoption [26–28].

In South Africa, reports of limited use of E-Procurement in the construction sector are noted [29]. The authors attribute this to (1) lack of a definite government policy to implement E-Procurement; (2) reliability of ICT infrastructure; (3) high costs of installing and operating E-Procurement systems; and (4) perceived negative impact of E-Procurement adoption on smaller firms and employment of people in the departments. Several studies have confirmed that the size of an organization, its financial capability and characteristics have a critical effect on the adoption of E-Commerce and technological systems [30]. The organisational size is one of the predictors of an organisation's intentions to adopt IS innovations on the premise that larger firms have a greater need for them, as well as resources, skills and experience and the ability to survive failures, than smaller firms [31]. Ntawanga and Coleman [32] presented a lightweight mobile E-Procurement application for small scale retailers in a rural areas of South Africa. Their application, allowed businesses to conduct their operations, specifically stock replenishment, efficiently and cost-effectively. In Kenya, the adoption of E-Procurement among large scale manufacturers is examined by [33], and five critical success factors reported: employees and management commitment to success of adoption; reliability of information technology and supplier performance; monitoring the performance of E-Procurement systems; user acceptance of E-Procurement systems and top management support. The authors also found the following challenges: resistance to change from employees, lack of E-Procurement approval by company board, existence of old IT equipment among the firms that need overhaul and lack of managerial support. From the public sector, Adebayo and Evans [34] examined the level of adoption of E-Procurement in Nigeria and arrive at the conclusion that at an operational level, public sector organisations are yet to fully attain the full benefits of E-Procurement. In Kenya, Ndumbi and Okello [35] point to the need for staff training in the use of E-Procurement because staff training influences compliance to regulatory instruments such as the public procurement and disposal act in Kenya.

The experience and the knowledge that organisations have about the intended innovation play an important role in decisions regarding adoption [24]. ICT expertise are critical as the task of managing the IT infrastructure and resources continues to grow more complex as businesses rely more and more on it. This complexity requires governance – a framework for making strategic, tactical and operational decision regarding rights and accountabilities, and stipulating clearly who is entitled to make major decisions, who has input and who is accountable for implementing those decisions, so as to encourage desirable behaviour in the use of IT [19]. Appropriate governance and the adoption of best governance practices enables organisations to ensure that their enterprise's IT sustains and extends their strategies and objectives [14] and fully harnesses the benefits of IT investments [25]. Table 1 documents the challenges faced by organizations in Africa in the adoption of E-Procurement.

Table 1. Challenges faced by African organization in the adoption of E-Procurement.

Country	Industry	Challenges
Nigeria	Building and construction	Technical and infrastructure
		Political
		Social and cultural issues
		Lack of perceived benefits
	Minimal top management support	
	Public sector	Lack of perceived benefits
Kenya	large scale manufacturers	Resistance to change from employees
		Lack of E-Procurement approval by company board
		Lack of managerial support
	Existence of old IT equipment among the firms that need overhaul	
	Public sector	Lack of staff training and ICT expertise in conformance to regulation
South Africa	Building and construction	Lack of a definite government policy to implement E-Procurement
		Reliability of ICT infrastructure
		High costs of installing and operating E-Procurement systems
		Perceived negative impact of E-Procurement on smaller firms

3 Methodology

The study adopted an interpretivist research philosophy and using a single case study, it examined the contextual challenges faced by the LesothOrg in its implementation of the E-Procurement system. A case study approach is more suitable to studies where the researcher desires to gain better insight and deep understanding of the processes being investigated [36]. Data was collected using semi-structured interviews from eight participants (see Table 2) who were with the organization from the adoption to the implementation phase of the project. Although the sample size is small, it should be borne in mind that qualitative studies are more concerned with in-depth understanding of the phenomenon from its natural setting as perceived by participants [37]. In this study, saturation point was reached with eight participants.

The literature review and the challenges identified in Africa with regards to E-Procurement informed the research instrument. Of these eight participants, three were in the project implementation team, representing Finance, Procurement and Information technology departments. These are the people who motivated for the project and were involved in the implementation. They observed and have information of the change management strategies that were applied, challenges faced and why the particular application was implemented. The Finance department representative is also a member of the LesothOrg execute management team who is mostly affected by this system. The remaining five participants include one stores department employee, one

Table 2. Respondent profile

Respondent # and Position	Gender	Line manager
1 Transmission and distribution manager	Female	General manager engineering
2 Acting operations manager	Male	General manger engineering
3 Stores controller	Male	Procurement manager
4 Procurement manager	Female	General manager finance
5 Financial accounting manager	Male	General manager finance
6 Operations and administrator	Male	Information technology manager
7 General manager finance (acting)	Female	Managing director
8 Section engineer planning & projects	Male	Planning and projects manager

financial accounting department employee, and three representatives for the three engineering departments who use the different modules of the system and were present both before and after the system implementation.

These participants are mainly the users of the systems and therefore have a better understanding of the benefits and challenges associated with the system use. All participants are based at the LesothOrg Headquarters in Maseru, Lesotho; and all interviews were recorded. Data analysis commenced with the process of transcribing the recordings from the audio tapes to a Microsoft Word document. Then, the main author went through the process of rereading each interview transcript with the purpose of familiarising oneself with the data and embedding herself into the situated context by relieving the interview experience. Each time an interview transcript was read, initial codes were identified and documented in MS Excel. Different colours were then used to highlight words, sentences and paragraphs that gave similar meanings, and helped the researcher compare similarities across respondents and thus identify initial patterns across the different interview scripts. Then, the process of aggregating and collapsing themes that talk about the same concepts followed so as to reduce the number of themes that emerged and avoid redundancy.

4 Findings

4.1 Perceived Benefits

One of the perceived benefits the study finds is the ability to automate various activities so as to “*achieve an acceptable level of efficiency*” (Respondent 5). There was a consistent remark that automation was the driver for the adoption of e-procurement, although for some employees this was not explicitly stated. For example, the Transmission and Distribution Manager (Respondent 1) was informed that the purpose of e-procurement was to move from the manual system to the electronic system. Although she quickly indicates that “*the manager did not explicitly tell us the purpose, maybe he did to our senior management*”. The Acting Operations Manager was also given the impression that “*the new system that they wanted would make it easier for people to order things because, you know before it used to be difficult be-cause the people at procurement used to throw away papers if they see that they cannot find what you are*

looking for, they just throw them away” (Respondent 2). The Stores Controller who reports directly to the procurement manager was confident in the anticipated benefits and reports that *“The intention was to try to automate some of the processes in order to achieve shorter errrrrr turnaround time and to respond to the user requirements but mostly our requirements were about that”* (Respondent 3). Respondent 6 strongly highlights the benefits that he finds important from his department’s perspective: *“because the requisitioning process has been fully automated, the requisition books or leaflets no longer get lost”*. This was believed to be a significant advantage because it improved their efficiency, thereby making their *“customers happier and the queries that we used to have, have been reduced a lot. Even for unhappy customers, we are able to explain with the support from the system. Also there used to be a lot of stock shortages before, we no longer have that”*.

Finally, one of the additional benefit cited by managers was the need to improve transparency. Respondent 8 clarifies: *“quotations we used to give to customers were different in every district and varied daily or from whoever the quotation was issued because the project estimator was just a spreadsheet that was not linked to other users. You can now trace your order easily with this system in place”*. Respondent 4 agrees that *“for now, we have a clear record of transactions, with times and days, we can know when a requisition was initiated, and when it was completed and by whom”*

4.2 Lack of Expertise

The Acting Operations Manager (Respondent 2) was of the view that employees lacked adequate training of the system and believed that *“more training is needed for them in order to understand what they are doing”*. Similar sentiments are made by The Stores Controller (Respondent 3) who indicates that all employees needed training of the system. He indicates that training was only given to a few because of the budget constraints. Respondent 7 confirms this challenge and indicates that the problem was not only a budget issue but the quality of the trainees that were employed. She states that through her observations, *“the consultants kept on recommending stuff, some of which they could not deliver or do themselves and then recommended that LesothOrg subcontract their other partners in the project”*. According to Respondent 2 *“the consultant was a little bit of err he was also learning himself”*. This was not well received by the management team as they perceived low confidence in the project implementers and brought pressure on employees to learn the system as they go.

4.3 System Problems

Although LesothOrg was able to accrue some benefits from the E-Procurement system, there were some challenges they experienced with the system itself, which were not related to the lack of training on the employee’s part. Respondent 1 explains: *“From my office every week I get a complain/request from the regional manager requesting IT intervention because either the system is not allowing them to raise a purchase requisition, it is slow or it is not allowing them to register the customers when they apply and then causes long customer queues”*. Respondent 6 confirms that *“the system itself had too many problems and could not eliminate all the manual challenges we*

experienced and so sometimes we had to go manual". This was not well received by the LesothOrg management because *"all these IT problems"* (respondent 7) were putting strain on the most important goals and objectives of why the system was implemented in the first place – that of achieving efficiency and transparency.

4.4 Employee Resistance

The findings show that despite the advantages the E-Procurement system brought into LesothOrg, evidence of employee resistance were noted. Respondent 5 noted *"resistance by some departments, especially engineering who say that the system belongs to Finance"*. There was consistent lack of ownership of the system and Respondent 4 attributed this to the fact that *"people were not adaptive to change, they were not well trained and most were not told what the system was to do and how it will affect them directly with regards to their daily work activities"*. According to respondent 2, the challenge was to provide proper information for the system to operate well – findings this proper information was problematic, given that people were not trained. Thereby confirming observations made by respondent 4 that most people in her department thought the *"new system has now created more job for them"*.

4.5 Lack of Project Management Skills and Support

According to respondents, the LesothOrg management lacked project management skills and the project eventually suffered scope creep problems. Management were also perceived not to be knowledgeable in E-Procurement and therefore were not able to solicit the right development team for the implementation (respondent 2). According to respondent 7, *"LesothOrg did not really know what they wanted and depended on the consultant to tell them what they can offer ... and so it was more like signing a blank cheque, and in every project meeting, something else came up"*. Respondent 6 confirms, noting that *"the tendering process was never followed for the whole process so basically there was not even a business case or anything...and unfortunately that exercise was done when some of the executive management do not want to hear anything about this project even though the project had already begun operation"*. Thus the lack of project management skills and top management support was perceived to be a barrier to successful implementation of E-Procurement.

5 Discussion

The findings in this study show that the most realized benefits associated with E-Procurement in the LesothOrg context were efficiency and transparency. The following challenges were identified: lack of expertise, system problems, employee resistance and lack of project management and support. Although most of these challenges have been identified in literature, thereby confirming our findings to be more generalizable to other developing countries; the challenges that stands out in the Lesotho context are (1) the lack of project management skills by the management team and (2) the lack of knowhow of the consultants brought in to provide development and training.

The lack of project management skills is a problem, especially in the Lesotho context that lacked “*a business case*” which is crucial to lay the foundation of clear objectives and how these are aligned to the business strategy. Several studies have reported that for business process initiatives to be successful there needs to be a clear link between the business processes and the business strategy [38–40]. Also, the skills portal of South Africa [41] has advised Africa that “a project-oriented mindset needs to be developed in the state sector” so as to address and redress current project failures and challenges. Our findings regarding the role of consulting companies in this study deviates from those attributed in literature. According to many studies, the role of consultants includes technology transfer, technology assessment, the articulation of needs, the exploration and appropriation of technologies, as well as acquisition, implementation and learning [42]. Consultants are perceived to possess the expertise and experience and so many organizations are advised to “spend money and time on getting the relevant advice from ICT experts and consultants in order to set up the ICT strategy, based on the SME’s business strategy” [43].

However, this advice becomes problematic in Africa and more specifically in the Lesotho context where ICT consultants are perceived to be lacking in ICT knowledge, thereby jeopardizing the successful completion of the project. According to [44] “ICT consultants with general ICT skills and specific ERP skills in particular are in short-supply world-wide....and the lack of quality ERP expertise, skills and knowledge affects ICT project success and may prevent organisations from achieving the potential benefits of implementing ERP”. This study therefore calls for the public institution to redress the lack of expertise and consider putting measures in place of reevaluating consultants on a periodical basis to assess their relevance to the agile ICT market.

6 Conclusion

The purpose of this study was to identify the perceived benefits and contextual challenges posed during the implementation of an E-Procurement system in the Lesotho electricity sector. Following an interpretivist approach, grounded in the study context; the study identified two key perceived benefits of efficiency and transparency. The challenges include the lack of adequate training, lack of expertise from the external market, system failure, employee resistance and lack of project management skills by top management. The study further identifies the lack of expertise and skill sets required by top management with respect to managing a project of the magnitude of an E-Procurement system. It was strongly suggested by all respondents that top management should, and in this case did not, possess project management skills that are necessary to drive an ICT project to its fruition. The study has presented insights into the challenges and potential benefits accrued from e-procurement. Future studies can work towards increasing the sample size, and using a theoretical lens that can provide a richer understanding of the E-Procurement in Lesotho.

References

1. Zunk, B.M., Marchner, M.J., Uitz, I., Lerch, C., Schiele, H.: The role of E-Procurement in the Austrian construction industry: adoption rate, benefits and barriers. *J. Ind. Eng. Manag.* **5** (1), 13–20 (2014)
2. Alvarez-Rodríguez, J.M., Labra-Gayo, J.E., de Pablos, P.O.: New trends on E-Procurement applying semantic technologies: current status and future challenges. *J. Comput. Ind.* **65**, 800–820 (2014)
3. Gardenal, F.: A model to measure E-Procurement impacts on organizational performance. *J. Public Procure.* **13**, 215–242 (2013)
4. Aduwo, E.B., Ibem, E.O., Uwakonye, O., Tunji-Olayeni, P., Ayo-Vuaghan, E.K.: Barriers to the uptake of e-procurement in the Nigerian building industry. *J. Theor. Appl. Inf. Technol.* **89**(1), 133–147 (2016)
5. Feinberg, S., Hill, T.L., Darendeli, I.S.: An institutional perspective on non-market strategies for a world in flux. In: *The Routledge Companion to Non Market Strategy*. Routledge (2015)
6. Zhang, C., Dhaliwal, J.: An investigation of resource-based and institutional theoretic factors in technology adoption for operations and supply chain management. *J. Prod. Econom.* **120**, 252–269 (2009)
7. Liang, H., Saraf, N., Hu, Q., Xu, W.: Assimilation of Enterprise systems: the effect of institutional pressures and the mediating role of top management. *J. MIS Q.* **31**, 59–87 (2007)
8. Kaynak, E., Tatoglu, E., Kula, V.: An analysis of the factors affecting the adoption of electronic commerce by SMEs: evidence from an emerging market. *Int. Mark. Rev.* **22**, 623–640 (2005)
9. Oruezabala, G., Rico, J.C.: The impact of sustainable public procurement on supplier management—The case of French public hospitals. *Ind. Mark. Manag.* **41**, 573–580 (2012)
10. Amemba, C.S., Nyaboke, P.G., Osoro, A., Mburu, N.: Challenges affecting public procurement performance process in Kenya. *J. Res. Manag.* **4**, 41–55 (2013)
11. Vaidya, K., Campbell, J.: Multidisciplinary approach to defining public E-Procurement and evaluating its impact on procurement efficiency. *J. Inf. Syst. Front.* **18**, 333–348 (2016)
12. Chang, H.H., Wong, K.H.: Adoption of E-Procurement and participation of e-marketplace on firm performance: trust as a moderator. *J. Inf. Manag.* **47**, 262–270 (2010)
13. Piera, C., Roberto, C., Giuseppe, C., Teresa, M.: E-Procurement and E-supply chain: features and development of E-collaboration. *IERI Procedia* **6**, 8–14 (2014)
14. Piotrowicz, W., Irani, Z.: Analysing B2B electronic procurement benefits: information systems perspective. *J. Enterp. Inf. Manag.* **23**, 559–579 (2010)
15. Vaidyanathan, G., Devaraj, S.: The role of quality in E-Procurement performance: an empirical analysis. *J. Oper. Manag.* **26**, 407–425 (2008)
16. Abdullah, N., Halim, N.A.: 5th International Conference on Business and Economic Research (5th ICBER 2014), Pullman Hotel, Kuching Sarawak Malaysia (2014)
17. Li, Y. H.: An empirical investigation on the determinants of E-Procurement adoption in Chinese manufacturing enterprises. In: *15th Annual Management Science and Engineering Conference Proceedings, ICMSE*, pp. 32–37. IEEE (2008)
18. Au, N., Ho, C.K., Law, R.: Towards an understanding of E-Procurement adoption: a case study of six hotels in Hong Kong. *J. Tour. Recreat. Res.* **39**, 19–38 (2014)
19. Lin, C., Huang, Y.A., Jalleh, G., Liu, Y.C., Tung, M.L.: An exploratory study of factors affecting adoption and implementation of B2B E-Commerce in Australian health care organizations. *J. Electron. Commer. Stud.* **1**, 77–96 (2010)

20. Teo, T.S., Lin, S., Lai, K.H.: Adopters and non-adopters of E-Procurement in Singapore: an empirical study. *J. Omega* **37**, 972–987 (2009)
21. Hashim, F., Alam, G.M., Siraj, S.: Information and communication technology for participatory based decision-making-E-management for administrative efficiency in higher education. *Int. J. Phys. Sci.* **5**, 383–392 (2010)
22. Ho, S.C., Kauffman, R.J., Liang, T.P.: A growth theory perspective on B2C E-Commerce growth in Europe: an exploratory study. *J. Electron. Commer. Res. Appl.* **6**, 237–259 (2007)
23. Iddris, F.: Adoption of E-Commerce solutions in small and medium-sized enterprises in Ghana. *Eur. J. Bus. Manag.* **4**, 48–57 (2012)
24. Rogers, E.: *The Diffusion of Innovations*, 5th edn. The Free Press, New York (2003)
25. Othman, M.F.I., Chan, T., Foo, E., Nelson, K.J., Timbrell, G.T.: Barriers to information technology governance adoption: a preliminary empirical investigation. In: *Proceedings of 15th International Business Information Management Association Conference*, pp. 1771–1787, Cairo, Egypt (2011)
26. McCue, C., Roman, A.V.: E-Procurement: myth or reality? *J. Public Procure.* **12**, 221–248 (2012)
27. Quesada, G., González, M.E., Mueller, J., Mueller, R.: Impact of E-Procurement on procurement practices and performance. *J. Benchmarking* **17**, 516–538 (2010)
28. Toktaş-Palut, P., Baylav, E., Teoman, S., Altunbey, M.: The impact of barriers and benefits of E-Procurement on its adoption decision: an empirical analysis. *J. Production Econom.* **158**, 77–90 (2014)
29. Laryea, S., Iben, E. O., Pagiwa, R., Phoi, R.: Electronic procurement in the South African construction sector: case study of government departments in the Gauteng Province. In: *Proceedings of the DII-2014 Conference on Infrastructure Investments in Africa*, Livingstone, Zambia 25–26 2014 (2014)
30. Simmons, G., Armstrong, G.A., Durkin, M.G.: A conceptualization of the determinants of small business website adoption: setting the research agenda. *J. Small Bus.* **26**, 351–389 (2008)
31. Ramdani, B., Kawalek, P., Lorenzo, O.: Predicting SMEs' adoption of enterprise systems. *J. Enterp. Inf. Manag.* **22**, 10–24 (2009)
32. Ntawanga, F., Coleman, A.: A lightweight mobile E-Procurement solution for rural small scale traders implemented using a living lab approach. In: *IST-Africa Conference*, 2015, pp. 1–10). IEEE (2015)
33. Mose, J.M., Njihia, J.M., Peterson, O.M.: The critical success factors and challenges in E-Procurement adoption among large scale manufacturing firms in Nairobi. Kenya. *J. Eur. Sci.* **9**, 375–401 (2013)
34. Adebayo, V.O., Evans, R.D.: Adoption of E-Procurement systems in developing countries: a Nigerian public sector perspective. In: *2nd International Conference on Knowledge-Based Engineering and Innovation*, Tehran, Iran, pp. 20–25. IEEE (2015)
35. Ndumbi, C.W., Okello, B.: Effect of staff training on level of compliance to public procurement system in Parastatals in Kenya. *J. Econom. Commer. Manag.* **3**, 613–626 (2015)
36. Saunders, M., Lewis, P., Thornhill, A.: *Research Methods for Business Students*, 5th edn. Pearson Education Ltd., London (2009)
37. *The applications of qualitative methods to social research*. In: *Qualitative Research Practice: A Guide for Social Science Students and Researchers* (2003)
38. Ariyachandra, T.R., Frolick, M.N.: Critical success factors in business performance management - striving for success. *J. Inf. Syst. Manag.* **25**, 113–120 (2008)
39. McGee-Abe, J.: *The business performance excellence summit* (2016). <http://www.businessperformanceexcellencesummit.com>

40. Jeston, J.A.: *Business Process Management: A Practical Guide to Successful Implementations*. Elsevier, Oxford (2006)
41. Skillsportal.co.za (2016). <http://www.skillsportal.co.za>
42. Janssen, W., Bouwman, H., van Buuren, R., Haaker, T.: An organizational competence model for innovation intermediaries. *Eur. J. Innov. Manag.* **17**, 2–24 (2014)
43. Modimogale, L., Jan, H.: The role of ICT within small and medium enterprises in Gauteng. In: *Communications of the IBIMA* (2011). <http://www.ibimapublishing.com/journals/CIBIMA/cibima.html>
44. Calitz, A., Greyling, J., Cullen, M.: The problems experienced within the e-skills value chain in South Africa. In: *Proceedings E-Skills Summit, Cape Town, South Africa*, pp. 1–10 (2010)