THE COMPETENCIES REQUIRED FOR THE BPA ROLE: AN ANALYSIS OF THE KENYAN CONTEXT

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ABSTRACT

Aim/Purpose	This study aims to answer the research question titled *What are the competencies required for the* Business Process Analyst (BPA) *role in organizations with ERP systems in Kenya.* Through 4 hypotheses, this study focuses on two specific aspects: (1) Enhancing BPM Maturity and (2) ERP implementation.
Background	The emergence of complex systems and complex processes in organizations in Kenya has given rise to the need to understand the BPM domain as well as a need to analyze the new roles within organizational environments that drive BPM initiatives. The most notable role in this domain is the BPA. Furthermore, many organizations in Kenya and across Africa are making significant investments in ERP systems. Organizations, therefore, need to understand the BPA role for ERP systems implementation projects.
Methodology	This study uses a sequential mixed methods approach analyzing quantitative survey data followed by the analysis of qualitative interview data.
Contribution	The main contribution of this study is a description of competencies that are critical for the BPA in Kenya both in terms of enhancing BPM maturity and for driving ERP systems implementations. In addition, this study sheds light on critical BPA competencies that are perceived to be undervalued in the Kenyan context.
Findings	Findings show that business process orchestration competencies are important for driving BPM maturity and for ERP systems implementations. This study found that business process elicitation, business analysis, business process improvement and a holistic overview of business thinking are often overlooked as critical competencies for BPAs but are nevertheless critical for building the BPA practitioner.

Recommendations for Practitioners	From this study, practitioners such as top managers and BPAs can be enlightened on the specific competencies that require focus when carrying out BPM and when implementing ERP systems projects.
Future Research	The next step is to investigate the interventions that organizations implement to build their BPA competencies. The main aim of this would be to describe those interventions that impact the requisite BPA competencies especially those competencies that were seen to be undervalued within the Kenyan context.
Keywords	enterprise systems, BPA competencies, business process analyst, context

BPM AND THE BPA ROLE

Business Process Management (BPM) has been defined as an approach to process performance that provides integration between managing the performance of the organization through the management of end-to-end business processes of the organization as well as the management of processes that add value to the organization (Hammer, 2015). BPM has been viewed as a prerequisite to taking full advantage of the ERP systems software that is to be implemented and as a means of automation of an enterprise's business processes and functions (Al-Mudimigh, Zairi, & Al-Mashari, 2001; Al-Mudimigh, Ullah, & Saleem, 2009). In the same breath, the Business Process Analyst (BPA) plays a critical role in understanding BPM initiatives of the organization. The BPA is the role directly involved with executing BPM initiatives and is defined as: "mid-level person who deals with tactical, more day-to-day aspects of discovering, validating, documenting and communicating business process knowledge" (Antonucci & Goeke, 2011). In fact, critical BPA functions include the implementation and management of these BPM initiatives. Similarly, the BPA competency is a critical factor in Enterprise Resource Planning (ERP systems) implementations (Garbutt & Seymour, 2015), and these implementations are increasing in most countries in the African continent and in Kenya with large, medium and small businesses in the country making significant investments in these systems. This has given rise to the need for new roles within ERP systems environments, most notably the BPA role. Several studies address the importance of BPAs in their research and also address a scarcity of skills in business process analysis (Chakabuda, Seymour, & van der Merwe, 2014; Jarrar, Al-Mudimigh, & Zairi, 2000; Motwani, Mirchandani, Madan, & Gunasekaran, 2002; Sonteya, Seymour, & Willoughby, 2012). In Kenya specifically, the current trend around ERP systems is that of growth and dynamic change (Otieno, 2010). For the literature review carried out during this study, no research discussing BPM competencies or the BPA role within ERP systems were found in the Kenyan Context, but several acknowledged the need for further analysis of competency requirements in the use of ERP systems (Abdullabhai & Acosta, 2012; Makokha, Musiega, & Juma, 2013; Otieno, 2010). Hence, this paper aims to answer the research question, titled: *"What are the competencies required for the BPA role in organizations in Kenya."* The study aims to describe the various BPA related competencies that companies, with certain characteristics such as level of BPM maturity and stage of ERP systems implementation, require. In addition, the research question aimed to establish if there was any difference between the Kenyan context and the South African context with regards to the BPA competencies that they perceived as important.

LITERATURE REVIEW

This section presents literature relevant to the objective of the study. The literature review covers studies focusing on a need to understand those BPM competencies that can enhance the BPM maturity of an organization, the BPA competencies necessary for ERP systems implementations and BPM literature within the Kenyan context and the African context at large.

BPA COMPETENCIES FOR BPM MATURITY

Literature around BPM maturity frameworks has been developed over the years (Röglinger, Pöppelbuß, & Becker, 2012; Tarhan, Turetken, & Reijers, 2016). Largely findings from literature indicate that organizations can be placed into four distinct stages of BPM maturity. These are: the Initial Stage where there are uncoordinated attempts towards BPM but a strong desire to learn (De Bruin & Doebeli, 2009; De Bruin & Rosemann, 2006; Rosemann, 2006; Rosemann & vom Brocke, 2015; Rummler & Brache, 1998); the Repeatable stage where organizations begin to document their processes. However, processes are manual, and organizations tend to be reactive towards process improvement (De Bruin & Doebeli, 2009; De Bruin & Rosemann, 2006; Hammer, 2015; Rosemann, 2006; Rosemann & vom Brocke, 2015); the Managed stage where organizations understand and coordinate end-to-end activities. Process improvement takes on a more proactive approach because organizations invest more in understanding and analyzing their processes (De Bruin & Doebeli, 2009; De Bruin & Rosemann, 2006; McCormack, 2007; McCormack et al., 2009; Rosemann, 2006; Rummler & Brache, 1998); the Optimized stage where BPM becomes engrained in the strategy and operations of the organization (De Bruin & Doebeli, 2009). Further, organizations take the time to measure and manage their processes and BPM is handled by well-organized teams (De Bruin & Doebeli, 2009; De Bruin & Rosemann, 2006; Harmon, 2015; Rosemann, 2006). Literature also suggests that the more mature an organization is in terms of BPM the higher the competency requirements for BPAs handling these BPM initiatives (De Bruin & Doebeli, 2009; De Bruin & Rosemann, 2006; Rosemann, 2006). To investigate further on the specific BPA competencies required to drive BPM maturity in organizations, the current study develops the following hypothesis:

> **BPA competencies are more important in organizations with managed or optimized BPM than in those with initial or repeatable BPM (H1).**

## THE BPA COMPETENCIES IN ERP SYSTEMS IMPLEMENTATIONS

When it comes to BPM in ERP systems implementations, studies suggest that even though a newer system will help in the automation of business processes, the actual improvement of business processes can be done independently of an ERP system (Kimberling, 2016). In addition, experts of BPM and ERP systems integration believe, when companies fail to define and improve their business processes, they end up implementing their ERP systems over existing faulty processes (Hongjun & Nan, 2011; Kimberling, 2016). Therefore, to effectively implement an ERP system, project members involved in these implementations, such as BPAs, need the requisite competencies to be able to define the existing processes and improving on them prior to the ERP systems implementation (Harmon & Trends, 2010; Hongjun & Nan, 2011; Kimberling, 2016).In order to uncover these requisite competencies, the following hypothesis was developed:

> **BPA competencies are more important in organizations with implemented ERP systems than in those that have either not implemented ERP systems or have partial ERP systems implementations (H2).**

THE KENYAN CONTEXT

Studies agree with the perspective, that information systems and ICT have potential in the continent to enable strategic and transformative development but hardly any research has delved into this rapidly growing area [2]. This study takes the position that research on a context should be selected not on convenience but through a thorough analysis of the strengths and opportunities available to the researcher (Davison & Martinsons, 2016). With specific respect to Kenya, the Kenyan government has developed a national strategy termed the Kenya Vision 2030. This long-term strategy is based on three pillars that include the economic pillar, the social pillar and the political pillar. Under the economic pillar, the vision 2030 strategy intends to implement business process outsourcing as a major

economic sector. Business process outsourcing (BPO) involves contracting specific business processes to a third-party service provider (Kenya Vision 2030, 2008). Research suggests that to achieve this, a high level of BPM know-how is be required (Mahmoodzadeh, Jalalinia, & Nekui Yazdi, 2009). In fact, among the intended outcomes of this sector is skills development for BPM related activities that would enhance the quality of products and services (Kenya Vision 2030, 2008). Kenya intends to market itself as a BPO destination and establish a BPO park as part of the expansion of its ICT infrastructure (Kenya Vision 2030, 2008). Figure 1 illustrates the sectors of the Economic Pillar of Kenya's vision 2030. In this case, BPO is represented as Business Process Offshoring. Given that high-quality BPO requires a high-level competence in BPM (Lacity, Solomon, Yan, & Willcocks, 2011; Mahmoodzadeh et al., 2009) it was interesting to note that while much has been done with respect to BPO in Kenya (Jane, Aosa, Awino, & Njihia, 2018; Mann & Graham, 2016; Mann, Graham, & Friederici, 2015), hardly any research in BPM or BPM competency building had been carried out on the Kenyan context with one study suggesting that one of the main pitfalls of BPO adoption in Kenya was a lack of relevant competencies in the country (Chumo, 2015).
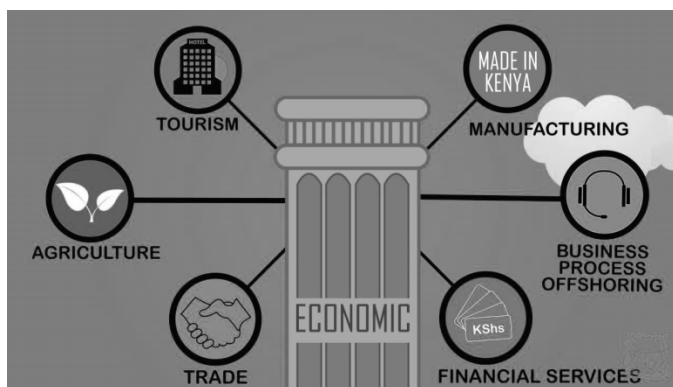
Figure 1. Sectors of the Economic Pillar for Kenya's Vision 2030 (Kenya Vision 2030, 2008)

Similarly, hardly any studies have been carried out regarding BPM education and BPM competency requirements in Kenya. This study aims to investigate what the Kenya context perceives with respect to BPA competencies and if there are any contextual differences with other African contexts. Literature indicated that very few studies had been done on BPA competencies in Kenya (Wamicha & Seymour, 2016; Wamicha & Seymour, 2017). The two studies found covering BPA competencies in South Africa (Chakabuda et al., 2014; Sonteya et al., 2012) focused primarily on the SA context. Generally speaking, studies on ICT competency development based on the SA context indicate that the country has made steps to develop BPM competency building initiatives with the aim of reducing the skills gap in the current ICT graduates (Ansen, 2014; Calitz, Greyling, & Cullen, 2014). Other studies have developed frameworks for graduate development focusing on improving both the quality and the quantity of ICT graduates and students (Breytenbach, De Villiers, & Jordaan, 2013). Research from SA has also addressed the challenges facing the country from the perspective of e-skills within the value chain (Calitz, Greyling, & Cullen, 2010). These studies indicate clear concern that there is a significant skills shortage both within SA and at an international level. This is especially so because current business practices require a skilled workforce conversant with new technology (Calitz, Greyling and Cullen, 2010). Several studies focusing on BPM curriculum and BPM competency building have also been carried out. Such studies have developed a competency framework for the BPA (Sonteya, Seymour, & Willoughby, 2012), an analysis of the challenges facing teaching business process related courses in SA HEIs (Flügel, Seymour, & van der Merwe, 2014) and a further explanation of the competency gap found in the emerging Business Process Analyst role (Chakabuda, Seymour, & van der Merwe, 2014). Additionally, the SA studies were appealing as a means of comparison with this Kenyan study as SA is perceived to have progressed quite rapidly in terms of development of BPM in different industries, BPM competency building models and BPM research as a whole (Chakabuda et al., 2014; Grisdale & Seymour, 2011; Kruger & Johnson, 2010; Sonteya et al., 2012;

Thompson, Seymour, & O'Donovan, 2009). The BPA competency framework that was used in the SA studies comprises 16 different competencies deemed necessary for the BPA (Sonteya et al., 2012). These 16 competencies are outlined in Table 1. Based on this synthesis of literature on contextual differences, two hypotheses were developed as follows:

- **The importance of the high-level BPA competencies in the Kenyan context will be different to the importance in other African contexts (H3) and**

- **The importance of constituent BPA competencies in the Kenyan Context will be different to the importance in other African contexts (H4).**

Table 1. List of BPA competencies (Sonteya et al., 2012).

COMPETENCY CATEGORY	CONSTITUENT COMPETENCIES
BIC (Business Interpersonal competency)	BIC1 (Facilitation and Leadership) BIC3 (Business Communication) BIC4 (Trustworthiness) BIC2 (Business Requirements Elicitation)
OK (Organizational Knowledge)	OK (Organizational knowledge)
BFC (Business process Analyst Fundamental Competency)	BFC1 (Business Analysis) BFC2 (Holistic Overview of business thinking) BFC3 (Client Experience Thinking) BFC4 (Mathematical and Statistical competency)
BPO (Business Process Orchestration)	BPO1 (Business process and Value chain modelling) BPO2 (Business Process Improvement) BPO3 (Business Process Risk and Compliance Assessment) BPO4 (BPA drive and promotion)
TC (Technical Competency)	TC1 (Software Oriented Architecture) TC2 (ERP systems Knowledge) TC3 (User Interface design)

METHODOLOGY

This study used a mixed methods approach. Mixed methods researchers suggest that a researcher can opt to have one method being more dominant than the other (Paradigm Emphasis decision) and the researcher can opt to use the methods concurrently or sequentially (Time order decision) (Greene, 2008; Johnson & Onwuegbuzie, 2004; Johnson, Onwuegbuzie, de Waal, Stefurak, & Hildebrand, 2016; Johnson, Onwuegbuzie, & Turner, 2007). For this study, the quantitative data analysis was more dominant than the qualitative data analysis. The study sequentially analyzed the quantitative data followed by the qualitative data. The research method used an informal sampling frame of 150 BPAs working in different organizations in Kenya following the guidelines developed by a seminal research paper on mixed methods (Teddlie & Yu, 2007). To qualify for the sampling frame, an individual had

to be directly involved in executing process management initiatives such as process documentation, analysis, re-design and implementation. The potential respondents were contacted through email and the online survey ran from March to June 2016. The participants were Kenyan. From the sampling frame, a total of 65 respondents completed the questionnaire. The researcher then carried out a follow-up interview with 5 willing BPAs who had filled in the questionnaire to clarify findings from the survey. The survey data was recorded in the Qualtrics data collection software. In the survey, respondents ranked each of the 16 competencies based on a Likert scale that ranged from "Not at all important" to "Extremely important". Table 2 outlines demographics of the 65 BPAs who completed the survey.

This research question follows a concurrent approach to mixed methods research where quantitative data is more dominant than qualitative. This approach is useful for carrying out corroboration of data (QUAN + qual)

Quantitative data:

- **Development of dependent and independent variables**

- **Hypothesis are developed and tested**

- **Quantifiable relationships are developed**

- **Propositions were developed that presented findings on those competencies that BPAs found important.**

- **The propositions were developed with respect to the results obtained after hypotheses were tested.**

Qualitative data:

- **This provides supporting data for the research question; promotes triangulation**

- **Provides confirmation of the results obtained from quantitative data**

- **Addresses issues specific to the Kenyan context which quantitative data is unable to achieve satisfactorily.**

Table 2. Demographics of the 65 survey respondents

RESPONSE ID	INDUSTRY	%	COUNT
1	Finance or insurance	7.94%	5
2	Professional, scientific or technical services	4.76%	3
3	Management of companies or enterprises	3.17%	2
4	Admin, support, waste management or remediation services	4.76%	3
5	Educational services	7.94%	5
6	Health care or social assistance	3.17%	2
7	Accommodation or food services	1.59%	1
8	Other services (except public administration)	7.94%	5
9	Utilities	4.76%	3
10	Construction	3.17%	2

RESPONSE ID	INDUSTRY	%	COUNT
11	Manufacturing	9.52%	6
12	Retail trade	0.00%	2
13	Transportation or warehousing	1.59%	1
14	Information Technology, Hardware or Software Development	39.68%	25
	Total	100%	65

The qualitative data were collected from 5 interviews with BPAs. The data collected were analyzed with NVivo qualitative data analysis software. Table 3 outlines the demographics of the 5 respondents.

Table 3. Demographics of the 3 interview respondents

INTERVIEW SEQUENCE	RESPONDENT ID	INDUSTRY	PROCESS MANAGEMENT AREA OF EXPERTISE
1	BPA1	Engineering	Operations
2	BPA2	Food and Beverage	Finance/credit
3	BPA3	Insurance	Business development
9	BPA9	Software development	Operations
10	BPA10	Education	Project management

With regards to the first hypothesis (H1) focusing on BPM maturity, a framework covering the maturity levels of different companies was used. This framework describes the different BPM maturity levels. H1 explains the BPA competencies that companies at different levels of maturity value. The second hypothesis (H2) focuses on establishing the perceptions that companies with, without and with partial ERP systems implementations have when it comes to BPA competencies that they find important. H1 and H2 were analyzed using the Kruskal-Wallis test. The last hypotheses (H3 and H4) aim to establish if there are any contextual differences between the Kenyan context and the African context at large. H3 and H4 were analyzed using the T-test.

FINDINGS AND DISCUSSION

Based on the 65 responses received from the survey, a calculation of means was carried out on all the competencies. The Likert scale spanned 5 (Extremely Important) to 1 (Not important at all). From the results of the means calculated, each of the competencies was ranked from the highest to the lowest mean. High means indicated those competencies that BPAs found important while low means indicated those that they perceived as not important. The results indicated that Trustworthiness (BIC4) was viewed as most important to the BPAs with a mean of 4.33. Similarly, the Business Interpersonal Competency (BIC) grouping was viewed as most important with a mean of 4.00. The Mathematical and statistical competencies were viewed as least important for the BPA with a mean of 3 while the Technical Competency grouping was viewed as the least important grouping with a mean of 3.1. Table 4 further outlines these findings. This is in line with findings from the literature that strongly supports that BPAs need to have strong interpersonal skills. In fact, they have been viewed as the most important BPA competencies (Chakabuda et al., 2014). On the other hand, tech-

nical competencies were not strongly required for the role (Chakabuda et al., 2014; Sonteya et al., 2012).

Table 4. Competency Mean and Ranking

ORGANIZATIONS IN KENYA	MEAN
BIC4 (Trustworthiness)	4.33
BIC3 (Business Communication)	4.29
BPA3 (Client Experience Thinking)	4.18
BFC1 (Business Analysis)	3.93
BFC2 (Holistic Overview of business thinking)	3.90
BPO3 (Business Process Risk and Compliance Assessment)	3.87
BPO2 (Business Process Improvement)	3.86
BIC1 (Facilitation and Leadership)	3.8
OK-Imp (Organizational Knowledge)	3.76
BPO1 (Business process and Value chain modelling)	3.70
BIC2 (Business Requirements Elicitation)	3.6
BPO4 (BPA drive and promotion)	3.41
TC2 (ERP systems Knowledge)	3.23
TC3 (User Interface design)	3.18
TC1 (Software Oriented Architecture)	3.04
BFC4 (Mathematical and Statistical competency)	3
BIC (Business Interpersonal competency)	4.00
OK (Organizational Knowledge)	3.76
BPA (Business process Analyst Fundamental Competency)	3.75
BPO Business Process Orchestration	3.71
TC Technical Competency	3.15

This section presents the perspectives of each of the hypotheses and the results of the data collected with respect to the 4 hypotheses developed for the study.

H1: Business Process competencies are more important in organizations with managed or optimized BPM than in those with initial or repeatable BPM.

H1 determines if Business Process competency requirements vary with increased BPM maturity. This study used the BPM maturity framework that had four distinct stages in BPM maturity (De Bruin & Doebeli, 2009; De Bruin & Rosemann, 2006; Rosemann, 2006). These four stages are defined in Table 5. The independent variable for H1 was "BPM maturity" and the four groups were "optimized", "managed", "repeatable" and "initial". The results of H1 indicated that Organizations in Kenya with Optimized BPM maturity found that BPO was a critical competency this differed significantly with those organizations that had repeatable or initial BPM. Table 6 further outlines the Kruskal-Wallis H-test results for the various competency groupings. For the Kruskal-Wallis test, significance is detected where $p < 0.05$ (McDonald, 2014).

The BPO competency was perceived as more important by BPAs working in organizations that had a higher level of BPM maturity (Optimized = 44.1 and Managed = 36.8) than those working in organi-

zations with a lower BPM maturity (Initial = 29.8 and Repeatable = 25.6). Like-wise the BPA fundamental competency was perceived as more important by BPAs working in organizations that had a higher level of BPM maturity (Optimized = 38 and Managed = 40) than those working in organizations with a lower BPM maturity (Initial = 26 and Repeatable = 27). This is in agreement with findings from literature that organizations with high BPM maturity also require personnel with high BPM expertise (Rosemann, De Bruin, & Power, 2006). Therefore, based on the findings from the study a proposition was developed as follows:

> **Proposition 1: The BPO orchestration competencies (BPO) and the fundamental BPA competencies (BFC) are perceived to be more important to organizations with managed and optimized BPM than they are to organizations with initial or repeatable BPM.**

Table 5. BPMM phases and their Characteristics (Source: (de Bruin & Doebeli, 2009; De Bruin & Rosemann, 2006; Rosemann, 2006))

MATURITY PHASE	CHARACTERISTICS OF THE PHASE
Low maturity a) Initial: Undefined processes b) Repeatable: Processes are documented and re-used	Low BPM competency requirements Reactive to process defects Processes are manual
High Maturity a) Managed: Processes are monitored and controlled b) Optimized: processes are constantly improved, measured and re-designed	 BPM activities are coordinated Proactive to process issues High BPM expertise requirements

Table 6. Competency categories with their respective Kruskal-Wallis results (Independent variable – BPM Maturity).

BPA COMPETENCY CATEGORY	H (2, N= 65)	P
BPO - Business process orchestration totals	9.23	P = 0.02
BIC - Business Interpersonal Competencies Totals	0.51	p = 0.91
OK - Organizational Knowledge	6.57	p = 0.08
TC - Technical Competencies totals	1.85	p = 0.60
BFC - Business Process Fundamental Competencies	7.54	p = 0.05

The BPO competency was perceived as more important by BPAs working in organizations that had a higher level of BPM maturity (Optimized = 44.1 and Managed = 36.8) than those working in organizations with a lower BPM maturity (Initial = 29.8 and Repeatable = 25.6). Likewise, The BPA fundamental competency or BFC was perceived as more important by BPAs working in organizations that had a higher level of BPM maturity (Optimized = 38 and Managed = 40) than those working in organizations with a lower BPM maturity (Initial = 26 and Repeatable = 27). Table 7 illustrates the mean differences between the 4 groups with respect to the BPO and BFC competencies.

Table 7: BPO and BFC Fundamental Competencies differences per group (Independent/Nominal variable – BPM Maturity)

BPM MATURITY PHASES	BPO P =.0263	BFC P=.0564
	MEAN	MEAN
Initial	29.8	26.5
Repeatable	25.6	27.4
Managed	36.7	40.7
Optimized	44.0	38.6

The results of the data analysis showed that the BPO orchestration competencies and the BFC competencies are deemed important to organizations with managed and optimized BPM. These organizations already have well-coordinated BPM activities requiring personnel who could effectively manage and optimize these BPM activities.

H2: Business Process competencies are more important in organizations with implemented ERP systems than in those that have either not implemented ERP systems or have partial ERP systems implementations.

The results of H2 indicated that there was a significant difference between BPA competencies requirements in organizations in Kenya with ERP systems versus without ERP systems for the BPO process competency grouping. Table 8 illustrates the mean differences between the 3 groups using the Kruskal-Wallis findings for the 5 different competency groupings. In this case, the Independent (grouping) variable was "ERP systems Implementation" where respondents were grouped into either ERP systems implementation, a partial implementation or no implementation.

Table 8. Competency categories with their respective Kruskal-Wallis H test results (Independent variable –ERP systems Implementation)

BPA COMPETENCY CATEGORY	H (2, N= 65)	P
BPO - Business process orchestration totals	7.70	0.02
BIC - Business Interpersonal Competencies	2.23	0.32
OK - Organizational Knowledge	2.80	0.24
TC - Technical Competencies	0.27	0.87
BFC - Business Process Fundamental Competencies	4.03	0.13

Out of the 5 competency categorizations, a significant difference was detected for the Business Process Orchestration (BPO) competency grouping which had a p-value of 0.0212. The highest mean ranking was found in those BPA respondents who had ERP systems implementations (Mean = 38.6) while the lowest mean ranking was found in BPA respondents who had no ERP systems implementations (Mean = 25.2). This indicated that BPAs working in organizations with ERP systems appreciated BPO competencies much more than those working in organizations without any ERP systems implementations. Table 5 further illustrates the BPO median differences per group where the Independent or Nominal variable is ERP systems Implementation (Paulk, 2016). The results of this hypothesis support findings from literature (Paulk, 2016). The competency group that had the most significant difference was the BPO competency which involves Value chain modelling (BPO1); Process improvement (BPO2); Risk and compliance assessment (BPO3) and promotion and drive of business processes (BPO4). All these constituent competencies are geared towards business process management and optimization. The results indicated that those BPAs in companies that had implemented ERP systems valued these competencies much more than BPAs in companies without an

ERP system. Therefore, based on the findings from the study a proposition was developed as follows:

> **Proposition 2: The BPO orchestration competencies are perceived to be more important to organizations with ERP systems than they are to organizations without or with partial ERP systems implementations.**

The business orchestration competencies were defined as the ability to understand how a process works (Antonucci & Goeke, 2009). BPO also involves process analysis, managing process changes while at the same time educating users who will be executing the various processes (Sonteya et al., 2012). In addition, BPO encompasses the enactment, monitoring and measurement of business processes within the organization (Sonteya et al., 2012). BPO has been viewed as core to the actual execution of business processes and has been termed as the coordination and invocation of services or activities that need to be performed within a given business process (Reed, Butt, Nene, Singh, & Addala, 2016; Sadok, Okba, Souraya, & Oueslati, 2017).

H3: The importance of the high-level BPA competencies in the Kenyan Context will be different than the importance in other African contexts.

The 2 SA based studies focused on BPAs working in South African companies. Study (Chakabuda et al., 2014) was a better match for comparison of contexts because it used a similar survey tool as the current study. The authors of the paper were contacted for the raw data obtained from their survey and this was compared with the results of the Kenyan study using the T-test on the two samples. The findings for this study indicated that for four of the five high-level codes, there were no significant differences between the two contexts. The significant differences were present within the BIC high-level competencies (t= -2.85456, p= 0.005086). Ideally, a p-value that is 0.05 (5%) or less means the differences are significant (Zimmerman, 1987). These findings are presented in Table 9.

Table 9. T-test results (per high-level competency) comparison of the SA and Kenyan samples

VARIABLE	MEAN SA	MEAN KENYA	T-VALUE	P
BIC	1.69	1.99	-2.85	0.005

These results indicated that overall, BIC competencies were valued more within the South African context than in the Kenyan context. This indicated that the SA context valued interpersonal competencies more than the Kenyan context. From these findings, the following proposition was developed:

> **Proposition 3. The Kenyan context is perceived to under-value BIC Interpersonal competencies more than the SA context.**

To analyze these contextual differences further, a t-test was done with the 16 constituent competencies. The findings of these are now presented.

H4: The importance of constituent BPA competencies in the Kenyan Context will be different than the importance in other African contexts.

For Hypothesis H4, the T-test was used on all 16 BPA competencies to compare the means from the two contexts and see which competencies had significant differences. The results indicated that 4 competencies had a high t-value (where samples were different from each other) and a significant p-value (where those differences were significant). Table 9 further outlines the results of both the im-

portance ranking. From highest to lowest significance, these competencies were Business Process Elicitation (t=-4.19, p=0.000053), Business analysis (t=-2.78, p=0.006283), Business Process Improvement (t=-2.50, p=0.013724), Holistic Overview of Business Thinking (t=-2.14, p=0.033672). Most of the competencies that were deemed important in the South African Context where also deemed important in Kenyan Context. To uncover further why these 4 competencies were so different in means between the two contexts, a further investigation of BPAs within the Kenyan context was carried out. This further investigation involved three short follow-up interviews with three BPAs focusing on their perception of these four competencies with respect to their role as BPAs.

Table 10. T-test results (per competency) comparison of the SA and Kenyan samples

VARIABLE	MEAN SA	MEAN KENYA	T-VALUE	P
BPO2	1.78	2.13	-2.50	0.013724
BFC1	1.66	2.06	-2.78	0.006283
BFC2	1.78	2.09	-2.14	0.033672
BIC2	1.67	2.40	-4.19	0.000053

a) Business process elicitation (BIC2)

The importance mean for the Business Requirements Elicitation competency for Kenya was at 3.6 while SA stood at 4.32. On the other hand, Kenyan BPAs ranked this competency much lower (Rank 11) than the South African BPAs (Rank 4). The t-test confirmed this significant difference between the samples with the t-value and p-value being quite high for this variable at 4.19617 and 0.000053 respectively. This indicated that BPAs in South Africa had a greater appreciation for Business Requirements Elicitation as a core competency for the BPA. Literature analyzed describes Business Process Elicitation as a skill or competency that is required during the implementation of Enterprise Systems (Jeyaraj, 2010). Business Process Elicitation has also been described as an initial problem identification step in collecting requirements when developing a solution as well as attaining a better understanding of the customer's business context (Cardoso, Almeida, & Guizzardi, 2009). Similarly, a study targeting SA BPAs suggested that the Business Process Elicitation competency involved the ability to gather information from business users or process owners who were experts in a specific business process (Sonteya et al., 2012). The following are some direct quotes with two interviews carried out.

> "In our company, most of the requirements collection is done by the technical team" -BPA2

> "Process Elicitation or collecting requirements does not really fall under what I do" – BPA1

Further, One BPA interviewed explained that it was mainly a team within the ICT department that drove much of the requirements collection.

> "What ICT did a few years ago, a section was created still within IT called Relationship Management, so we work very closely also with Relationship Management. This is where process development start, and you get to know the requirements and scope of the process, "– BPA 1

The overall feedback from the BPAs indicated that they felt that Business Process Elicitation was a function carried out by the technical developers of the solution or the enterprise system rather than a distinct competency requirement for the BPA. Sometimes, requirements elicitation was viewed as a job that could be outsourced to an external IT company or even to the ERP systems vendor. From these findings, the following proposition was developed.

> **Proposition 4a: While Business Process Elicitation is critical for BPM, the Business Process Elicitation competency is perceived to be undervalued within the Kenyan context relative to the SA context.**

b) Business analysis (BFC1)

The T-test mean results for the South African context was found to be much higher than the mean in the Kenyan context. In other words, BPAs in South Africa found this competency more important than those in Kenya. The Business Analysis competency has been defined as the ability to investigate various business situations by identifying the ways in which these businesses can be evaluated and improved (Cadle, Paul, & Turner, 2014). Other functions found within business analysis include requirements determination and improving business systems.

Feedback received, regarding these competencies, from a discussion with one BPA working for an ERP systems vendor suggested that most times, Kenyan companies do not invest enough in roles that do not have a direct relation to the overall objectives of the company. For example, if the core functions of a business are power generation, then they are less likely to value a role that is not directly linked to the process of power generation. In many circumstances, the business analysis role is viewed as consultative where external consultants are called in to analyze the business. The following is a direct quote from an interview with the BPA who emphasized that business analysis functions were not always a priority for the company and that the core functions of a company are more of a priority:

> "If you're in an IT company, the core focus is to develop and sell software as a finance guy you're in the wrong place, you're not in the core business, you need to be the guy developing or the guy selling software. If you're in an audit firm and your work there is cash collection, if you're not doing the actual audit you're not in the core business or if you work for a learning institution and you're a secretary… the core is either a lecturer or in the exam section or admissions, you must be directly interacting with the students, if you're not you're missing it." - BPA9

From these findings, the following proposition was developed:

> **Proposition 4b: While Business analysis is critical for BPM, this competency is perceived to be undervalued within the Kenyan context relative to the SA context.**

c) Business Process Improvement (BPO2)

Similarly, the Business Process Improvement competency has often been associated with process-based change. It has been defined as an essential component of process-centric organizations that wish to continue advancing and evolving (Shtub & Karni, 2010). Business process improvement also enables organizations to understand their ability to adapt (Adesola & Baines, 2005; Shtub & Karni, 2010) and is a key requirement for the ever-expanding knowledge economy (Sallos, Yoruk, & García-Pérez, 2017). However, again, in the case of this competency, the SA context viewed it as much more important than in the Kenyan context. Further analysis through interviews with individual BPAs indicated that their organizations often faced a lack of structure within the organization. Often the teams within the organization were closed off to each other. Given that business process improvement requires an end-to-end view of existing processes, a lack of awareness about what other departments are doing can make BP improvement initiatives rare and unappreciated. However, it was important to note that most BPAs admitted that their respective organizations were taking steps to make BP improvement easier by provided better structure and increased openness between teams and between departments that were once viewed as autonomous. Literature also strongly suggests that if organizations have an open culture then they are better able to facilitate organizational learn-

ing (Nemanich & Vera, 2009). The following are quotes elaborating further on the importance of structure and openness, as a good starting point for BP improvement competency development, presented by two BPAs (BPA1 and BPA2) who are based in Kenyan companies.

> "I think as the structure progresses, System Analysts, technical guys will remain under System Analysis and then the Business Processes team will be taken under Relationship Management. So that way it makes it very clear that the process starts with the Relationship Management point" – BPA1

> "Processes and systems are now more structured. Before, people were not very open, but now the environment is more open and inclusive with people going out of their way to explain and justify various issues." – BPA2

As part of the data collection, a BPA (BPA3) from SA context was asked about the BP improvement competency and what impact it had on the organization. The BPA emphasized that it was an integral part of her job as a BPA and something that would be difficult to do without input from different point persons within the organizations. Often as a BPA, you had to know who to talk to understand the AS-IS process and further work with them to redesign to the TO-BE process. To achieve this, a proper structure and openness within the organization was critical. The following is a direct quote from the interview:

> "Because I'm involved in process improvement, I look at the Business Processes, I'm mostly involved in and I'm often assigned to improve these processes, it involves process optimization which is an understanding, analyzing the current process or the AS-IS and then talking to the person involved in the process flow. This includes analyzing operating procedures and then establishing where to optimize the actual processes. Every now and then we're looking and we're taking on new processes, and I'm very much involved in trying to design new operating models…we optimize or we're looking at a new process that needs to be designed." – BPA3

BPA3 appreciated that it was important to continuously redesign or create new processes and operating models to ensure adaptability of the organization to the industry. From these findings, the following proposition was developed:

> **Proposition 4c: While Business Process Improvement competency is critical for BPM, this competency is perceived to be undervalued within the Kenyan context relative to the SA context.**

d) Holistic Overview of business thinking (BFC2)

From the T-test carried out with the Kenyan and SA samples, the holistic overview of business thinking competency exhibited a significant difference in importance between the two samples as outlined in Table 9. This competency has been defined as the ability of a business process analyst to think and apply knowledge in process dimensions (Sonteya et al., 2012). As well as the ability to view the environment as a living system that is dynamic and complex (Sonteya et al., 2012). An important element in this competency is the ability to understand the process dimension which involves being able to capture organizational best practices that are derived from practice. This capture then leads to business process reviews and can trigger business process improvement initiatives (Zacarias & Martins, 2011). BPAs would, therefore, need to understand the dynamic interaction between the process and practice dimensions (Zacarias & Martins, 2011). From literature analyzed it was clear that this competency is inextricably linked to the BA competency and BP improvement competency. The interview carried out with the BPA from the SA context supported findings from literature that argued that SA context had a more progressive approach to BPM than the Kenyan context in terms of understanding full end-to-end processes.

"Yes. I think it's extremely important especially in my role because when you got into a company and you're asked to assist in BPM then that's your starting point, but you need to understand what the company is about. So, yeah, the organizational structure, the whole value chain, you must start there and then once you have that understanding you need to break down to the level where you're going to be involved it will be a specific business unit or a specific process" – BPA3

"So, I handle operations, my colleague handles procurement, another one with finance, HR and so on" – BPA1

This indicated that within the SA context there was a clear need to understand and appreciate the organization as a dynamic and living enterprise. On the other hand, Kenyan BPAs were often limited to handling business process within a single function of the organization, therefore, an end to end view of business processes of the entire organization may be difficult to achieve. From these findings, the following proposition was developed:

Proposition 4d: While holistic overview of business thinking competency **is critical for BPM, this competency is perceived to be undervalued within the Kenyan context relative to the SA context**

Based on the overall findings Table 11 outlines the propositions developed in the study as well as a description of findings for each of the propositions.

Table 11. Propositions and summary of findings.

PROPOSITION	DESCRIPTION
1. The BPO orchestration competencies and the fundamental BPA competencies are perceived to be more important to organizations with managed and optimized BPM than they are to organizations with initial or repeatable BPM.	Organizations with managed and optimized BPM already have well-coordinated BPM activities. They, therefore, require personnel who could effectively manage and continuously optimize these BPM activities.
2. The BPO orchestration competencies are perceived to be more important to organizations with ERP systems than they are to organizations without or with partial ERP systems implementations.	Companies intending to carry out an ERP systems implementation need to define and improve their business processes to reduce the risk of project failure. BPO competencies are critical for carrying out definition and improvement of business processes. Business processes orchestration should take place before an ERP systems implementation commences.
3. The Kenyan context is perceived to under-value BIC Interpersonal competencies more than the SA context.	Interpersonal competencies are a necessary ingredient for the BPA. The ability to work with integrity, to elicit business processes and to effectively communicate within a team were deemed important in contexts with mature BPM.

PROPOSITION	DESCRIPTION
4a. While Business Process Elicitation is critical for BPM, the Business Process Elicitation competency is perceived to be undervalued within the Kenyan context relative to the SA context	Within the Kenyan context, it is necessary to emphasize that Business Process elicitation is an important competency for the BPA. Process elicitation tasks should not be left to the technical developer and the BPA should be a core driver of these activities.
4b. While Business analysis is critical for BPM, this competency is perceived to be undervalued within the Kenyan context relative to the SA context.	Business Analysis may not be perceived as a core competency in many organizations but through it, organizations are better able to identify opportunities and strengths of the organization and even drive the development of new services.
4c. While Business Process Improvement competency is critical for BPM, this competency is perceived to be undervalued within the Kenyan context relative to the SA context.	Business process improvement is a critical competency required for organizational advancement. Business process improvement activities thrive in organizations that have a clear structure such that roles of every worker are well defined and where teams are open so that processes are easily defined and visible understanding processes from an end-to-end point point-of-view.
4d. While holistic overview of business thinking competency is critical for BPM, this competency is perceived to be undervalued within the Kenyan context relative to the SA context.	Having a holistic view of business process thinking enables the BPA to carry out process discovery by understanding the best practices of the organization and transforming them into business processes that form part of the operations of the organization.

CONCLUSION AND FUTURE WORK

This study examines the research question: *"What are the competencies required for the BPA role in organizations in Kenya.* To answer the research question, the study used a framework of 16 different competencies as outlined in Table 1. From quantitative data, their means by importance were calculated. Here, trustworthiness was perceived as the most important competency while Mathematical and Statistical competency were least important. In terms of competency grouping the Business Interpersonal Competencies were most important while technical competencies were least important. This concurred with similar literature on BPA competencies (Chakabuda et al., 2014; Sonteya et al., 2012). From this, the first Hypothesis (H1) focused on analyzing the BPA competencies groupings to establish how Kenyan BPAs perceived them with respect to the companies' BPM maturity stage. The results indicated that the more mature an organization's BPM activities were the more they valued business process orchestration (BPO) and fundamental BPA competencies (BFC). The second hypothesis (H2) also analyzed the 5 competency groupings and attempted to establish those BPA competencies the companies with and without ERP systems valued. The results indicated that those companies with ERP systems valued process orchestration competencies more than those without ERP systems. This indicated that there was a link between competency requirements for companies that value BPM and those that have ERP systems implementations. The study argues that for you to successfully implement and operate an ERP system, BPM expertise is necessary. Finally, H3 and H4 analyzed the Kenyan context vis-à-vis the African context with respect to BPA competency requirements. H3 analyzed differences in the 5 competency groupings while H4 analyzed differences in the 16 constituent competencies. The most appropriate study found was a South African study on BPAs (Chakabuda et al., 2014) and raw data from the study was compared with that from this study and the

results indicated that Business Interpersonal Competencies (BIC) were undervalued in Kenya and the Business Process Elicitation, Business Analysis, Business Process improvement and the Holistic overview of BP thinking were undervalued in the Kenyan context.

While limitations could indicate the potential weaknesses of a study, this study takes the stand that limitations could lead to opportunities for future research. A major limitation of the study was the sample used in the research which focused mainly on BPAs. A study targeting top managers or HR practitioners could have provided an additional perspective on the critical competencies of the BPA. Additionally, despite the SA data being important for the study, qualitative data from SA based BPAs was limited to one interviewee. Future improvements could include interviewing additional SA based BPAs, top management and HR practitioners to obtain richer qualitative data. Future research could involve further analysis of the interventions that organizations implement to build their BPA competencies. The main aim of this is to describe those interventions that impact the requisite BPA competencies especially those competencies that were seen to be undervalued within the Kenyan context.

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