

Public procurement and competitiveness of women-owned businesses: a structural equation model (SEM) for gender-responsive procurement in Uganda

Received 20 February 2020
Revised 25 April 2020
Accepted 2 May 2020

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Abstract

Purpose – Several intergovernmental organizations claim that the involvement of women in public procurement has a direct impact on sustainable development and growth, especially in the developing world, yet we know very little of such claim. This study aims to empirically examine how public procurement can contribute to women empowerment by boosting the competitiveness of women-owned businesses (WOBs) in Uganda.

Design/methodology/approach – In this study, a cross-sectional survey method is used. Quantitative data were gathered from a sample of 371 respondents in Ministries, Departments and Agencies (MDAs) and a section of women entrepreneurs in Uganda's capital Kampala. From the literature review, six hypotheses were formulated and tested using structural equation modelling (SEM). A research model is developed and presented.

Findings – All hypotheses, except for one, were supported. Procurement policy had a significant influence on evaluation criteria, contract management and most importantly, on the competitiveness of WOBs. Within the procurement process, evaluation criteria had a significant influence on the competitiveness of WOBs, while the influence of contract management on competitiveness of WOBs was not statistically significant. We, therefore, concluded that public procurement can indeed enhance women empowerment through a gender-responsive procurement policy. Above all, pre-contract award interventions such as streamlining evaluation criteria to ease access of WOBs to public procurement contracts seem have the most significant impact to competitiveness of WOBs compared to post-ward interventions during contract management.

Originality/value – This study offers a research-based model that articulates the role of procurement policy as an enabler for competitiveness of WOBs in developing countries. The model proposes a combination of both policy (a direct influence) and interventions in the supplier selection process (an indirect influence) to boost the competitiveness of WOBs.

Keywords Public procurement, Developing countries, Supplier evaluation, Women empowerment, Gender-responsive procurement, Procurement policy

Paper type Research paper



1. Introduction

Public procurement has become an important tool to address the socio-economic challenges that women, veterans, minorities and persons with disabilities face in today's economy (Vyas-

Doorgapersad and Kinoti, 2015; Quinot, 2013; Preuss, 2011). It is therefore not uncommon that many public procurement frameworks in the developed and the developing world have preference schemes and set-aside policies to address the inequality and imbalances that exist in their social systems (Wright and Conley, 2018; Callerstig, 2014). In this paper, we draw attention to the inequality in access to public procurement opportunities by women-owned businesses (WOBs) in developing countries. Here we qualify a WOB using the definition of Basheka (2018) and Chin (2017) as an enterprise that is owned wholly or partially (at least 50%) by one or more women, and in some cases, where women or a woman is the principal signatory to the accounts of the company.

Preference schemes and set-aside policies are common in public procurement globally (Sennoga, 2006). They appear discriminatory and, therefore, in breach of the competition, equity and fairness principles, but in some cases, they are necessary. The principles of fairness and participation in particular are vital in addressing the issue of women empowerment through public procurement. These two principles infer that while the goal of public procurement is essentially the acquisition of goods and services for governments, it must also serve to undertake procurement to promote equal treatment of all interest groups in that process (Hawkins *et al.*, 2018). Unfortunately, very few governments predominantly in the developing world emphasize such a dual mandate in public procurement when it comes to the role of businesses owned and run by women (WOBs) to address unemployment and socio-economic inequality (Nyeck, 2016; Medina-Arnáiz, 2010).

In developing countries, it appears that set-aside public procurement policies for the youth, women and persons with disabilities have not really worked. In countries like Uganda and Kenya, this situation is attributed to the ambiguity in procurement laws, the purchase quantities of public organizations, bureaucracy and, specifically, WOBS' lack of capacity to execute such contracts (Korir, 2018; Basheka, 2018). We argue that these have a direct effect on access and therefore competitiveness of WOBS. These barriers, which are remediable through a robust procurement policy and target process interventions, limit the capacity of WOBS to participate in public procurement markets. Competitiveness here is seen as "a firm's ability to design, produce and or market products superior to those offered by competitors, considering the price and non-price qualities" (Ambastha and Momaya, 2004). The purpose of this paper, therefore, is to examine the role of public procurement policies in enabling the competitiveness of WOBS in developing countries.

With the exception of a handful of studies (e.g. McCrudden, 2004; Rasheed, 2004; Medina-Arnáiz, 2010; Callerstig, 2014; Nyeck, 2016; Basheka, 2018), there is limited understanding of how procurement can contribute to women empowerment and gender equality as its underlying social objective in the developing world. The dearth of empirical evidence to inform policies on women empowerment through public procurement further compounds this problem (Rimmer, 2017). This study, therefore, presents one of the first empirical assessments of the impact public procurement can have on women's empowerment initiatives in developing countries drawing empirical evidence from Uganda.

We specifically address the research question (RQ): What influence does procurement policy have on competitiveness of WOBS in developing countries like Uganda? By answering this RQ, we contribute a research-based model that offers a better understanding of how public procurement policies can engender women empowerment goals as a form of targeted social policy outcome. We are aware that developed countries like the USA (e.g. Bisceglie *et al.*, 2017), Spain (e.g. Medina-Arnáiz, 2010), Australia (e.g. McSorley, 2017) and Chile (Inostroza and Erogbogbo, 2017) already use procurement policy to reduce gender inequality, yet we know so little of what is happening in the developing world, hence this study.

The paper is organized as follows. The literature is reviewed and hypotheses developed in the next section, and thereafter, the methods section is presented. The results and discussion sections

follow. In the last sections of the paper is the conclusion and implications of for research and practice.

2. Literature review, hypotheses and conceptual model development

Literature is inundated with evidence of policy as a driver of public sector initiatives (e.g. Bolton, 2006; Quinot, 2013; Rogerson, 2018; McCrudden, 2004; Wright, 2015; Bisceglie *et al.*, 2017). Looking at the typical public procurement process, we see policy as the bedrock of the entire government procurement infrastructure: right from planning and user needs assessment, to supplier evaluation, to contract award and implementation (Morton *et al.*, 2013). Procurement policies, divided into structural and allocative types, naturally seek to standardize practices across the entire government procurement process (Snider and Rendon, 2008). Specifically, procurement policies apply to bind all employees of a public organization in any situation where they are involved in a procurement process, whether as users, purchasers or negotiators, or those who validate or authorize payments.

The most common examples of procurement policies include those on promotion of small and medium enterprises (SMEs), innovation among domestic industries, green public procurement for sustainable development and local sourcing policies, among others. The forward commitment procurement policy in the UK is for example a policy to stimulate innovation (Morton *et al.*, 2013). US's allocative policies for emergency and defense procurements are another example (Snider and Rendon, 2008). Another example is the Buy Uganda Build Uganda (BUBU) policy in Uganda, which aims to stimulate local industry development (Banya, 2018). Therefore, procurement policy, as Abutabenjeh *et al.* (2018) show, can have significant impact when targeted to desired outcomes. In the public procurement process, part of which we focus on, we demonstrate how a policy can be that mechanism for which a desired outcome is operationalized. With this background, we shall now review the literature to tease out the relationship between procurement policy and the two process variables, i.e. evaluation criteria and contract management, on the one hand, and competitiveness of WOBs as the desired outcome, on the other hand.

2.1 Procurement policy and evaluation criteria

There usually is a procurement policy in many government contracting organizations that specifies several criteria to be followed to determine the contractor or provider who is best suited to supply goods or contracts for services and civil works. The policy will spell out the generic criteria rather than the specific factors such as cost, delivery capacity, etc. often used in the determination of procurement outcomes (Chen, 2011). Taylor (2005) shows that a public procurement policy naturally provides for information asymmetry where the suppliers have relatively little information on the procurement in question, and therefore, selection decisions are more often skewed to price rather the quality. Igarashi *et al.* (2015) use lessons from the Norwegian public sector to show that a procurement policy on the implementation of green supplier programs often causes confusion if not well understood by public purchasers, but has the potential to achieve not just internal goals but drive green solutions from the market. Therefore, the following hypothesis is set forth:

H1. There is a relationship between a procurement policy and the evaluation criteria used in the public procurement process.

2.2 Procurement policy and contract management

There is a consensus in the literature that procurement policies regulate the entire pre-contract award process to simplify the post-contract award management of that contract, i.e. contract administration (Oluka and Basheka, 2014). The inherent goal of a procurement

policy, therefore, is to ensure that users receive goods, services or works that meet their functional needs and at the best possible cost to the procuring organization (Grandia and Meehan, 2017).

Rasheli (2016) shows that institutional policies that govern local government procurement in Tanzania have a direct effect on transaction cost, resulting into higher transaction costs in post-contract management stages than in the pre-contracting stages. Palmujoki *et al.* (2010) show that without a policy, the enforcement of green procurement obligations in public procurement can attract significant contractual penalties. From a survey among procurement practitioners in Uganda, Oluka and Basheka (2014) show that the absence of policy frameworks to govern the operational implementation of the post-contract award process often results in cost overruns, unreliable records and poor contract execution. Therefore, the following hypothesis is set forth:

H2. There is a relationship between a procurement policy and contract management.

2.3 Procurement policy and competitiveness of women-owned businesses

Governments globally use preferential and set-aside schemes in procurement to empower marginalized groups, particularly when targeted assistance through access to public tenders can improve their economic status in society (Ambe, 2019). For example, Ambe (2019) reports the positive impact of the black economic empowerment (BEE) policy in South Africa. Likewise, the empowerment of women through targeted procurement policy support has shown positive results in WOBs' competitiveness in countries like Chile (ITC International Trade Centre Report, 2014). Loosemore, Alkilani and Mathenge (2019) argue that inclusion and tapping of women potential in public procurement contracting creates a multiplier effect for others whose voice is absent in social discourse. Moreover, a public procurement policy that encourages SMEs and other minority-owned businesses to compete for public contracts enhances their capacity to be more active in trade and business (Combaz, 2018; Rimmer, 2017). In the long term, competitive WOBs have the capacity to provide products and services that meet the desired market quality at competitive prices and offer good returns on investment for the owners (Basheka, 2018). To test this premise, the following hypothesis is proposed:

H3. There is a relationship between a procurement policy and competitiveness of WOBs.

2.4 Evaluation criteria and contract management

The criteria set-out for assessment of prospective suppliers or service providers usually takes into consideration the life cycle of goods or service contract, including the end-of-life disposal of goods or services (Obicci *et al.*, 2018). This assertion shows that contract management is perhaps procurement's most complex sub-process because the contract management process is incomplete until the asset is disposed of or service terminated. This sub-process is preceded by the supplier selection stage, which uses a set of predetermined evaluation criteria to identify the most qualified supplier (Bergman and Lundberg, 2013).

From the time of award of the contract, the entity must develop a plan for proper execution of that contract by addressing transition, performance monitoring and ensuring that the supplier fulfills their contractual obligations (Brown *et al.*, 2012). In short, poorly formulated evaluation criteria will result in a wrong supplier, which makes contract management very problematic. Banaitiene and Banaitis (2006) found out that evaluation criteria have a positive impact on contract management. Jain *et al.* (2009) show evidence that good evaluation criteria translate to effective contract management, which is essentially about managing performance, relationships, changes in the contracts and managing disputes. Thus:

H4. There is a relationship between evaluation criteria and contract management.

2.5 Evaluation criteria and competitiveness of women-owned businesses

Evaluation criteria is a test of the supplier's technical capacity to deliver, should they be awarded the contract. From the supply side, it is a stable benchmark of business competitiveness. [Murigi \(2014\)](#) suggests that selection criteria have a direct relationship to the overall performance of suppliers, as 57.1% of procurement process performance is directly attributed to supplier evaluation and appraisal criteria. Capable suppliers are considered the most competitive and therefore pose lower business risk to government ([Mwikali and Kavale, 2012](#)).

[Korytárová et al. \(2015\)](#) suggest that financial qualification criteria are justified if used appropriately. The contracting entity, therefore, requires the fulfillment of those criteria, which are necessary to assess the ability of contractors to perform the contract. Best practice in public contracting demands that contracts are awarded only to contractors who meet certain qualification criteria for participation in tenders. In the case of WOBs, tailoring the selection criteria to a specific group for which competition can occur among peers still generates healthy competition as well as value for money for the public ([Wright and Conley, 2018](#)). Conversely, the more complex the evaluation criteria, the more the SMEs fall out of competition and hence the lost opportunities. Therefore, the following hypothesis is set forth:

H5. There is a relationship between evaluation criteria and competitiveness of WOBs.

2.6 Contract management and competitiveness of women-owned businesses

Effective contract management is largely defined by the process that creates those contracts particularly in organizations that have mature contract management processes ([Rendon, 2015](#)).

Following the contract award decision, suppliers are contractually required to mobilize their resources to fulfil the contracts' obligations. For SMEs and other disadvantaged groups, which have a limited understanding of the bureaucracy of government, the demands of public contracts can be overwhelming ([Obanda, 2017](#)). [Ernita and Greitens \(2012\)](#) suggest that complexity may vary from simple equipment or personnel restrictions to more complex expectations regarding the frequency of milestones and deliverables to be met.

Most WOBs, like most SMEs, are often young and loosely structured, so high transaction costs make it difficult to compete ([Uwonda and Okello, 2015](#)). Yet also the process of managing contracts can provide incentives for companies to develop innovative solutions to societal issues ([Morton et al., 2013](#)). This is why [Raven and Le \(2015\)](#) propose capacity-building and training of women entrepreneurs to improve their competitiveness in highly competitive public procurement markets. Following the reviewed literature, we hypothesize that:

H6. There is a relationship between contract management and competitiveness of WOBs.

2.7 Summary and conceptual model

[Figure 1](#) displays the conceptual model for this paper. The underlying postulation of this four-dimensional model is that public procurement has the potential to reposition the discourse on women empowerment on the basis of a policy change toward gender-smart procurement. The literature (e.g. [Basheka, 2018](#); [McSorley, 2017](#); [Rimmer, 2017](#); [Medina-Arnáiz, 2010](#)) and professional reports (e.g. [WEF's Gender Gap Report, 2014](#); [ITC report, 2014](#); [Chin, 2017](#); [World Bank Report, 2012](#)) support this position. Gender-responsive public procurement requires policies that facilitate WOBs to build internal capacity for long-term growth and can ably compete for public tenders ([Callerstig, 2014](#); [Quinot, 2013](#); [Wright and Conley, 2018](#)). Here, we elected to focus on the two most critical dimensions of the

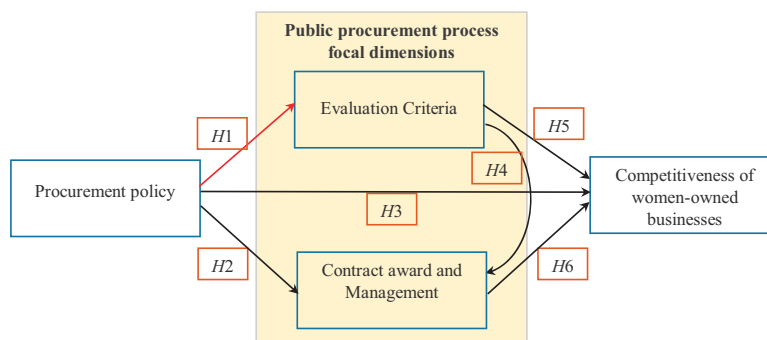


Figure 1.
The conceptual model

procurement process, i.e. the supplier evaluation criteria and contract management. These two together have the highest impact on the procurement performance and the capacity of a supplier to see through a contract (Oluka and Basheka, 2014).

3. Methodology

This is a quantitative study in which we focus primarily on the evaluation or qualification criteria, contract management and their role in ensuring fairness of competitiveness of WOBs in Uganda. A cross-sectional survey research method was used. This survey-based research design allows for data collection from a given study population and subsequently facilitates making inferences about that population at each point in time (Basheka *et al.*, 2010). In addition, we were able to measure multiple factors and therefore carry out a more in-depth examination of underlying relationships. To understand the relationship among latent variables, the questionnaire approach and structural equation modeling (SEM) using Amos v21.0 were adopted. The questionnaire was designed in way that the indicator questions reflect the change in the construct. Based on literature review, five hypotheses were formulated. Using experience, a conceptual model was developed for the formulated hypotheses to analyze the relationship between a procurement policy and women competitiveness.

3.1 Research setting

This paper draws empirical data from the public sector in Uganda. The got-to document on women empowerment initiatives in Uganda is the National Gender Policy of 1997, amended in 2007. This policy established voice to women-driven initiatives across all spheres of society, including in economic activities such as procurement and supply markets. The BUBU policy is meant to encourage local content purchasing initiatives (Banya, 2018). This policy targets 20% of all government spends is toward locally made products. Together, these two policies should encourage WOBs participation in public procurement, yet there is no known assessment if these two policies have had any meaningful impact on women empowerment in Uganda in general or among WOBs specifically.

The other policy framework that addresses the question of WOBs is the Public Procurement and Disposal of Public Assets (PPDA) Act of 2003, whose recent 2014 amendments considered preferential schemes for specific interest groups (Basheka, 2018). These included preference and reserve schemes for locally made goods and local contractors, the use of local expertise and materials, promotion of participation of local communities and local organizations and the application of local technologies. Still these legislations have not had much of an impact. WOBs' involvement in public procurement remains low, and one can argue that the public procurement market in Uganda is generally skewed toward men-owned

and men-run businesses (Basheka, 2018). The central and local government procurement regulations, which operationalize the PPDA Act, provide few incentives for procurement officers to implement preference schemes for WOBs (Ssennoga, 2006; Basheka, 2018). Therefore, a clear understanding of the extent to which procurement policy influences competitiveness of WOBs is needed. This result shall provide knowledge on the importance of WOBs access to government contracts and the effect of that on the social-economic development of developing countries like Uganda.

3.2 Sampling, data collection and analysis

3.2.1 Data collection. Prior to the survey, a pilot study was carried out to test the suitability of the data collection tool in terms of language and clarity. Upon designing the final data collection tool, data were collected using a questionnaire from the executive leadership of the Uganda Women Entrepreneurs' Association (UWEA) and within four government Ministries, Departments and Agencies (MDAs) in Kampala Uganda.

Overall, 371 self-administered questionnaires were distributed, of which 207 were returned, giving a response rate of 55.8%. Respondents were asked their opinion on 26 items that were established to understand the factors influencing competition among women-owned enterprises. They were asked to rank the variables according to a five-point Likert scale (where 1 = strongly disagree; 2 = disagree, 3 = Not sure; 4 = agree, and 5 = strongly agree). The 26 items are shown in the questionnaire.

The scope of the study was narrowed to Uganda for a number of reasons, but primarily because Uganda is one of the few developing countries where women empowerment through business has been strongly encouraged to reduce poverty and unemployment challenges the country faces today (ITC International Trade Centre Report, 2014). The respondents understood that the general purpose of the research was to examine the relationship between procurement policies and women competitiveness. They were also made aware that their participation in the survey was voluntary. The questionnaires were self-administered with the support of a research assistant. When the respondents finished, they placed their questionnaires in a large collection envelope per organization as a means of further ensuring their anonymity.

3.2.2 Data analysis. We subjected the data to confirmatory factor analysis to establish content validity of the *a priori* dimensions. Second, we used correlation analysis to test the six hypotheses concerning the relationships of the factors to procurement policy, evaluation criteria, contract management and competitiveness. Support for these hypotheses provided evidence of validity for the instrument, in the sense that the dimensions identified showed essentially the same relationship to the dependent variables of interest. According to Bailey (1982), construct validity exists when different indices (in this case, dimensions) show the same relationship to other measures as one would expect, based on the theory in which they appear.

Later, SEM was used. SEM is a multivariate statistical technique used to study multiple variables, mostly applied in econometrics because of its ability to account for measurement errors both in latent and observed variables (Shi *et al.*, 2016). Moreover, SEM has a capacity to discover the underlying relationship under complex model systematically. SEM has two components: confirmatory factor analysis (CFA) and structural analysis. CFA shows how latent variables are measured and represented by observed variables. While, SEM establishes the path coefficients/regressions among the variables. In this study, SEM was used to examine the relationships between latent variables, procurement policy, contract management, evaluation criteria and business competitiveness.

4. Results

The survey results show that slightly more women-owned businesses employed below 20 employees (51%), while those that employ more than 20 employees represent 49%. The implication is that most women businesses are SMEs, with limited resources to finance relatively big procurement opportunities. Regarding the number of years the businesses had been in business, it was revealed that 35% of the businesses had been in existence for between one and five years, while those between six and ten years represented 26%; those over ten years were 30, and 9% were those that had been in business for under one year. The implication among the respondents is that the majority survive beyond the first five years. The finding was earlier supported by [Basheka \(2018\)](#).

A total of 187 women and 20 men who represented a wide range of positions within their organizations, tenures and ages participated in this study. The participants' ages varied from 18 to over 61 years, and most of the women were in the Central Business District of Kampala ([Table 1](#)).

4.1 Reliability test

Reliability shows the ability of a research tool to reproduce consistent results under different environment. Cronbach's alpha was applied to evaluate the appropriateness of the data. All the four latent factors had a Cronbach's alpha greater than 0.7 ([Table 2](#)). In addition, the inter-item correlations for the items were between 0.3 and 0.6. This indicates that the data have sufficient internal consistency reliability. The measure of overall reliability of heterogeneous but similar items, composite reliability (CR), shows that all the factors are above 0.7. Cronbach's alpha was applied to evaluate the appropriateness of the data. All the four latent factors had Cronbach's alpha greater than 0.6: the overall alpha for the four latent variables was 0.897 ([Table 2](#)). Thus, the internal consistency of the data is sufficient for further analysis.

4.2 Validity

Validity shows the extent to which the results measure the claim. KMO, a measure of sampling adequacy, is 0.847, and all the extracted communalities are above 0.30. The four-factor model explained 59% of the variance. All the retained factors elicited a strong loading – greater than 0.50, [Table 2](#). Also, from [Table 2](#) (component correlation), all the non-diagonal values are less than 0.50; thus, there is no strong sharing of the variance among items. For discriminant validity, average variance explained (AVE) was conducted; an AVE of 0.5 and above is recommended; [Table 2](#) summarizes the AVE values. Although one factor elicited an

	Item	Frequency	%
Gender	Male	20	9.7
	Female	187	90.3
Age	18–29	66	31.9
	30–39	71	34.3
	40–49	47	22.7
	50–59	18	8.7
	60+	5	2.4
Education	Secondary education	37	17.9
	Diploma	51	24.6
	Bachelor's degree	85	41.1
	Master's degree	22	10.6
	PhD	12	5.8

Table 1.
Demographic structure
of the sample size

	Factor				Gender-responsive procurement
	1	1	3	4	
PP1		0.647			
PP2		0.732			
PP3		0.896			
PP4		0.805			
CM1					0.703
CM2					0.691
CM3					0.571
CM4					0.820
EC1	0.654				
EC2	0.804				
EC3	0.778				
EC4	0.772				
EC5	0.746				
EC6	0.666				
C2			0.511		
C3			0.624		
C4			0.769		
C5			0.770		
CA	0.804	0.72	0.831		0.774
Eigen	30.8	11.0	9.1		7.7
AVE	0.55	0.60	0.46		0.50
CR	0.77	0.86	0.77		0.72
Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy					0.847

Component correlation matrix				
	1	2	3	4
1	1.000	0.443	0.402	0.294
2	0.443	1.00	0.354	0.182
3	0.402	0.354	1.00	0.140
4	0.294	0.182	0.140	1.000

Note(s): 1: Evaluation criteria (EC), 2: Competitiveness (C), 3: Procurement policy (PP), 4: Contract management (CM), CA: Cronbach's alpha, AVE: Average variance explained, CR: Composite reliability

Table 2. Reliability and validity test

AVE of 0.46, no further improvement was made in terms of deleting the items with low loading. However, CFA was conducted to ensure the suitability; Table 3 elicits that all the diagonal values were higher than the inter-correlation constructs.

4.3 Goodness of fit

The appropriateness of the hypothesized model was evaluated based on the goodness-of-fit (GOF) indices using IBM AMOS v21.0 software. From Table 4, some of the GOF indices did

	Proc_P	Eval_C	Comp	Cont_M
Proc_P	0.634			
Eval_C	0.563	0.623		
Comp	0.601	0.539	0.630	
Cont_M	0.428	0.420	0.405	0.487

Table 3. Inter-construct correlations

not meet the required levels. For example, comparative fit index (CFI) – 0.914, Tucker–Lewis index (TLI) – 0.898 and goodness-of-fit index (GFI) – 0.898. Therefore, the hypothesized model had to be refined to meet the GOF measures.

To improve the GOF indices, modifications were made based on AMOS modification indices. This was done by adding error-covariance paths among the errors variables. After modification, the recommended GOF indices were satisfied. For example, after modification – χ^2/df was 1.293, while RMSEA was 0.038 and GFI was 0.924. This suggests that the model and the data are acceptable, and the hypothetical model fits the sample with high level of confidence. Albeit the modifications parameter were based on SEM suggestions, the modifications are practically plausible. The findings are justified because the interaction between procurement and competitiveness is a complex pillar where different variables can easily interact with each other.

From Table 5, the standard regression path coefficients are positive and significant at the 0.05 level; thus, the observed and latent variable relationship is significant. In addition, the evaluation criteria variable has the highest factor loading; thus, Eval-C has the greatest influence on women competitiveness.

Figure 2 shows the interaction and path coefficients among latent variables – these paths were estimated using regression analysis under the SEM model. Table 6 summarizes the coefficients. Based on the R^2 values of the model, 48% of the total variability in competitiveness is explained by the model. Except one, all the path coefficients were positive and significant at $p < 0.05$. Of the six hypotheses, *H1, H2, H3, H4* and *H5* were supported by the collected data. The significance of the indirect effect was analyzed using bootstrapping at 2,000 levels and at a bias-corrected confidence interval of 90 – Table 4 summarizes the three indirect effects.

GOF fit	Criteria	Hypothetical	Revised	Reference
GFI	>0.90	0.898	0.924	Hair <i>et al.</i> (2010)
TLI	>0.95	0.898	0.961	Hair <i>et al.</i> (2010)
IFI	>0.95	0.916	0.969	Hair <i>et al.</i> (2010)
PGFI	>0.50	0.678	0.675	Shi <i>et al.</i> (2016)
RMSEA	<0.07	0.061	0.038	Steiger (2007)
CFI	>0.95	0.914	0.968	Hair <i>et al.</i> (2010)
NFI	>0.80	0.825	0.876	Hooper <i>et al.</i> (2008)

Table 4. GOF measurements **Note(s):** IFI: Incremental fit index, PGFI: Parsimony goodness-of-fit index, RMSEA: Root mean square error of approximation, CFI: Comparative fit index, NFI: Normed-fit index

Path	Estimate	<i>p</i>	Path	Estimate	<i>p</i>
C2 ← Comp	0.573	***	PP4 ← Proc_P	0.728	***
C3 ← Comp	0.752	***	PP3 ← Proc_P	0.795	***
C4 ← Comp	0.721	***	PP2 ← Proc_P	0.723	***
C5 ← Comp	0.649	***	PP1 ← Proc_P	0.578	***
EC5 ← Eval_C	0.662	***	CM1 ← Cont_M	0.271	***
EC4 ← Eval_C	0.741	***	CM2 ← Cont_M	0.551	0.003
EC3 ← Eval_C	0.670	***	CM3 ← Cont_M	0.605	0.003
EC2 ← Eval_C	0.694	***	CM4 ← Cont_M	0.430	0.006
EC1 ← Eval_C	0.590	***			
EC6 ← Eval_C	0.653	***			

Table 5. Standardized regression weights **Note(s):** *** represents a significance level of $p < 0.001$

5. Discussion

5.1 Procurement policy and the latent variables

The findings confirm the strategic importance of procurement policy toward the competitiveness of WOBs. They demonstrate that a procurement policy is a cardinal variable that positively influences performance of other variables studied. Proc-P positively influences competitiveness – path coefficient, 0.350; Eval-C – path coefficient, 0.490; and Cont-M – path coefficient, 0.400. These results are supported by [Preuss \(2011\)](#) and [Knight et al. \(2012\)](#) which show that well-established procurement systems with adequate policy frameworks tend to enhance supplier selection processes and foster business development in the long term. The work of [Hsu et al. \(2013\)](#), [Lember et al. \(2011\)](#) and [Nijaki and Worrel \(2012\)](#) further confirms this evidence where the use policy to standardize procurement procedures makes it easier for suppliers to submit competitive and responsive bids.

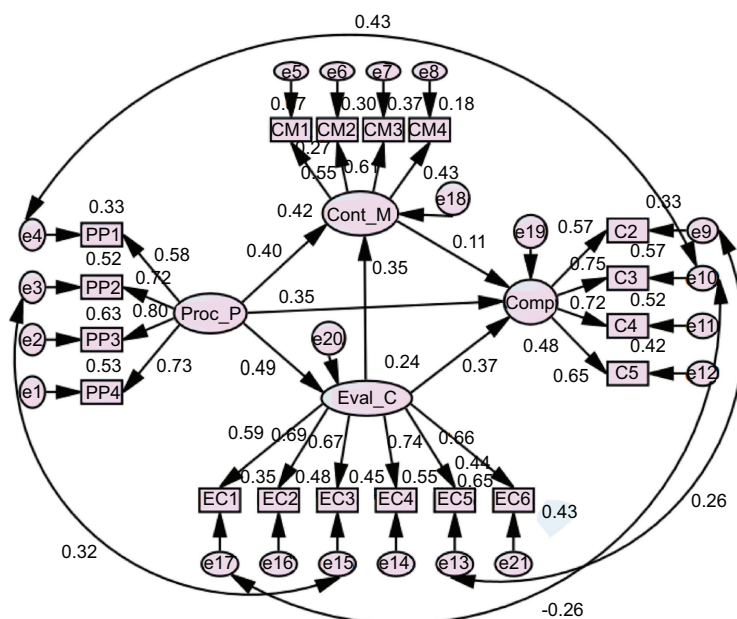


Figure 2. The final SEM model

Hypothesis	Path	Effect	<i>p</i>	
H1	Eval-C ← Proc-P	0.486	***	Supported
H2	Cont-M ← Proc-P	0.404	0.015	Supported
H3	Comp ← Proc-P	0.346	0.002	Supported
H4	Cont-M ← Eval-C	0.347	0.023	Supported
H5	Comp ← Eval-C	0.372	***	Supported
H6	Comp ← Cont-M	0.109	0.414	Rejected
	Comp ← Cont-M ← Proc-P	0.044	0.068	
	Comp ← Eval-C ← Proc-P	0.181	0.001	
	Comp ← Cont-M ← Eval-C ← Proc-P	0.019	0.225	

Note(s): *** represents a significance level of $p < 0.001$

Table 6. Hypotheses results

Specifically for WOBs, targeted procurement policies that involve underprivileged groups make procurement socially responsive while improving social and economic stability among the policy favored groups (Rimmer, 2017; Furneaux and Barraket, 2014). The findings further illustrate that government willingness to improve the WOBs participation in the procurement activities is a symbol of commitment toward gender equality in procurement markets that are largely male dominated. The impact of such policy is equitable growth, fairly equal economic outcomes and better employment opportunities for women (Combaz, 2018; Chin, 2017).

Although reservation procurement policies simplify the evaluation criteria for the award of a contract, in the end, it is the capacity of WOBs that will determine their technical ability to see through the contract, hence repeat business. Thus, the view that policy is only a facilitator of WOBs' competitiveness, and therefore, fair competition for contracts is, in fact, a direct enabler for WOBs' competitiveness (Grandia and Meehan, 2017). Rather than set-aside methods that ringfence certain contracts to WOBs, hence less competition, a procurement policy can regulate how public contracts are executed, e.g. through piggyback contracts and or unbundling the procurement categories to pool WOBs and other special interest groups together with the traditionally stronger suppliers (Obanda, 2017; Chin, 2017). Moreover, a procurement policy can facilitate WOBs' competitiveness through training and capacity-building and ease access to finance interventions for those special interest groups (Raven and Le, 2015).

5.2 Evaluation criteria and competitiveness

The findings show that the evaluation criteria, Eval-C, has a significant influence on contract management, cont-M – path coefficient 0.350 and on competitiveness – path coefficient 0.370. First, this finding agrees with Bergman and Lundberg (2013) that the effectiveness of supplier selection decisions and how contractors deliver on public services depend solely on the robustness of evaluation criteria purchasers use to award public contracts. The finding further demonstrates and concurs with Banaitiene, and Banaitis (2006) that quantitative evaluation measures, such as price, alone tend to ignore the qualitative aspects of a suppliers and therefore is not fair to firms that lack a strong financial bids: it limits their capacity to compete effectively. Basheka (2018) shows that WOBs that naturally tend to have socially grounded solutions shy away from the procurement process because their pricing structure does not match the normal market conditions. Here we see that that the use of value-added tax registration, income tax clearance, valid trading licenses, current and past contracts (EC1) for the evaluation of WOBs for public contracts had a factor loading, 0.590**. Martinsuo and Poskela (2011) recommend the adaptation of evaluation criteria to the objectives the procurement. In addition, evaluating the business using past experience significantly affects the competitiveness of that business (EC3 = 0. 670**). In Uganda, most of the WOBs are fairly inexperienced in the public contracting. Therefore, evaluating them based on experience of their past contracts cannot make them competitive compared to other traditional businesses. Chuang and Huang (2018) propose corporate social responsibility as new way of assessing the competitiveness of such businesses. They suggest assessment based on community activities and introducing environmental criteria would create a fair level the ground for WOBs and other groups of such kind.

5.3 Contract management and the latent variables

The findings have shown that contract management, Cont-M, is influenced both by evaluation criteria, Eval-C (path coefficient, 0.350), and procurement policy, Proc-P (path coefficient 0.40); however, contract management does not significantly influence competitiveness – path coefficient 0.109. This is a significant result about the public procurement process design. It agrees with Garrett and Rendon's (2015) view that effective

contracts management depends on the processes used to create those contracts. This gives credibility to the view that supplier selection decisions and the quality of evaluation criteria used by public purchasers have a strong chance of influencing competitiveness of WOBs than the contract management processes which many procurement systems tend to focus on most (Martinsuo and Poskela, 2011; Banaitiene, and Banaitis, 2006)

This finding differs from Oluka and Basheka (2014), who show that intricacies of contracts' implementation keep many businesses away from participating in public procurement. In fact, like Obanda (2017) says, paying very close attention to the supplier selection criteria offers more benefits to small businesses than what happens when the contract has been awarded.

Thus, the environment in which WOBs operate which demands mature contract management processes in place increases operating costs of these business and that affects their competitiveness in the long term (Uwonda and Okello, 2015). It is, therefore, important to find new methods within the public procurement that streamline the earlier involvement of WOBs in public contracts, e.g. training and capacity-building (Raven and Le, 2015), easier access to information through earlier involvement (Chin, 2017), direct interventions (Sennoga, 2006) and developing gender-sensitive evaluation criteria (McSorley, 2017). Compared to post-contract initiatives, such pre-award interventions have a more direct impact on WOBs' competitiveness.

6. Conclusion

It is without doubt now that public procurement policy has significant influence on the competitiveness of women-owned businesses. We postulated that public procurement had enormous power to positively reduce gender inequalities in most developing countries. This, we argued would give more socio-economic power to women as one among the many disadvantaged groups and drive sustainable development in the longer term.

Based on a review of the literature, we argued that a procurement policy, which was operationalized through two key procurement process variables, i.e. evaluation criteria and contract management, should have some level of influence on the competitiveness of businesses owned and or management by women, WOBs. The hypotheses tested were all significant except for one which tested the relationship between contracts management and competitiveness.

We conclude that the effect of procurement policy interventions alone on competitiveness of WOBs is important but not very significant unless combined and embedded in process interventions such as the design and development of gender-response evaluation criteria. This can be summarized using the following equation:

$$\Delta\text{Competitiveness} = 0.35 \times \text{Proc} - P + (0.49 + 0.18) \times \text{Eval} - C + 0.044 \times \text{Cont} - M$$

In the above equation, the first component refers to direct effects from procurement policy factors, and the last two components refer to the indirect effects from other variables. It is reasonable to conclude that the public procurement generally has a social responsibility to contribute to women emancipation and sustainable development, and that can be achieved either directly through policy (Proc-P) or even indirectly through adjustment in the selection criteria (Eval-C) during the actual process execution.

7. Implications of the study to practice and research

7.1 Implications for practice

First and foremost, these research findings generally confirm the socio-economic potential of public procurement, especially in developing countries where public procurement still

constitutes a significant percentage of their gross domestic products (GDPs). Here are three takeaways for practitioners.

A procurement policy has direct effect on the competitiveness of WOBs. An appropriate procurement policy is the most important cogwheel in streamlining the contracting process where WOBs can actively compete. We have demonstrated to the developing world with the case of Uganda. It appears from other cases in the USA, Chile, Spain and Australia that such a gender-responsive procurement policy has to be even more concrete and specific to aspects like: gender-balanced composition of the procurement team, WOB certification programs, set-aside contracts and purchase categories where only WOBs can participate, develop procurement methods for gender sensitive, etc. Most policies wrongfully assume that reservation schemes targeting SMEs benefit WOBs by proxy.

It is also clear that the development of gender-responsive award criteria is much more important to WOBs than post-award interventions. Post-award interventions such as the number of women employed by the successful firm appears to not have big impact than if a WOB won the contract. Evaluation criteria in the tender documents must explicitly attach weight to business ownership often stated in bid bonds, technical capacity and equipment ownership. Even the composition of supplier selection committee members should demonstrate equality of in gender roles.

Moreover, tailoring evaluation criteria to the nature and challenges of WOBs can improve their procurement capacity and experience to bid for government contracts. WOBs are often smaller, and likely to be home-based, than traditional businesses and those owned by men. [Rimmer \(2017\)](#) argue that it can be costly for WOBs to implement complex trade procedures and rules demanded by public procurement markets. Therefore, providing WOBs to piggyback in large-scale contracts can build their experience to compete for public contracts. Alternatively, allow the use of group procurements (consortia-based purchasing) where small WOBs can pool resources and experience and compete for large projects as one company. This increases their supply capacity and reduces their operational costs to execute even long-term contracts.

7.2 Implications for research

From a research perspective, this study presents many opportunities for theory testing, theory elaboration and theory extension of the gender-responsive procurement construct. In particular, the assumption about the boundaries and performance distinctions between WOBs and the male-owned businesses. How important (and relevant) is the distinction between WOBs and male-owned business in public procurement? In addition, in the study, we focus on only two variables, i.e. the supplier selection criteria and contract management. A typical procurement has over eight procurement subprocess process variables. Future studies could broaden the study and consider other procurement process variables besides those studied here.

This study is not without limitations. First, some caution is necessary for generalization of the findings, as data come from WOBs in Kampala city, which is just one of the local governments within the big central government system of MDAs. This institutional context may limit generalization. This also applies to the use of the developing country context as well. Secondly, the hypothesis is tested by self-questionnaire data (as the only basis for data collection). The validity of such data may be influenced by possible difficulty in the respondents' understanding of the questions and their willingness to respond to these questions. However, the researchers undertook diligent measures to ensure that these limitations do not affect the quality of the study by undertaking validity and reliability tests, whose results were presented.

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