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FACTORS INFLUENCING THE PARTICIPATION OF SMALL AND MEDIUM ENTERPRISES IN PUBLIC PROCUREMENT IN TANZANIA: A CASE OF UBUNGO MUNICIPALITY

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Abstract: **Public procurement offers commercial opportunities to small and medium enterprises (SMEs), yet participation may be constrained by their financial and technical capabilities and access to tender information. This study examined the relationships between financial strength, technical tendering skills, access to tendering information and SME participation in public procurement in Ubungo Municipality, Tanzania. Guided by Dynamic Capabilities Theory, a quantitative cross-sectional survey was conducted among SME owners and managers. From an eligible population of 692, 253 respondents were selected through proportionate stratified random sampling; 200 usable questionnaires were analysed (effective response rate: 79.1%). Data were processed using IBM SPSS Statistics version 27, with descriptive statistics, Pearson correlations and multiple linear regression. All three factors were positively associated with SME participation and remained significant in the combined model ($p < 0.001$). Information access had the largest standardised coefficient ($\beta = 0.324$), followed by technical tendering skills ($\beta = 0.299$) and financial strength ($\beta = 0.291$). The model explained 42.1% of the variation in participation ($R^2 = 0.421$). These results provide municipality-specific evidence that information access and complementary firm capabilities are jointly relevant to procurement participation. The study recommends accessible electronic tender information, practical bidding training and stronger financial preparedness. Causal claims are not warranted by the cross-sectional, self-reported data.**

Keywords: **Small and medium enterprises; public procurement; financial strength; tendering skills; tendering information; dynamic capabilities; Tanzania.**

I. INTRODUCTION

Small and medium enterprises (SMEs) can benefit from government contracting, but access to a formally open procurement market does not guarantee that a firm can compete. Bid preparation entails costs, compliance with technical requirements, timely discovery of opportunities and the ability to finance delivery. International research has documented the importance of procurement design, bidding costs and institutional conditions for SME participation [1], [2], [3]. Alongside those system-level factors, enterprises require resources and capabilities with which to respond to opportunities.

Tanzanian studies suggest that such capabilities merit closer examination. Israel and Mwenda [4] identified the relevance of technological and market-sensing capabilities, with financial capability shaping their use; Athumani et al. [5] linked financial and tendering capabilities to participation among special groups. Research on tendering competence indicates that procedural knowledge influences bidding activity [6], while evidence on procurement-opportunity access [7] and electronic tendering [8] points to the increasing importance of information and digital skills. Under Tanzania's Public Procurement Act, 2023 [9] and the National Electronic Procurement System of Tanzania (NeST) guidelines [10], firms must navigate both formal requirements and electronic information flows.

However, evidence from other districts, special groups and sector-specific procurement settings does not establish how three particular firm capabilities—financial strength, technical tendering skills and access to tendering information—relate jointly to procurement participation among SME owners and managers in Ubungo Municipality. The present study addresses this local evidence gap by estimating their associations within one three-predictor model rather than considering information access in isolation.

The study examined three objectives: (i) the relationship between financial strength and SME participation; (ii) the relationship between technical tendering skills and SME participation; and (iii) the relationship between access to tendering information and SME participation. Corresponding positive predictive hypotheses (H1–H3) were evaluated at the 5% significance level. Because the study is cross-sectional, the term "predictor" denotes a statistical relationship and not an established causal mechanism.

II. THEORETICAL BASIS AND RELATED EVIDENCE

A. Dynamic Capabilities Theory

Dynamic Capabilities Theory, formulated by Teece, Pisano and Shuen [11], explains how firms identify opportunities, mobilise resources and adapt their capabilities as environmental conditions change. Akenroye et al. [12] applied this perspective to SMEs in public procurement. In the present study, access to tendering information was considered a manifestation of sensing (recognising relevant tenders); technical tendering skills reflected seizing (preparing an adequate response); and financial strength represented resource mobilisation and reconfiguration (meeting bidding and contract commitments). This mapping provides an interpretive framework rather than a direct test of each dynamic-capability process.

The theory helps connect the three factors: an enterprise may have finance and competent staff yet fail to bid without timely information, while access to a tender notice may be insufficient without the skills or working capital needed for a compliant submission. Institutional arrangements including payment practices and tender packaging—also affect participation, but were not independent variables in the present model.

B. Empirical evidence and the study contribution

In Tanzanian SME research, Israel and Mwenda [4] treated financial capability as a moderator, whereas the present study tested financial strength as a direct predictor. Findings among special groups [5], and wider evidence on bidding costs [2], likewise suggest that resource availability matters. Evidence from European firms [13] cautions against assuming that public contracts themselves remove financing constraints. For technical skills, Flynn and Davis [6] associated procedural tendering capability with bidding activity, while Aron et al. [8] highlighted the continuing relevance of training and ICT capacity to electronic procurement.

Access to opportunities and information has also been linked to participation in Tanzania [7] and to effective bidding processes among SMEs in Zambia [14]. These studies are not interchangeable: they differ in population, institutional setting and measurement. The present study adds evidence from a municipal SME sample and compares the three capabilities within one model, while recognising that its results do not identify the separate effects of individual information-access items.

III. RESEARCH METHODOLOGY

A. Design, population and sampling

The study adopted a positivist philosophy and a quantitative cross-sectional survey design. The study population was 692 eligible SME owners and managers listed in a 2024 administrative sampling frame for Ubungo Municipality; the frame comprised registered enterprises that had participated in public procurement or had formally expressed an intention to do

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so. Respondents were selected through proportionate stratified random sampling across goods, services and works categories [15]. The required sample of 253 was estimated using Yamane's finite-population formula [16] at a stated 5% precision level.

Structured, self-administered questionnaires were distributed using a drop-and-pick approach. Of 253 questionnaires distributed, 213 were returned (84.2%); 13 returned questionnaires were unusable, leaving 200 responses for analysis (79.1% of those distributed). Among analysed respondents, 56.0% were male and 44.0% female; services accounted for 45.0% of SMEs, goods 32.0% and works 23.0%. The sample reflects the eligible municipal frame, not all enterprises in Ubungo.

B. Measurement, instrument quality and analytical approach

The questionnaire covered financial strength (FS), technical tendering skills (TTS), access to tendering information (ATI) and SME participation in public procurement (SMEPP). Each construct comprised six five-point Likert items. Content and face validity were addressed through literature-informed item preparation, expert review and pilot testing. Exploratory factor analysis employed principal axis factoring with Varimax rotation. The overall Kaiser–Meyer–Olkin value was 0.941, and Bartlett's test was significant, $\chi^2(276) = 4298.143$, $p < 0.001$. Factor loadings were reported as acceptable, and Cronbach's alpha ranged from 0.924 to 0.953 across the four scales. These checks support instrument quality but do not eliminate possible response or common-method biases [17].

Analyses were performed using IBM SPSS Statistics version 27. Means and standard deviations summarised construct scores; Pearson correlations assessed bivariate associations; and multiple linear regression estimated each predictor's statistical association with SMEPP while adjusting for the other two [18]. The fitted model was $SMEPP = \beta_0 + \beta_1 FS + \beta_2 TTS + \beta_3 ATI + \varepsilon$. Normality, linearity, homoscedasticity, residual independence, multicollinearity and influential observations were assessed before interpreting the regression. Participant consent, anonymity and confidential processing were reported in the dissertation.

IV. RESULTS

A. Descriptive statistics and measurement reliability

The mean scores for the four constructs clustered near the midpoint of the five-point scale (Table I). Technical tendering skills had the highest predictor mean, while access to tendering information had the lowest; these small differences do not, by themselves, measure the importance of the predictors. SME participation displayed the greatest variation in responses. Each multi-item scale exceeded the stated minimum reliability threshold.

TABLE I: DESCRIPTIVE STATISTICS AND SCALE RELIABILITY

Construct	N	Mean	SD	Cronbach's α
Financial strength (FS)	200	3.08	0.987	0.939
Technical tendering skills (TTS)	200	3.14	0.967	0.924
Access to tendering information (ATI)	200	3.04	0.996	0.949
SME procurement participation (SMEPP)	200	3.05	1.133	0.953

Note. Each score derives from six five-point questionnaire items. Source: dissertation field data (2026).

B. Pearson correlation analysis

All three capabilities were positively and significantly correlated with SME participation (Table II). ATI showed the largest bivariate association ($r = 0.498$), followed by TTS ($r = 0.441$) and FS ($r = 0.439$), each $p < 0.001$. Correlations among the explanatory variables were comparatively smaller, supporting their examination as related but distinct constructs in the combined regression.

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TABLE II: PEARSON CORRELATION MATRIX

Variable	SMEPP	FS	TTS	ATI
SMEPP	1.000	—	—	—
FS	0.439**	1.000	—	—
TTS	0.441**	0.168*	1.000	—
ATI	0.498**	0.303**	0.285**	1.000

Note. N = 200; ** p < 0.01, * p < 0.05 (two-tailed). Abbreviations are defined in Table I. Source: dissertation field data (2026).

C. Multiple regression and hypothesis testing

The overall three-predictor regression model was statistically significant, $F(3, 196) = 47.491$, $p < 0.001$, with $R = 0.649$, $R^2 = 0.421$ and adjusted $R^2 = 0.412$. Therefore, financial strength, technical tendering skills and access to tendering information jointly accounted for 42.1% of the observed variation in SMEPP. The remaining 57.9% was not accounted for by these predictors. The standard error of estimate was 0.869 and the Durbin–Watson statistic was 1.923. These are statistics for the full model, not an ATI-only regression.

All three explanatory variables retained positive and statistically significant coefficients when estimated simultaneously (Table III). ATI had the largest standardised coefficient ($\beta = 0.324$), followed by TTS ($\beta = 0.299$) and FS ($\beta = 0.291$). The differences in coefficient size describe their ordering in this sample; no formal test comparing those coefficients was reported. The three directional hypotheses were supported by the reported regression tests.

TABLE III: MULTIPLE LINEAR REGRESSION COEFFICIENTS FOR SME PARTICIPATION

Predictor	B	SE	β	t	p
Intercept	−0.195	0.281	—	−0.696	0.488
FS	0.333	0.066	0.291	5.075	< 0.001
TTS	0.351	0.067	0.299	5.259	< 0.001
ATI	0.369	0.067	0.324	5.505	< 0.001

Note. Dependent variable: SMEPP; N = 200. Full model: $R^2 = 0.421$; adjusted $R^2 = 0.412$; $F(3, 196) = 47.491$, $p < 0.001$. B = unstandardised coefficient; β = standardised coefficient. Source: dissertation field data (2026).

In unstandardised terms, a one-point higher FS score was associated with an estimated 0.333-point higher SMEPP score, controlling for TTS and ATI. The corresponding conditional differences were 0.351 points for TTS and 0.369 points for ATI. These estimates represent differences associated with the observed scale scores, not guaranteed effects of an intervention. The fitted equation was $SMEPP = -0.195 + 0.333(FS) + 0.351(TTS) + 0.369(ATI)$.

Reported diagnostics were broadly consistent with the fitted linear model: the Shapiro–Wilk test on standardised residuals was non-significant ($p = 0.653$); a Breusch–Pagan test did not indicate heteroscedasticity ($p = 0.120$); VIF values ranged from 1.097 to 1.174; and the maximum Cook's distance was 0.050. These checks address conventional regression assumptions, although they cannot exclude model misspecification or self-report bias [18].

V. DISCUSSION

A. Financial strength and procurement participation

Financial strength was positively related to SME participation in both the correlation analysis ($r = 0.439$) and the combined regression ($\beta = 0.291$), supporting H1. This result is consistent with Tanzanian evidence that financial capability helps SMEs translate other capabilities into procurement activity [4], and with work linking financial competence to public procurement participation among special groups [5]. Bidding and contract performance require working capital, financing

and the ability to manage payment and compliance demands. Nevertheless, as Schäfer et al. [13] caution, access to government contracts does not necessarily remove financing constraints. The result therefore supports attention to financial preparedness, without implying that additional credit alone would cause firms to win tenders.

B. Technical tendering skills and procurement participation

Technical tendering skills were also associated with participation ($r = 0.441$; $\beta = 0.299$), supporting H2. The finding accords with Flynn and Davis [6], who linked procedural capabilities to bidding activity, and with Tanzanian evidence highlighting skills and ICT capacity in electronic procurement [8]. From a dynamic capabilities perspective, a firm must not merely identify a tender but also interpret eligibility and evaluation criteria, prepare compliant documentation and submit on time. The positive association is consistent with a "seizing" capability [11], [12]. However, this study did not test training interventions or measure verified procurement performance before and after upskilling.

C. Information access and the combined capability model

Access to tendering information had the highest bivariate correlation with SMEPP ($r = 0.498$) and the largest standardised regression coefficient ($\beta = 0.324$), supporting H3. This aligns with evidence from Ilala on market sensing [4], from Tanzanian special groups on accessibility of procurement opportunities [7] and from Zambian SMEs on information access and tendering processes [14]. In a system where opportunities, amendments and deadlines are increasingly communicated electronically, the ability to locate and interpret information is directly relevant to an enterprise's decision to bid [10].

The findings nevertheless show that information access cannot be regarded as sufficient on its own. FS and TTS also remained significant in the same model. This combination fits the dynamic-capabilities sequence of sensing opportunities, seizing them through technically competent bids and mobilising resources to undertake contracts [11], [12]. It also explains the value of estimating the predictors together: the present results indicate an independent association for ATI while acknowledging the contribution of the other two capabilities. Because ATI was measured as one composite construct, the regression did not establish the separate contributions of tender timeliness, clarity, document accessibility and other individual questionnaire items.

The model's explained variance of 42.1% represents a meaningful contribution to understanding participation within the studied sample, but the other 57.9% remains outside the three-predictor specification. Procurement procedures, firm characteristics, payment experience and other conditions may also matter; these possibilities require direct investigation rather than being inferred from the unexplained share alone. The cross-sectional data support relationships and prediction, not claims that improving one capability necessarily produces more contract awards.

VI. IMPLICATIONS, LIMITATIONS AND FURTHER RESEARCH

For procurement authorities and public entities, the results support prioritising usable procurement notices, clear digital guidance and timely updates through NeST, alongside practical supplier outreach. For SME owners and managers, the findings point to the value of routinely reviewing tender information, developing document-preparation skills and planning working capital before bidding. For training providers and finance institutions, the findings offer a basis for coordinated support rather than isolated awareness campaigns. These are evidence-informed priorities for evaluation, not proven interventions.

Several limitations define the interpretation of the findings. Data were collected at one point in time and derived from self-reported questionnaires, so temporal direction and causality cannot be established. Recall inaccuracies, socially desirable answers and common-method effects were possible, but their extent was not measured. The reliability and factor-analysis results do not rule out such biases. Moreover, the population comprised registered SMEs in one municipal eligibility frame; informal businesses, non-respondents and other procurement settings may differ. Detailed administrative tender-award records were not available for independent verification.

Further research should combine questionnaire data with electronic procurement records, test the model across additional municipalities and examine changes longitudinally. Qualitative work with SME suppliers and procurement officials could clarify why firms with access to information do not necessarily bid or win contracts. Studies may also assess particular components of ATI separately and test whether practical training, improved notices or procurement-linked financing changes objectively measured participation.

VII. CONCLUSION

This study examined financial strength, technical tendering skills and access to tendering information as predictors of SME participation in public procurement in Ubungo Municipality. Each factor was positively associated with participation at the bivariate level and remained statistically significant in the combined regression. Information access had the largest standardised coefficient, followed by technical tendering skills and financial strength, although the reported analysis did not establish statistically significant differences between their coefficients.

The results suggest that public procurement participation should be understood as a capability-based activity: opportunities must be identified, bids prepared competently and resources mobilised to meet requirements. Dynamic Capabilities Theory offers a useful interpretation of these complementary processes. The findings add municipality-specific evidence to the Tanzanian SME procurement literature and indicate practical areas for improving supplier readiness.

The principal recommendation is to strengthen access to timely, intelligible tender information while also supporting tender-preparation competence and financial preparedness. These measures should be assessed using objective procurement outcomes and, ideally, designs that can establish change over time. Since the present study relied on cross-sectional self-reports from an eligible municipal sample, the observed associations should not be treated as causal effects or generalised uncritically to all Tanzanian SMEs.

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