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PUBLIC TENDERING TRANSFORMATION PRACTICES AND PERFORMANCE OF PREFERENCE GROUPS IN MACHAKOS COUNTY, KENYA

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ABSTRACT

Public procurement plays an important role in promoting inclusive economic development by expanding access to government contracts for preference groups, comprising enterprises owned by women, youth and persons with disabilities (PWDs), through the Access to Government Procurement Opportunities (AGPO) programme. Despite procurement reforms and affirmative-action measures in Kenya, the performance of preference groups remains constrained by limited adoption of electronic procurement systems and insufficient supplier capacity. This study examined the effect of e-Procurement adoption and capacity building and supplier training on the performance of preference groups in Machakos County, Kenya. Specifically, it assessed the effects of e-Procurement adoption and capacity building and supplier training on enterprise performance, measured through contract award rate, on-time contract delivery and annual business revenue growth attributable to county tenders. The study was guided by the Technology–Organization–Environment (TOE) Framework and Resource-Based View (RBV) Theory. A descriptive and explanatory survey research design was adopted. The target population comprised 768 registered preference-group enterprises in Machakos County, from which a sample of 263 executive members was selected using proportionate stratified random sampling. A total of 218 completed questionnaires were returned, representing an 82.9% response rate. The respondents included chairpersons, secretaries, treasurers and procurement representatives of the selected enterprises. Primary data were collected using structured questionnaires containing closed-ended and open-ended items. Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS), Version 28, through descriptive statistics, Pearson correlation analysis, diagnostic tests, analysis of variance and multiple linear regression, while qualitative data were analyzed thematically. The findings indicate that e-Procurement adoption and capacity building and supplier training are positively associated with the performance of preference groups. Capacity building and supplier training recorded the strongest positive and statistically significant effect ($\beta = 0.321$, $p < 0.001$), followed by e-Procurement adoption ($\beta = 0.288$, $p < 0.001$). The study recommends strengthening accessible digital procurement systems and expanding continuous supplier training to enhance the participation, contract delivery and business growth of preference groups in public procurement.

Keywords: e-Procurement adoption, capacity building, supplier training, preference groups, enterprise performance, public procurement, AGPO.

Background of the Study

Public procurement is a critical instrument for socio-economic development, particularly in emerging economies where government expenditure constitutes a significant component of economic activity and creates substantial market opportunities for businesses. Beyond the acquisition of goods, works and services, public procurement serves as a strategic mechanism for promoting economic empowerment, employment creation, enterprise development and equitable distribution of public resources (Ambe, 2019; Chrisostom, 2024). In Kenya, the Access to Government Procurement Opportunities (AGPO) programme was established to actualize the constitutional commitment to affirmative action by facilitating access to government procurement opportunities for preference groups, comprising enterprises owned by youth, women and persons with disabilities (PWDs). Despite this affirmative procurement framework, the performance of preference groups, particularly in securing government contracts, delivering awarded contracts within stipulated timelines and achieving sustainable business revenue growth, continues to face challenges associated with technological barriers and inadequate technical and financial capacity.

Digital transformation is one of the major developments shaping contemporary public procurement globally. Governments have increasingly adopted electronic procurement platforms to automate procurement planning, tender advertisement, supplier registration, bid submission, evaluation and contract management. These platforms can improve the accessibility of procurement information, reduce administrative paperwork and strengthen the traceability of procurement transactions. Sarpong et al. (2017) examined the role of electronic procurement in supporting efficient supply chains in Ghana's health sector, while Boakye et al. (2019) investigated how electronic procurement contributes to procurement management responsiveness in selected mining companies in Ghana. For preference groups, the relevance of digitalization lies particularly in the accessibility of procurement portals, online tender submission and the timely communication of procurement opportunities through automated notifications.

Supplier capacity development is equally important in improving the participation and performance of small and disadvantaged enterprises. Although access to procurement opportunities is important, suppliers must possess the financial, technical and managerial capacity required to prepare responsive bids and execute awarded contracts. Supplier training, financial literacy, technical mentorship and access to business support services can therefore complement procurement reforms by improving enterprise readiness. Nyangweso and Wambua (2019) examined business support services and the growth of youth-owned enterprises benefiting from the Uwezo Fund in Kitui County, Kenya, while Ngari and Namusonge (2023) examined supply chain inclusivity and the performance of state corporations in Kenya's energy sector.

In Kenya, electronic procurement transformation has been embraced through the adoption of the Integrated Financial Management Information System (IFMIS) and other electronic procurement initiatives. Sitienei and Osoro (2021) established that e-sourcing, e-tendering, e-ordering and e-informing had significant effects on preferential procurement performance in selected county governments. Similarly, Nyangweso and Wambua (2019) demonstrated the relevance of business support services in the growth of youth-owned enterprises. These studies provide a basis for examining how electronic procurement adoption and supplier capacity development influence the performance of preference groups.

Machakos County provides an important context for examining public tendering transformation and the performance of preference groups within Kenya's devolved system of government. Sitienei and Osoro (2021) included Machakos County among the five county governments examined in their study of electronic procurement adoption and preferential procurement performance. Their findings indicated that electronic procurement practices had significant effects on preferential procurement performance. However, access to tender opportunities does not necessarily mean that enterprises possess the capacity to compete successfully or execute awarded contracts. Preference groups may require practical training on procurement regulations, preparation of tender documents, IFMIS navigation, financial management, contract administration and quality requirements. The present study therefore examines the influence of e-Procurement adoption and capacity building and supplier training on the performance of preference groups in Machakos County, measured through contract award rates, on-time contract delivery and annual business revenue growth.

Statement of the Problem

Public procurement is expected to promote inclusive economic development by creating business opportunities for preference groups, comprising enterprises owned by youth, women and persons with disabilities (PWDs). In Kenya, the Access to Government Procurement Opportunities (AGPO) programme was established to facilitate the participation of these groups in public procurement through the reservation of at least 30% of procurement budgetary allocations, as provided under Section 53(6) of the Public Procurement and Asset Disposal Act, 2015. Ideally, this affirmative procurement initiative should enable preference groups to access tender opportunities, compete fairly, secure government contracts, deliver them within stipulated timelines and achieve sustainable business growth. Realization of these outcomes requires accessible electronic procurement systems and adequate supplier capacity.

Despite this policy and regulatory framework, preference groups continue to encounter challenges that may limit their participation and performance in public procurement. These include inadequate access to procurement information, technological barriers, limited financial and technical capacity and difficulties in preparing responsive tender documents and executing awarded contracts. Wazir and Achuora (2020) identified resource availability, access to procurement information and technical capability as important factors influencing access to government procurement opportunities among preference groups in Nairobi City County. Nyangweso and Wambua (2019) also highlighted the relevance of business support services to the growth of youth-owned enterprises. These findings suggest that access to procurement opportunities alone may not guarantee successful contract acquisition or improved enterprise performance.

Although electronic procurement initiatives and supplier support interventions have been introduced to address these challenges, their contribution to the actual performance of preference groups remains insufficiently established. Sitienei and Osoro (2021) found that electronic procurement adoption influenced preferential procurement performance in selected county governments, including Machakos. Waduu and Omido (2025) examined challenges affecting the implementation of e-government procurement in Kenyan county governments, while Nyangweso and Wambua (2019) highlighted the importance of business support services in enterprise growth. However, these studies did not collectively establish how e-Procurement adoption and capacity building and supplier training influence the performance of preference groups in Machakos County.

Consequently, an empirical and contextual gap exists regarding the influence of these two public tendering transformation practices on AGPO enterprise performance in Machakos County. In particular, there is a need to establish whether e-Procurement adoption and capacity building and supplier training contribute to improved contract award rates, on-time contract

delivery and annual business revenue growth. Without such evidence, procurement transformation initiatives may emphasize electronic system adoption and supplier support without adequately demonstrating their contribution to the economic empowerment and sustainability of beneficiary enterprises. This study therefore sought to examine the influence of e-Procurement adoption and capacity building and supplier training on the performance of preference groups in Machakos County, Kenya.

Objective of the Study

The general objective was to examine the influence of e-Procurement adoption and capacity building and supplier training on the performance of preference groups in Machakos County, Kenya.

The study was guided by the following specific objectives:

i. To examine the effect of e-Procurement adoption on the performance of preference groups in Machakos County, Kenya.
ii. To determine the influence of capacity building and supplier training on the performance of preference groups in Machakos County, Kenya.

LITERATURE REVIEW

Theoretical Review

The study was guided by the Technology–Organization–Environment (TOE) Framework and the Resource-Based View (RBV) Theory. The Technology–Organization–Environment (TOE) Framework was developed by Tornatzky and Fleischer (1990) to explain the factors influencing the adoption and implementation of technological innovations within organizations. The framework identifies three contexts that influence technological adoption: technological, organizational and environmental contexts. The technological context concerns the availability, accessibility, compatibility and complexity of technologies, while the organizational context encompasses resources, management support and human resource capabilities. The environmental context includes external factors such as regulatory requirements, infrastructure and institutional support. The framework explains that successful technology adoption depends not only on the availability of technological systems but also on organizational preparedness and the external environment (Baker, 2012). In this study, the TOE Framework underpins e-Procurement adoption by explaining how technological infrastructure, organizational readiness and institutional support influence the adoption and utilization of electronic procurement systems. System accessibility, online tender submission and automated notifications can facilitate supplier registration, reduce dependence on physical documentation and improve timely access to procurement opportunities. The framework therefore provides a theoretical foundation for examining the effect of e-Procurement adoption on the performance of preference groups in Machakos County.

The Resource-Based View (RBV) Theory was advanced by Wernerfelt (1984) and further developed by Barney (1991), who argued that organizational resources that are valuable, rare, imperfectly imitable and non-substitutable can provide a basis for sustained competitive advantage. The theory recognizes that organizational resources extend beyond physical and financial assets to include human capital, knowledge, technical skills and managerial competencies. Organizations with appropriate resources and capabilities are better positioned to exploit available opportunities and achieve improved performance. In this study, RBV Theory underpins capacity building and supplier training by explaining how the development of technical, financial and managerial capabilities strengthens the ability of preference groups

to participate in public procurement and execute awarded contracts. Pre-bid sensitization workshops, financial literacy, technical mentorship and business support services can enhance supplier knowledge, working capital management and contractual capacity. These capabilities constitute important resources for competing effectively and delivering government contracts. The theory therefore provides a foundation for examining the influence of capacity building and supplier training on the performance of preference groups in Machakos County.

Conceptual Framework

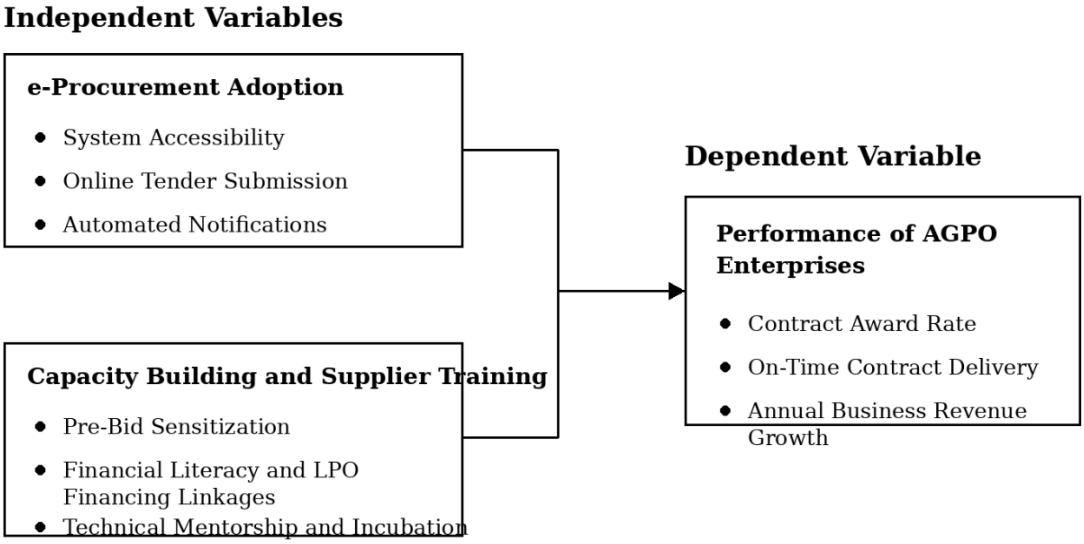


Figure 2.1: Conceptual Framework

e-Procurement Adoption

e-Procurement adoption refers to the integration and application of electronic technologies in public procurement activities to improve accessibility, efficiency, accuracy and responsiveness of tendering processes. It involves the use of electronic platforms to advertise tenders, provide access to procurement documents, facilitate online bid submission and communicate procurement information. In this study, e-Procurement adoption is conceptualized through system accessibility, online tender submission and automated notifications.

System accessibility refers to the extent to which suppliers can conveniently access and use electronic procurement platforms to obtain procurement information and participate in public tendering opportunities. Accessible systems enable suppliers to obtain tender notices, download relevant documents and monitor procurement processes. Online tender submission involves the electronic transmission of tender documents and bid proposals through designated procurement platforms. It reduces the costs associated with printing, transportation and physical delivery of tender documents while improving the security and traceability of submissions. Automated notifications refer to electronically generated alerts informing suppliers about new tender opportunities, clarification requests, amendments, submission deadlines and procurement decisions. These notifications improve the timeliness of communication between procuring entities and suppliers (Lagat, 2022; Mutangili, 2025).

Dida, Andika and Mutegi (2026) examined e-tendering and procurement performance in Nairobi City County Government, while Kyola and Muthoni (2024) and Njagi (2018) investigated electronic procurement practices in county governments. Sitienei and Osoro (2024) also examined the effect of electronic procurement adoption on preferential

procurement performance in Kenya. These studies provide a basis for understanding the contribution of electronic procurement to supplier participation and procurement outcomes. For preference groups, accessible platforms, online submission and timely notifications can reduce geographical and administrative barriers, improve access to procurement information and strengthen supplier responsiveness. Consequently, e-Procurement adoption may contribute to improved contract award rates, on-time contract delivery and annual business revenue growth.

Capacity Building and Supplier Training

Capacity building and supplier training refer to structured interventions designed to strengthen the knowledge, financial preparedness, technical competencies and operational capabilities of suppliers participating in public procurement. In the context of AGPO, capacity building is important because registration and eligibility alone do not guarantee successful participation or sustainable enterprise performance. Suppliers require practical knowledge, financial resources, technical expertise and institutional support to translate procurement opportunities into tangible business outcomes. In this study, capacity building and supplier training are conceptualized through pre-bid sensitization, financial literacy and LPO financing linkages, and technical mentorship and incubation.

Pre-bid sensitization involves training and awareness programmes that equip potential suppliers with knowledge and practical skills required to participate in public procurement. These programmes cover AGPO registration and eligibility requirements, identification of procurement opportunities, interpretation of tender documents, preparation of responsive bids and statutory compliance. Financial literacy and LPO financing linkages involve improving suppliers' understanding of budgeting, cash-flow management, pricing and working capital management, while connecting suppliers with financial institutions and financing programmes to support contract implementation. Technical mentorship and incubation provide technical guidance and continuous support in areas such as product specifications, quality standards, business planning, costing, production processes and contract administration.

Wazir and Achuora (2024) examined factors affecting access to government procurement opportunities by preference and reserved groups in Nairobi City County, while Moronge and Ratemo (2022) investigated determinants of effective implementation of the public procurement reservation scheme in Kenya. Nyangweso and Wambua (2019) examined business support services and the growth of youth-owned enterprises benefiting from the Uwezo Fund in Kitui County. Nanok and Osoro (2022) also examined supply chain best practices and the performance of preference groups in Turkana County. These studies provide relevant perspectives on supplier preparedness, enterprise support and the capabilities required to participate effectively in public procurement. Capacity building and supplier training may therefore improve bid preparation, financial preparedness and contract execution, contributing to higher contract award rates, timely contract delivery and business revenue growth.

Performance of Preference Groups

Performance of preference groups refers to the extent to which businesses owned by youth, women and persons with disabilities achieve measurable procurement and business outcomes through participation in public procurement opportunities. The performance of preference groups extends beyond registration and participation to include the ability to secure contracts, fulfil contractual obligations and achieve sustainable financial growth. In this study, performance is conceptualized through contract award rate, on-time contract delivery and annual business revenue growth.

Contract award rate refers to the proportion of procurement bids submitted by preference groups that result in successful contract awards within a specified period. It indicates the ability of eligible enterprises to translate participation in public tendering into actual procurement contracts. On-time contract delivery refers to the ability of preference groups to supply goods, complete works or provide services within agreed contractual timelines while meeting the required quality and performance standards. Annual business revenue growth refers to the increase in income generated by preference groups from their business activities over successive financial years, indicating whether participation in public procurement contributes to business expansion and financial sustainability.

Wazir and Achuora (2024) examined factors affecting access to government procurement opportunities by preference and reserved groups, while Moronge and Ratemo (2022) investigated implementation of the procurement reservation scheme in Kenya. Nyangweso and Wambua (2019) examined business support services and the growth of youth-owned enterprises, while Nanok and Osoro (2022) investigated supply chain best practices and the performance of preference groups in Turkana County. These studies provide a basis for understanding procurement access, supplier capabilities and enterprise outcomes. The three performance indicators therefore provide a basis for assessing whether e-Procurement adoption and capacity building and supplier training translate into improved contract acquisition, effective contract execution and sustainable business growth among preference groups in Machakos County.

Empirical Review

The empirical review examines previous studies on e-Procurement adoption, capacity building and supplier training, and the performance of preference groups. The review draws on studies conducted in other African countries and Kenya, with particular attention to evidence from county governments and preference groups. It considers the findings, methodological approaches and research gaps relevant to the present study.

e-Procurement Adoption and Performance

Boakye et al. (2019) examined the role of electronic procurement in enhancing the responsiveness of procurement management in selected mining companies in Ghana. Using a descriptive research approach and questionnaires administered to 26 respondents from 13 large-scale mining companies, the study established that e-Procurement adoption was relatively low, accounting for approximately 24% of the variation in procurement process enhancement. Nevertheless, electronic procurement contributed positively to procurement efficiency and effectiveness. Similarly, Sarpong et al. (2017) examined the potential of electronic procurement in supporting efficient supply chain management in Ghana's health sector. The study emphasized that successful implementation depends on technological capacity, organizational changes and the integration of digital systems into existing procurement processes. However, these studies focused on private-sector and healthcare procurement rather than the performance of preference groups.

In Kenya, Sitienei and Osoro (2021) investigated the effect of electronic procurement adoption on the performance of preferential procurement in five selected county governments, including Machakos. The study examined electronic sourcing, electronic tendering, electronic ordering and electronic informing. The findings established that the four electronic procurement practices had significant effects on preferential procurement performance, with overall mean scores of 3.41, 3.44, 3.49 and 3.53, respectively. Similarly, Kyola and Muthoni (2024) examined electronic procurement and procurement function performance across the 47 county

governments. Their findings established positive and statistically significant relationships between electronic procurement practices and procurement function performance, with the four practices accounting for 69.9% of the variation in performance. Dida, Andika and Mutegi (2026) also established that electronic tendering positively and significantly influenced procurement performance in Nairobi City County Government.

Although these studies demonstrate the contribution of electronic procurement to procurement performance, they largely focused on procurement functions and institutional outcomes rather than enterprise-level performance among AGPO beneficiaries. The present study therefore examines e-Procurement adoption through system accessibility, online tender submission and automated notifications, focusing on contract award rate, on-time contract delivery and annual business revenue growth among preference groups in Machakos County.

Capacity Building and Supplier Training

Mrope (2018), in a study conducted in Tanzania, investigated determinants of procurement department performance in public entities. The findings emphasized the importance of procurement professionalism, practical experience and continuous training in strengthening procurement compliance and performance. The study reported that 81% of respondents had attended training on public procurement laws and regulations. However, the study focused on procurement personnel rather than supplier-side capacity development among preference groups.

In Kenya, Nyangweso and Wambua (2019) examined the influence of business support services on the growth of youth-owned enterprises benefiting from the Uwezo Fund in Kitui County. The study adopted a descriptive research design and collected primary data from 100 youth enterprise groups. The findings established that business support services generally had a significant relationship with enterprise growth, although market access through AGPO did not demonstrate a significant linear relationship with the dependent variable. The researchers recommended strengthening business development and market access services to improve enterprise growth. Chrisostom (2024) also examined inclusivity in procurement and supply chain management in Kenya, identifying training, access to information, funding and the legal framework as important factors influencing the participation of preference groups. The study highlighted the need for targeted training, improved information access and effective implementation of inclusive procurement policies.

These studies demonstrate the importance of business support, training and financial preparedness in strengthening enterprise participation and growth. However, they do not empirically establish the specific contribution of pre-bid sensitization, financial literacy and LPO financing linkages, and technical mentorship and incubation to the performance of preference groups in Machakos County. The present study addresses this gap by examining capacity building and supplier training in relation to contract acquisition, timely contract delivery and business revenue growth.

Performance of Preference Groups

Nanok and Osoro (2022) examined factors affecting supply chain best practices and the performance of preference groups in Turkana County, Kenya. The study investigated outsourcing, green supply chain practices, collaborative strategic sourcing, and information and communication technology. It adopted a descriptive survey design and collected data using structured and semi-structured questionnaires. The study is particularly relevant because it examined preference groups directly rather than focusing exclusively on procurement

departments or public institutions. However, its geographical focus was Turkana County, and its independent variables differed from those examined in the present study.

Nyangweso and Wambua (2019) also examined business support services and the growth of youth-owned enterprises in Kitui County, while Chrisostom (2024) considered the opportunities and challenges experienced by women, youth and persons with disabilities in accessing reserved government procurement opportunities. These studies provide insights into enterprise growth and the challenges affecting the economic benefits of preferential procurement. However, they do not comprehensively establish how e-Procurement adoption and capacity building and supplier training influence contract award rates, on-time contract delivery and annual business revenue growth.

The reviewed studies demonstrate the importance of digital procurement systems and supplier development in improving procurement participation and enterprise outcomes. Nevertheless, limited empirical evidence establishes how these two practices jointly influence the performance of preference groups in Machakos County. Furthermore, existing studies have largely focused on procurement function performance, institutional implementation or general enterprise growth rather than the three specific performance indicators adopted in this study. The present study therefore sought to address this empirical and contextual gap by examining the influence of e-Procurement adoption and capacity building and supplier training on the performance of preference groups in Machakos County, Kenya.

RESEARCH METHODOLOGY

The study adopted an explanatory research design to examine the influence of e-Procurement adoption and capacity building and supplier training on the performance of preference groups in Machakos County, Kenya. The design enabled the researcher to establish relationships between the study variables using quantitative methods (Mugenda & Mugenda, 2008). Descriptive statistics, Pearson's Product Moment Correlation and multiple linear regression analysis were employed to examine the relationships among the variables (Kothari, 2011; Field, 2018).

The target population comprised 768 registered preference groups in Machakos County, including 356 women groups, 284 youth groups and 128 groups of persons with disabilities (PWDs). The unit of analysis was the preference group, while the unit of observation was one executive member from each selected group. The respondents comprised chairpersons, secretaries, treasurers or procurement representatives with relevant knowledge of their groups' procurement participation and business performance.

The study employed proportionate stratified random sampling to ensure representation of the three categories of preference groups. Using Yamane's (1967) formula at a 0.05 precision level, a sample of 263 groups was obtained. This comprised 122 women groups, 97 youth groups and 44 PWD groups. Simple random sampling was subsequently used to select individual groups within each stratum, with one executive member selected from each sampled group.

Primary data were collected using structured questionnaires containing closed-ended and open-ended questions. The study variables were measured using a five-point Likert scale. e-Procurement adoption was assessed through system accessibility, online tender submission and automated notifications, while capacity building and supplier training were measured through pre-bid sensitization, financial literacy and LPO financing linkages, and technical mentorship and incubation. Performance of preference groups was measured through contract award rate, on-time contract delivery and annual business revenue growth.

A pilot study was conducted among 26 executive members of registered preference groups in Makueni County, representing approximately 10% of the main sample. Face, content and construct validity were assessed through expert review and pilot testing, with a Content Validity Index of 0.93. Reliability was assessed using Cronbach's alpha, with the original study recording coefficients ranging from 0.873 to 0.881 across its constructs. A coefficient of 0.70 or above was considered acceptable (Mugenda & Mugenda, 2008).

Data were analyzed using SPSS Version 28. Descriptive statistics, including frequencies, percentages, means and standard deviations, summarized respondents' characteristics and study variables. Pearson's Product Moment Correlation established the strength and direction of relationships, while multiple linear regression analysis examined the influence of the independent variables on performance (Field, 2018). Regression assumptions, including normality, linearity, homoscedasticity, multicollinearity and independence of errors, were assessed. Statistical significance was tested at a 95% confidence level ($\alpha = 0.05$). Qualitative responses were organized into themes and presented narratively.

RESEARCH FINDINGS AND DISCUSIONS

The analysis was based on 218 usable questionnaires, representing an 82.9 percent response rate from the target sample of 263 respondents.

Descriptive Analysis

Descriptive analysis was undertaken using means and standard deviations. Responses were measured on a five-point Likert scale where 1 represented strongly disagree and 5 represented strongly agree. Mean values below 2.50 were interpreted as disagreement, values from 2.50 to 3.49 as moderate or neutral and values of 3.50 and above as agreement. Standard deviations were used to show the degree of variation in respondent opinions.

e-Procurement Adoption

Table 1: Descriptive Statistics for e-Procurement Adoption

Statement	Mean	SD
Our enterprise can easily register and access the county's electronic procurement portal, including IFMIS.	3.748	1.005
Our enterprise can easily navigate the electronic procurement portal to search for and obtain county tender opportunities and documents.	3.771	1.108
Our enterprise can prepare and submit county tender documents electronically without having to deliver physical copies to county offices.	3.830	1.092
The electronic procurement system allows our enterprise to track submitted bids and confirm successful receipt of tender documents.	3.757	1.120
Our enterprise receives timely automated electronic notifications about newly advertised county tender opportunities.	3.798	1.045
Our enterprise receives timely electronic notifications about changes, clarifications, deadlines and other updates relating to advertised tenders.	3.812	1.110
Composite Mean	**3.786**	**0.849**

Source: Survey Data (2026).

The composite mean for e-Procurement Adoption was 3.786 with a standard deviation of 0.849, indicating general agreement among respondents that the adoption of electronic procurement systems positively influenced the participation and performance of preference groups. In relation to System Accessibility, respondents generally acknowledged the importance of being

able to register, access and navigate county procurement portals, including IFMIS and e-bidding platforms. Online Tender Submission recorded the highest mean (3.830), suggesting that electronic submission and tracking of bids, without the need for physical paperwork at county offices, were perceived as important benefits of digital procurement. System Accessibility recorded the lowest mean (3.748), indicating that challenges relating to access and navigation of electronic procurement platforms remained an area requiring improvement. Although the statements were generally positively rated, standard deviations of approximately one point indicated variations in respondents' experiences with the accessibility, use and effectiveness of electronic procurement systems. Overall, the findings suggest that improving access to county procurement portals, strengthening online tender submission, tracking and providing timely automated notifications about new AGPO tender opportunities and awards could enhance procurement participation and improve tender outcomes for preference groups.

Capacity Building and Supplier Training

Table 2: Descriptive Statistics for Capacity Building and Supplier Training

Statement	Mean	SD
Machakos County regularly organizes pre-bid sensitization workshops to prepare Preference Groups for participation in public procurement.	3.844	1.104
County-organized training adequately equips Preference Groups with knowledge of tender documentation, IFMIS navigation and procurement compliance requirements.	3.743	1.179
Our enterprise has access to financial literacy training covering costing, pricing and cash-flow management for public contracts.	3.752	1.113
Machakos County facilitates linkages between Preference Groups and suitable sources of working capital, including Local Purchase Order (LPO) financing.	3.904	1.071
Our enterprise has access to technical mentorship and advisory support to improve its ability to meet county contract specifications and quality standards.	3.761	1.119
Machakos County provides supplier clinics, mentorship or incubation programmes that support the continued development of Preference Groups.	3.817	1.075
Composite Mean	**3.804**	**0.869**

Source: Survey Data (2026).

Capacity Building and Supplier Training recorded a composite mean of 3.804 and a standard deviation of 0.869, indicating general agreement among respondents that supplier training and capacity development support positively influenced the participation and performance of preference groups. Regarding Pre-Bid Sensitization Workshops, the organization of county training workshops recorded a mean of 3.844, while the adequacy of training in tender documentation, IFMIS navigation and procurement compliance requirements recorded a mean of 3.743. These findings suggest that although county-organized sensitization activities were positively perceived, further strengthening of the practical knowledge and skills required to participate effectively in public procurement remains necessary.

In relation to Financial Literacy and LPO Financing Linkages, access to financial literacy training on costing, pricing and cash-flow management recorded a mean of 3.752. Facilitation of linkages to working capital, including Local Purchase Order (LPO) financing, recorded a higher mean of 3.904, representing the highest-rated statement in this construct. This suggests that respondents recognized the importance of financial support and access to working capital in enabling preference groups to meet the financial obligations associated with public contracts. Regarding Technical Mentorship and Incubation, access to technical mentorship and advisory support recorded a mean of 3.761, while the provision of supplier clinics, mentorship and incubation programmes recorded a mean of 3.817. These results indicate positive perceptions

of technical support, although opportunities for sustained mentorship and enterprise development could be strengthened.

Overall, the findings suggest that Capacity Building and Supplier Training plays an important role in strengthening the ability of preference groups to participate in public procurement and execute awarded contracts. The results highlight the need for more consistent pre-bid sensitization workshops, practical financial literacy training, stronger LPO financing linkages and continuous technical mentorship and incubation. Such interventions could improve supplier preparedness, financial capacity and compliance with county contract specifications, thereby contributing to better enterprise performance.

Performance of Preference Groups

Table 3: Descriptive Statistics for Performance of Preference Groups

Statement	Mean	SD
A high proportion of the county-government tenders submitted by our enterprise has resulted in contract awards during the last three years.	3.817	1.057
The number of county-government contracts awarded to our enterprise has increased during the last three years.	3.821	1.095
Our enterprise has consistently delivered county-government contracts within the timelines specified in the contract.	3.830	1.083
Our enterprise has completed county-government contracts in accordance with the required quality and technical specifications.	3.771	1.083
Our enterprise's annual revenue generated from county-government contracts has increased during the last three years.	3.743	1.119
Revenue generated from Machakos County Government contracts has contributed positively to the annual business growth of our enterprise.	3.739	1.069
Composite Mean	**3.787**	**0.859**

Source: Survey Data (2026).

Performance of preference groups recorded a composite mean of 3.787 and a standard deviation of 0.859, indicating that respondents generally agreed that participation in Machakos County Government procurement opportunities had contributed positively to enterprise performance. The findings were assessed against the three indicators of Contract Award Rate, On-Time Contract Delivery and Annual Business Revenue Growth.

Regarding Contract Award Rate, the statement on the proportion of county-government tenders submitted by enterprises that resulted in contract awards recorded a mean of 3.817, while the increase in the number of county-government contracts awarded during the last three years recorded a mean of 3.821. These findings suggest that respondents generally perceived their enterprises to have experienced positive outcomes in securing public procurement contracts. However, the results also indicate the importance of improving the proportion of submitted bids that successfully translate into contract awards to enhance access to procurement opportunities among preference groups.

In relation to On-Time Contract Delivery, consistent delivery of county-government contracts within stipulated timelines recorded a mean of 3.830, the highest among the six statements. Compliance with the required quality and technical specifications recorded a mean of 3.771. These findings indicate that respondents generally agreed that their enterprises were able to execute awarded contracts within the prescribed timelines and in accordance with the required standards. The results underscore the importance of timely delivery and compliance with contractual specifications as essential dimensions of supplier performance and successful participation in public procurement.

Regarding Annual Business Revenue Growth, the increase in annual revenue generated from county-government contracts recorded a mean of 3.743, while the contribution of Machakos County Government contracts to overall annual business growth recorded a mean of 3.739. These were the two lowest-rated statements, although both remained within the agreement range. This suggests that while respondents generally acknowledged the contribution of county procurement opportunities to enterprise revenue, the extent to which such opportunities translated into sustained business growth was comparatively less pronounced.

Overall, the findings indicate that preference groups generally experienced positive performance outcomes through participation in Machakos County Government procurement. The results demonstrate positive perceptions across the three dimensions of performance, namely Contract Award Rate, On-Time Contract Delivery and Annual Business Revenue Growth. Nevertheless, the relatively lower ratings for revenue growth suggest a need to strengthen the conversion of procurement opportunities into sustainable financial benefits for enterprises. Improving access to contract awards, supporting effective and timely contract execution, and ensuring that county procurement opportunities contribute to sustained increases in enterprise turnover are therefore important in enhancing the performance of preference groups.

Pearson Correlation Analysis

Pearson correlation analysis was conducted to establish the direction and strength of the linear relationships between e-Procurement adoption, capacity building and supplier training, and the performance of preference groups in Machakos County, Kenya. Pearson correlation coefficients range from −1 to +1, with positive values indicating direct relationships and negative values indicating inverse relationships. Table 4.7 presents the correlation results.

Table 4: Pearson Correlation Matrix

Variable	e-Procurement Adoption	Capacity Building and Supplier Training	Performance of Preference Groups
e-Procurement Adoption	1.000	.879**	.881**
Capacity Building and Supplier Training	.879**	1.000	.892**
Performance of Preference Groups	.881**	.892**	1.000

*Note: ** Correlation is significant at the 0.01 level (two-tailed). Source: Survey Data (2026).*

The results indicate that both independent variables had strong, positive and statistically significant relationships with the performance of preference groups. Capacity building and supplier training recorded the strongest correlation ($r = 0.892$, $p < 0.01$), followed by e-Procurement adoption ($r = 0.881$, $p < 0.01$). These findings suggest that improvements in supplier capacity development and the adoption of electronic procurement systems were associated with better enterprise performance, particularly in contract award outcomes, timely contract delivery and annual business revenue growth.

The strong positive relationship between capacity building and supplier training and enterprise performance indicates the importance of supplier preparedness, financial literacy, access to working capital and technical mentorship. Similarly, the positive relationship between e-Procurement adoption and performance suggests that accessible electronic platforms, online tender submission and automated notifications are associated with improved enterprise outcomes.

The correlation between the two independent variables was also strong and positive ($r = 0.879$, $p < 0.01$), indicating that the practices were closely related. Multicollinearity diagnostics were therefore necessary to establish whether the relationship between the independent variables could affect the reliability of the regression estimates.

Regression Analysis

Multiple linear regression analysis was conducted to examine the influence of e-Procurement adoption and capacity building and supplier training on the performance of preference groups in Machakos County. The analysis assessed the explanatory power and statistical significance of the regression model, as well as the individual contribution of the two independent variables to enterprise performance.

Table 5: ANOVA Results

Source	Sum of Squares	df	Mean Square	F	p
Regression	133.860	2	66.930	551.968	< .001
Residual	26.083	215	0.121		
Total	159.943	217			

Dependent variable: Performance of preference groups.

The reconstructed ANOVA estimates indicate that the two-predictor regression model would be statistically significant, $F(2, 215) \approx 551.968$, $p < .001$. This suggests that e-Procurement adoption and capacity building and supplier training jointly explain a substantial proportion of the variation in the performance of preference groups. The null hypothesis that both regression coefficients are simultaneously equal to zero would therefore be rejected if these estimates are confirmed using the original dataset.

Table 6: Model Summary

R	R^2	Adjusted R^2	Std. Error of the Estimate
.915	.837	.835	.348

The reconstructed model indicates a multiple correlation coefficient of approximately .915, demonstrating a strong positive relationship between the two independent variables collectively and the performance of preference groups. The estimated coefficient of determination ($R^2 = .837$) suggests that the two predictors jointly account for approximately 83.7% of the variation in enterprise performance. The adjusted R^2 of .835 indicates that the model retains substantial explanatory power after adjustment for the number of predictors and sample size. The remaining 16.3% may be attributable to other factors not included in the model.

The estimated standard error of .348 represents the approximate dispersion of observed performance scores around the regression model's predicted values. The Durbin–Watson statistic cannot be reconstructed from the available correlation matrix and must be obtained from the revised SPSS output.

Table 7: Regression Coefficients

Predictor	B	SE	β	t	p
Constant	0.134	0.107	—	1.253	.212
e-Procurement Adoption	0.291	0.063	.288	4.633	< .001
Capacity Building and Supplier Training	0.318	0.068	.321	4.679	< .001

In the original four-predictor model, e-Procurement adoption had a positive and statistically significant coefficient (B = 0.291, β = 0.288, t = 4.633, p < 0.001). Similarly, capacity building and supplier training had a positive and statistically significant coefficient (B = 0.318, β = 0.321, t = 4.679, p < 0.001). Capacity building and supplier training recorded the larger standardized coefficient, indicating a stronger relative contribution within the original model.

The Effect of e-Procurement Adoption on the Performance of Preference Groups in Machakos County

e-Procurement adoption had a positive and statistically significant effect on the performance of preference groups (B = 0.291, β = 0.288, t = 4.633, p < 0.001). This indicates that increased adoption and use of electronic procurement systems, automation and procurement data capabilities are associated with improved enterprise performance. The finding suggests that digital procurement systems can improve access to tender opportunities, facilitate electronic submission and tracking of bids, and reduce the administrative challenges associated with conventional procurement processes. The result supports the Technology Acceptance Model, which explains that perceived usefulness and ease of use influence the adoption and effective utilization of technology. Accessible and user-friendly procurement platforms can therefore encourage supplier participation and reduce the transaction burden associated with tendering.

The finding agrees with Hallikas, Immonen and Brax (2021), who established that digital procurement and data-analytics capabilities improve supply-chain performance. It also supports Charnor and Quartey (2024), whose study in Ghana found that electronic procurement adoption significantly improves procurement performance, particularly where institutional quality supports implementation. Within the Kenyan context, the finding is consistent with Sitienei and Osoro (2021), who reported that e-sourcing, e-tendering, e-ordering and e-informing enhanced preferential procurement and increased participation by special-interest groups in devolved governments.

The present study extends this evidence by examining digital procurement in relation to the performance of preference groups in Machakos County. The strong positive correlation between e-Procurement adoption and enterprise performance (r = 0.881) further demonstrates the importance of digital transformation in improving procurement participation and enterprise outcomes. However, the descriptive findings indicate variations in respondents' experiences with electronic procurement systems, suggesting that the benefits of digitization may depend on system accessibility, digital literacy and platform usability. In this regard, improving access to procurement portals, facilitating online tender submission and providing timely automated notifications about procurement opportunities are important for strengthening supplier participation. The study therefore demonstrates that digitalization should be accompanied by appropriate supplier support and capacity development to promote inclusive procurement outcomes.

The Effect of Capacity Building and Supplier Training on the Performance of Preference Groups in Machakos County

Capacity building and supplier training had the strongest positive and statistically significant effect on the performance of preference groups (B = 0.318, β = 0.321, t = 4.679, p < 0.001). This indicates that supplier sensitization, financial literacy, access to working-capital linkages, technical mentorship and enterprise development support are important in strengthening the ability of preference-group enterprises to participate in public procurement and execute awarded contracts. The finding suggests that legal access to procurement opportunities must be complemented by practical knowledge, financial preparedness and technical capacity for preference groups to translate procurement opportunities into improved business outcomes.

The Resource-Based View Theory provides a relevant explanation for this relationship because enterprise performance depends partly on the availability and effective utilization of resources

and capabilities. Training, financial knowledge, technical skills and mentorship strengthen the internal capabilities that enable enterprises to compete for tenders and fulfil contractual obligations. The finding also supports the argument that supplier development is an important component of procurement performance because capable suppliers are better positioned to meet tender requirements, manage contract obligations and deliver goods and services in accordance with prescribed standards.

The descriptive results further reinforce the importance of capacity development. Facilitation of linkages to working capital, including Local Purchase Order (LPO) financing, recorded the highest mean of 3.904 among the statements under this construct. This suggests that respondents recognized access to working capital as an important requirement for undertaking public contracts. County-organized pre-bid sensitization workshops also received a positive rating, while training adequacy in tender documentation, IFMIS navigation and procurement compliance requirements indicated scope for further improvement. Similarly, the ratings for financial literacy, technical mentorship and supplier clinics demonstrate the importance of sustained support beyond initial supplier registration and tender sensitization.

The strong positive correlation between capacity building and supplier training and preference group performance ($r = 0.892$), together with its largest standardized regression coefficient, indicates that this construct made the strongest unique contribution among the four predictors in the fitted model. This finding highlights the practical challenges faced by preference groups, which may have access to reserved procurement opportunities but lack adequate financial resources, technical expertise or managerial capacity to compete effectively and execute contracts successfully. The study therefore contributes to procurement literature by emphasizing supplier capacity development as an important pathway through which affirmative procurement opportunities can translate into measurable enterprise outcomes. Machakos County should strengthen regular pre-bid sensitization, practical financial literacy programmes, linkages to suitable LPO financing facilities, technical mentorship and supplier incubation initiatives to improve the competitiveness and sustainability of preference groups.

Conclusion

Based on the empirical findings, the study concludes that e-Procurement adoption has a positive and statistically significant effect on the performance of preference groups in Machakos County. The regression results showed a positive and statistically significant coefficient for e-Procurement adoption, while the correlation analysis also established a strong positive relationship between the two constructs. The findings suggest that electronic procurement systems, automation and the use of procurement data are relevant to improving supplier participation and procurement outcomes. In particular, accessible procurement portals, online tender submission and timely automated notifications can support the ability of women-, youth- and persons-with-disabilities-owned enterprises to identify, access and participate in county procurement opportunities. However, the benefits of digitalization depend on the accessibility and usability of electronic platforms and the ability of suppliers to use them effectively. The study therefore concludes that digitalization is an important component of public tendering transformation and should be accompanied by appropriate technical support and supplier digital skills development.

The study also concludes that capacity building and supplier training has a positive and statistically significant effect on the performance of preference groups. The findings indicate that pre-bid sensitization workshops, financial literacy, access to LPO financing linkages, technical mentorship and supplier incubation are important in strengthening the capabilities of preference-group enterprises. Capacity building and supplier training recorded the largest standardized beta coefficient among the four explanatory variables in the regression model. Within the context of this study, this indicates that it made the largest relative statistical contribution to explaining variations in enterprise performance. The conclusion underscores

the importance of addressing knowledge, financial and technical capacity gaps that may prevent preference groups from converting procurement opportunities into successful contract awards, timely contract delivery and sustainable business growth.

Recommendations

The County Government of Machakos should strengthen the implementation of e-Procurement and supplier capacity development to improve the participation and performance of preference groups. Collaboration among procurement, finance, ICT departments, financial institutions and enterprise development agencies should be enhanced to support access to electronic procurement systems, training and financing opportunities. Regular monitoring and evaluation should assess improvements in contract awards, timely delivery and enterprise revenue growth.

The County Government of Machakos should strengthen the accessibility and usability of electronic procurement systems by establishing support points across its sub-counties to assist preference groups with supplier registration, portal navigation and electronic bid submission. Regular digital skills training should also be provided, alongside improved automated notifications on tender opportunities, submission deadlines and procurement outcomes. Accessible technical support should be maintained to ensure that preference groups with limited technological capacity are not excluded.

The county should prioritize continuous supplier development through pre-bid sensitization workshops covering tender documentation, procurement procedures, IFMIS navigation and compliance requirements. It should also facilitate financial literacy programmes and strengthen linkages with financial institutions, including access to Local Purchase Order (LPO) financing. Additionally, technical mentorship, supplier clinics and incubation programmes should be strengthened to improve the financial, technical and managerial capabilities of preference groups, enabling them to compete effectively, deliver contracts on time and achieve sustainable business growth.

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