

User involvement in contract management and procurement performance in Zanzibar: the moderating role of user competence

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Abstract

Drawing on institutional theory and the competence model, this study explores the influence of user involvement in contract management on procurement performance among local government authorities (LGAs) in Zanzibar and examines the moderating role of user competence. In this study, cross-sectional data were collected from 159 heads of the user departments within 11 LGAs in Zanzibar. The collected data were analysed through partial least squares structural modelling (PLS-SEM). The results revealed that user involvement in contract formation has a significant positive effect on procurement performance ($\beta = 0.524$, $p < 0.001$), whereas user involvement in receiving and inspection has insignificant negative effect on procurement performance ($\beta = -0.081$, $p = 0.418$). On the other hand, user competence has a significant positive effect on procurement performance ($\beta = 0.297$, $p = 0.001$). The moderation analysis reveals different perspectives, indicating that user competence has a negative moderating effect on the relationship between user involvement in contract formation and procurement performance ($\beta = -0.231$, $p < 0.001$), and a positive moderating effect on the relationship between user involvement in receiving and inspection and procurement performance ($\beta = 0.153$, $p = 0.017$). This study demonstrates that procurement performance is affected by active user involvement in contract formation, and receiving and inspection as aspects of contract management, with effects varying at different levels of user competence. This study integrates institutional theory and the competence model to present new empirical evidence based on data obtained from user departments within LGAs in Zanzibar.

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1. Introduction

Procurement performance provides the basis for the procuring entity to employ an analytical framework to assess the procurement process and its outcomes (Kimario & Kira, 2024; Kimario & Mwagike, 2024; Mohamed et al., 2026). It is a driver of the organisation's improvement in service quality (Nyamah et al., 2023). With recent developments in procurement procedures, procurement performance is considered to have a substantial effect on cost advantages, quality assurance, and timely delivery (Jama & Mohamud, 2024). This outcome makes the organisation effective in terms of accountability and ensures things run smoothly (Mahuwi & Israel, 2024). Procurement performance is conventionally measured through indicators such as timely delivery, cost control, and the quality and quantity of procured items (Changalima & Mdee, 2023; Ottou et al., 2024). Among the determinants of procurement performance, contract management emerges as a critical factor (Matto et al., 2021). Effective contract management in procurement activities ensures compliance with applicable laws and contractual obligations (Mugecha & Ndeto, 2024).

Contract management is a systematic process that ensures the organisation's objectives align with procurement outcomes. It begins with procurement planning, ensuring that procurement requirements are effectively identified and defined to enhance implementation efficiency (Harerimana, 2021). Successful contract execution requires active user involvement from contract initiation through recording, receiving inspection, and payment approval to ensure the organisation meets its needs (Panakaduwa et al., 2025). User participation in contract management enhances efficiency, transparency, and accountability by ensuring that procurement products meet required requirements, enabling early error detection, and reducing risks. The most substantial areas in contract management are contract formation, receipt and inspection, record-keeping, and payment, which require continuous user involvement to achieve organisational objectives effectively (Uwiringiyimana & Dushimimana, 2024). Evidence demonstrates that procurement performance improves when users are actively engaged in receiving, inspecting, and accepting procured items before payment authorisation (Oenga et al., 2022). User participation in inspections ensures adherence to quality standards, timely

delivery, and successful project completion while minimising procurement risks, contractual errors, and disputes (Osifo et al., 2025).

Despite the acknowledged gains of user involvement in contract management, organisations continue to bear numerous challenges that harmfully affect procurement performance. Ineffectiveness of user involvement often results in poor management of procurement contracts, non-compliance with procurement rules and regulations, poorly defined risks, and a failure to enforce the terms and conditions of agreements (Egbumokei et al., 2024; Osifo et al., 2025). Several empirical studies attribute this to insufficient user involvement and a lack of standardised contract management (Demirkesen & Tezel, 2022; Mushi et al., 2024b). The magnitude of these challenges persists despite the government's efforts to establish procurement laws and oversight authorities to strengthen integrity and accountability in procurement entities. Audit evidence from the Controller and Auditor General (CAG) of Zanzibar indicates that weaknesses in public procurement lead to operational and technical inefficiencies and to substandard services and projects.

These challenges are systemic across three consecutive periods (2019/2020, 2020/2021, and 2020/2021). The report demonstrates continuous non-compliance with procurement laws across local government authorities (LGAs) in Zanzibar. During the financial year 2019/2020, LGAs made irregular payments totalling TZS 40.03 million by paying contractors before the project was completed. In the financial year 2021/2022, losses amounting to 100 million Tanzanian Shillings were recorded as a result of poor contract management, including delayed or absent inspections, incomplete contract documentation, and failure to enforce contractual obligations. Furthermore, in the financial year 2022/2023, a town council alone lost 1.76 billion Tanzanian Shillings due to poor record-keeping and defective contract formation resulting from malpractices (CAG Report, 2023). Recurring of these flaws in audit reports indicate persistent weaknesses in contract management despite the existence of procurement laws and standards.

On the other hand, several studies have investigated the relationship between contract management and procurement performance, though there is limited evidence on user involvement in contract management, and their findings remain inconclusive. For instance, some studies found a significant relationship (Christine & Gamariel, 2021; Jolly, 2022; Mugecha & Ndeto, 2024), while others found an insignificant relationship (Harerimana, 2021; Komakech, 2020). These mixed results suggest the possibility of conditional factors influencing contract management on procurement performance, especially in public sector. Consequently, some scholars in the context of public procurement recommend examining moderating variables that may explain variations in research results (Changalima et al., 2026; Masoud & Kawishe, 2024; Matunga et al., 2021; Mwagike, 2025). Existing literature shows that staff competence determines how procurement practitioners perform their duties in the contract execution (Mwagike, 2025; Nangpiire et al., 2024). However, empirical literature has predominantly concentrated on competence of procurement officers and paid little attention to user departments.

To address the existing gap, this study explores the effect of user involvement in contract management (contract formation, and receiving and inspection) on procurement performance within LGAs in Zanzibar, and whether user competence moderates these relationships. Therefore, the present study introduces user competence as a moderating variable in the main relationship. In this regard, the current study is relevant in the research field as it extends the literature by explaining the conditional effects of aspects of user involvement in contract management on procurement performance at different levels of user competence.

2. Literature review and hypothesis development

2.1 The institutional theory

Institutional theory is adopted to explain how organisational practices are shaped by institutional pressure (Scott, 2005). The theory focuses on normative, regulatory, and cultural-cognitive pillars (Hwang, 2023). Normative pillars are the values and norms that guide the organisation in performing its functions. The regulatory pillar emphasises the use of rules, laws, regulations, standards and guidelines. The cultural cognitive pillar focused on explaining how stakeholders shared understanding (Nangpiire et al., 2024). These provide an analytical framework for how organisations implement procurement practices that adhere to regulatory norms and foster a shared understanding within public procurement. Aksom and Tymchenko (2020) state that organisations can embrace procurement practices by establishing mechanisms that encourage procurement practitioners to adopt the regulatory, normative, and cultural-cognitive pillars. The theory explains the link between user involvement in contract management and procurement performance. Considering active user participation in contract formation and receiving and inspections, the theory shows how to embed legal binding within regulatory and normative pillars to ensure that contractual agreements reflect technical operations,

organisational needs, and service delivery expectations. Operational effectiveness is achieved when organisations comply with public procurement rules and regulations (Adebayo et al., 2024; Mwagike, 2025).

The theory helps the organisation ensure that stakeholders translate external pressures into organisational action. Its likelihood of satisfactory procurement performance increases when users are involved in procurement activities. (Nangpiire et al., 2024). Therefore, institutional theory is pertinent to this study because it explains how user involvement in contract management influences procurement performance in the public sector. It also justifies the view that user involvement in contract management is an institutional behaviour that must be understood within a normative and regulatory context. However, the theory does not adequately explain differences in user involvement and procurement performance among users within the same institutional context. Therefore, this study employed the competence model to account for variation in user competence which is crucial in assessing the moderating effect in the main relationships.

2.2. The competence model

The competence model was instituted by David McClelland in 1973 (McClelland, 1973). This model explains competence as a key predictor of performance (Wibisono & Mauludin, 2025). The concept of competence should relate to an individual's ability, skills, and knowledge to perform assigned job functions and achieve organisational goals (Abraham & Abdullahi, 2024). The competence model derives from individual attributes, including knowing what (concepts), why, and how something in your job functions (Azwandi et al., 2024). Accordingly, when employee competence aligns with the demands of their jobs, high performance is achieved (Matunga, 2023). In this study, the model supports the inclusion of the moderating effect of user competence. It shows that users vary across some attributes such as procedural understanding and technical knowledge. This model explains the nature of user's understanding on how to comply with the needed duties and how their skills translate into meaningful contributions to organisational operations. The model is relevant in the current study in examining the moderating role of user competence as competences help procuring entities to ensure that their skills and knowledge improve procurement performance. The model is relevant to the current study in examining the moderating role of user competence, as competence enhances the ability of procuring entities to have workforce with developed skills and knowledge that improve procurement performance.

2.3. Hypothesis development

2.3.1 User involvement in contract formation and procurement performance

Contract formation constitutes the initial phase of contract management, delineating the obligations of the buyer and seller in the procurement of goods and services. It ensures mutual understanding and commitment between parties (Mugecha & Ndeto, 2024). Empirical evidence shows that stakeholder participation improved performance by defining their needs, establishing clear responsibilities, and making a formal commitment. This involvement enhances the quality, quantity, and timeliness of delivery (Umar et al., 2025). Mwaiseje et al. (2024) evaluated the relationship between procurement contract administration and the quality of force account work. The study found that procurement contract administration significantly influences the attainment of quality in force accounts. Early user integration into the formulation of contractual agreements enhances performance outcomes by recommending accurate evaluation criteria and technical specifications (Almutairi et al., 2024). Moreover, Matto et al. (2021) demonstrated a strong correlation between value for money and effective contract formation. The aforementioned studies illustrate that contract formation positively influences the quality, quantity, and timeliness of delivery. Despite this empirical evidence, the literature on the relationship between contract formation and procurement performance offers limited explanations of the specific aspects of user involvement, indicating a relevant research gap. Consequently, the following hypothesis is proposed:

H1: User involvement in contract formation positively affects procurement performance.

2.3.2 User involvement in receiving and inspections, and procurement performance

Uwiringiyimana and Dushimimana (2024) state that the receiving and inspection committee shall ensure that bidders comply with the procuring entity's contract terms and specifications, including standards and quality requirements. Co and Bermudez (2023) contend that user involvement in the inspection of delivered goods positively impacts supply chain performance. Similarly, Esteve et al. (2024) find that discrepancies, losses, and irregularities in the acquisition of goods and services should be minimised or avoided when the organisation involves users in the inspection process. These studies highlight the benefits of user involvement in receiving and inspection processes. When stakeholders such as user departments actively participate in procurement processes, the procurement outcomes are more likely to align with the contractual agreement and organisational needs (Changalima et al., 2022). Also, existing regulatory frameworks emphasise the formal institutionalisation of the role of user departments in procurement processes. The accounting officers of given procuring entities should establish a receiving and inspection committee with membership including

the relevant staff from a user department (Mchopa et al., 2024). Where such involvement is insufficient, the organisation may incur the costs of incomplete deliveries, an increasing risk of substandard products and services, and delivery inefficiency (Ottou et al., 2024). These findings suggest that user involvement in receiving and inspection is a functionally significant determinant of procurement outcomes, especially in public sector. However, the studies warrant further empirical investigation of user involvement, which has received comparatively limited attention. Therefore, a gap exists that needs to be addressed by examining the link between user involvement in receiving and inspection and procurement performance. Accordingly, the following hypothesis was formulated:

H2: User involvement in receiving and inspection positively affects procurement performance.

2.3.3 The moderating effect of user competence

Competence is the ability, knowledge and skills that enable workers to perform responsibilities within a specific context (Mwagike, 2025). The study recommended that the organisation should prioritise staff development, foster collaboration, and improve overall performance. The present study explores the moderating role of staff competence on the relationship between user involvement in contract management (contract formation, and receiving and inspection) and procurement performance. Generally, previous studies have yielded mixed results on the influence of contract management on procurement performance. In contrast, some studies report a significant influence (Christine & Gamariel, 2021; Jolly, 2022; Mugecha & Ndeto, 2024), while Komakech (2020) and Harerimana (2021) have found an insignificant effect. These inconsistent results underscore the importance of identifying boundary conditions that may explain when contract management influences procurement performance.

On the other hand, Changalima and Mwagike (2024) examined the moderating effect of staff competence on communication and the effectiveness of the force account approach, and found that staff competence has a statistically significant influence on both variables. However, the study did not focus on procurement performance in LGAs, specifically in the Zanzibar context, as the public procurement system in Zanzibar is currently being reformed [The Revolutionary Government of Zanzibar (RGZ, 2025)]. Therefore, subject to further investigation incorporating the moderating variable of user competence (Changalima & Mwagike, 2024; Mebrate & Shumet, 2024; Rasheli, 2016), and given the limited literature on the moderating effect of user competence on procurement performance, this study examines how user competence moderates the relationship between user involvement in contract management processes and procurement performance. Specifically, the following hypotheses are formulated:

H3: User competence moderates the effect of user involvement in contract formation on procurement performance.

H4: User competence moderates the effect of user involvement in receiving and inspection on procurement performance.

2.4 The conceptual framework

Figure 1 presents the conceptual framework of the study. It explains the relationship between user involvement in contract management (in terms of contract formation, and receiving and inspection) and procurement performance when moderated by user competence.

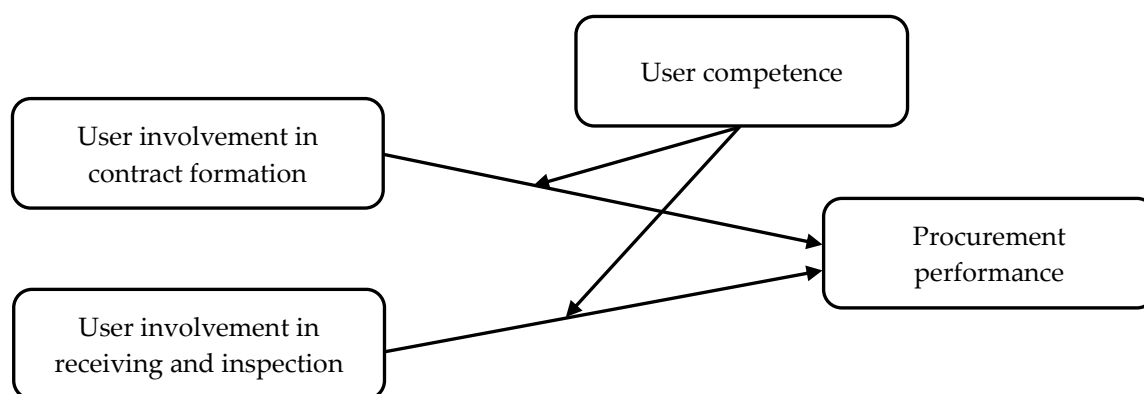


Figure 1. The conceptual framework

Source: Figure by the authors

3. Methodology

3.1 Area of the study and target population

This study was conducted in Zanzibar, and data were collected from LGAs. Zanzibar is a relevant area of research due to reported concerns about procurement performance, especially in LGAs. In Zanzibar, there are 12 LGAs and out of these, one was involved during pilot testing. The pilot testing was done to improve the accuracy and quality of the research instruments (Hair et al., 2020). Therefore, during the full-scale data collection period, the present study involved 11 LGAs. The target population consisted of 165 heads of user departments across 11 LGAs, with 15 per LGA. User department is defined as the department, section, or unit in the organisation that initiates procurement requirements and assists the procurement management unit (PMU) throughout the procurement process (RGZ, 2025). Heads of user departments were involved as units of inquiry because they represent users in the procurement process, especially within the public sector (Mushi et al., 2024a, 2024b). The contacted heads of user departments were actively involved in identifying procurement needs, formulating technical agreements, and confirming delivery of procured goods and services as required by public procurement law and regulations of Zanzibar. Therefore, heads of the user departments possessed relevant insights into the public procurement process, especially in LGAs, concerning the involvement of users in procurement undertakings.

3.2 Research design, sample size and data collection

An explanatory cross-sectional research design was employed in this study, in which data were collected at a single point in time (Taris et al., 2021). This design is relevant in providing a snapshot and explaining the nature of relationships between variables under the investigation. On the other hand, the study utilised a census approach in which all heads of user departments within the respective LGAs were contacted to participate. This approach is useful when the study population is small, clearly identified and manageable (Okinyi et al., 2023). A census approach eliminates sampling errors, increases response rates, and is cost-effective when the population is manageable (Odongo & Kazungu, 2023). On the other hand, a structured questionnaire was used to collect data from the respondents. The drop-off and pick-up method was used to distribute the questionnaires to selected respondents (Allred & Ross-Davis, 2011; Asenahabi, 2019). This approach was relevant for enhancing response rate due to its flexibility. A total of 165 responses were collected from 11 LGAs in Zanzibar. At the end of the data collection period, 159 questionnaires were accepted for data analysis as 6 out of 165 were rejected due to incomplete and missing information. This resulted to 96.4% response rate. The final total responses met the recommendation of the 10-times rule as provided in partial least squares structural modelling (PLS-SEM) literature (Kock & Hadaya, 2018).

3.3 Measurements of variables

Measurements of variables were based on previous studies and refined during pilot testing to align with the specific research purposes and the study's context. All measurement items, as presented in Table 1, were rated on a five-point Likert scale ranging from '1 - strongly disagree' to '5 - strongly agree'. The four items for measuring user involvement in contract formation were based on the studies by Briggs (2022), Athumani and Bisama (2018), and Peter and Muli (2022), while the three items for measuring user involvement in receiving and inspection were based on the studies by Briggs (2022) and Peter and Muli (2022). The items for measuring procurement performance were based on studies by Benaya (2020), and Damayanti and Aswar (2021), Mahuwi and Panga (2020), while the items for measuring user competence were developed with reference to the studies by Masoud and Kawishe (2024), Nyalusi and Sama (2025) and Mrope (2017). Both user competence and procurement performance were measured using six items.

3.4 Data analysis

SmartPLS 4 was employed in this study (Ringle et al., 2024), whereas PLS-SEM was used for analysing the collected data. PLS-SEM is useful as it facilitates hypothesis testing and is predictive in nature (Magno et al., 2024). It is also well suited for complex structural models involving moderation, prediction-oriented research, and relatively small sample sizes (Changalima & Chuwa, 2025; Hair et al., 2024). Therefore, PLS-SEM became more appropriate in the present study. PLS-SEM enables the evaluation of both the measurement and structural models (Hair & Alamer, 2022). The measurement model was evaluated to assess the reliability and validity. Internal consistency reliability was examined using Cronbach's alpha and composite reliability. Indicator reliability was evaluated through outer loadings. Convergent validity was examined using average variance extracted (AVE) (Changalima & Chuwa, 2025). Discriminant validity was assessed using cross-loadings and the Heterotrait-Monotrait Ratio (HTMT) (Ringle et al., 2023). The model is found to be valid and reliable when the constructs meet the required thresholds. The structural model was evaluated to test the proposed hypotheses following validation of the measurement model. In this study, the bootstrapping procedure with 10,000 bootstrap resamples was employed in the structural model to obtain relevant significance levels

for path coefficients (Changalima & Chuwa, 2025). The evaluation also included collinearity, path coefficients, significance testing, predictive relevance, and coefficient determination (Usakli & Rasoolimanesh, 2023; Ringle et al., 2023).

Table 1: Measurement items of the study variables

Variables	Items	References
User involvement in contract formation	- The users are involved in a proper technical review before a contract (UICF1) - User involved in defining the process and a clear contract management plan (UICF2) - User is involved in corrective actions once a discrepancy is identified in this process (UIRI3) - The user department is involved in supervising contracts to ensure the supplier/services provider/contractor meets the specified terms and conditions of the contract (UICF4)	Briggs (2022) Mbeche and Gichanga (2021) Peter and Muli (2022)
User involvement in receiving and inspection	- The user department is involved in inspecting the delivery of goods or services to ensure all terms of the contract are being adhered to (UIRI1) - The user department participates in checking invoices against the purchase order and delivery note before payment (UIRI2) - The user department is involved in generating all its records during the inspections with honesty (UIRI3)	Briggs (2022) Peter and Muli (2022)
User competence	- The user department has adequate knowledge and skills in procurement requirements (UCK1) - The user department knows its function in procurement (UCK2) - User department understanding of procurement procedures (UCK3) - User department knows procurement rules and regulations (UCK4) - User involved in procurement activities are competent enough to perform their respective responsibilities (UCK5) - User department has strong contract management skills (UCK6)	Masoud and Kawishe (2024) Mrope (2017) Nyalusi and Sama (2025)
Procurement performance	- Supplier's adherence to delivery date (PP1) - The product is used according to the planned schedule (PP2) - Reduce the number of complaints about delays in service delivery (PP3) - There are minimal complaints from the user department on procurement matters (PP4) - There is an improvement in quality standards (PP5) - The procurement department delivers the requested item with the right quality (PP6)	Benaya (2020) Damayanti and Aswar (2021) Mahuwi and Panga (2020)

Source: Table by the authors

4. Findings and discussion

4.1 Demographic characteristics

Table 2 provides an overview of the demographic characteristics. Demographic characteristics are important because they illustrate the characteristics of the respondents, i.e., heads of user departments. A total of 159 heads of user departments participated in this study. As presented in Table 2, the majority of respondents were aged between 31 and 40 years, indicating that the participants were predominantly in the productive age group. The number of females and males who participated in the study was nearly equal. Additionally, most of the heads of user departments included in this study held bachelor's degrees, indicating that the participants are capable of understanding and providing

knowledgeable responses in relation to the study's variables. Generally, these demographic characteristics indicate that the final sample was suitable for the study.

Table 2: Demographic Characteristics (n = 159)

Variable	Responses	Frequency	Percent
Age	20-30	37	23.3
	31-40	92	57.9
	Above 40	30	18.8
Sex	Male	79	49.7
	Female	80	50.3
Highest level of education	Advanced diploma	13	8.2
	Bachelor degree	121	76.1
	Master degree	24	15.1
	PhD	1	0.6

Source: Table by the authors

4.2 Descriptive statistics

The results presented in Table 3 indicate a moderate level of user involvement in contract formation, and receiving and inspection. Meanwhile, user competence recorded moderately mean scores, indicating potential competence deficiencies among users. Notwithstanding, procurement performance is perceived relatively favourably. The responses exhibit some variations, as evidenced by standard deviations exceeding 1, as presented in Table 3.

Table 3: Descriptive statistics

Variable	Mean	Standard deviation
User involvement in contract formation	3.2940	0.9859
User involvement in receiving and inspection	3.1468	1.1404
User competence	3.3071	0.9648
Procurement performance	3.3941	0.9951

Source: Table by the authors

4.3 Assessment of the measurement model

The measurement model in PLS-SEM focuses on the relationships between latent variables and their indicators so as to assess reliability and validity. In this stage, the study assessed the indicator reliability, internal consistency, convergent validity and discriminant validity.

First, indicator reliability was assessed by examining outer loadings, which should be above 0.7 and preferably above 0.708 (Changalima & Chuwa, 2025; Ringle et al., 2023). The findings in Table 4 show that all outer loadings are above 0.708; hence, indicator reliability was achieved. Second, internal consistency reliability was assessed by using Cronbach's alpha coefficients and composite reliability. The findings in Table 4 indicate that internal consistency was achieved as the Cronbach's alpha coefficients are above 0.7 (Santos, 1999; Subhaktiyasa, 2024; Tavakol & Dennick, 2011). Also, composite reliability which is a measure of internal consistency in scale items that evaluates how well a set of observed indicators (items) measures a single underlying theoretical construct is considered acceptable when it is 0.7 and above (Changalima & Chuwa, 2025). Table 4 shows that all values of composite reliability are above 0.7.

On the other hand, convergent validity was evaluated by assessing values of average variance extracted (AVE), whereby AVE values which are 0.5 and above meet the recommended threshold (Subhaktiyasa, 2024). In this study, AVE values for all constructs are above 0.5. Therefore, the study's findings in Table 4 indicate that the items employed are both consistent and reliable, as presented in Table 4.

In assessing the discriminant validity, this study used two approaches to validate that all constructs are different from each other. These approaches are the Heterotrait-Monotrait ratio (HTMT) and Fornell-Larcker criterion (Changalima & Chuwa, 2025; Henseler et al., 2015; Ringle et al., 2023). The HTMT was employed to assess whether theoretically dissimilar latent constructs are also empirically distinct. It is the most reliable test in PLS-SEM (Henseler et al., 2015; Ringle et al., 2023). The results presented in Table 5 indicate that all values of the HTMT matrix are acceptable, as all items are below the recommended threshold of 0.85 (Changalima & Chuwa, 2025; Henseler et al., 2015). Also, the results in Table 5 indicate that the Fornell-Larcker criterion was satisfied, as the square root of the AVE for each construct exceeded its correlations with other constructs (Fornell & Larcker, 1981).

Table 4: Reliability and convergent validity

Constructs and Items	Loadings	Cronbach's alpha	Composite reliability	AVE
<i>Procurement performance</i>		0.898	0.905	0.664
• PP1	0.773			
• PP2	0.755			
• PP3	0.835			
• PP4	0.866			
• PP5	0.847			
• PP6	0.807			
<i>User competence</i>		0.885	0.901	0.632
• UCK1	0.784			
• UCK2	0.753			
• UCK3	0.796			
• UCK4	0.781			
• UCK5	0.834			
• UCK6	0.821			
<i>User involvement in contract formation</i>		0.840	0.844	0.676
• UICF1	0.793			
• UICF2	0.834			
• UICF3	0.853			
• UICF4	0.808			
<i>User involvement in receiving and inspection</i>		0.845	0.906	0.764
• UIRI1	0.872			
• UIRI2	0.862			
• UIRI3	0.887			

Source: Table by the authors

Table 5: Discriminant validity

HTMT matrix					
Constructs	PP	UCK	UICF	UIRI	UCK*UIRI
PP					
UCK	0.571				
UICF	0.812	0.700			
UIRI	0.532	0.856	0.813		
UCK*UIRI	0.096	0.351	0.058	0.285	
UCK*UICF	0.361	0.109	0.308	0.052	0.564
Fornell-Larcker criterion					
Constructs	PP	UCK	UICF	UIRI	
PP	0.815				
UCK	0.530	0.795			
UICF	0.714	0.606	0.822		
UIRI	0.468	0.743	0.683	0.874	

Source: Table by the authors

4.4 Assessment of the structural model

The structural model in PLS-SEM evaluates the relationship between latent variables in the study (Gelashvili et al., 2021). The standard criteria in this stage include assessing collinearity through variance inflated factor (VIF) and predictive metrics such as coefficients of determination (R^2), effect size (f^2), and (Q^2) (Changalima & Chuwa, 2025; Ringle et al., 2023). This is relevant because the first criterion in this reflective model is a collinearity test to ensure the robustness of the study's analysis (Kassim et al., 2020). Also, the assessment includes path coefficients and their statistical

significance levels. This stage in PLS-SEM is used to reveal how the model explains the direction and strength of the relationships under investigation.

Collinearity was assessed using the VIF scores. When the VIF is < 3.0 or 5.0 , it indicates no major concerns of collinearity issues in the study (Changalima & Chuwa, 2025; Hair et al., 2019; Ringle et al., 2023). If there is no collinearity issue, the coefficient determination was examined to describe the endogenous construct (Subhaktiyasa, 2024). As shown in Table 6, collinearity is not a concern because the VIF scores are below 5.0 (Hair et al., 2019; Ringle et al., 2023). On the other hand, model's predictive accuracy and predictive relevance were assessed in this stage. It should be noted that, R^2 values of 0.25 , 0.50 and 0.75 indicate weak, moderate, and substantial, respectively (Hair et al., 2019). Although the R^2 greater than 0.10 is also acceptable (Changalima & Chuwa, 2025; Falk & Miller, 1992). As presented in Figure 2, the R^2 value is 0.568 . This means that 56.8% of the variance in procurement performance (endogenous construct) is explained by user involvement in contract formation, user involvement in receiving and inspection (exogenous constructs), and user competence as a moderating variable. This value indicates moderate predictive accuracy.

In addition, the study assessed effect size (f^2) values to quantify the magnitude of the relationship between variables. According to Cohen (1988), effect sizes of 0.35 , 0.15 , and 0.02 are considered large, medium, and small, respectively. The findings in Table 6 demonstrate that the f^2 values ranged from small to medium effects for most of relationships. On the other hand, Q^2 , is acceptable if the value is greater than zero (Hair et al., 2019). In this study, the model's predictive relevance (Q^2) was 0.365 , which is above zero, indicating that the model's predictive relevance was achieved (Changalima & Chuwa, 2025; Hair et al., 2019).

Table 6 present the path coefficients and statistical significance for testing the hypotheses as obtained in the structural model assessment. The study hypothesised that user involvement in contract formation positively affects procurement performance (H1). The results shown in Table 6 and Figure 2 supported this hypothesis ($\beta = 0.524$, $t = 6.004$, $p < 0.001$). The results suggest that user involvement practices in LGAs within Zanzibar offer opportunities to improve terms and conditions of the procurement contract. The same is relevant for enhancing procurement performance. This finding is aligned with Hassan and Omwenga (2023), who claim that contract administration has a significant positive influence on procurement performance. The finding aligns with institutional theory by highlighting that operational efficiency is achieved when organisations adhere to public procurement policies, laws, and regulations and hence strengthening compliance. The involvement of users in contract formation encourages them to be assigned and to perform their tasks in accordance with the existing laws and guidelines (Mohamed, 2017).

The second hypothesis (H2) posits that user involvement in receiving and inspection positively affects procurement performance. The findings presented in Table 6 show that the effect of user involvement on receiving and inspection on procurement performance is not statistically significant ($\beta = -0.081$, $t = 0.811$, $p = 0.418$). Therefore, H2 is not supported. This implies that user involvement in receiving and inspection is not a relevant predictor of procurement performance in public sector. These findings contradict previous studies as Wanjugu et al. (2018) indicated that inspection of delivered products and procurement performance are significantly related. Furthermore, Gatobu (2020) found that receiving and inspection have a significant positive effect on performance. The previous studies indicate that procuring entities should treat receiving and inspection as critical activities in the procurement process to enhance procurement performance. Furthermore, Co and Bermudez (2023) state that a physical inspection significantly impacts the organisation's success. In this regard, the present study calls for more research on the effect of user involvement in receiving and inspection on procurement performance. This is crucial as physical inspection may ensure that all goods are systematically handed over and appropriately recorded, thereby enhancing procurement outcomes.

The third hypothesis (H3) centres on testing whether user competence moderates the effect of user involvement in contract formation on procurement performance. Table 6 shows that user competence significantly moderates this relationship ($\beta = -0.231$, $t = 3.886$, $p < 0.001$), supporting H3. However, the findings reveal that user competence weakens the positive relationship between user involvement in contract formation and procurement performance. This shows that user involvement in contract formation is crucial for enhancing procurement performance. However, the effect becomes weaker when user competence is high. This interesting result may be explained by the fact that highly competent users already possess the knowledge, skills, and experience needed to make sound procurement decisions and effectively communicate their requirements. As a result, the additional benefits of active involvement in contract formation are less pronounced because these users can achieve satisfactory procurement outcomes even with relatively lower levels of participation. In contrast, when user competence is low, active involvement in contract formation provides greater opportunities for clarification, knowledge sharing, and collaboration with procurement professionals, thereby significantly improving procurement performance. This interesting result may also be attributed to the substitutive relationship between user competence and user involvement. As user competence increases, the marginal value of extensive involvement in contract formation diminishes because competent users are better able to define

requirements accurately and make informed decisions independently. Therefore, competence partially substitutes for the benefits derived from active involvement, resulting in a weaker relationship between user involvement in contract formation and procurement performance.

The final hypothesis (H4) centres on testing whether user competence moderates the effect of user involvement in receiving and inspection on procurement performance. The results in Table 6 show that user competence significantly moderates this relationship ($\beta = 0.153$, $t = 2.390$, $p = 0.017$), leading to the acceptance of hypothesis H4. The finding implies that the negative effect of user involvement in receiving and inspection on procurement performance is reduced at higher level of user competence. Therefore, competent personnel with adequate skills and knowledge ensure satisfactory procurement performance. It should be noted that user involvement in receiving and inspection has insignificant negative direct effect on procurement performance. However, the positive and significant moderating effect indicates that user competence (moderator) reduces the negative effect in this relationship. As the level of the moderator increases, the adverse effect of user involvement in receiving and inspection decreases and may become positive at sufficiently high levels of user competence. These results are supported by previous studies which emphasise on the role of competence in procurement outcomes. For instance, Tinali and Zachary (2021) reported that competence has a stronger impact on procurement performance than other indicators. Additionally, Prasetyo and Orbaningsih (2024) state that individual competence is crucial in enhancing effectiveness of training and improving procurement performance. Moreover, the result supports the integration of institutional theory and the competence model, demonstrating that institutional rules and regulations influence organisational behaviour and users' competence (Mihungo & Mwangike, 2021), and that the positive effect of user involvement on procurement performance also depends on users possessing adequate skills and knowledge as relevant attributes of competence.

Table 6: Structural model results for hypothesis testing

Relationships	Original sample (O)	Standard deviation (STDEV)	T statistics (O /STDEV)	VIF	f ²	p- values
H1: UICF → PP	0.524	0.087	6.004	3.096	0.205	0.000
H2: UIRI → PP	-0.081	0.100	0.811	3.264	0.005	0.418
UCK → PP	0.297	0.089	3.325	2.570	0.080	0.001
H3: UCK*UICF → PP	-0.231	0.059	3.886	2.232	0.068	0.000
H4: UCK*UIRI → PP	0.153	0.064	2.390	2.321	0.026	0.017

Source: Table by the authors

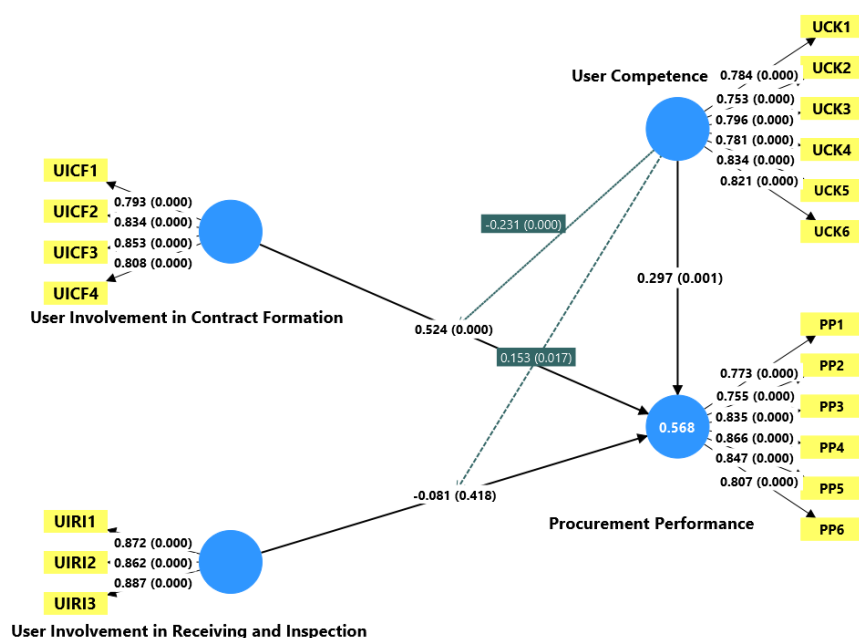


Figure 2. The structural model

Source: Figure by the authors

Furthermore, in this study, the conditional effects in the structural model were assessed through moderation analysis, and simple slope plots were generated to interpret significant interaction effects. The slope plots illustrated how the relationship between the predictors (user involvement in contract formation, and user involvement in receiving

and inspection) and outcome variable (procurement performance) changed across low (-SD), mean, and high (+SD) levels of the moderator (i.e., user competence), thereby enhancing the interpretation of the conditional effects. The results in Table 7 present the conditional effects and Figures 3 and 4 present slope plots.

Table 7 shows that at all levels of user competence, the relationship between user involvement in contract formation and procurement performance remains positive and statistically significant. However, the relationship is stronger at the low level of user competence than at the high level. This implies that as user competence increases, the positive effect of user involvement in contract formation on procurement performance weakens. In other words, user competence negatively moderates the relationship between user involvement in contract formation and procurement performance. Although involving users in contract formation enhances procurement performance regardless of competence level, its incremental contribution is greater when users possess lower levels of competence than when they are highly competent. These effects are clearly presented in Figure 3 by unveiling a slope plot that demonstrates the way user competence moderates the relationship between user involvement in contract formation and procurement performance. The findings show that user involvement in contract formation remains relevant to procurement performance at all levels, though the effect decreases when user competence increases.

Table 7 reveals that user competence moderates the relationship between user involvement in receiving and inspection and procurement performance. Specifically, at low levels of user competence, user involvement in receiving and inspection has a significant negative effect on procurement performance ($\beta = -0.235$, $t = 2.398$, $p = 0.017$). At the mean level of user competence, the relationship remains negative but is no longer statistically significant ($\beta = -0.081$, $p = 0.418$). Similarly, at high levels of user competence, the relationship becomes positive ($\beta = 0.072$), although the effect is not statistically significant ($p = 0.598$). The simple slope analysis in Figure 4 indicates that user involvement in receiving and inspection has a negative effect on procurement performance at low levels of user competence.

However, as user competence increases, this negative effect becomes weaker and eventually turns positive, suggesting that competent users are better able to undertake receiving and inspection activities in ways that enhance procurement performance. These findings suggest that increasing user competence diminishes the negative effect of user involvement in receiving and inspection on procurement performance. While low user competence is associated with a significant decline in procurement performance when users are involved in receiving and inspection, higher levels of competence reduce this adverse effect. Thus, the results indicate that user competence primarily serves to mitigate the negative consequences associated with user involvement in receiving and inspection.

Table 7: The conditional effects of predictor variables at the values of the moderator

Predictors and the levels of the moderator	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	p-values
User involvement in contract formation as a predictor					
Low level (-1SD)	0.755	0.757	0.057	13.146	0.000
Mean	0.524	0.525	0.087	6.004	0.000
High level (+1SD)	0.293	0.293	0.138	2.125	0.034
User involvement in receiving and inspection as a predictor					
Low level (-1SD)	-0.235	-0.242	0.098	2.398	0.017
Mean	-0.081	-0.091	0.100	0.811	0.418
High level (+1SD)	0.072	0.061	0.137	0.528	0.598

Source: Table by the authors

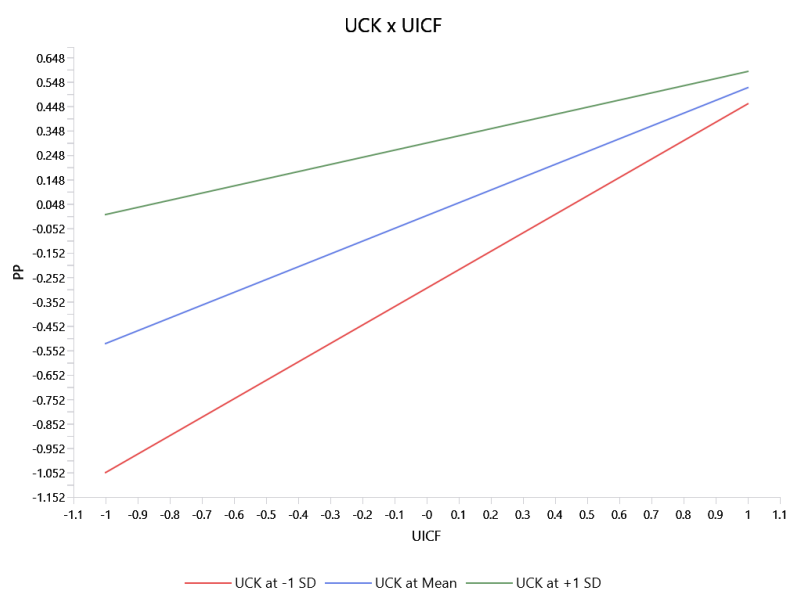


Figure 3. The slope plot for user involvement in contract formation as a predictor

Source: Figure by the authors

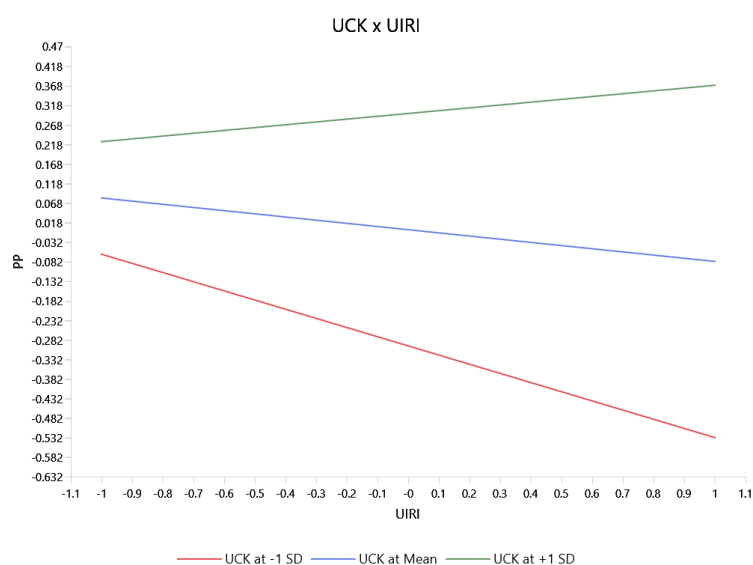


Figure 4. The slope plot for user involvement in receiving and inspection as a predictor

Source: Figure by the authors

5. Conclusion

This study used data collected from 159 heads of user departments in LGAs within Zanzibar to examine the relationship between user involvement in contract management (in terms of user involvement in contract formation, and user involvement in receiving and inspection) and procurement performance. Also, the study examined the moderating effect of user competence in these main relationships. Based on the results, the study concludes that user involvement in contract management in terms of contract formation, and receiving and inspection affects procurement performance. Also, user competence significantly moderates these relationships at different levels and directions. Regarding the direct relationship, user involvement in contract formation and user competence (as a relevant factor) have a significant positive effect on procurement performance. Whereas user involvement in receiving and inspection has an insignificant negative relationship with procurement performance. However, the moderation analysis reveals statistically significant results with different contributions on the main relationships. Therefore, user involvement in contract management processes should be effectively leveraged, taking into account the moderating effect of user competence. User competence alters the nature of the relationship between user involvement in contract management (contract formation, and receiving and inspection) and procurement performance, depending on the levels of user competence. This study has several implications.

5.1 Policy implications

The study presents critical evidence on user involvement in contract formation, and receiving and inspection as aspects of contract management. Similarly, the research emphasises the role of user competence in moderating the effects of user involvement in contract management and procurement performance. In this regard, policymakers should develop and strengthen policies that clearly define and identify users' roles in contract management processes. Also, policymakers should prioritise capacity building by establishing professional and technical bodies in Zanzibar to equip public procurement practitioners and stakeholders with relevant knowledge of procedures, standards, and ethical issues in procurement contract management and associated processes such as contract formation, and receiving and inspection. Finally, relevant policymakers should ensure the effective implementation of procurement laws and regulations by raising awareness among all public procurement stakeholders including user departments.

5.2 Practical implications

The study highlights the importance of user involvement in contract formation showing that their involvement improve procurement performance, especially within LGAs in Zanzibar. Effective user involvement during contract formation helps define terms and schedules, while involvement in receiving and inspection processes ensures quality. The findings suggest that LGAs should involve user departments to enhance public procurement outcomes, ensuring that their participation improves delivery quality, reduces delays, and aligns with organisational goals. However, procuring entities should be cautious about the negative moderating effect, whereby reliance on user competence weakens the positive effect of contract formation on procurement performance. Therefore, participation should be regulated and closely monitored, prioritising strategic skills over operational tasks. On the other hand, user competence reduces the negative effect of user involvement in receiving and inspection on procurement performance. Therefore, users must attend training to enhance their ability to handle receiving and inspection procedures.

5.3 Theoretical implications

The present study investigates the moderating effect of user competence on the relationship between user involvement in contract management (i.e., contract formation, and receiving and inspection) and procurement performance, specifically in LGAs within Zanzibar. This area of research is underexplored and remains a critical gap in the literature. Therefore, the study addresses a relevant gap in the literature by focusing on user involvement and their competences in enhancing public procurement performance. The current study extends previous research that overlooked the involvement of users in procurement practices and procurement performance (King'oo & Muli, 2019; Mebrate & Shumet, 2024; Nangpiire et al., 2024). Furthermore, the study extends this line of research by confirming the moderating effect of user competence on the main relationships. On the other hand, the current study confirms that both institutional theory and the competence model provide relevant insights into enhancing organisational outcomes. The study revealed that the way user competence affects contract formation, and receiving and inspection as aspects of contract management impacts procurement performance in LGAs.

6. Limitations and suggestions for future studies

The present study utilised cross-sectional data obtained from heads of user departments within LGAs in Zanzibar, thereby limiting the generalisability of the findings to other regions due to differences in policies, laws, regulations, and guidelines governing public procurement procedures. Therefore, future studies should consider expanding the sample to other regions to obtain relevant insights into the moderating effect of user competence on the relationship between user involvement in contract management and procurement performance. Furthermore, as the current research was conducted in a public-sector setting, future research should focus on entities within the private sector, including the manufacturing sector, to facilitate comparisons of procurement outcomes. This study employed a cross-sectional design, collecting data at a single point in time; future studies should employ a longitudinal design to yield a more profound understanding of active user involvement in contract management, user competence, and procurement performance. Additionally, the theoretical perspectives of the current research may limit the explanation of organisational capability development and conditions that shape the application of user competence in public procurement settings. Therefore, future studies should integrate complementary perspectives, such as behavioural theories, with the inclusion of other variables (predictors, mediators, and moderators) to provide a more comprehensive understanding of user involvement in contract management, user competence, and procurement performance.

Declarations

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Ethical approval

The study considered ethical issues and obtained ethical clearance from the Institutional Research Review Ethics Committee of the University of Dodoma under Ref. No. MA.84/261/77/270 on 15th August 2024.

Authors' contributions

Shamsia Mikidadi Mohamed, as the PhD candidate, was responsible for the conceptualisation, methodology, data curation, project administration, software implementation, preparation of the original draft, and manuscript review and editing under the supervision of **Dr. Salum Matotola** and **Prof. Leonada Raphael Mwagike**. Both supervisors contributed to the study design, manuscript writing, critical review, and editing. All authors read and approved the final version of the manuscript for submission.

Consent to publish

All the authors have consented to the publication of the article.

Consent to participate

All participants consented to participate in the study.

Competing interest

The authors declare no potential conflict of interest.

Data availability

Data is available from the corresponding author upon reasonable request.

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