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The influence of procurement skills on the cross-functional coordination in public procurement: evidence from Tanzania

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ABSTRACT

Currently, there is a growing focus on procurement skills as one of the key variables in explaining crucial outcomes in public procurement. Despite such observations, the relationship between procurement skills and cross-functional coordination is not well articulated to concretize the claimed causal relationship. This study examined the influence of procurement skills on cross-functional coordination in public procuring entities in Tanzania. Data were collected through structured questionnaires from 177 heads of departments found in 11 selected local government authorities in Tanzania. Data were analyzed by using structural equation modeling. The findings reveal that procurement skills in terms of strategic analytical skills, technical tactical skills, as well as interpersonal skills are positive and significant determinants of cross-functional coordination. The findings imply that procurement skills are critical in influencing cross-functional coordination in the procurement process among public entities. This study serves as a wake-up call for procurement managers to improve and update the skills of their staff, particularly procurement professionals. Also, this study fills a gap in the literature that emphasizes internal coordination in procuring entities by contributing to the understanding of the significance of procurement skills in the coordination approach for a more integrated public procurement process.

1. Introduction

Public procurement is a function that assists the government in carrying out its responsibilities and attaining its goals (Matebese-notshulwana, 2021). It involves a process of acquiring goods, works and services through public funds for the benefit of the majority of public users. Procurement has been regarded as the most promising functions that contribute to the national economic development of the country (Changalima et al., 2021). According to global statistics, the world's total expenditures in public procurement account for more than 20% in 2017 and 17% in 2020 (Organisation for Economic Co-operation and Development [OECD], 2019, 2021). In developing countries specifically in Tanzania, public procurement expenditures account for more than 70% (Changalima, 2023; Matto et al., 2021). Considering the highest portion of government funds in procurement operations, attention has been paid to the management of procurement processes for the achievement of users' needs (Lyimo & Mrema, 2022; Tinali, 2022). Thus, procurement practitioners have the responsibility of managing the procurement processes to ensure the timely and efficient acquisition of the right goods (Cornelius du Preez & Folinas, 2019).

Generally, the procurement process starts from identification of needs, selection and solicitation of sources, preparation and awards of contracts as well as management of contracts to their ends (Holma et al., 2020). This indicates that public procurement not only focuses to deliver public goods but also on attaining value creation (Malacina et al., 2022; Plantinga et al., 2020). Not only that but also procurement

value is enhanced when there is strategic alignment between functions (Patrucco et al., 2019). The departmental functions are considered key factors to be taken into consideration in the public procurement process. That is to say, the productivity and efficiency of user departments rely on the effectiveness of procurement operations. Procurement professionals cannot work in isolation; they need to collaborate closely with users in each department to understand their needs and fulfill them on time (Tamarabra & Askia, 2020). This is because, the current procurement environment demands quality, timely delivery and an effective response, all of which require coordination among departments.

Cross-functional coordination means harmonization of all processes and functions within an organization from different units in order to create customer value (Tomaskova, 2018). It is more concerned with gaining and disseminating information, integrating knowledge, as well as responding to this information to achieve common objective. According to PPA (2011), with its amendment (PPA, 2016), section 38, Procurement Management Unit (PMU) is responsible to co-ordinate the procurement and disposal activities of all the departments of the procurement entity, furthermore, section 39, stipulates the responsibility of user department to liaise with procurement throughout the procurement process. Therefore, coordination in public procurement is vital (Uyarra et al., 2019). Cross-functional coordination enables the achievement of common understanding, improves efficiency, creates new knowledge and improve performance acquisition which are both considered critical for the success of procurement operations in terms of delivering quality products within a reasonable time (Malacina et al., 2022; Ruiz-Alba et al., 2020).

Most procurement proceedings experience lead-time issues that cause delays, independence of departments and conflicting goals (Plantinga et al., 2020), which hinder efficiency and effectiveness in procurement (Elhag et al., 2020; Matto, 2017). This has been caused by a lack of a structured communication framework, differences in departmental priorities, as well a lack of common understanding, (Kang et al., 2021). Therefore, managing interactions and creating a better understanding of needs of users requires sufficient skills and capabilities (Nguyen et al., 2018). The required skills include, but not limited to, strategic analytical skills, technical tactical skills and interpersonal skills, which are more related to human competence. Therefore, through these skills, practitioners obtain information from both internal and external environments. With a cross-functional coordination strategy, they can respond to the derived information which enables the organization to achieve its objectives (Tomaskova, 2018).

According to Schütz et al., (2020), procurement value is determined when procurement professional knowledge and skills are combined with other functional processes, such as procurement coordination. Additionally, procurement objectives are achieved when department functions interact (Mukhtar & Azhar, 2020). Moreover, procurement success necessitates cross-functional coordination efforts and the integration of work, diverse ideas and diverse viewpoints across different functional divisions (Ashenbaum et al., 2020; Kang et al., 2021; Omoruyi & Ntshingila, 2021). Therefore, procurement skills are key drivers toward cross-functional coordination (Ruiz-Alba et al., 2020).

Past studies have approached procurement coordination from various perspectives. For example, Mukhtar and Azhar (2020) examine how cross-functional coordination influences the creation of value and enhances the competitiveness of the supply chain. Ashenbaum et al. (2020) focus on the coordination between procurement and engineering in a competitive business environment and the impact of cross-functional coordination in moderating claims and disputes in procurement (Elhag et al., 2020). Also, Breitling (2019) assessed the impact of cross-functional coordination between purchasing and logistics on supply chain performance. However, there is a gap in the literature regarding the exploration of procurement skills about coordination, especially, in the context of public procurement. Therefore, this study examines the influence of procurement skills on cross-functional coordination in public entities. To achieve this objective, this study seeks to gain a better understanding of the following general research question:

Research Question 1 (RQ1): Do procurement skills influence cross-functional coordination in public procurement?

By answering this research question, the study makes an empirical contribution by examining the influence of procurement skills on cross-functional coordination in public procurement. The study

investigates the relationship between procurement skills and coordination between different functional departments within an organization. Also, the theoretical contribution of this study lies in bridging the gap in the existing literature regarding the exploration of procurement skills about cross-functional coordination. By investigating the influence of procurement skills on coordination, the study enhances our understanding of the factors that contribute to effective coordination within public procurement entities. This is crucial for practical contributions in enhancing procurement skills to improve cross-functional coordination in public entities. The study's findings can contribute to the development of theoretical models and frameworks that emphasize the importance of procurement skills in achieving successful coordination in public procurement settings.

2. Literature review and hypotheses development

2.1. Resource based view (RBV)

According to the RBV, an organization is considered to have resources and capabilities that enable it to execute its tasks (Barney, 1991). Resources are regarded as tangible or intangible resources owned by organizations that allow them to achieve their purposes (Kozlenkova et al., 2014). The theory believes that the resources and capabilities that are owned within an organization are valuable, rarity, imitability and organization, (how organizations operate and design for organizational performance) (Karia & Wong, 2013). RBV emphasizes that organizational performance depends on the integration of unique resources and competencies in terms of human, social and financial resources (Barney et al., 2021). Therefore, resource-based theory adds a range of capabilities that come from a complicated pattern of interaction and coordination between resources (Changalima et al., 2023; Mahonda, 2022). In this notion, the ability to coordinate procurement activities is regarded as an intangible resource, such as strategic analytical skills, technical skills and interpersonal skills. This implies that internal coordination is required for procurement professionals to function well. This is because functional units that heavily rely on each other's resources are more prone to rely on coordination mechanisms. Furthermore, high resource interdependence can result in interactions between functions.

2.2. Strategic analytical skills and cross-functional coordination

Strategic analytical skills are vital skills needed in procurement operations to analyze complex procurement situations and develop creative solutions (Cho et al., 2019). With strategic skills in place, procurement managers can mitigate the risks associated with procurement operations (Mwagike & Changalima, 2022), save costs and foster collaboration (Rane et al., 2020). This is because, in the dynamic and ever-evolving world of procurement, the ability to effectively manage strategic skills and coordination is paramount for achieving procurement success (Allal-Chérif et al., 2021). Therefore, procurement plays a strategic role in managing cross-functional relationships to ensure quality and prompt delivery (Cornelius du Preez & Folinas, 2019). The notion may be considered relevant even for the development of procurement employees in different contexts (Bunea, 2021).

Various authors have studied strategic analytical methods using various parameters (Cho et al., 2019; Mwagike & Changalima, 2022; Santos & Cabral, 2022; Schütz et al., 2020). It has been observed that procurement professionals with negotiation ability to provide the best deal in the organization, but also provide an easy way of properly implementing the specifications provided in the contract, thus reducing conflict between functions (Mwagike & Changalima, 2022). Santos and Cabral (2022) focused on assessing cross-functional collaboration in the buyer-supplier relationship aspect and found that procurement capability, such as relationship management with stakeholders, influences collaborative trust with suppliers in complex procurement. Evidence in public procurement contexts is missing on the link between strategic analytical skills and cross-functional coordination, given the importance of strategic analytical skills towards organizational outcomes. Therefore, the following hypothesis is worth investigating:

Hypothesis 1 (H1): Strategic analytical skills significantly influence cross-functional coordination.

2.3. Technical tactical skills and cross-functional coordination

Technical tactical skills or purchasing technical knowledge refer to the specific abilities and knowledge required to effectively carry out tactical procurement activities (Bals et al., 2019). These skills are focused on knowledge and practices that enable procurers to meet organizational objectives (Omoruyi & Ntshingila, 2021). They include knowledge of the product required, market conditions, every product that should be purchased, the quality required and the manufacturing process (Cho et al., 2019; Elias & Changalima, 2023). The possession of these skills bridges the gap between departments, promotes collaboration and ensures that procurement activities are well-coordinated with other functions, unfortunately enhancing overall organizational performance (Mahamadu et al., 2018; Omoruyi & Ntshingila, 2021). Furthermore, Omoruyi and Ntshingila (2021) emphasize that technical skills are important antecedents for effective public procurement management.

Previous studies have elucidated how technical purchasing skills influence performance in the restaurant industry (Belo et al., 2020; Cho et al., 2019; Elias & Changalima, 2023). According to Belo et al. (2020), organizations that purchase technical knowledge can develop better procurement strategies, such as coordination strategies, as an opportunity to enhance procurement performance. This is because the achievement of procurement objectives relies on networks and good relationships among functions, that is, purchasing knowledge becomes valuable when combined with other functions (Schütz et al., 2020). However, despite the importance of purchasing technical knowledge toward organizational strategy, little attention has been paid to the link between technical knowledge and cross-functional coordination. Therefore, we propose the following hypothesis:

Hypothesis 2 (H2): Technical tactical skills significantly influence cross-functional coordination.

2.4. Interpersonal skills and cross-functional coordination

Interpersonal skills refer to individuals' ability to communicate, interact and build relationships with others (Abdelmasseh et al., 2022). It is regarded as in-depth knowledge of human interaction that facilitates effective service delivery (Omoruyi & Ntshingila, 2021). In this respect, human interaction becomes a source of trust, which in turn nourishes organizational performance (Kimario & Kira, 2023; Moshtari et al., 2021). Procurement operation by its nature focuses on solving problems; thus, making any decision regarding procurement proceeding requires interpersonal intelligence to understand end users' needs (Ugoani, 2020). Hence, strong interpersonal skills are likely to have a significant impact on the overall coordination process (Omoruyi & Ntshingila, 2021). This is because effective communication, working well with the user, effective listening and maintaining a good relationship with users all contribute to successful procurement outcomes (Lyimo & Mrema, 2022).

Earlier studies have indicated how interpersonal skills enable organizations to manage procurement problems (Ugoani, 2020), enhance buyer-supplier relationships (Anin et al., 2021) and improve sales and marketing relationships (Le Meunier-Fitzhugh & Massey, 2019). It has been suggested that in situations where internal conflict and ineffective communication prevail, coordination and internal relationships within an organization are likely to suffer (Le Meunier-Fitzhugh & Massey, 2019). This is attributed to the notion that organizations consist of individuals and that effective communication plays a crucial role in comprehending individual ideas and behaviors (Santa et al., 2023). Therefore, there is a need to explore the influence of interpersonal skills toward cross-functional coordination in the context of public procurement, because procurement professionals with higher interpersonal skills are more likely to connect with other departments and likely to influence organizational performance. Additionally, interpersonal skills are deemed necessary as the current future requirement for purchasing and supply chain management (Bals et al., 2019). So, the following is hypothesized:

Hypothesis 3 (H3): Interpersonal skills significantly influence cross-functional coordination.

3. Methodology

3.1. Study area, research design

This study examines the relationship between procurement skills and cross-functional coordination in a public procurement context. Data were collected from the heads of departments found in 11 selected

Local Government Authorities (LGAs). The selection of these LGAs considered the outcomes of procurement performance from previous audit reports (National Audit Office of Tanzania, 2020; PPRA, 2021). The study adopted a cross-sectional research design, as long as data were collected once from the surveyed LGAs. In this study, data were collected between February – December 2023. Furthermore, to ensure a higher response rate, the questionnaires were distributed physically using drop and pick technique (Allred & Ross-Davis, 2011). The intention behind this technique was to give enough time to respondents and encourage the likelihood of receiving enough completed questionnaires.

3.2. Population, sampling procedure and data collection

Concerning the 11 selected LGAs, all heads of user departments were involved during data collection. First, by considering the coordination of procurement processes, most complaints related to public procurement are raised from the user departments. Second, the heads of the user departments have received necessary information regarding the complaints of users concerning the coordination of procurement processes and the heads of the user department act as a link between end users and the PMU. Therefore, the PMU, as a coordinator of procurement operations, should ensure proper coordination within a procuring entity. Furthermore, structured questionnaires were used and issued to all heads of the user departments. Before data collection, the study obtained ethical clearance from the ethical committee of the University of Dodoma with reference number MA.84/261/02/'A'/58/34. Also, the involved participants provided verbal consent. Out of 180 issued questionnaires, 177 were returned and used for the final data analysis.

3.3. Measurements and data analysis

To measure the constructs in this study, previous scales were adopted and used, as shown in Table 1, previous validated measures were used in this study procurement skills such as strategic analytical skills (SAS) were measured in six items adopted from (Oke et al., 2018), technical tactical skills (TTS) measured in five items adopted from (Cho et al., 2019; Omoruyi & Ntshingila, 2021) and interpersonal skills (IPS), which were measured using four items adopted from (Cho et al., 2019; Omoruyi & Ntshingila, 2021). To measure inter-departmental coordination, five items were adopted (Pellathy et al., 2019).

Additionally, a multivariate data analysis technique was used, and structural equation modeling was adopted purposively as an important attribute for analyzing latent variables and their relationships (Hair et al., 2021), The current model is adequate and is mostly used to analyze relationships between variables (Hooper et al., 2008). To test the theory in the current study, covariance-based structural equation modeling (CB-SEM) was employed in AMOS software, as described by Dash and Paul (2021). It is a robust technique that is suitable for examining the theoretical constructs and relationships in business and social science research (Hair et al., 2020). By utilizing CB-SEM, the researchers were able to analyze and validate the proposed theoretical model effectively. About the model, confirmatory factor analysis (CFA) was done to confirm latent and observed variables, as well as to assess the measurement model indices. In addition, a structural model was used to test the formulated hypotheses to assess the influence of strategic analytical skills, technical tactical skills and interpersonal skills on inter-departmental coordination.

4. Results

4.1. Common method variance

Because of self-reported questionnaires, the study poses some bias as a matter of fact data were collected from the heads of the user departments in the selected LGAs. The action taken to control bias was based on assuring anonymity by reporting data in general rather than case by case, and the main purpose of the study was also included when designing the questionnaire. Therefore, a statistical procedure was used to assess the possibility of potential bias. Through the Harman single-factor test for

Table 1. Measurements, reliability, validity and factor loadings.

Variables	Items	Factor loadings
Strategic analytical skills (SAS) (Cronbach's alpha = 0.901, CR = 0.903, AVE = 0.611, MSV = 0.317)	• Procurement department can manage time and meet your demand	0.835
	• The procurement department is aware of the main supplier of the product required	0.836
	• The procurement department can negotiate during the contract negotiation process	0.810
	• The procurement department can follow global skills in procurement	0.599
	• The procurement department is able to effectively manage their own time	0.834
	• The procurement department is able to develop supplier relationship	0.748
Technical tactical skill (TTS) (Cronbach's alpha = 0.857, CR = 0.859, AVE = 0.552, MSV = 0.317)	• The procurement department is familiar with the quality requirement of the products	0.604
	• Procurement staff are knowledgeable about the product required	0.821
	• Procurement staffs continues to develop their professionals	0.727
	• Procurement staff have good understanding of every product that should be purchased	0.779
	• Procurement staff are knowledgeable about the market condition of the required product	0.765
Interpersonal skills (IPS) (Cronbach's alpha = 0.876, CR = 0.880, AVE = 0.650, MSV = 0.296)	• Procurement staffs work well with the user department	0.895
	• The procurement department have good communication skills with user	0.747
	• Procurement professionals are good at listening to users' concern	0.847
	• The procurement department maintains positive relationship with the user	0.723
Coordination (COD) (Cronbach's alpha = 0.917, CR = 0.918, AVE = 0.692, MSV = 0.296)	• there is always a joint agreement on procurement decisions	0.828
	• We engage constructively in debate pertain the goal of the organization	0.856
	• There is always an open and transparency procurement operation for establishing a common goal	0.939
	• We support the procurement function in achieving common goals	0.811
	• We establish a regular process for reviewing jointly agreed decisions	0.710

Source: Table by author.

common method bias, only 40.92% was found to be the major variance, which came from a single factor in the unrotated factor analysis. Thus, it was concluded that common method bias was not potential, as long as 50% less of the variance was explained by a single factor (Podsakoff et al., 2003).

4.2. Measurement model results

In assessing the achievement of internal consistency reliability, Cronbach's alpha coefficients and composite reliability for all variables were above 0.7; hence, reliability was justified, while convergent validity was achieved given the square root of AVE being above 0.5. The discriminant validity was assessed using the Fornell-Larcker criterion, as shown in the results presented in Table 2, that the square root of AVE values is greater than the value of inter-correlation between constructs. Also, the HTMT matrix as presented in Table 2 supports the achievement of discriminant validity as values are below 0.85 (Ab Hamid et al., 2017; Hair et al., 2019). Furthermore, the statistical relationships among the variables used in the study were established by assessing the structural model (path analysis). As presented in Figure 1, The factor loadings in the measurement model are 0.6 and above which presents a strong relationship of latent variable on each item. CFA results show that the model fit indices for the measurement model are CMIN = 251.557, df = 164, $p < .001$ and CMIN/df = 1.534. also, CFI = 0.961, IFI = 0.961, TLI = 0.554, SRMR = 0.047, RMSEA = 0.055 and PCLOSE = 0.266. within acceptable thresholds (Hair et al., 2021; Hooper et al., 2008).

4.3. Structural model and hypothesis testing

A structural model as presented in Figure 2 was used to test the study's hypotheses using path coefficients and p-values. The results indicated that approximately 42% of the variance in cross-functional coordination resulted from procurement skills included in the current study, with a value of $R^2 = 0.42$. On the other hand, the results in Table 3 show that SAS positively and significantly influences cross-functional coordination ($\beta = 0.172$ and $p = .043$), which supports H1. Thus, strategic analytical skills impact cross-functional coordination. Also, the structural model analyzed the influence of technical tactical skills on cross-functional coordination (H2). The results show that TTS positively and significantly influences COD, as indicated by the level of significance and p-value ($\beta = 0.329$ and $p = .004$), which signifies that TTS is a positive predictor of cross-functional coordination; thus, H2 was supported. The last

Table 2. Discriminant validity (Fornell-Larcker criterion and HTMT).

Fornell-Larcker criterion

	SAS	TTS	IPS	COD
SAS	**0.782**			
TTS	0.563	**0.743**		
IPS	0.425	0.389	**0.806**	
COD	0.479	0.502	0.544	**0.832**

HTMT

	COD	IPS	SAS	TTS
COD				
IPS	0.577			
SAS	0.492	0.438		
TTS	0.506	0.395	0.572	

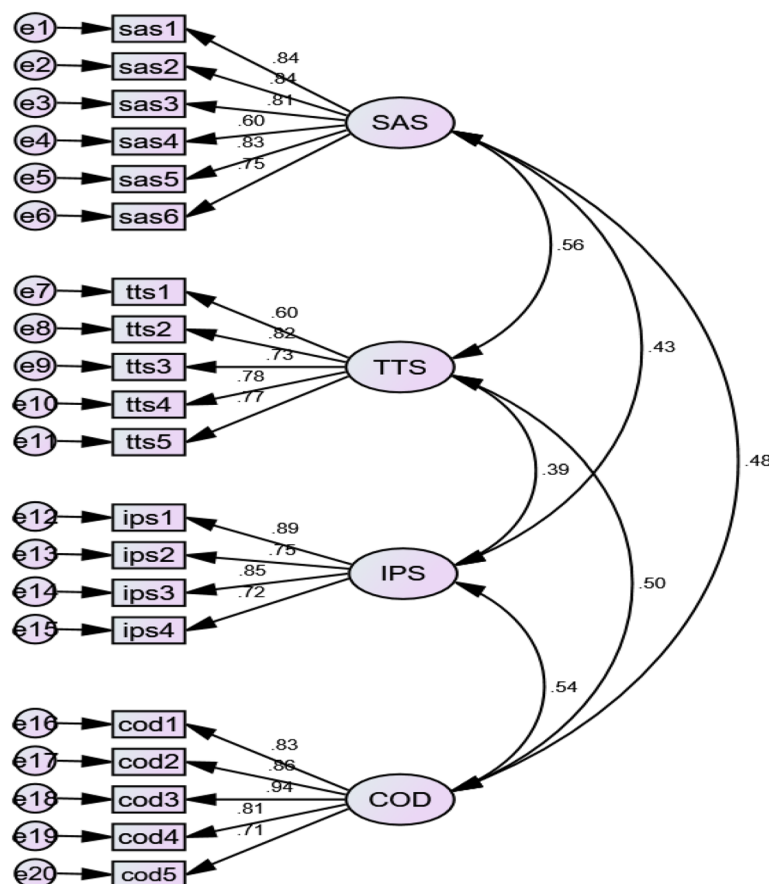*Note:* The bolded numeric value represents the √AVE.

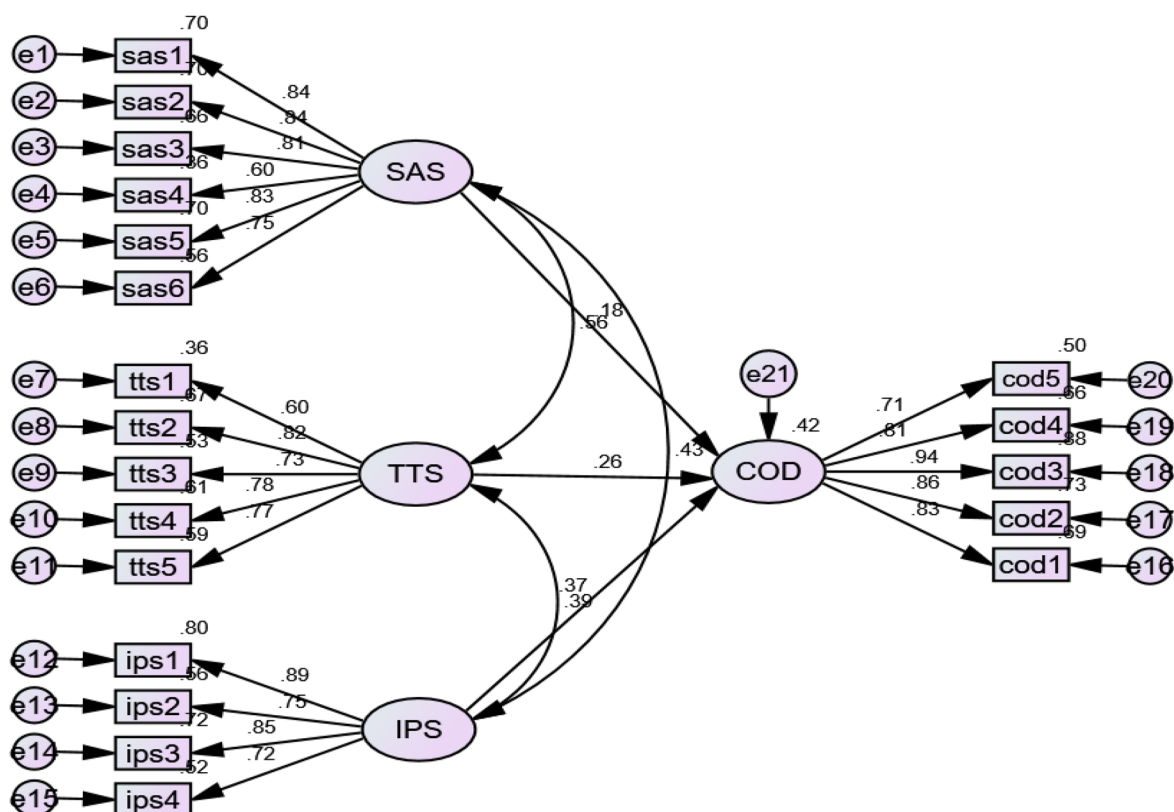**Figure 1.** The measurement model. *Source:* Figure by author.

Figure 2. The structural model. *Source:* Figure by authors.

Table 3. Regression weights for testing relationships.

			Estimate	S.E	C.R	p
COD	<—	SAS	0.172	0.085	2.024	.043
COD	<—	TTS	0.329	0.115	2.862	.004
COD	<—	IPS	0.324	0.069	4.680	.001

Source: Table by author.

hypothesis measured the impact of interpersonal skills on cross-functional coordination and found that IPS positively and significantly impacts COD (β = 0.324 and p = .001); hence, H3 was accepted.

5. Discussion of findings and conclusion

The findings of this study revealed that procurement skills are a key component of cross-functional coordination; that is, working in coordination is beneficial; however, the relationship will be effective when skills are available (Ruiz-Alba et al., 2020). The motives behind H1 were to assess the influence of strategic analytical skills toward cross-functional integration, and it was found that strategic analytical skills concerning (time management, supplier relationship management, negotiation skills and management of own time management) play an important role in cross-functional coordination. In this regard, it means that, by improving SAS concerning time management in meeting demand, users' expectations and preferences will be coordinated accordingly. The findings concur with the study of Anin et al. (2021) and Chenini et al. (2021), that managing time, speed to market, and quicker responses becomes a mirror image of managing quality and improves coordination. Additionally, SAS with respect to negotiation ability, improves results to reduce departmental complaints regarding specifications provided. The findings are also supported by Mwagike and Changalima (2022), who argue that the ability of procurement to negotiate contracts serves as the best and essential for controlling misunderstandings as well as conflict with user departments. Furthermore, SAS improves trust and

collaboration concerning RM. According to Santos and Cabral (2022), building and managing relationships with stakeholders activates coordination.

The second proposed hypothesis (H2) was supported by the influence of technical tactical skills on cross-functional coordination. The findings revealed that technical skills contribute to cross-functional coordination. This indicates that TTS concerning knowledge of the product in the aspects of product detail, features and benefits, as well as the knowledge of the market conditions, improves interactions and builds trust among departments. These findings concur with those of Omoruyi and Ntshingila (2021), who suggested that one of the prerequisites for good procurement coordination and management is a solid knowledge and practical grasp of the product to be purchased, its market conditions, primary supplier and quality requirements. Technical skills were identified as the most important skills required by any procurement specialist to coordinate procurement activities (Oke et al., 2018).

Concerning the H3 results, interpersonal skills were found to be an important predictor of cross-functional coordination. This suggests that, under normal circumstances, improving IPS in terms of effective listening, working well with the user, communicating timely with users, and joint agreement is one of the attributes of trust development, which in one way or another influences cross-functional coordination. This finding is supported by Ferreira and Ruiz-Alba (Ruiz-Alba et al., 2020), who stated that trust, information exchange and mutual understanding influence cross-functional coordination. Furthermore, cross-functional coordination requires a certain level of contact or information exchange (Breitling, 2019).

This study examines the relationship between procurement skills and cross-functional coordination in public procuring entities in Tanzania. Hence, it was concluded that strategic skills significantly influence cross-functional coordination among public entities. This implies that procurement professionals with the knowledge of negotiating procurement contracts, managing time and developing supplier relationships are capable of influencing cross-functional coordination. The study also concluded that technical skills significantly influence cross-functional coordination because users are currently more interested in a person who looks knowledgeable about market conditions. Furthermore, the study concluded that interpersonal skills significantly influence cross-functional coordination, implying that good internal relationships create opportunities for knowledge integration (Schütz et al., 2020). Therefore, well-equipped procurement practitioners can positively improve cross-functional coordination, which in turn enables the achievement of organizational objectives.

6. Study implications

6.1. Theoretical implications

This study contributes to the body of knowledge regarding the influence of procurement skills on cross-functional coordination. Among the three dimensions of skills, namely, strategic analytical skills, technical tactical skills and interpersonal skills, which were identified as the top-most procurement skills needed by practitioners, its relationship with coordination was not covered. Hence, it is imperative to link these skills with cross-functional coordination within the organization. This has been supported by RBV, which states that organizations consisting of individuals with higher intangible resources, such as skills, can interact and influence better outcomes. To this end, the willingness of the functional interaction is influenced by the commitment shown by procurement in managing time, solving problems and effective listening and concern shown to the user department.

6.2. Managerial implications

The managerial implication of this study is that the findings of the study can be used as inputs to the coordination efforts between departments within a procuring entity and inform the head of the user department within the organization of how procurement skills contribute to organizational effectiveness and thus could guide procurement managers to put efforts to improve and update the skills of their practitioners. Furthermore, this is a wake-up call to the management that there is a need for openness and transparency in procurement, engaging users in the issues regarding organizational goals and joint agreement in procurement decisions to enhance proper coordination and achieve organizational objectives.

7. Limitations and directions for future studies

As with any study, this one also has some limitations. The purpose of this study is to show the link between procurement skills and cross-functional coordination in public procuring entities in Tanzania, where a cross-sectional survey design was employed, in which questionnaires were only adopted and information was only collected from heads of user departments and not final users. External coordination, such as with suppliers, should be considered rather than internal coordination alone. However, the focus should also be on the procurement perspective and not only from the user perspective. Moreover, the suggested findings of the study should be generalized for contexts of LGAs (where study was conducted) and limited for other entities such as Ministries, Department and Agencies (MDAs) and Parastatals Organizations (PAs).

Author contributions

Gift O. Mushi was involved in the conception and design, analysis, interpretation of the results and drafting of the manuscript under the supervision of *Ismail J. Ismail* and *Alban D. Mchopa* who were involved in the review of the manuscript and approval for submission.

Disclosure statement

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Data availability statement

The data used in this study will be made available upon reasonable request.

References

Abdelmasseh, R. M., Bassioni, H. A., & Gaid, E. F. (2022). Project manager skills affecting construction projects in Egypt. *IOP Conference Series: Earth and Environmental Science*, *1056*(1), 1. https://doi.org/10.1088/1755-1315/1056/1/012038

Ab Hamid, M. R., Sami, W., & Mohmad Sidek, M. H. (2017). Discriminant validity assessment: Use of Fornell & Larcker criterion versus HTMT criterion. *Journal of Physics: Conference Series*, *890*(1), 012163. https://doi.org/10.1088/1742-6596/890/1/012163

Allal-Chérif, O., Simón-Moya, V., & Ballester, A. C. C. (2021). Intelligent purchasing: How artificial intelligence can redefine the purchasing function. *Journal of Business Research*, *124*, 69–14. https://doi.org/10.1016/j.jbusres.2020.11.050

Allred, S. B., & Ross-Davis, A. (2011). The drop-off and pick-up method: An approach to reduce nonresponse bias in natural resource surveys. *Small-Scale Forestry*, *10*(3), 305–318. https://doi.org/10.1007/s11842-010-9150-y

Anin, E. K., Essuman, D., & Owusu, H. (2021). How does buyer-seller information sharing affect procurement quality performance? Insight from SMEs in a developing African economy. *International Journal of Quality and Service Sciences*, *13*(1), 91–105. https://doi.org/10.1108/IJQSS-03-2020-0046

Ashenbaum, B., Blair, C. W., & Brewer, B. (2020). The influence of the competitive landscape on cross-functional interactions between procurement and engineering. *Journal of Purchasing and Supply Management*, *26*(1), 100595. https://doi.org/10.1016/j.pursup.2019.100595

Bals, L., Schulze, H., Kelly, S., & Stek, K. (2019). Purchasing and supply management (PSM) competencies: Current and future requirements. *Journal of Purchasing and Supply Management*, *25*(5), 100572. https://doi.org/10.1016/j.pursup.2019.100572

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120. https://doi.org/10.1177/014920639101700108

Barney, J. B., Ketchen, D. J., & Wright, M. (2021). Resource-based theory and the value creation framework. *Journal of Management*, *47*(7), 1936–1955. https://doi.org/10.1177/01492063211021655

Belo, I. F. d J. M., Amaral, A. M., & Belo, T. F. (2020). The mediation effects of purchasing strategy and supplier integration on the relations between purchasing skills and corporate performance. *Timor Leste Journal of Business and Management*, *2*(1), 1–13. https://doi.org/10.51703/bm.v2i2.17

Breitling, T. (2019). Inter-functional coordination of purchasing and logistics: Impact on supply chain performance. *Supply Chain Forum: An International Journal*, *20*(2), 71–88. https://doi.org/10.1080/16258312.2019.1612226

Bunea, O.-I. (2021). Perceptions of the factors that influence the labour productivity of procurement employees in e-commerce companies under telework conditions. *Management & Marketing*, *19*(2), 181–193. https://doi.org/10.52846/MNMK.19.2.02

Changalima, I. A. (2023). Are the Covid-19 pandemic and public procurement 'strange bedfellows'? An African perspective. *Africa Development*, *48*(2), 175–196. https://doi.org/10.57054/ad.v48i2.5085

Changalima, I. A., Israel, B., Amani, D., Panga, F. P., Mwaiseje, S. S., Mchopa, A. D., Kazungu, I., & Ismail, I. J. (2023). Do internet marketing capabilities interact with the effect of procedural capabilities for public procurement participation on SMEs' sales performance? *Journal of Public Procurement*, *23*(3/4), 416–433. https://doi.org/10.1108/JOPP-01-2023-0001

Changalima, I. A., Mushi, G. O., & Mwaiseje, S. S. (2021). Procurement planning as a strategic tool for public procurement effectiveness: Experience from selected public procuring entities in Dodoma city, Tanzania. *Journal of Public Procurement*, *21*(1), 37–52. https://doi.org/10.1108/JOPP-05-2020-0047

Chenini, A., Iqbal, J., Qurrahtulain, K., Husain Mahmood, M. A., & Aldehayyat, J. S. (2021). Strategic procurement, supplier integration, and speed-to-market: The mediating role of procurement lead-time performance and manufacturing performance. *Journal of Public Affairs*, *21*(3), e2248. https://doi.org/10.1002/pa.2248

Cho, M., Bonn, M. A., Giunipero, L., & Divers, J. (2019). Restaurant purchasing skills and the impacts upon strategic purchasing and performance: The roles of supplier integration. *International Journal of Hospitality Management*, *78*, 293–303. https://doi.org/10.1016/j.ijhm.2018.09.012

Cornelius Du Preez, H., & Folinas, D. (2019). Procurement's contribution to the strategic alignment of an organisation: Findings from an empirical research study. *Supply Chain Forum: An International Journal*, *20*(3), 159–168. https://doi.org/10.1080/16258312.2019.1570685

Dash, G., & Paul, J. (2021). CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. *Technological Forecasting and Social Change*, *173*, 121092. https://doi.org/10.1016/j.techfore.2021.121092

Elhag, T., Eapen, S., & Ballal, T. (2020). Moderating claims and disputes through collaborative procurement. *Construction Innovation*, *20*(1), 79–95. https://doi.org/10.1108/CI-02-2019-0020

Elias, R., & Changalima, I. A. (2023). The behavioural uncertainty and environmental sustainability of restaurant businesses: The moderating role of purchasing technical knowledge. *LBS Journal of Management & Research*. https://doi.org/10.1108/LBSJMR-10-2022-0068

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S., Jr. (2021). An introduction to structural equation modeling. In J. F. Hair G. T. M. Hult, C. M. Ringle, M. Sarstedt, N. P. Danks, & S. Ray (Eds.), *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook* (pp. 1–29). Springer International Publishing. https://doi.org/10.1007/978-3-030-80519-7_1

Hair, J. F., Page, M., & Brunsveld, N. (2020). *Essentials of business research methods* (4th ed.). Routledge.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Holma, A. M., Vesalainen, J., Söderman, A., & Sammalmaa, J. (2020). Service specification in pre-tender phase of public procurement - A triadic model of meaningful involvement. *Journal of Purchasing and Supply Management*, *26*(1), 100580. https://doi.org/10.1016/j.pursup.2019.100580

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, *6*(1), 53–60.

Kang, M., Lee, G., Hwang, D. W., Wei, J., & Huo, B. (2021). Effects of cross-functional integration on NPD success: Mediating roles of customer and supplier involvement. *Total Quality Management & Business Excellence*, *32*(13-14), 1515–1531. https://doi.org/10.1080/14783363.2020.1736543

Karia, N., & Wong, C. Y. (2013). The impact of logistics resources on the performance of Malaysian logistics service providers. *Production Planning & Control*, *24*(7), 589–606. https://doi.org/10.1080/09537287.2012.659871

Kimario, H. F., & Kira, A. R. (2023). Cause – effect relationship of trust of buyer – suppliers' integration on procurement performance in large manufacturing firms in Tanzania. *Journal of Global Operations and Strategic Sourcing*. https://doi.org/10.1108/JGOSS-12-2021-0101

Kozlenkova, I. V., Samaha, S. A., & Palmatier, R. W. (2014). Resource-based theory in marketing. *Journal of the Academy of Marketing Science*, *42*(1), 1–21. https://doi.org/10.1007/s11747-013-0336-7

Le Meunier-Fitzhugh, K., & Massey, G. R. (2019). Improving relationships between sales and marketing: The relative effectiveness of cross-functional coordination mechanisms. *Journal of Marketing Management*, *35*(13-14), 1267–1290. https://doi.org/10.1080/0267257X.2019.1648310

Lyimo, B. J., & Mrema, I. (2022). Factors affecting procurement practices in public procurement entities in Tanzania. *Olva Academy – School of Researchers*, *4*(1), 96–106.

Mahamadu, A. M., Manu, P., Booth, C., Olomolaiye, P., Coker, A., Ibrahim, A., & Lamond, J. (2018). Infrastructure procurement skills gap amongst procurement personnel in Nigeria's public sector. *Journal of Engineering, Design and Technology*, *16*(1), 2–24. https://doi.org/10.1108/JEDT-09-2017-0089

Mahonda, P. M. (2022). Professional qualification and its impact on procurement performance: The case of Mzinga Holding Company Limited, Morogoro, Tanzania. *African Journal of Business Management*, *16*(11), 239–248. https://doi.org/10.5897/AJBM2021.9288

Malacina, I., Karttunen, E., Jääskeläinen, A., Lintukangas, K., Heikkilä, J., & Kähkönen, A.-K. (2022). Capturing the value creation in public procurement: A practice-based view. *Journal of Purchasing and Supply Management*, *28*(2), 100745. https://doi.org/10.1016/j.pursup.2021.100745

Matebese-Notshulwana, K. (2021). Weak procurement practices and the challenges of service delivery in South Africa. In N. Dorasamy & O. Fagbadebo (Eds.), Public procurement, corruption and the crisis of governance in Africa. Palgrave Macmillan. https://doi.org/10.1007/978-3-030-63857-3_6

Matto, M. C. (2017). Mapping public procurement reforms in Tanzania: Compliance, challenges and prospects. *European Journal of Business and Management*, *9*(12), 175–182.

Matto, M. C., Ame, A. M., & Nsimbila, P. M. (2021). Tender process and value for money in Tanzania public procurement. *International Journal of Logistics Economics and Globalisation*, *9*(1), 1–23. https://doi.org/10.1504/IJLEG.2021.116218

Moshtari, M., Altay, N., Heikkilä, J., & Gonçalves, P. (2021). Procurement in humanitarian organizations: Body of knowledge and practitioner's challenges. *International Journal of Production Economics*, *233*(January), 108017. https://doi.org/10.1016/j.ijpe.2020.108017

Mukhtar, U., & Azhar, T. M. (2020). Inter-functional coordination to co-create value within integrated value chains for competitive supply chain. *Operations and Supply Chain Management: An International Journal*, *13*(1), 11–22. https://doi.org/10.31387/oscm0400249

Mwagike, L. R., & Changalima, I. A. (2022). Procurement professionals' perceptions of skills and attributes of procurement negotiators: A cross-sectional survey in Tanzania. *International Journal of Public Sector Management*, *35*(1), 94–109. https://doi.org/10.1108/IJPSM-12-2020-0331

National Audit Office of Tanzania. (2020). *The annual general report on the audit of local government authorities for the financial year 2018/19*. National Audit Office of Tanzania.

Nguyen, N. P., Ngo, L. V., Bucic, T., & Phong, N. D. (2018). Cross-functional knowledge sharing, coordination and firm performance: The role of cross-functional competition. *Industrial Marketing Management*, *71*(December 2017), 123–134. https://doi.org/10.1016/j.indmarman.2017.12.014

Oke, A. E., Ogunsemi, D. R., & Adeyelu, M. F. (2018). Quantity surveyors and skills required for procurement management. *International Journal of Construction Management*, *18*(6), 507–516. https://doi.org/10.1080/15623599.2017.1354497

Omoruyi, O., & Ntshingila, L. (2021). Assessing purchasing technical skills as a precondition for effective purchasing management within Sedibeng District Municipality, South Africa. *Journal of Contemporary Management*, *18*(2), 162–183. https://doi.org/10.35683/jcm21011.125

Organisation for Economic Co-operation and Development. (2019). *Government at a glance 2019*. OECD Publishing.

Organisation for Economic Co-operation and Development. (2021). *Government at a glance 2021*. OECD Publishing.

Patrucco, A. S., Luzzini, D., Moretto, A., & Ronchi, S. (2019). Attraction in buyer–supplier relationships: Improving supply network performance through purchasing recognition and proficient collaboration initiatives. *Business Process Management Journal*, *25*(2), 347–367. https://doi.org/10.1108/BPMJ-06-2017-0137

Pellathy, D. A., Mollenkopf, D. A., Stank, T. P., & Autry, C. W. (2019). Cross-functional integration: Concept clarification and scale development. *Journal of Business Logistics*, *40*(2), 81–104. https://doi.org/10.1111/jbl.12206

Plantinga, H., Voordijk, H., & Dorée, A. (2020). Clarifying strategic alignment in the public procurement process. *International Journal of Public Sector Management*, *33*(6/7), 791–807. https://doi.org/10.1108/IJPSM-10-2019-0245

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

PPA. (2011). Public procurement act no.7 of 2011. *The Gazette of the United Republic of Tanzania No.52*, *92*(9), 1–159.

PPA. (2016). *PPA_Ammendment_Act_2016.pdf*. Government Printers.

PPRA. (2021). *Annual performance evaluation report for the year ended 2020-2021*. PPRA.

Rane, S. B., Narvel, Y. A. M., & Bhandarkar, B. M. (2020). Developing strategies to improve agility in the project procurement management (PPM) process: Perspective of business intelligence (BI). *Business Process Management Journal*, *26*(1), 257–286. https://doi.org/10.1108/BPMJ-07-2017-0196

Ruiz-Alba, J. L., Guesalaga, R., Ayestarán, R., & Morales Mediano, J. (2020). Interfunctional coordination: The role of digitalization. *Journal of Business & Industrial Marketing*, *35*(3), 404–419. https://doi.org/10.1108/JBIM-03-2019-0129

Santa, R., Sanz, C. M., Tegethoff, T., & Cayon, E. (2023). The impact of emotional intelligence, cross-functional teams and interorganizational networks on operational effectiveness. *Journal of Organizational Effectiveness: People and Performance*, *10*(3), 313–329. https://doi.org/10.1108/JOEPP-03-2022-0069

Santos, J. B., & Cabral, S. (2022). Public procurement capabilities as engines for collaboration and enhanced performance in complex projects. *International Journal of Operations & Production Management*, *42*(1), 32–58. https://doi.org/10.1108/IJOPM-02-2021-0098

Schütz, K., Kässer, M., Blome, C., & Foerstl, K. (2020). How to achieve cost savings and strategic performance in purchasing simultaneously: A knowledge-based view. *Journal of Purchasing and Supply Management*, *26*(2), 100534. https://doi.org/10.1016/j.pursup.2019.04.002

Tamarabra, F. D., & Askia, W. U. (2020). End users role in procurement in an organization. *International Journal of Scientific & Engineering Research, 11*(1), 764–790. https://doi.org/10.13140/RG.2.2.36618.62400

Tinali, G. Z. P. (2022). Technology usage and public procurement performance in Tanzania. *University of Dar es Salaam Library Journal*, *17*(1), 18–37. https://doi.org/10.4314/udslj.v17i1.3

Tomaskova, E. (2018). Interfunctional coordination and its influence on customer success. *Open Economics*, *1*(1), 105–114. https://doi.org/10.1515/openec-2018-0004

Ugoani, J. N. N. (2020). Salovey-Mayer emotional intelligence model for dealing with problems in procurement management. *American Journal of Marketing Research*, *6*(3), 28–36.

Uyarra, E., Ribeiro, B., & Dale-Clough, L. (2019). Exploring the normative turn in regional innovation policy: Responsibility and the quest for public value. *European Planning Studies*, *27*(12), 2359–2375. https://doi.org/10.1080/09654313.2019.1609425