

THE IMPACT OF PROCUREMENT TRAINING ON PROCUREMENT PROCESS EFFICIENCY AND ORGANIZATIONAL PERFORMANCE: A PLS-SEM ANALYSIS

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ABSTRACT

This study delves into the role of procurement training on procurement process efficiency and its subsequent impact on organizational performance. Employing the resource-based view theory as a theoretical foundation, the research adopts a quantitative approach, utilizing Partial Least Squares Structural Equation Modeling (PLS-SEM). This study adopted a purposive-convenient sampling technique to select the needed respondents. 312 procurement officials from diverse institutions in Ghana as participants were engaged in the study. The findings reveal a significant effect of procurement training on procurement process efficiency and organizational performance. The positive correlation between procurement and process efficiency contributes to enhanced organizational performance. These results emphasize the pivotal role of training interventions in optimizing the procurement process, benefiting overall organizational effectiveness. Recognizing the substantial impact of training on enhancing efficiency and, in turn, organizational performance, organizations are encouraged to invest strategically in procurement training programs. This research contributes valuable insights to the field, offering a nuanced understanding of the interplay between training, process efficiency, and organizational performance in the procurement domain.

KEYWORDS: Procurement training, procurement process efficiency, organizational performance.

JEL CLASSIFICATION: H57, L25, P47

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INTRODUCTION

In contemporary business environments, the effective management of procurement processes plays a pivotal role in shaping organizational success. Procurement process efficiency (PPE), characterized by streamlined and effective acquisition of goods and services, is critical for achieving operational excellence and maintaining a competitive edge in the market (Christopher, 2016; Monczka et al., 2018). Organizations that optimize their procurement processes can realize cost savings, minimize supply chain disruptions, and foster stronger supplier relationships (Schumacher et al., 2020; Bienhaus & Haddud, 2018). Simultaneously, the performance of an organization is intricately linked to the efficiency of its procurement processes. Efficient procurement contributes to enhanced supply chain resilience, responsiveness to market demands, and overall organizational agility (Croom et al., 2018; Handfield et al., 2019). As organizations increasingly recognize the strategic importance of their supply chains, the procurement function has emerged as a key driver of organizational performance (OP) and profitability (Nangpiire et al., 2024). One crucial factor influencing procurement process efficiency and, consequently, organizational performance is the skill set of procurement professionals. The dynamic nature of global markets, technological advancements, and evolving supplier landscapes necessitate continuous adaptation by procurement teams. Training programs empower procurement professionals with the latest industry knowledge, negotiation skills, and strategic thinking capabilities (Carter et al., 2020; Rong et al., 2018). A well-trained procurement workforce is better equipped to navigate complex supply chain scenarios, negotiate favorable contracts, and contribute to the organization's overall strategic objectives (Schumacher et al., 2020; Lysons & Farrington, 2012).

In an era of dynamic business environments, organizations are constantly seeking ways to optimize their operations, reduce costs, and enhance their competitive edge. One critical area that plays a pivotal role in achieving these objectives is procurement training, the process by which organizations source and acquire the goods and services necessary for their operations (Giunipero & Hooker, 2019). The efficiency of procurement training can significantly impact an organization's overall performance and financial health. To bridge the gap between procurement process efficiency and organizational performance, a key element that comes into focus is procurement training (Giunipero & Hooker, 2019). Procurement training encompasses a range of educational activities and development initiatives designed to enhance the knowledge and skills of procurement professionals. These programs offer an opportunity for employees to gain a deeper understanding of procurement processes, compliance, negotiation techniques, and market trends. When implemented effectively, procurement training can empower professionals to make informed decisions, promote best practices, and adapt to the rapidly evolving supply chain landscape (Christopher, 2016). Moreover, the improved efficiency of procurement processes is expected to directly affect overall organizational performance in terms of profitability, cost management, and competitiveness (Caniato et al., 2017). By examining the intricate connections between these elements, organizations can gain valuable insights into how investments in human capital, in the form of training and development, can positively influence procurement outcomes and, by extension, the broader organizational performance. According to Semmann (2021), efficient procurement processes, characterized by streamlined workflows, effective supplier relationships, and cost containment, are essential for optimizing resource allocation and mitigating risks. When improved, these processes can generate cost savings, improve supplier performance, and enhance supply chain resilience. Therefore, a positive link between procurement process efficiency and organizational performance is well-established in the literature.

The government of Ghana has demonstrated a dedication to enhancing accountability, transparency, and governance in public procurement activities. This dedication is frequently demonstrated by programs and policies designed to improve procurement procedures, which creates the perfect setting for evaluating the effects of training interventions. Despite the increasing recognition of the pivotal role played by procurement processes in organizational success (Cousins et al., 2019; Monczka et al., 2018), a substantial gap persists in the literature regarding the impact of procurement training on procurement

process efficiency and organizational performance. While existing studies highlight the individual importance of efficient procurement processes and the benefits of training (Paulraj et al., 2017; Giunipero & Hooker, 2019), a comprehensive understanding of how these elements synergistically contribute to organizational outcomes remains elusive. This research gap impedes the development of an integrated framework for optimizing procurement functions and realizing enhanced organizational performance. Therefore, this study seeks to address this gap by investigating the impact role of procurement training in augmenting the impact of efficient processes and subsequently influencing overall organizational performance. By examining the relationships between these variables, the research aims to provide valuable insights for organizations seeking to optimize their procurement function in the rapidly evolving landscape of contemporary business.

To achieve the purpose of the study, the following objectives are outlined for investigation:

1. To examine the impact of procurement training on the procurement process efficiency on organizational performance relationships
2. To explore the relationship between procurement process efficiency and organizational performance.
3. To assess specific dimensions of procurement training influencing organizational performance.

As a result, the current study includes the following sections: a review of the literature, a methodology, empirical results and findings, discussions, and a conclusion that is supported by limitations at the end of the paper.

1 THEORETICAL FOUNDATION

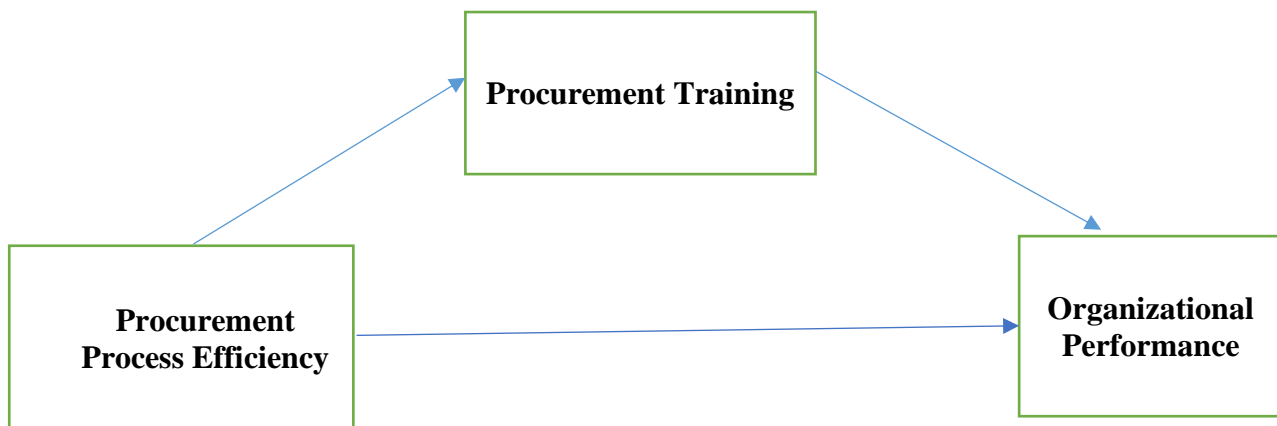
1.1 The Resource based-view theory

The resource-based view (RBV) is a widely accepted theory of management (Barney et al., 2001; Newbert, 2007; Kellermanns et al., 2016; Davis & DeWitt, 2021). According to this theory, organizations can enhance their competitive position by possessing and effectively utilizing resources and capabilities that possess value, rarity, inimitability, and non-substitutability (Barney, 2001; Newbert, 2008). This competitive advantage can manifest in various aspects, such as cost, quality, or differentiation (Barney, 2001; Newbert, 2008). The objective of the RBV is to comprehend the dynamics of resource interactions and the potential for resource integration to sustain a competitive advantage (Barney, 2001; Peteraf, 1993).

As stated by Amit and Schoemaker (1993), resources refer to the elements possessed or managed by the organization, while capabilities represent the organization's ability to effectively utilize such resources. The RBV posits that organizational resources consist of both tangible and intangible assets that a corporation utilizes to formulate and execute plans to enhance operational efficiency and overall effectiveness (Barney, 1991). In light of the aforementioned context, the utilization of intangible organizational resources and competencies, specifically digital orientation, has the potential to effectively support the establishment of competitive advantage, thereby enhancing overall performance (Ferreira et al., 2019). Consequently, scholars have advocated for the investigation of various sorts of firms possessing distinct resource allocations to empirically assess the Resource-Based View's proposition that distinctive resources have an impact on organizational performance (Hult & Ketchen, 2001; Jogaratnam, 2017). In recent times, the RBV has been employed as a framework for examining the procurement and supply chain processes. For instance, Brewer et al. (2014) used the RBV to investigate the procurement decision processes of manufacturing firms in the USA. Earlier, Ordanini and Rubera (2008) intimated that process efficiency and process integration capabilities can enhance the performance of organizations and the synergies between them. The study adds that training of

procurement staff on the use of IT enhances procurement process capability. Using the RBV theory, Moh'd Ali Smadi and Ababneh (2018) suggested that the key to the organization's supply chain performance is improving procurement processes. Hence, recommended management support for continuous training for staff on new procurement innovations and processes. Based on the above, this study utilizes the RBV theory to the performance of the organizations relative to their procurement processes. RBV theory posits that strategic resources contribute to competitive advantages. In this study, procurement training is a strategic resource that enhances organizational capabilities. Considering that, procurement training is a key internal resource influencing organizational processes, RBV theory supports the idea that internal resources impact organizational efficiency and effectiveness. Furthermore, the RBV theory argues that efficient procurement processes stem from valuable internal resources, such as well-trained procurement staff (Munir et al., 2020). In line with RBV theory, asserting that organizational performance is influenced by the strategic allocation of internal resources, it will result in effective procurement training and efficient processes (Ellram et al., 2021). Therefore, this study examines the synthesis of procurement training and its effect on procurement process efficiency and organizational performance. This study contends that the RBV will better explore the nuances of factors that lead to improving the processes of procurement in organizations in the context of digital technologies as a crucial determinant of organizations' competitiveness, performance, and long-term viability. Figure 1 below shows the proposed conceptual framework of the study.

Figure 1 Proposed conceptual framework



(Source: proposed conceptual framework)

2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Procurement Training

Training plays a crucial role in enhancing procurement skills and knowledge by providing professionals with the tools, methodologies, and insights necessary to excel in a rapidly evolving business environment. The procurement function involves intricate processes, ranging from strategic sourcing to contract management, and a well-trained workforce is better equipped to navigate complexities. The role of training in procurement includes. Training programs focus on developing essential skills such as negotiation, communication, risk management, and strategic thinking. These skills are vital for procurement professionals to effectively engage with suppliers, make informed decisions, and contribute strategically to the organization. Procurement Training plays a crucial role in enhancing the skills and knowledge of professionals within the procurement function. A thorough review of the

literature provides insights into the significance, types, and outcomes of procurement training programs. Rong et al. (2018) emphasize the strategic importance of investing in procurement training, stating that well-trained procurement professionals contribute to the overall strategic goals of the organization. Carter et al. (2020) argue that organizations gain a competitive advantage by investing in training programs that equip procurement professionals with the latest skills and knowledge. Monczka et al. (2018) highlight the role of formal education in procurement, including academic programs and certifications that provide a structured foundation for professionals. On-the-job training is recognized as a valuable form of learning, allowing procurement professionals to apply theoretical knowledge to practical scenarios (Carter et al., 2020). Procurement training programs contribute to the development of negotiation skills, a critical aspect of effective procurement (Rong et al., 2018). Masudin et al. (2021) highlight that procurement training enhances the adoption of technological tools and systems, improving overall procurement efficiency. Training programs also contribute to the integration of sustainable practices within procurement processes, aligning with global sustainability goals (Carter et al., 2020). The effectiveness of procurement training is often measured by its impact on performance indicators such as cost savings, supplier relationship management, and overall organizational success (Rong et al., 2018).

2.2 Procurement Process Efficiency (PPE)

Procurement Process Efficiency (PPE) is a critical element in modern supply chain management, emphasizing the effectiveness and optimization of procurement activities. A comprehensive literature review provides insights into the key dimensions, factors, and impacts associated with PPE. Procurement Process Efficiency is often defined as the ability to streamline and optimize the processes involved in acquiring goods and services. Scholars emphasize various dimensions of PPE. Cousins et al. (2019) describe PPE as encompassing strategic sourcing, supplier relationship management, and effective cost control. Monczka et al. (2018) highlight process transparency, cycle time reduction, and compliance as key dimensions. Several factors contribute to the efficiency of procurement processes. Information systems are crucial in enhancing PPE by automating tasks, improving communication, and providing real-time data (Handfield et al., 2019). Effective SRM is linked to improved PPE, emphasizing collaboration, risk mitigation, and performance monitoring (Cousins et al., 2019). Organizations employing strategic sourcing practices tend to achieve higher levels of PPE, focusing on supplier selection and negotiation (Monczka et al., 2018). Efficient procurement processes contribute significantly to organizational success. Organizations with streamlined procurement processes experience cost savings through reduced cycle times and improved negotiation outcomes (Cousins et al., 2019). PPE is linked to operational efficiency, as highlighted by Monczka et al. (2018), resulting in enhanced overall organizational performance

Efficient procurement processes have been extensively explored in the literature, with numerous studies highlighting their critical role in organizational success. Recent research emphasizes several key themes. According to Chaudhuri et al. (2018), efficient procurement processes contribute significantly to cost savings, positively impacting an organization's financial performance. Research by Cousins et al. (2019) demonstrates that strategic sourcing practices positively correlate with supplier performance, emphasizing the importance of a systematic approach to supplier selection. In their study, Masudin et al. (2021) find a positive relationship between the adoption of e-procurement technologies and overall procurement process efficiency, highlighting the role of technology in streamlining procurement. Monczka et al. (2018) underscores the importance of efficient procurement in mitigating supply chain risks, thereby enhancing organizational resilience. Sustainable procurement is gaining prominence, and studies like Carter and Rogers (2008) demonstrate that integrating sustainability into procurement processes positively impacts efficiency and long-term organizational performance. By understanding

these components and their impact, organizations can strategically enhance their procurement process efficiency, contributing to overall operational effectiveness and competitiveness

2.3. Organizational Performance in the Procurement Context

Organizational performance in the context of procurement refers to the overall effectiveness and efficiency of an organization's procurement function in achieving its strategic goals and objectives. It involves assessing how well the procurement processes contribute to the financial, operational, and strategic success of the organization. Key indicators of organizational performance in procurement may include cost savings, supplier relationship management, risk mitigation, innovation, and the alignment of procurement strategies with broader business objectives. Recent literature has extensively explored the impact of procurement processes on overall organizational performance, shedding light on the critical role of procurement in shaping the success of businesses.

According to Carter et al. (2020), effective procurement practices, including strategic sourcing and cost management, significantly contribute to cost savings, positively influencing the financial performance of organizations. Research by Cousins et al. (2019) highlights that a strong focus on supplier relationship management, characterized by collaboration and innovation, positively correlates with organizational performance. Effective SRM fosters innovation, contributing to a competitive advantage. Studies such as Handfield et al. (2019) emphasize that aligning procurement strategies with overall business objectives enhances operational performance. Strategic procurement ensures that the organization's supply chain is agile, responsive, and adaptable to market dynamics. Monczka et al. (2018) discuss the crucial role of procurement in mitigating supply chain risks, demonstrating that a robust procurement function enhances organizational resilience and minimizes disruptions, positively impacting overall performance. Ethical procurement practices, as explored by Carter and Rogers (2008), are linked to organizational performance through enhanced CSR. Organizations that integrate ethical considerations into their procurement processes exhibit improved reputations and long-term sustainability. By examining these facets, it is evident that procurement processes influence various dimensions of organizational performance. A well-functioning procurement function contributes not only to cost efficiencies but also to strategic positioning, innovation, and risk management, all of which collectively shape the overall success of the organization. Based on this, the study proposes the following hypotheses:

H1: There is a significant relationship between Procurement Training and Organizational Performance

H2: There is a significant relationship between Procurement Training and Procurement Process Efficiency

H3: There is a significant relationship between Organizational Performance and Procurement Process Efficiency

3 RESEARCH METHODOLOGY

3.1 Sampling and Data Collection

This section discusses the research design employed in the current study and how they are documented, which aids the researchers in comprehending the research study, methods for collecting data, and the analysis that follows to meet the research objectives (Amoah et al., 2021; Frankfort-Nachmias & Nachmias, 2007). The study used a quantitative technique to achieve its goals. It is important to note that the study used procurement officers (as respondents) who were chosen from government and private companies. The research started by investigating the necessary information, goals, and

hypotheses from the framework. The primary approach was adopted in this study. To achieve the study's goal, a structured questionnaire was created. The structured questionnaire comprises information on the participants' profiles as well as the study constructs used to evaluate hypotheses. The structured questionnaire was only answered by procurement officers of the various selected institutions. The usage of these respondents was a result of the information in their possessions and again their level of knowledge, and experience on the intended subject matter. To elaborate more, the researchers first sought verbal consent from the respondents for the data collection. After the verbal consent was granted, the data collection process began. Participants were made aware of the purpose of the study. Because the study involves human participants, the procedures used were following the 1964 Helsinki Declaration and its subsequent amendments, or comparable ethical standards. Both online and offline means were used in the process of the data collection exercise. This was accomplished through the use of non-probability sampling techniques, notably the purposive-convenient sampling technique. The efficiency, financial ramifications, and most importantly, ease of use of sampling techniques led to their use. Additionally, because they require little planning to employ for data gathering, sampling techniques were highly helpful in time-sensitive situations. It's crucial to note that some participants asked for the soft copy to be sent to their digital platforms because of their hectic work schedules, while others completed the questionnaire during their downtime or launch period. Only one opportunity to respond to the survey was rigorously given to respondents. The data collection process took five months, and each respondent used an average of fifteen minutes to answer the structured questionnaire.

The questionnaire's inaccuracies and areas of ambiguity were discovered during the pilot trial. The instrument was evaluated by determining the questions' reliability. Based on the pilot study data collected from 50 chosen respondents among the procurement officials, the reliability is assessed. Later, these respondents were not included in the survey collecting actual data. A consistency check must be conducted on a multiple-item instrument, and the Cronbach coefficient is typically used to do this (Hayes, 2008). It is without dispute that the Cronbach coefficient can be used to assess an instrument's dependability. The instrument developed for this investigation was confidently used by the researchers to gather data after demonstrating an appropriate level of reliability in the pilot trial.

The respondents for this study were assured of their anonymity as part of the ethical considerations. Out of the 412 questionnaires administered, 355 were received from respondents. In the current study, a sample size of 312, representing 87.89 percent of the total questionnaire administered, was in excellent condition and thus used in the data processing and analysis. This means that 43 of the questionnaires were not deemed fit for their purpose. It is critical to highlight that there is no agreement in the literature on sample size for structural equation modeling (SEM). Some authors believe that even a small sample size can be meaningfully examined (see Marsh & Hau, 1999; Hoyle, 1999). According to some researchers, the minimum sample size for structural equation modeling is between 100 and 150 (Tinsley & Tinsley, 1987; Anderson & Gerbing, 1988; Markus, 2012). However, some methodological researchers (Hair 2019; Podsakoff et al., 2003; Moshagen & Musch, 2014) have recommended a relatively large number; for example, a sample size of 200 respondents is quite appropriate for conducting SEM analysis, and the current study examined over 300 respondents as a sample size to accomplish the study goal(s). Furthermore, the study performed and analyzed the data for this investigation (research model and presented hypotheses) using the PLS-SEM (Partial least squares and structural equation modeling) technique and the ADANCO software version. Because it is easier to analyze than unstructured data, the researchers chose to apply partial least square structural equation modeling (Amoah et al., 2023). After all, there is less processing required. In the demographics portion of the questionnaire survey, there are both multiple-choice answers and closed-ended questions with a 5-point Likert scale. Table 1 presents specific information on the traits of the respondents or study participants.

Table 1 Respondents' Profile

<i>Variables</i>	<i>Category</i>	<i>Frequency</i>	<i>Percentage (%)</i>
Gender	Male	214	68.59
	Female	98	31.41
Age	Less than 30years	67	21.47
	31-35years	98	31.41
	36-40years	90	28.85
	Above 41years	57	18.27
Educational Level	Others	70	22.43
	Higher National Diploma	66	21.15
	Bachelor's Degree	64	20.51
	Masters/PGD	112	35.90
Study Regions	Western Region	214	68.59
	Western North Region	98	31.41
Level of Experience	Less than 3years	66	21.15
	4-6years	88	28.20
	Above 6years	158	50.64
Institutions Type	Government Institutions	208	66.67
	Private Institutions	104	33.33
Sample Size (n)		312	100

(Source: Authors' field survey)

3.2 Data Analysis Technique

To validate the research model, the study used Partial Least Square and structural modeling (PLS-SEM). Instead of using covariance-based structural equation modeling (CB-SEM), PLS-SEM was used. PLS-SEM makes no inferences regarding the order of distribution of the data, whereas CB-SEM demands that the data be evenly distributed. The use of PLS-SEM can be justified since non-normal data do not fundamentally change a statistical test's conclusions (Hair et al., 2019).

3.3 Measurement of the constructs

The measurement of the research constructs was done by drawing ideas from the available literature. The study employed a five-point Likert scale for the measuring scale (1 being extremely disagree, 2 being disagree, 3 being neutral, 4 being agree, and 5 being highly agree). The five-point Likert scale was used to determine the extent to which the respondent either agreed or disagreed with each of the questionnaire's different questions. A five-point Likert scale was used since it is simpler for respondents to complete and takes less time than open-ended questions (Sullivan & Artino Jr, 2013). Notably, the constructs used in the study were taken from existing literature such as procurement training (Saastamoinen et al., 2017; Aragão & Jabbour, 2017), procurement process efficiency (Kakwezi & Nyeko, 2019; Akumuntu, 2019), and organizational performance (Islam et al., 2017; Kipkemoi, 2017).

3.4 Common Method Bias

Before performing the study, the researchers looked into the possibility of CMB (common method bias). The procedural and statistical approaches were the two that were used. The study cited Kock and

Hadaya (2018) and Attor et al. (2022) for the procedural component, where respondents were provided strict confidentiality guarantees and the construct items were properly created. Importantly, the poll was designed to ensure that participants would maintain their privacy and have full discretion on whether or not to participate. To ensure how much the behaviour (variance) of an independent variable is influenced, or inflated, by its interaction/correlation with the other independent variables, the study conducted a thorough multicollinearity test, concentrating on the variance inflation factor (VIF). Because the computed VIFs are less than the cut-off value in this computation, depending on an acceptable threshold of 10 by earlier authorities (see Alin, 2010; Salmerón et al., 2020) does not pose a problem for CMV (see Table 3).

4 EMPIRICAL RESULTS

4.1 Model Assessment

The evaluation focused on research studies that used PLS-SEM and used Dijkstra-Rho Henseler's with Cronbach alpha coefficients to determine the validity and reliability of the study constructs (see Hair et al., 2019; Edeh & Khojasteh, 2023). All of the coefficients of these indices are above the cut-off value with an acceptable value of 0.5, according to methodological researchers (Hair et al., 2019). Cronbach's alpha was utilized to assess the proposed model's dependability. Internal consistency was assessed using composite reliability, while indicator reliability was examined utilizing outer loadings. Once more, the basic constituents of the study variables' cognitive qualities were assessed. By satisfying the minimum values for Jöreskog's rho (ρ_c) and Cronbach Alpha of 0.7 and 0.80, respectively, the test met the specifications for the composite reliability of constructs (Table 2). The level of dependability increases with increasing composite reliability. Shrestha, (2021) and Amoah et al. (2022) state that composite reliability scores between 0.60 and 0.70 are acceptable (Hair et al., 2014).

Table 2 Construct Reliability and Validity

Constructs	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_c)	Cronbach's alpha (α)	The average variance extracted (AVE)
Proc-Process Efficiency	0.9556	0.9637	0.9637	0.8420
Org-Perform	0.9279	0.9432	0.9244	0.7689
Product-Training	0.9580	0.9651	0.9564	0.8217

(Source: Authors' processing from ADANCO 2.0 version)

The factor loading for each construct was computed and loaded to its viewpoint latent variable, achieving the threshold of 0.6 and proving the effectiveness of the indicators. As a result, the current study considered ensuring that such an assumption is met. According to the linked constructs' coefficients, the minimum loading was 0.8111 and the maximum loading was 0.9541 (see Table 3 below for more information). In regression analysis, VIF gauges how strongly the independent variables are correlated. Multicollinearity, which is the term for this correlation, can be problematic for regression models. Additionally, because the researchers were very concerned about the problem of multicollinearity, they used the common method variance (CMV) to discover how it was used in proving the variance inflation factor (VIF). The variance inflation factor of the numerous indicators used below is less than the maximum threshold of ten, according to several studies (Attor et al., 2022; Santosa et al., 2022), proving that common method variance is not a problem (see Table 3).

Table 3 Construct Indicators, Loadings, and VIF

Construct	Indicator	Loading	VIF
Procurement Training	PT1: My company has been organizing procurement training to improve employees' skills in procurement practices	0.8908	3.2257
	PT2: The institution is committed to having employees equipped with competent skills to handle procurement practices	0.9397	2.5865
	PT3: The institution's procurement staff are highly trained in procurement practices	0.8688	3.0648
	PT4: In my view, procurement staff at the institution undertake refresher procurement courses	0.8843	4.8889
	PT5: In my view, regular training on procurement is done to equip and develop procurement skills	0.9305	3.7349
	PT6: Employees are trained to negotiate procurement contracts effectively	0.9225	1.1626
Procurement Process Efficiency	PPE1: The institution has enacted better procurement processes to ensure efficiency	0.8215	2.2179
	PPE2: The institution has high standards for procurement processes	0.9206	4.3607
	PPE3: Procurement Process Efficiency has contributed to the success of the organization's performance.	0.9396	3.8206
	PPE4: Procurement Process Efficiency has improved procurement performance	0.9541	3.5770
	PPE5: In my view, Procurement Process Efficiency has reduced the associated risk of procurement issues	0.9458	2.9393
Organizational Performance	OP1: The performance of the institution has improved through procurement training	0.8626	2.9297
	OP2: In my view, procurement training has improved compliance of the company	0.8115	2.2158
	OP3: Regular training of employees has led to improving the efficiency and transparency of my company.	0.9017	3.5706
	OP4: My company's performance through procurement training improved innovation and competitiveness	0.9056	4.0454
	OP5: My organization has received positive results due to procurement training in meeting goals and targets	0.8994	3.9925

(Source: Author's processing from ADANCO 2.0 software)

Table 4 Discriminant Validity-Fornell-Larcker Criterion

Constructs	Proc-Process-Effi	Org-Perform	Product-Training
Proc-Process-Effi	0.8420		
Org-Perform	0.8075	0.7689	
Proc-Training	0.8139	0.7680	0.8217

Note: Squared correlations; AVE in the diagonal. Source: processing from ADANCO 2.0 software

(Source: Author's processing from ADANCO 2.0 software)

According to the Fornell-Larcker criteria's findings, as shown in Table 4, the value in the diagonal is higher than the other values for the identical constructs. The discriminant validity of the variables employed in a study must be assessed. To be sure of this, Hair et al. (2019) encouraged the researchers to use the 1981 Fornell-Larcker (1981) criterion to identify the latent variables of the discriminant validity. The table below, which also displays the average variance retrieved, indicates that all of the values on the diagonal, including **0.8420**, **0.7689**, and **0.8217**, respectfully meet the threshold criterion of above 0.5 as the baseline for its assessment. According to the Fornell-Larcker (1981) criterion (Table

4), the AVE was necessary to have greater values than the other constructs before the fundamental and rigorous assumptions of the study constructs could be constructed. Finally, the outcome of the Fornell–Larcker Criterion is evident enough for the proposed model.

4.2 Hypothesis Testing - PLS-SEM

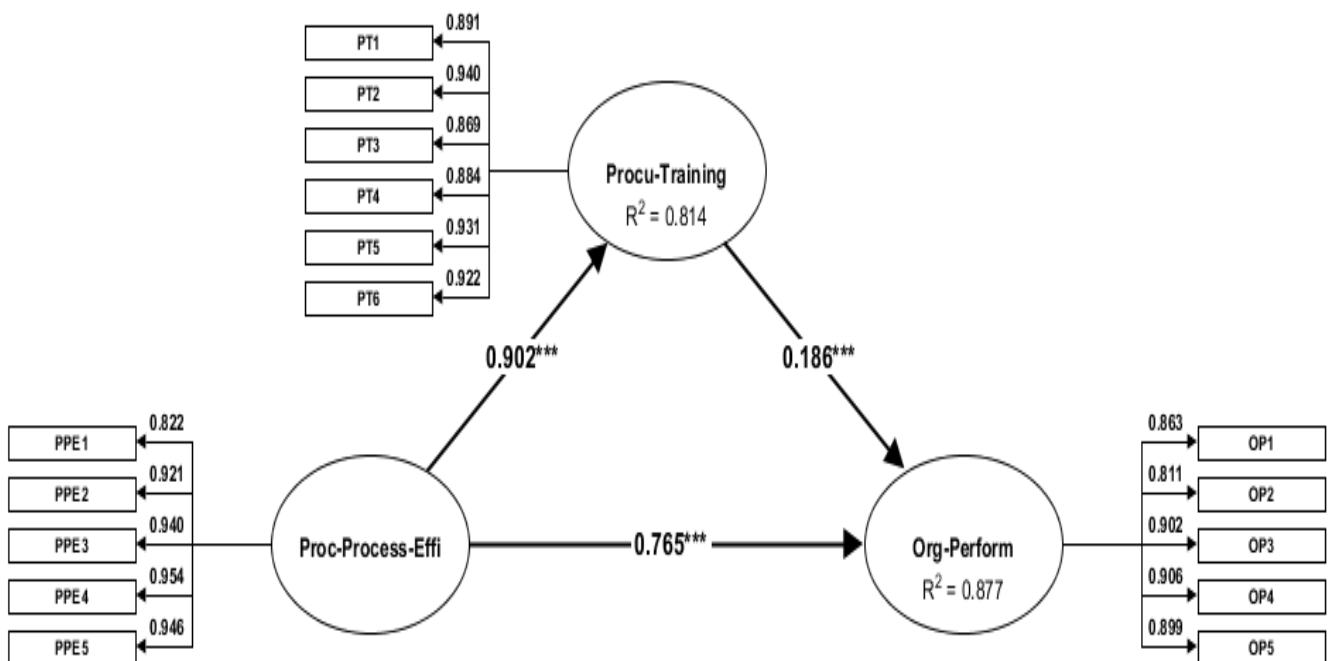
Table 5 Hypothetical Path Coefficient

Constructs	Original Coefficient	Standard bootstrap results				Decision
		Mean Value	Standard Error	T-Value	P-Value	
Proc-Process-Effi -> Org-Perform	0.7652	0.7658	0.0479	15.9766	0.0000	Agreed
Proc-Process-Effi -> Procu-Training	0.9022	0.8988	0.0216	41.6911	0.0000	Agreed
Product-Training -> Org-Perform	0.1861	0.1857	0.0544	3.4192	0.0003	Agreed

Construct	Coefficient of determination (R ²)	Adjusted R ²
Org-Perform	0.8770	0.8762
Product-Training	0.8139	0.8133

(Source: processing from ADANCO 2.0 software)

Figure 2 Empirically Tested Research Model



(Source: Author's processing)

The path analysis, also known as structural modeling, was taken into account when evaluating the model's fit to show the causal relationship between the research constructs. The Structural Path Coefficients (values) were estimated with the PLS-ADANCO version and are shown in Figure 2, the

figures exhibit the path coefficient diagram. To assess the significance level of path coefficients (values), T-tests with their respective significance levels are determined and shown in Table 5. In addition, the estimations of the hypothetical structural route model reveal that three of the predictions made about the current study's hypotheses are significant. The table below provides more details, including the regression coefficients of the Beta (β), and the research model's significant values (p-values 0.05). Additionally, the research model's viability for generating values for the regression model was evaluated. Given the research model's capacity for prediction, the coefficient of determination (R^2) of the regression model was assessed. The coefficient demonstrates the proportion of the dependent variable's change that can be attributable to the independent (predictor) variable. As a result, the R^2 of organizational performance and procurement training were 87 and 81 percent, respectively, as shown in Table 5 and Figure 2 below.

5 DISCUSSIONS OF RESULTS

Optimization is essential in every facet of an organization's operations to engender improved operational costs and become competitive. This has paved the way for organizations to constantly look for innovative means to enhance their decision-making to generate the desired customer and supplier intimacy and attain operational excellence. This is key given that, the procurement process in the circular economies keeps evolving with current emerging trends pacing with existing operational tasks. As a remedy, training has become a critical success factor for most process-oriented organizations to enhance the efficiency of their procurement process. Thus, this study sought to explore how procurement process and organizational performance are mediated by procurement training. Following this, the study proposed three hypotheses to arrive at the underpinning objective.

First, hypothesis (H1), *there is a significant relationship between Procurement Training and Organizational Performance* sought to investigate whether a significant relationship exists between procurement training and organizational performance. This hypothesis was supported. In line with extant studies (e.g., Yevu & Yu, 2020; Kombe, 2020; Munir et al., 2020), procurement training helps improve the competencies of employees. Munir et al. (2020) specifically emphasize that training is critical to procurement staff since it helps mitigate the consequences of risk associated with procurement processes. Essentially, procurement is a risk endeavour that demands critical and tactical knowledge to be able to identify the risk factors. The ability to identify the risk factors helps mitigate the consequences of some unintended decisions. Thus, making procurement training an embodiment of efficiency to be able to optimize resources in the organizations. Beyond that, Gray and Silbey (2014) in conformity with the result of this study, mentioned that the evolving nature of the procurement process has given way to routine revision of regulatory frameworks to strengthen the process. Albeit, employees need to be abreast with the current framework to be able to optimize the resources of the organizations towards their overall performance.

Second, hypothesis (H2), *there is a significant relationship between procurement training and procurement process efficiency* sought to explore the relationship between procurement training and procurement process efficiency. This hypothesis was supported by affirming existing studies (Bals et al., 2019; Handfield et al., 2019; Kakwezi & Nyeko, 2019). As opined by Kakwezi and Nyeko (2019), key performance indicators such as reduced cycle time and cost savings are significant training dynamics that could contribute to procurement process efficiency. Given the changes in technology, market dynamics, and supplier landscapes, continuous learning lets procurement professionals react swiftly to new market trends, laws, and supplier capabilities. It helps them adapt to the changing business environment and make smart judgments. Procurement professionals can better engage suppliers by remaining informed. Understand market trends and best practices to have relevant interactions with suppliers, improving

relationships and negotiation results. Handfield et al. (2019) contend that continuous learning helps procurement professionals learn new skills and innovative methods and technologies. This expertise helps them optimize procedures, automate jobs, and find cost-saving options, improving procurement efficiency.

Finally, hypothesis (H3), *there is a significant relationship between organizational performance and procurement process efficiency* was also supported. This implies the performance of an organization is engendered by the efficiency of the procurement process. This finding was affirmed (Bag et al., 2020; Bustinza et al., 2019; Saeed et al., 2019). Saeed et al. (2019) maintained that tailored procurement strategies to the goal of the organization help expedite the performance of the organization. In a similar vein, Bag et al. (2020) conclude that the efficiency of the procurement process is intricately connected to the resilience and agility of the supply chain. Thus, an organization that possesses an efficient procurement process is more capable of promptly addressing market fluctuations, managing supply chain interruptions, and adjusting to new business circumstances. Moreover, the ability to adapt to new process models is a crucial element in attaining consistent organizational performance within dynamic and competitive contexts (Bustinza et al., 2019).

5.1 Implications

This study has several implications for research and practice. Our analysis highlights the critical role of procurement training as an impact factor in enhancing two key capabilities in the procurement domain—process efficiency and process integration. Employing an RBV framework, this reframed focus aims to elucidate how procurement activities, when coupled with effective training, influence organizational performance. By emphasizing the impact role of procurement training, we respond to the call for research in supply chain management, showcasing how strategic management frameworks, particularly training interventions, can be instrumental in shaping procurement's impact on performance. Our study underlines that, beyond the efficiency of managing purchasing transactions, the effectiveness of procurement is strategically integrated with other business processes in the supply chain. Given the fact that existing studies have not explored this phenomenon extensively, this study offers a nuanced understanding of the procurement process. Procurement training acts as a mediator, demonstrating that achieving excellence requires distinct sets of resources and capabilities, aligning with established cases.

Practically, Managers should recognize the spillover effects of procurement, facilitated by training, on activities such as customer satisfaction and time-to-market. Procurement, when coupled with training, becomes a precondition for successful product and service innovation at the downstream level. While our findings explored the role of innovations in procurement, this reframed perspective underscores the importance of internet resources in enhancing the synergies between process efficiency and integration capabilities. For managers, the Internet serves as an inter-functional coordinator, especially when combined with effective procurement training. The findings suggest that firms with higher levels of resources, complemented by procurement training, are better positioned to integrate process efficiency and process integration capabilities. This insight provides practical guidance for managers seeking innovative strategies in procurement, exemplified successes in managing the supply chain effectively through extensive internet resources and training.

CONCLUSIONS

This study investigated the impact of training on procurement process efficiency and organizational performance. Drawing on the resource-based view theory as its theoretical lens, the study uses a

quantitative technique, PLS-SEM. Participants were drawn from 312 sampled procurement officials across several institutions in Ghana. The result showed that procurement training significantly mediates the relationship between procurement process efficiency and organizational performance. While procurement was found to have a positive relationship with procurement process efficiency, it also results in improved organizations' performance. This study has several implications for the process improvement in procurement tasks in organizations.

LIMITATIONS

Given the focus of the research, this study was limited by the scope, procurement training, and its consequences on the process efficiency with implications on the performance of organizations. Thus, making the scope limited. In the same vein, the result could not be generalized given the scope. Furthermore, the study was limited by the theoretical perspective and the context in which it was applied. While the sample size could also be another shortfall, it would be an avenue for future studies to look beyond the RBV theory and apply or extend other theories to explore similar phenomena. Similarly, future studies could look at it from another perspective of the procurement process to include the availability of resources and challenges besetting procurement tasks in both public and private institutions.

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