

Unlocking Organizational Performance in Public Hospitals: The Strategic Linkage between Procurement Planning and Internal Audit Interdependency

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Abstract

The present research explores the role of procurement planning in the context of organisational performance in the public sector by analyzing the mediating influence of internal audit interdependency. This work utilized a quantitative research design, and data was collected from respondents using an adapted research questionnaire. Participants for the study were selected from the 201 employees of public hospitals in Pakistan. This study adopted structural equation modelling (SEM), and the data was analysed using software known as SmartPLS version 3. The results confirm all hypothesized relationships so stated and tested in this study. B pleads that procurement planning positively and significantly influences both organisational performance and internal audit interdependency. Moreover, the findings of interdependency between internal audits revealed that the internal audit interdependency had a positive relationship with the organisational performance. Clearly, a mediating effect was highlighted; internal audit interdependency was established as the partial mediator between procurement planning and organisational performance. The results underscore the need for developing the position of procurement planning as one of the most crucial skills for public sector organisations, as well as strengthening cooperation between the procurement division and internal auditors. There are important recommendations for managers: seek to build up the capability of, and cooperation between, procurement planning and operational procurement functions; enlist additional support from the internal audit function to improve organisational performance.

Keywords: Procurement planning; Internal audit interdependency; Organizational performance; Public hospitals; Developing country

Introduction

The government's purchasing of goods and services is also a problem area internationally and has been put through reforms, restructuring, rules and regulation (Svensson-Hoglund et al., 2021). According to the theoretical frameworks of the procurement practices are defined as purchasing organizations' steps to manage and coordinate their performance to improve productivity by optimizing cost and time (Cammarano et al., 2022). Especially noteworthy is the connection between procurement and organizational performance (Junejo et al., 2022), on which basis adopting best practices is vital when presenting success to organizations. Different public sectors within the developed and developed nations have implemented purchasing reforms, which include laws and regulations (Liu et al., 2024). Efficient procurement involves the application of

sound business practices that enable an organization to get value for the money through the provision of goods and services. This follows the mantra that the job of the purchasing department is to purchase the correct material or service, in the right quantity, at the right place, at the right time and for the right price (Patrucco et al., 2023). The effectiveness of proper procurement practices can affect the performance of organizations and national economies in general (Yousfani et al., 2023), provided that the procurement practices are applied strategically (Jaffu & Changalima, 2023). However, it is noted that disruptions of the purchasing practice at any level severely impact the performance of the organizations (Araujo et al., 2023).

When the purchasing process is elaborated and implemented appropriately, it becomes an economic indicator of national development (Hochstetter et al., 2023). Several are forced to cope with the dynamic purchasing revolution, and this causes them headaches in the functioning of procurement and performance, as well as the internal and external business. The major problem with the current procurement industry is not the limited regulation models but the failure to comply with what is being regulated and a pathetic way of executing regulated models (Bosman & Jansen, 2024).

The key research questions guided the following in this study are:

RQ1: What is role of procurement planning on organizational performance in public hospitals of developing country, Pakistan?

RQ2: Does internal audit interdependency play mediating role between procurement planning and organizational performance?

Based on various literatures, much research has been done concerning the impact of procurement on the performance of organizations, most of which have recorded positive results (Viale & Zouari, 2020), (AlNuaimi et al., 2021), (Charles & Ochieng, 2023). The author's studies also revealed that this concept of strategic purchasing management directly influences financial organizations' overall performance (Schütz et al., 2020), (Kumar & Ganguly, 2021). Likewise, () established that the procurement practices were relevant to the performance (Ambekar et al., 2021). Similarly, in this study, () also pointed out that procurement practices enhance the performance of public projects (Kristensen et al., 2021). The lack of mediating role of internal audit interdependency in the public hospitals of Pakistan as a developing country should have been highlighted in their study as this study has planned to do.

Literature review

Procurement planning

Procurement is referred to in the same breath as the supply system, which is a crucial component of the supply chain system of any institution (Wilhelm & Villena, 2021). In most cases, an organization's procurement process comprises operational and strategic processes critical in the functioning of the two primarily distinct firms. Requisition of purchase orders, management of suppliers, products of procurement, and growth are some of the activities associated with procurement strategies (Paul et al., 2024). Through procurement processes, most organisations decentralize their procurement tasks in correlation with the strategies central to the procurement process (Memon et al., 2021). Purchasing and procurement will assist a company in group practices that will lead to more significant discounts and better service from suppliers (Miguel & Tonelli, 2023), (Mirani et al., 2021), information acceleration found among the suppliers and buyers, and a reduced number of administrative hours, which frees up time for them to perform

other duties, respond more swiftly to stiff competition in new markets, therefore, improving on the chances of championing new enterprises. The managing function of procurement acts as a system leader in paving the way for accomplishing the presumed goals of systems in private and public domains (Yakovlev et al., 2023).

Furthermore, through the empowerment of employees and enhancement in the quality of the products to develop business rights in the workplace, procurement also supports the growth in labour increase (Shaukat et al., 2023). It is expressed in terms of product/service quality, customer satisfaction, performance in the marketplace, innovation services, and employee inter-relationships (Singla & Sawhney, 2023). As regards the role of procurement practices, procurement practices have a positive correlation or tend to influence the level of organizational performance in the context of all the performance measures (Sohu et al., 2024). It is written in the literature that inventory management, procurement monitoring, procurement controls, procurement planning and training of a workforce can lead to positive organizational performance (Jama, 2023).

H1: PP is positively related to OP.

H2: PP is positively related to IAI.

Mediating of internal audit interdependency

It shows that internal audits enhance the performance of organisations and assist them in achieving their set objectives (Alqudah et al., 2023). It also shows that the relationship between internal audits and the company's relative performance is moderated through audit committee independence. This study established that the independence of the audit committee is a sign of the company's positive performance and that the relationship between the internal audit and the audit committee improves the position of the company (Jaggi, 2023). Internal audits have a very significant positive effect on the association's financial management efficiency. Furthermore, enhanced unity regarding the determinants of internal audits would enhance the efficiency of the association's financial affairs management (Junejo et al., 2022). Thus, internal auditors are to be independent of the people and business processes of the organisations (Saengsith & Suntraruk, 2023). In addition, it encourages the university's senior management to do internal audits and develop the profession by improving the audit staff's knowledge and experience and providing them with independence through training activities and seminars (Shuwaili et al., 2023).

H3: IAI is positively related to OP.

H4: IAI mediates the relationship between PP and OP.

Methodology

Data collection procedure

By employing data from Pakistani public hospitals, we examine the hypotheses set forth in the preceding section. Quantitative survey data or archival data are usually used in cross-sectional public audit research studies (Desta, 2023). In public procurement research, relevant documentary information is not only hard to obtain, particularly in developing countries, but such data tends to address only overall and large-scale concerns. Thus, survey methodology is the conventional mode of developing an understanding of the procurement issues internal to a procuring entity (Agyekum et al., 2023).

Because of the informal institutional factors and a weak mailing system in Pakistan, we made direct contact with the key informants using a team of enumerators. In the current study, we therefore invited 348 employees in the target public hospitals for their consent to participate in the survey. Of these, 249 consented to participate and were offered the survey instruments (cover letter and questionnaire). In all organizations, one respondent, a senior manager aware of the public procurement issues, was asked to fill out the questionnaire. In several subsequent visits, the authors collected 209 questionnaires during 90 days of fieldwork. Out of the questionnaires filled, the researchers excluded 49 for their incompleteness, making 201 questionnaires usable in the study; this was 80% of the total questionnaires administered. The overall finding was an 80 % effective response rate.

Measurement of scale

In this study five likert scale was considered from strongly agree 5 to strongly disagree 1.

Procurement planning is defined as “Procurement planning entails identifying and documenting the particular goods, services, and results required for the successful undertaking of a project. It is concerned with decisions of what to buy, when to buy and where to buy from”. Its eight research items were adopted from the study (Mebrate & Shumet, 2024) and sample item was “Budget approval is obtained for the required items before purchase orders are placed”.

Internal audit interdependency is referred to “Internal audit interdependency means how the internal auditors depend on other organizational functions or units to accomplish their activities and how the other functions depend on the internal audit function. The so-called interdependency is crucial to guarantee that all the companies in the organization are under coherent and integrated supervision, as well as efficient risk monitoring and internal controls”. IAI four research items were taken from the research of (AL-Rashdi & Al Maskari) and sample item was “Internal auditors carry out audits on activities and operations undertaken by the top management”.

Organizational performance can be defined as “The impacts or outcomes of an organization are the difference between desired or planned outputs and actual outputs of a firm. It is the extent to which an organization has been put in order and the degree to which it is effective in creating value for its stakeholders or consumers, shareholders, and the public in general”. The five research items were taken from the study of (Mebrate & Shumet, 2024) and sample item was “Procurement practices adopted by the hospital have impacted positively on the hospitals’ performance”.

Software tool

SmartPLS is mainly employed concerning PLS-SEM, a beneficial approach to analyze the test model because it is a structural equation modelling technique, suitable when the model is exploratory and the data is non-normally distributed (Hair & Alamer, 2022). SmartPLS allows one to estimate the latent variables; these are factors on their own represented by one or more than one index. This is especially relevant in research work carried out in social sciences. In terms of usability, SmartPLS is relatively easy to use, which is essential because researchers of different levels of statistical literacy will use the program.

Results and Discussion

Reliability and validity

The reliability and validity of the measurements contained in the model were also analyzed in the study. The findings also show that the constructs have acceptable internal consistency coefficients, at least in the case of the sample, and convergent validity. In the case of procurement planning, the obtained Cronbach's alpha was 0.925, and the composite reliability of 0.938 demonstrates strong reliability. Concerning the average variance extracted (AVE), procurement planning has a value of 0.655, which, in fact, is beyond the recommended limit of 0.50, indicating that convergent validity achieved an almost perfect degree (Yahaya et al., 2019). In the same way, the internal audit interdependency construct has a satisfactory level of reliability, evidenced by Cronbach's alpha level of 0.885 and a composite reliability of 0.921. The AVE for internal audit interdependency is 0.744, again supporting this construct's convergent validity.

Regarding organizational performance, Cronbach's alpha was 0.899, and the composite reliability of 0.925 indicates excellent reliability. In the context of organizational performance, the AVE is 0.50. This means that 712 also embraces the convergent validity criterion. Also, all the outer loadings for the measurement items are more significant than 0.70. Furthermore, 70 provided the necessary support for the convergent validity of the model. In what has emerged is that the measurement model indicators have a high degree of reliability and validity, thereby adding confidence to the credibility of the outcome as well as the conclusions that have been made in this study. (See Table 1 and Figure 1)

Table 1. Reliability and validity

Factors	Item SPSS coding	Value of outer loading	Value of Cronbach alpha	Value of Composite Reliability	Value of Average Variance Extraction (AVE)
Procurement planning	PP1	0.789	0.925	0.938	0.655
	PP2	0.763			
	PP3	0.824			
	PP4	0.839			
	PP5	0.794			
	PP6	0.782			
	PP7	0.849			
	PP8	0.832			
Internal audit interdependency	IAI1	0.849	0.885	0.921	0.744
	IAI2	0.834			
	IAI3	0.854			
	IAI4	0.911			
Organizational performance	OP1	0.903	0.899	0.925	0.712
	OP2	0.807			
	OP3	0.817			
	OP4	0.867			
	OP5	0.823			

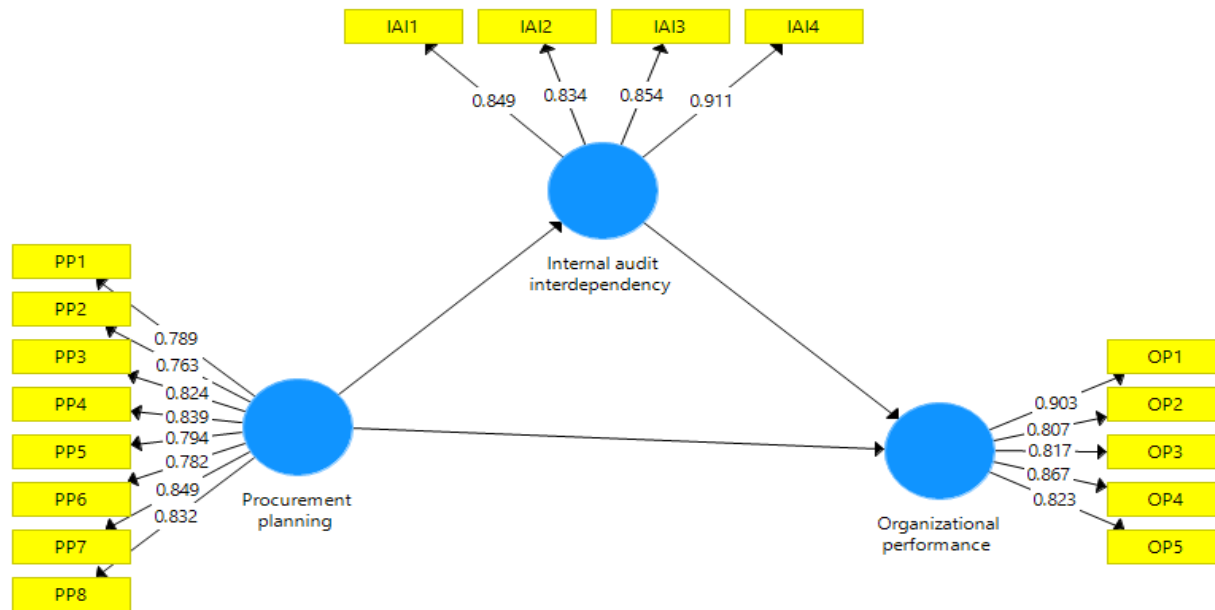


Figure 1. Measurement model

Hypothesis testing and Discussion

The procurement implications are a significant independent variable with a direct positive correlation with organisational performance ($t = 8.697$, $\beta = 0.492$). The findings indicate that the level of procurement planning has a direct significant impact on organisational performance. So, the extent to which an organization undertakes efforts to optimize its procurement planning function is most probable to experience enhanced organisational performance (Zong et al., 2024). Several previous researches have revealed that good procurement planning enhances the performance of an organization (Bag, 2012), (Changalima & Mdee, 2023). The outcomes of the present research support these earlier contributions, underlining that procurement planning is a strategic business activity that may affect organisational performance. The number increase is seen in the Table Below and Figure 2.

This research also shows that procurement planning positively influences internal audit interdependency estimate ($\beta = 0.708$, $t = 21$). The study findings indicate that procurement planning directly impacts internal audit interdependency; the effect is highly significant and positive at 0.508 , $t = 7.339$, $p < 0.05$. This implies that organizations that put their money where their mouths are and enhance their procurement planning functions will likely experience considerable changes in the level of integration and coupling between the procurement function and the internal audit function. There seems to be little literature about the relationship between procurement planning and the interdependency of internal audit (Hazaea et al., 2023). However, some scholars have established that those two functions are coproduction to organizational control and decision-making. This is evidenced by the responses in Table 2 and illustrated in Figure 2 below.

There is a significant positive relationship between the interdependency of internal audit and organizational performance ($\beta = 0.348$, $t = 5$). By so doing, the findings reveal that internal audit interdependency has a significant, positive, and statistical effect on organizational

performance (Bunget et al., 2020). This implies that organizations that manage to increase interconnection between the procurement function and internal audit function will experience a positive change in organizational performance (Hoai et al., 2022). Several studies have been done on the effect of internal audits on the performance of an organization, and the results have been mixed (Hazaea et al., 2020). [Please see Table 2 and Figure 2]

Thus, the indirect effect of procurement planning on organisational performance through internal audit interdependency is also positive and statistically significant with a value of $\beta = 0.246$, $t = 5.403$ and with a partial mediation effect. A partial mediation is, therefore, suggested by the results where internal audit interdependency acts as a partial mediator through which procurement planning may improve the performance of organisations. This current study adds to the existing body of knowledge by revealing that the relationship between procurement planning and organisational performance is not only a direct but also a partially mediated function of the interdependency between the procurement and internal audit functions. (Review Tables 2 and Figure 2 below)

Table 2. Path Directions

Paths	Value of Beta	T-Value	Remarks
Procurement planning-> Organizational performance	0.492	8.697	Accepted
Procurement planning-> Internal audit interdependency	0.708	21.187	Accepted
Internal audit interdependency-> Organizational performance	0.348	5.658	Accepted
Procurement planning-> Internal audit interdependency-> Organizational performance	0.246	5.403	Partial mediation effect

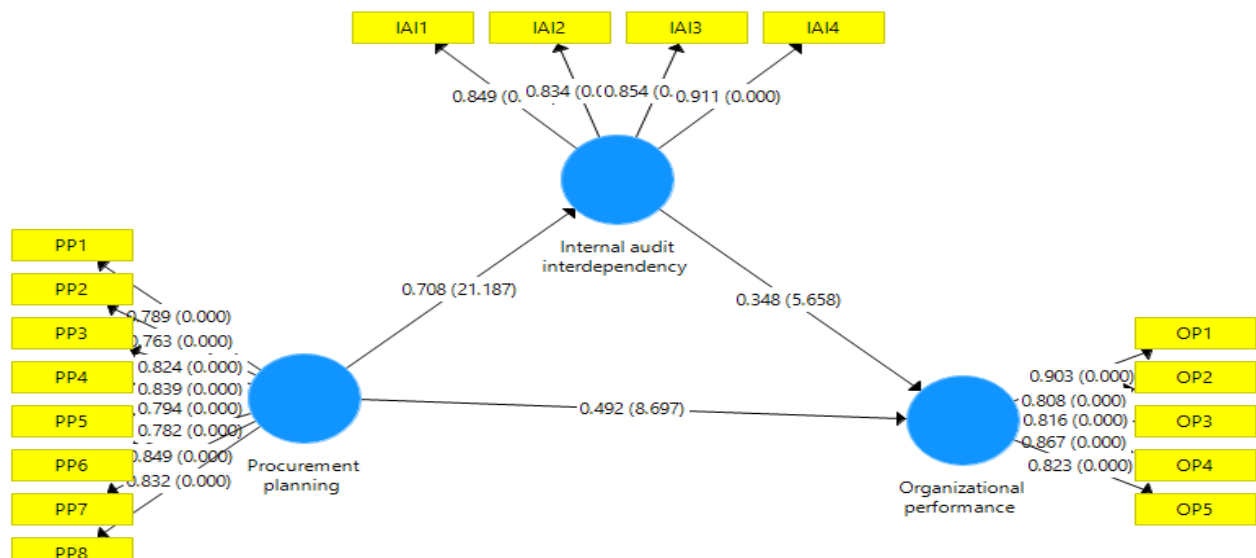


Figure 2. Structural model

Conclusion

This research aimed to identify the cross-sectional relationships between procurement planning, interdependency between internal audit, and organisational performance to provide evidence of the relationship between the identified constructs. First, the study validated the previous findings of the direct and positive relationship between procurement planning and organisational performance. Procurement planning helps organisations obtain required resources, control expenses, and make choices that can result in better organisational performance. Secondly, the research established that procurement planning positively correlates with the interdependency of internal audit. Companies whose procurement practices involve proper planning of the procurement function are more likely to enhance cohesiveness between the procurement and internal audit departments. Third, the study further affirmed the hypothesis that the interdependency of internal audits positively influences an organisations performance. In this way, relying on the internal audit function and using its knowledge and outlook, an organization can enhance its efficiency and increase the chance of its positive performance. Most importantly, the current study established a partial mediation effect, where the relationship between procurement planning and organisational performance was not only direct but also through the level of coordination between procurement and internal audit functions. This implies that procurement planning could, directly and indirectly, improve organisational performance, with the internal audit as an enabler and coordinator.

Managerial implications

The findings have highlighted that procurement planning helps explain organizational performance. Managers should ensure that they enhance and promote the protection of a sound procurement planning system in their organizations. This may involve procuring procurement planning software, educating and training procurement personnel, and integrating procurement plans with the organization's overall business plans.

Second, the study emphasizes the need to improve the relationship between the Procurement and Internal Audit functions to strengthen the link. This involves increasing interaction between the cross-functional teams, sharing information, and ensuring that the procurement and internal audit teams are chasing the same goals and measurements.

Finally, the results show that internal audit interdependency can enhance organizational performance. Managers need to understand and accept that internal audits add value to the organization and give internal auditors more opportunities to become more involved and exert more influence.

Limitations and future research directions

The data for the current study was collected cross-sectionally in that it was a period of time-specific data. More elaborate studies could be carried out through longitudinal research designs that help determine how the relationships between the variables transform over time. Extending the study to different industries, sectors, or cultures would support the generalization of the findings and provide a richer understanding of the relationships. There could be study ideas that would examine the moderating role of variables, like organizational culture, leadership, or industry characteristics and reveal the contingencies and restrictions of the observed relations.

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