Original Article

STAKEHOLDERS' PERCEIVED EFFECTIVENESS OF PUBLIC E-PROCUREMENT THROUGH GOVERNMENT E-MARKETPLACE IN INDIA

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ABSTRACT

This study investigates the role of India's Government e-Marketplace (GeM) in advancing good governance through public E-procurement. It aims to explore and compare the perceptions of buyers and suppliers regarding GeM adoption.

Using a descriptive research design, primary data were collected through structured interview schedule from 260 active GeM users (120 buyers and 140 suppliers) from six North Indian states. The study uses Exploratory Factor Analysis (EFA) to identify key dimensions of GeM adoption for both buyers and suppliers. It uses independent samples t-test to compare the group perceptions. The analysis revealed six core dimensions influencing GeM adoption viz. transparency and accountability, corruption reduction, professionalism and fair competition, reliability and standardization, operational efficiency, and real-time access. Distinct factor structures emerged for buyers and suppliers, highlighting their differing priorities.

This study offers a novel stakeholder-specific assessment of E-procurement effectiveness - an area underexplored in existing literature. By applying EFA separately to buyers and suppliers, the research provides in-depth understanding of user experiences. Findings highlight the need for user-specific policy interventions for buyers and suppliers on GeM platform. The study calls for targeted support to suppliers, especially MSMEs, to improve their access and competitiveness on GeM.

Keywords: Public Procurement, E-Procurement, Government E-Marketplace, Gem, Digital Governance, Transparency, Accountability, Corruption Control, Buyer-Supplier Perceptions

INTRODUCTION

Adopting electronic procurement (E-procurement) systems has transformed traditional procurement, significantly impacting government and public sector transactions. The push toward digital governance in India has placed E-procurement as a pivotal strategy for enhancing transparency, accountability, efficiency, and effectiveness in procurement processes. These shifts reflect broader global trends in public procurement reforms, driven by the need to reduce corruption and promote a seamless, business-friendly environment. E-procurement became a strategic priority of the government of India under Digital India Program launched in 2015. Government e-Marketplace (GeM), launched in 2016 as an initiative of Digital India, offers a centralized platform for government agencies to procure goods and services, aiming to reduce corruption, streamline workflows, and encourage fair competition among suppliers.

This study examines the perceived effectiveness of E-procurement in promoting good governance. The study explores the perceptions of both buyers and suppliers engaged with GeM, focusing on the multidimensional aspects that influence their experiences. While prior studies have highlighted the potential of E-procurement to improve governance, this research uniquely examines how buyers and suppliers perceive GeM's functionalities differently. By identifying core dimensions—such as operational transparency, reduction of favoritism, and professionalism—this study aims to provide insights into the strengths and areas for improvement within GeM, aligning with good governance practices.

The study draws upon the Technology Acceptance Model (TAM), Good Governance Theory, and Public Value Theory to explore the role of E-procurement in fostering good governance through GeM. These frameworks provide insights into technology adoption, governance principles, and the creation of public value, which are central to understanding the perceptions of procurement agencies and suppliers.

Previous research on public E-procurement systems has highlighted their transformative potential in addressing inefficiencies and malpractices in public procurement. Studies by Neupane et al. (2014) and Intauno et al. (2024) demonstrate how E-procurement platforms enhance transparency and accountability, thereby mitigating corruption in public procurement processes. Aboelazm (2022) emphasizes that digital tools streamline procurement workflows, reduce transaction costs, and improve efficiency. These insights are particularly relevant for policymakers aiming to foster good governance, as they highlight the value of E-procurement in aligning procurement practices with principles of transparency, equity, and operational excellence. For practitioners, the operational benefits such as enhanced supplier competition and improved market access provide a roadmap for adopting digital procurement solutions.

While prior research has acknowledged the potential of E-procurement to enhance transparency and reduce corruption in public procurement systems, most studies have focused on technical implementation, policy frameworks, or case-specific operational outcomes. However, limited attention has been paid to how different stakeholder groups—specifically buyers and suppliers—perceive and experience public E-procurement platforms like GeM.

This study addresses these gaps by providing a comparative, stakeholder-based analysis of GeM adoption, grounded in well-established theoretical models. By applying Exploratory Factor Analysis (EFA) to a robust sample from six North Indian states, this research offers an understanding of the governance outcomes of E-procurement from both demand and supply sides. This dual perspective contributes novel empirical insights to the discourse on digital governance and public procurement reforms in developing economies.

The remainder of this paper is structured as follows. The next section presents a comprehensive literature review. The methodology section details the research design, data collection, and analytical techniques used to examine the perceptions of buyers and suppliers regarding the GeM. The findings section presents key results, highlighting similarities and differences in stakeholder perceptions. This is followed by the discussion section, which contextualizes the findings within the theoretical framework and existing literature and explores their implications. Finally, the paper concludes by summarizing key insights, discussing limitations, and proposing directions for future research and policy development.

REVIEW OF LITERATURE

E-procurement has garnered significant attention due to its numerous benefits in streamlining procurement processes and enhancing governance outcomes Singh and Vij (2022). Croom and Brandon-Jones (2005) have cited cost savings, improved transparency, process efficiencies and enhanced compliance and auditability as possible advantages of E-procurement. Siwandeti et al. (2023) explored the perceived benefits of participation in public E-procurement among participating and non-participating vendors in Tanzania, identifying reduced paperwork, increased transparency, cost control, and corruption reduction as key advantages. E-procurement enhances traceability in financial transactions Neupane et al. (2014), brings openness in procurement processes Kassim and Hussin (2010), Fridayani and Atmojo (2017), Haninun et al. (2023) and reduces information asymmetry in procurement processes Croom and Brandon-Jones (2007), Neupane et al. (2014), promoting overall transparency Blum et al. (2023), Intauno et al. (2024). Transparency has additional benefits, such as increased accountability of procurement officials Croom and Brandon-Jones (2005), Mpehle and Mudogwa (2020).

E-procurement improves monitoring Rotich and Okello (2015), automates workflows Shakya (2015) and enhancing accountability. It also increases consistency Neupane et al. (2014) and predictability Shakya (2015) while promoting professionalism Brandon-Jones (2017) and improving working methods Ferreira and Amaral (2016). A significant advantage is the reduction in lead time Belisari et al. (2019), Egorova et al. (2021) and greater accuracy in procurement processes Toktaş-Palut et al. (2014).

E-procurement has also been associated with wider vendor choice Moon et al. (2005), reduction in transaction costs Dooley and Purchase (2006), Bromberg and Manoharan (2015), Aboelazm (2022) and lower prices of products and services Kassim and Hussin (2010), Pai (2019), leading to significant budgetary savings Singer et al. (2009), Blum et al. (2023) and ensuring value for money Afolabi et al. (2022). Improvement in bargaining power facilitates better negotiation with suppliers Kameshwaran et al. (2007), Ferreira et al. (2014). E-procurement also improves inventory management Toktaş-Palut et al. (2014), Rotich and Okello (2015) and reduces maverick buying Barratt and Rosdahl (2002), Vaidya and Campbell (2016). Additionally, it reduces the administrative

burden on procurement officials Egorova et al. (2021), boosting overall efficiency and effectiveness Aboelazm et al. (2022), Haninun et al. (2023).

A recurring theme in the literature is the role of E-procurement in reducing corruption Fridayani and Atmojo (2017), Aboelazm (2022). Specifically, it reduces bid rigging Ishii (2022), Afolabi et al. (2022), lobbying or nepotism Said et al. (2017), favoritism Mpehle and Mudogwa (2020), and red-tapism European Commission (2016). It also minimizes collusion among suppliers Mpehle and Mudogwa (2020), Afolabi et al. (2022) by reducing human interaction and intermediaries like brokers Pandey et al. (2019), thus enabling faceless procurement Lewis-Faupel et al. (2016),Said et al. (2017). These changes decrease opportunities for fraud Said et al. (2017), Zahra et al. (2022) and prevent officials from subverting processes for personal gain Campbell (2017).

It has led to simplification of processes, which has made procurement easier to navigate Leipold et al. (2004), Ferreira et al. (2014), Toktaş-Palut et al. (2014), Shakya et al. (2015). E-procurement reduces paperwork Imtiyaj et al. (2015), Afolabi et al. (2022) and improves supply chain management performance Mpehle and Mudogwa (2020), Waithaka and Kimani (2021). It streamlines procurement procedure for small and medium enterprises (SMEs) thereby reducing corruption and ensuring transparency Soong et al. (2020). It also increases buying and selling avenues for both buyers and suppliers Fridayani and Atmojo (2017), Pandey (2019) and promotes equity and inclusiveness Mpehle and Mudogwa (2020), Sailesh (2020) by enabling small enterprises to access public procurement markets Bromberg and Manoharan (2015), Pandey (2019). This enhanced access increases competition Blum et al. (2023) and fosters communication, improving the speed and flow of information within procurement systems Gunasekaran and Ngai (2008), Liu et al. (2011). Real-time access to procurement systems Fridayani and Atmojo (2017), Anthony (2018) and the generation of reliable, persistent data Ferreira and Amaral (2016), Campbell (2017) further enhance procurement record management Boafo et al. (2020).

Špaček and Špačková (2023) have studied the perception of employees from central state administration bodies in Czech Republic who use the national e-procurement system and conclude that the system has got certain benefits yet there are numerous challenges and difficulties to make it super successful. Despite hitches, E-procurement has emerged as a pivotal mechanism for enhancing good governance in public procurement systems. Suardi et al. (2025) argue that while e-procurement alone may not directly reduce corruption, it significantly strengthens the effect of robust procurement governance on corruption prevention. Mélon and Spruk (2020) found that the implementation of e-procurement reform is generally associated with a relatively stronger control of corruption in the Netherlands and Denmark, while a similar reform in Portugal failed to translate into a stronger control of corruption. Ratnawati and Suryawan (2021) demonstrate that E-procurement positively impacts good governance dimensions such as transparency, accountability, and service quality, ultimately improving public trust. Mu'ah et al. (2024) highlight the role of E-procurement in increasing institutional transparency and reducing collusion risks in Indonesia. Likewise, Sirait et al. (2023) affirm that E-procurement fosters good governance by improving compliance, monitoring, and integrity in procurement processes. Nasrullah and Aven (2020) provide evidence from Tanzania that effective E-procurement systems enhance participation, reduce delays, and increase competition—cornerstones of good governance. Collectively, these studies suggest that when effectively implemented and supported by sound governance frameworks, E-procurement systems can serve as powerful tools for good governance in emerging economies.

Ofori et al. (2023) investigated the intention to adopt the Ghana Electronic Procurement System (GHANEPS) among public sector organizations (PSOs) in Ghana. It explored whether two groups of procurement staff—labeled as "optimistic" versus "discomfort"—differ significantly in their attitudes and intentions toward using GHANEPS. While the two groups (optimistic and discomfort) exhibited some differences in perceptions, statistical analysis found no significant difference in their intention to adopt GHANEPS. Overall, beliefs about facilitating conditions (e.g., support), personal innovativeness, ease of use, and perceived usefulness were all positively linked to attitude and the intention to use the system.

PUBLIC E-PROCUREMENT IN INDIA

E-procurement systems in India have undergone substantial development over the past two decades, marked by the pivotal launch of the Government e-Marketplace (GeM) in 2016. Imtiyaj et al. (2015) found that E-procurement reduces tender-related crimes, encourages healthy competition, enables 24/7 bidding, promotes a paperless environment, and enhances process efficiency. Panduranga (2016) emphasized that initiatives such as E-publishing, E-procurement, DGS&D rate contracts, and GeM have bolstered transparency in public procurement. However, challenges persist which are highlighted by Hazarika and Jena (2017). The problems sighted were fragmented procedures, insufficient professionals, and widespread corruption. Alryalat et al. (2023) studied the nature of the perceived barriers to B2G e-commerce adoption and categorized the barriers into 'cause group' including lack of IT infrastructure, lack of expertise and technical skills, high cost of technology, perceived information security risk, and lack of awareness of government issues and legal policies; and 'effect group' including organizational resistance to change, lack of top management support, low perceived operational benefits, and unwillingness to adopt B2G e-commerce services. Pai (2019) recommended GeM for fostering transparency, accountability, and inclusiveness by opening the public procurement market. Similarly, Pandey (2019) observed that GeM reduces lead times, eliminates intermediaries, ensures prompt payments, and supports entrepreneurship. Mehra et al. (2020) conclude that GeM portal is a relatively novel dynamic concept and it is evolving with a mandate to revolutionize public procurement.

The success of GeM relies heavily on its adoption by users. Nandankar and Sachan (2019) found that performance expectancy, effort expectancy, and trust significantly influence public buyers' intentions to use GeM. Gupta (2020) compared GeM with private platforms, emphasizing its ability to reduce human intervention, increase transparency, and address inefficiencies in traditional procurement processes. Sailesh (2020) underscores GeM's focus on efficiency, transparency, and inclusiveness. Sharma (2021) highlights persistent challenges like insufficient IT infrastructure and staff training. Saha et al. (2025) studied the perspectives of different stakeholders regarding the GeM and found that a few government buyers have become dominant entities on the platform. Dastan et al. (2025) found that GeM platform has helped in increasing sales, benefiting from exemption from tender fee and earnest money deposit (EMD); as agreed by 72.5% of the MSME respondents.

These studies underline the transformative potential of E-procurement systems like GeM, while emphasizing the need to address institutional bottlenecks and resistance to change. Despite the technical focus of existing literature, there remains a gap in exploring the perceptions of E-procurement among buyers and suppliers, particularly in India. Our study seeks to address this gap by examining the experience of GeM users on different aspects of E-procurement such as transparency, accountability, corruption control, efficiency & effectiveness, and ease of doing business.

THEORETICAL BACKGROUND

This study is grounded in the theoretical frameworks of the Technology Acceptance Model (TAM), Good Governance Theory, and Public Value Theory to examine the role of E-procurement in fostering good governance through the Government e-Marketplace (GeM). The TAM, developed by Davis et al. (1989), provides a lens to understand the adoption and acceptance of technology among stakeholders, emphasizing the influence of perceived usefulness and ease of use on user behavior. In the context of E-procurement, TAM helps explain how procurement agencies and suppliers perceive and adopt GeM as a tool to simplify processes, enhance efficiency, and improve decision-making. Complementing TAM, Good Governance Theory emphasizes the principles of transparency, accountability, efficiency, and fairness as critical benchmarks for evaluating governance reforms. Good Governance Theory was introduced by the World Bank (1992) to link governance quality with development outcomes, emphasizing transparency, accountability, and rule of law. Grindle (2004) further conceptualized its practical application in reform efforts within developing countries. Additionally, the Public Value Theory, as articulated by Moore (1995), emphasizes the creation of value for the public through enhanced service delivery and trust in government systems. The GeM reflects this by not only achieving cost savings and operational efficiency but also by reinforcing citizen trust in public procurement processes. These interrelated theoretical perspectives offer a robust foundation to explore how public E-procurement systems like GeM contribute to enhancing governance and generating value for stakeholders in India

METHODOLOGY

This study adopts a descriptive research design to explore the dimensionality of buyer and supplier perceptions of public E-procurement in India. The research focuses on key governance-related variables in E-procurement identified from the extant literature, including transparency, accountability, efficiency & effectiveness, corruption control, and ease of doing business. These variables have been examined to understand their role in fostering good governance through E-procurement practices. The study specifically aims at the following objectives:

1) To identify the determinants of public E-procurement adoption for good governance.
2) To analyze the perceptions of buyers and suppliers regarding GeM's impact on good governance.

In this firm level study, a purposive sampling method was employed to select respondents from the North Indian states, including Punjab, Haryana, Himachal Pradesh, Jammu & Kashmir, Chandigarh, and Delhi. A sample of 260 respondents was drawn including 140 suppliers and 120 buyers on the GeM platform. The selection was based on the active participation of respondents in E-procurement processes. A self-developed interview schedule was used to gather primary data from the respondents. The interview schedule was designed based on an extensive literature review (see Annexure-I). The selected items were finalized after consultation with experts in E-procurement and public policy to ensure the content validity. Informed consent was obtained from all participants before data collection, with assurances of anonymity and voluntary participation throughout the study. The respondents were asked to indicate their level of agreement with each item using a seven-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree."

A pilot study was conducted to evaluate the clarity and reliability of the instrument, leading to minor revisions that enhanced the precision and relevance of the items. All responses were collected personally by the researcher using a structured interview schedule. As a result, the dataset was free from missing values, eliminating the need for imputation or data cleaning procedures. To assess the potential for common method bias, Harman's single-factor test was conducted. We entered all items into an unrotated principal component analysis to determine whether a single factor would account for most of the variance. The analysis revealed that the single factor accounted for 39.752% of the total variance, which is below the recommended threshold of 50%. This suggests that common method bias is not a major concern in this study.

Exploratory Factor Analysis (EFA) was conducted using Principal Component Analysis (PCA) as the extraction method, with Varimax rotation applied. PCA is appropriate where the primary goal is to summarize the underlying structure of a large set of variables. Factors with eigenvalues greater than 1.00 were retained, in accordance with the Kaiser criterion, to ensure inclusion of only those components that accounted for a substantial amount of variance. Factor loadings above 0.40 were considered significant for interpretation. In cases of cross-loading, items were assigned to the factor on which they exhibited the highest loading, thereby maintaining conceptual coherence and improving the overall interpretability of the factor solution. To test the significance of difference in the opinion of buyer and supplier groups, independent samples t-tests were conducted on factor scores generated via regression-weighted EFA.

ANALYSIS AND FINDINGS

We applied exploratory factor analysis on a total sample of 260 respondents including buyers and suppliers on GeM. The KMO value of 0.948 indicates excellent sampling adequacy, suggesting that the variables are highly interrelated and appropriate for dimensionality reduction. Bartlett's Test of Sphericity, with an approximate Chi-Square value of 5762.928, degrees of freedom (df) of 820, and a significance level of 0.000, demonstrates that the correlation matrix is not an identity matrix and that sufficient correlations exist among the variables. These results collectively validate that the dataset meets the requirements for conducting factor analysis effectively. Table I presents exploratory factor analysis of perception of all the respondents regarding E-procurement through GeM in India.

DETERMINANTS OF PUBLIC E-PROCUREMENT ADOPTION IN INDIA

Based on EFA, six dimensions determine the adoption of GeM by the respondents:

1) **Transparency and Accountability in E-Procurement:** It emerges as the most important dimension explaining 39.752% of the variance. This factor indicates that GeM has made the procurement process more transparent and accountable by removing intermediaries, improving financial traceability, and ensuring fair competition. It includes items like 'GeM has improved reach across the country', 'It is easier to trace financial transactions after implementation of GeM in procurement activity', 'GeM has led to faceless procurement activity', 'There is elimination of middlemen in procurement activity after introduction of GeM' and 'GeM has ensured level playing field to all bidders'.

2) **Reduction in Corruption and Malpractices:** It is the second most important factor which explains the 4.522 % variance. The factor reflects the role of GeM in reducing corruption by minimizing practices such as favoritism, bid rigging, and lobbying. It creates a fairer procurement process. It consists of items like 'GeM has reduced favoritism in procurement activity,' 'There is reduction of bid rigging after implementation of GeM in procurement activity', 'There is reduction of lobbying in procurement activity after implementation of GeM', 'GeM has reduced red-tapism in procurement process.'

3) **Improvement in Professionalism and Fair Competition:** This is another factor that explains 3.776 % of the variance. It captures improvements in the professionalism of the procurement system and the promotion of fair competition. The items included are 'GeM ensures fair competition in procurement activities', 'GeM has enhanced professionalism in public procurement,' 'GeM has led to reduction in scope for fraud in procurement,' and 'There is increase in accuracy in procurement procedure after implementation of GeM.'

4) **Reliability and Standardization:** This factor explains 3.470 % of variance. This factor captures the reliability of information, product specifications, and the reduction of unplanned procurement. It includes items, 'GeM provides reliable information', 'GeM has led to increase in reliability in procurement activity,' 'GeM has led to reduction in unplanned procurement,' 'GeM provides adequate product specifications to ensure the right product is supplied.'

5) **Operational Efficiency and Workload Reduction:** This factor explains 3.030 % of the variance. It focuses on the reduction of the workload and operational burdens on procurement officials. The items included are, 'There is availability of equal information to all concerned after implementation of GeM,' 'There is reduction in the requirement of manpower for undertaking procurement,' 'GeM has resulted in reduction in the administrative burden on procurement officials'.

6) **Paperless and Real-Time Information Access:** This factor explains 2.792 % of the variance. It is characterized by a reduction in paperwork and the availability of real-time access to information. The items consist of, 'There is reduction in paperwork after implementation of GeM, and 'GeM provides real-time access to information'.

Thus, each factor represents a different aspect of the role of E-procurement and the adoption of GeM in enhancing good governance through improvements in transparency, efficiency, and fairness in public procurement in India.

Table 1

Table 1 Perception of Government e-Marketplace Adoption (N=260)					
Factor Number	**Name of Dimension (% of Variance)**	**Item Code**	**Factor Loading**	**Communality**	**Cronbach's Alpha**
1	Transparency and Accountability in Procurement (39.752%)	EB9	0.69	.560	0.890
		TR2	0.663	.582	
		CC8	0.557	.502	
		CC9	0.551	.534	
		EB11	0.532	.519	
		AC4	0.497	.606	
		EE3	0.497	.632	
		TR3	0.492	.601	
		TR4	0.457	.594	
		TR6	0.436	.536	
2	Reduction in Corruption and Malpractices (4.522%)	CC7	0.638	.627	0.887
		CC10	0.598	.57	
		CC6	0.594	.675	
		CC4	0.535	.644	
		CC5	0.533	.592	
		CC2	0.529	.58	
		EB1	0.486	.535	
		CC3	0.459	.467	
		AC2	0.443	.543	
		EE7	0.431	.439	
3	Improvement in Professionalism and Fair Competition (3.776%)	EB10	0.756	.704	
		EE1	0.609	.581	
		CC1	0.607	.622	
		EE6	0.574	.606	
		AC3	0.57	.591	
		AC1	0.563	.544	
		EB4	0.514	.504	
4	Reliability and Standardization (3.47%)	EB7	0.701	.639	0.805
		EE2	0.609	.659	
		EE8	0.556	.545	
		EB3	0.545	.567	
		EE4	10.49	.497	
5	Operational Efficiency and Workload Reduction (3.03%)	TR5	0.638	.616	
		EE5	0.589	.571	
		EE9	0.530	.576	
		EB8	0.485	.614	
6	Paperless and Real-Time Information Access (2.792%)	EB2	0.601	.569	0.724
		TR1	0.471	.616	
		EB6	0.464	.601	
		EB5	0.44	.441	

	CC11	0.412	.507

Source: The Authors

Factor scores were saved for each of the dimension during the EFA. Independent samples t-tests conducted for mean comparison of buyer and supplier perceptions across six dimensions revealed significant group differences on three factors (see Table II). Suppliers reported significantly stronger agreement than buyers on Transparency and Accountability in Procurement (p = .046) and Operational Efficiency and Workload Reduction (p = .010). In contrast, buyers expressed significantly more favorable views than suppliers on Reliability and Standardization (p < .001), indicating a divergent perception regarding platform dependability and procedural consistency. No significant differences were observed for Reduction in Corruption, Professionalism and Fair Competition, and Paperless Real-Time Access, suggesting broadly aligned stakeholder perceptions on those aspects.

Table 2

Table 2 Independent Samples t-Test for Buyer vs Supplier Perceptions of GeM				
Factor	**Dimension**	**t (df)**	**p-Value**	**Mean Difference**
1	Transparency and Accountability in Procurement	2.007 (250)	0.046*	+0.25
2	Reduction in Corruption and Malpractices	1.518 (257)	0.13	+0.19
3	Improvement in Professionalism and Fair Competition	1.700 (258)	0.09	+0.21
4	Reliability and Standardization	-6.195 (211)	0.001*	-0.74
5	Operational Efficiency and Workload Reduction	2.594 (248)	0.010*	+0.32
6	Paperless and Real-Time Information Access	-0.582 (250)	0.561	-0.07

*Significant at 5% level

Source: The Authors

To better understand the perception of the buyers and the suppliers who have adopted the GeM platform, we factor analyzed the responses of both the groups separately.

For the 'Procurement Agency/Buyer' sample, the KMO value of 0.871 signifies a high level of sampling adequacy, suggesting strong interrelationships among variables. Bartlett's Test of Sphericity yields a significant result (Approx. Chi-Square = 2561.889, df = 820, Sig. = 0.000), indicating that sufficient correlations exist among variables to justify factor analysis. These findings validate the appropriateness of the dataset for further factor analysis to explore underlying constructs. Table III shows the ten unique dimensions, emerging out of EFA of the perception of buyers about GeM. Likewise, EFA was also conducted for the bidder/supplier category. The KMO value of 0.927 indicates strong correlations among variables and their appropriateness for further analysis. Bartlett's Test of Sphericity, with an approximate Chi-Square of 4115.248, degrees of freedom (df) of 820, and a significance level of 0.000, confirms sufficient inter-variable relationships. Table IV presents the dimensionality of perceptions of suppliers about GeM. The EFA reveals seven distinctive factors determining the adoption of GeM by the suppliers.

IMPACT OF E-PROCUREMENT ON GOOD GOVERNANCE: PERCEPTIONS OF BUYERS AND SUPPLIERS

Based on EFA as shown in Table III and Table IV, we profiled a comparative picture of the perception of procurement agencies (buyers) and bidders (suppliers). There are many commonalities and differences in the perception of buyers and suppliers about the impact of GeM. Both buyers and suppliers recognize the importance of fair competition and accountability within the GeM system. Buyers (Factor 6: Accuracy and Fair Competition) and Suppliers (Factor 1: Fair Competition and Accountability) both agree that GeM ensures fair competition, improves accuracy, and enhances professionalism. This indicates that both stakeholders see GeM as contributing to good governance by establishing a level playing field and increasing responsibility among procurement officials. Secondly, both groups acknowledge that GeM plays a role in reducing fraud, lobbying, bid rigging, and favoritism. Buyers (Factor 3: Transparency and Anti-Corruption Measures) and suppliers (Factor 2: Reduction in Malpractices) perceive GeM as reducing corruption and increasing transparency. This alignment shows that both sides appreciate the platform's efforts to curb malpractices, which is critical for maintaining trust in the procurement system.

Thirdly, both buyers (Factor 5: Administrative and Manpower Efficiency) and suppliers (Factor 4: Timeliness, Reliability, and Administrative Efficiency) share a common perception of reduced administrative burden and manpower requirements due to GeM. Both stakeholders also see improvements in workflow and reliability using the GeM system, which simplifies processes and reduces transaction costs. Also, both groups highlight transparency and the availability of timely and reliable information as key benefits of GeM. For buyers (Factor 9: Real-Time and Faceless Transactions) and suppliers (Factor 6: Expansion of Procurement Avenues), GeM's ability to provide real-time access to information is a significant aspect of good governance.

Table 3

Factor Number	Name of Dimension (% of Variance)	Interpretation	Item Code (Factor Loading)	Cronbach's Alpha
Table 3 Buyers' Perception of Government e-Marketplace Adoption (N=120)				
1	Workflow Efficiency and Simplification (32.727 %)	Buyers value the most that GeM simplifies and improves the procurement workflow, making the process more open and reducing red-tapism.	EB1 (.677), EB9 (.624), EE3 (.615), TR3 (.579), CC4 (.497), AC2 (.476)	0.872
2	Reliability and Timeliness of Information (5.912%)	Buyers emphasize the reliability and timeliness of procurement-related information, crucial for decision-making.	EB7 (.733), EE2 (.618), EE4 (.610), EB8 (.599), AC4 (.441)	0.827
3	Transparency and Anti-Corruption Measures (5.230%)	Buyers perceived GeM as enhancing transparency and reducing opportunities for corruption and collusion.	CC1 (.683), TR1 (.671), CC6 (.597), CC11 (.560), EE8 (.546), CC7 (.420)	0.85
4	Expansion of Procurement Avenues (4.141%)	Buyers believe that GeM expands procurement opportunities and increases professionalism while reducing vendor collusion.	EB5 (.624), CC3 (.622), EB4 (.607), EE1 (.520), AC3 (.507)	0.74
5	Administrative and Manpower Efficiency (3.890%)	Buyers perceive that GeM reduces the human resource and administrative burden involved in procurement activities.	EE5 (.739), EB2 (.454), EB3 (.427)	0.71
6	Accuracy and Fair Competition (3.196%)	Buyers acknowledge that GeM contributes to more accurate procurement procedures and fosters a fair competitive environment.	EE6 (.740), EB10 (.583), TR5 (.540)	0.777
7	Checks and Balances in Procurement Process (3.187%)	Buyers admit GeM's role in establishing adequate controls to ensure fairness and reducing transaction costs.	CC2 (.679), EE7 (.607), EB11(.498)	0.7
8	Prevention of Malpractices and Middlemen (2.919%)	Buyers believe that GeM helps in eliminating middlemen and curbing opportunities for private gains.	CC5 (.618), CC9 (.610)	0.699
9	Real-Time and Faceless Transactions (2.685%)	Buyers see GeM's provision of real-time access and faceless procurement as transforming the market and making it more transparent.	EB6 (.663), CC8 (.569), TR4 (.550), AC1 (.418)	0.77
10	Accountability and Reduction in Bid Rigging (2.481%)	Buyers feel that GeM increases accountability and reduces issues like bid rigging.	CC10 (.770), EE9 (.492)	0.626

Source: The Authors

Table 4

Factor Number	Name of Dimension (% of Variance)	Interpretation	Item Code (Factor Loading)	Cronbach's Alpha
Table 4 Suppliers' Perception of Government e-Marketplace Adoption (N=140)				
1	Fair Competition and Accountability (46.161%)	Suppliers perceive GeM as fostering fair competition, increasing accountability (both on the buyer and seller sides), and reducing fraud, thus improving professionalism and accuracy in procurement.	EB10 (.794), AC1 (.707), CC1 (.687), EE6 (.683), EE1 (.642), AC3 (.567), EB4 (.536), AC4 (.527), TR5 (.514), TR4 (.487)	0.907
2	Reduction in Malpractices and	Suppliers recognize GeM as improving geographical reach, reducing middlemen, and	EB9 (.709), TR2 (.683), CC5 (.618), CC8 (.616), CC9	0.932

	Increased Openness (5.373%)	making the procurement process more transparent by reducing opportunities for malpractices like lobbying and private gains.	(.549), CC6 (.530), TR3 (.485), CC4 (.478), EB11 (.471), EE3 (.452), CC11 (.433)	
3	Checks, Balances, and Collusion Reduction (3.380%)	Suppliers emphasize the importance of checks and balances within GeM to prevent buyer manipulation and reduce collusion, bid rigging, and favouritism.	CC2 (.698), CC3 (.646), CC10 (.539), CC7 (.539), EE4 (.497), EE7 (.480), EB1 (.439)	0.874
4	Timeliness, Reliability, and Administrative Efficiency (3.474%)	Suppliers view GeM as providing timely and reliable information and product specifications, contributing to reduced administrative burdens and improved procurement reliability.	EB8 (.715), EB3 (.708), EE9 (.531), EE2 (.522)	0.836
5	Paperwork and Manpower Reduction (2.924%)	Suppliers perceive a significant reduction in paperwork and manpower requirements, leading to greater efficiency in procurement operations.	EB2 (.684), AC2 (.548), EE5 (.542)	0.737
6	Expansion of Procurement Avenues (2.599%)	Suppliers acknowledge that GeM has expanded market access and improved transparency through real-time information, enhancing the overall procurement experience.	EB5 (.678), EB6 (.523), TR1 (.514), EB7 (.480), TR6 (.424)	0.838
7	Reduction in Unplanned Procurement (2.546%)	Suppliers see GeM as effectively reducing unplanned and unsystematic procurement activities, fostering more structured procurement processes.	EE8 (.656)	-

Source: The Authors

We also observe differences in perception e.g. suppliers place a stronger emphasis on market access and buying/selling avenues (Factor 6: Expansion of Procurement Avenues), whereas this aspect is less pronounced for buyers. Suppliers benefit from the openness of the market created by GeM, allowing for more opportunities to engage in procurement activities.

Suppliers also emphasize the importance of checks and balances to ensure fairness in the selection of vendors (Factor 3: Checks and Balances). Though buyers appreciate fairness, yet their focus is more on operational aspects. Suppliers are more concerned with safeguards to prevent manipulation of the procurement process by buyers. Suppliers specifically identify reductions in paperwork (Factor 5: Paperwork and Manpower Reduction) and unplanned procurement (Factor 7: Reduction in Unplanned Procurement) as key benefits, which may reflect their operational priorities. For buyers, factors like workflow efficiency and accountability (Factor 1: Workflow Efficiency and Simplification) are more central to their perception of GeM's impact.

This comparative analysis demonstrates that while buyers and suppliers have aligned views on many aspects of GeM, there are notable differences in their focus areas, reflecting their unique positions within the procurement process. The difference in the number of factors extracted for buyer respondents (10 factors) compared to suppliers (7 factors) likely arises due to differences in the roles, responsibilities, and experiences of the buyers and the suppliers in the procurement process.

Buyers are involved in the entire procurement process, which includes designing procurement procedures, managing workflows, ensuring compliance, overseeing vendor selection, and handling administrative tasks. They are responsible for more complex and multifaceted tasks, which likely lead to the identification of a broader range of issues and experiences, resulting in a larger number of factors. Buyers' concerns can range from workflow efficiency and internal accountability to managing risks such as bid rigging, favoritism, and collusion. They are concerned with internal governance aspects of E-procurement, leading to a more complex and varied set of factors.

Suppliers, on the other hand, are primarily focused on participation in the procurement process—competing for bids, ensuring compliance with requirements, and fulfilling contracts. Their experience is more focused on market access, fair competition, openness, and receiving timely and transparent information from the system. As a result, the suppliers' concerns and perceptions are often simpler and more targeted. They focus more on external processes such as how they are treated by the procurement system, whether they have a fair chance to compete, how accessible the market is, and whether the system is transparent and free of corruption. Their focus is less on internal workflow efficiency and more on their interactions with the system, resulting in fewer distinct factors.

DISCUSSION

This study investigates the role of the Government e-Marketplace (GeM) in enhancing good governance, as perceived by buyers (procurement agencies) and suppliers (bidders). The findings reveal that while both groups share common views on many aspects of E-procurement, their perceptions diverge on certain priorities, reflecting their unique roles in the procurement ecosystem.

The study aligns with the Technology Acceptance Model (TAM) by demonstrating that perceived usefulness (e.g., transparency, accountability) and ease of use (e.g., reduced paperwork, automation) are significant in driving GeM adoption. Buyers emphasize GeM's ability to streamline workflows and ensure compliance, consistent with findings by Imtiyaj et al. (2015) and Panduranga (2016). Suppliers, in contrast, value fair competition and market access, reinforcing Kassim and Hussin,(2010) emphasis on open markets facilitated by E-procurement.

From the perspective of Good Governance Theory, the study highlights the platform's success in promoting transparency, accountability, and corruption reduction. Both buyers and suppliers acknowledge GeM's role in mitigating favoritism, lobbying, and bid rigging. These findings align with the literature, including insights from Neupane et al. (2014) and Fridayani and Atmojo (2017), emphasizing E-procurement's potential to foster fairness and reduce human intervention.

The study also draws upon Public Value Theory, as GeM generates value for buyers and suppliers by reducing costs, increasing professionalism, and expanding access. Suppliers particularly highlight GeM's ability to improve accountability among procurement officials and suppliers, as supported by Carter and Bélanger (2005). Buyers, on the other hand, emphasize its role in administrative efficiency and real-time monitoring, echoing insights from Rotich and Okello (2015).

Despite shared appreciation for GeM's benefits, differences emerge. Buyers focus on internal efficiency, accountability, and governance mechanisms, consistent with their responsibility for compliance and decision-making. Suppliers prioritize external aspects such as market access and competitive fairness, which reflect their need to compete equitably. This aligns with findings from Mpehle and Mudogwa (2020), Gupta et al. (2020) and Saha et al. (2025), who noted the divergent priorities of procurement stakeholders.

CONCLUSION

The study confirms that GeM has significantly contributed to good governance by improving transparency, accountability, and operational efficiency. Buyers perceive GeM as a tool for optimizing workflows, ensuring compliance, and enhancing internal accountability, while suppliers emphasize its ability to foster fair competition, reduce malpractices, and expand market access.

These findings validate the application of TAM, Good Governance Theory, and Public Value Theory in understanding E-procurement adoption and its governance impact. GeM not only simplifies procurement processes but also strengthens trust among stakeholders, fostering a culture of fairness and professionalism in public procurement. However, the differing priorities of buyers and suppliers highlight the need for targeted strategies to address their unique concerns.

This study makes a significant contribution by filling a critical gap in the existing literature on public E-procurement. Although some studies have evaluated the Government e-Marketplace (GeM) with respect to its design, benefits, and implementation challenges (e.g., Gupta et al. (2020), Sharma (2021), Saha et al. (2025), they often adopt a platform-centric or policy-oriented lens. This study departs from such approaches by empirically examining stakeholder-specific perceptions—a relatively underexplored area. Evaluating buyers and sellers' perspectives separately, the study captures the differential dimensionality of GeM adoption and its governance implications, revealing how each stakeholder group interprets transparency, efficiency, accountability, and market access. Unlike prior studies that treat GeM users as a homogenous group, this research offers a comparative, evidence-based insight into the platform's performance. This study generates and adds a user-level understanding to the academic discourse on digital procurement in India.

Our study offers actionable insights for policymakers seeking to enhance governance through digital procurement reforms in India. The findings affirm that the Government e-Marketplace in India significantly contributes to good governance by enhancing transparency, accountability, operational efficiency, and fairness in public procurement. Policies that prioritize the scaling of GeM adoption, backed by structured training programs for procurement officials, can further institutionalize the gains achieved in reducing malpractices, minimizing human intervention, and promoting fair competition. Additionally, the differentiated perceptions of buyers and suppliers highlight the need for policies that address user-specific challenges. For instance, policies could focus on expanding digital infrastructure and providing targeted support to suppliers, particularly MSMEs, to improve their access and competitiveness on GeM.

For practitioners, this study highlights the tangible benefits of GeM in simplifying procurement workflows, reducing paperwork, and enhancing the accuracy and transparency of procurement processes. Procurement officials can leverage GeM to automate routine tasks, thereby reallocating time toward strategic procurement planning and supplier management, which contributes to improving service delivery and operational effectiveness. Suppliers, particularly MSMEs, can use the transparency and openness of GeM to compete on a level playing field, expanding their market reach, and reducing the dependency on intermediaries. Managers

can also benefit from real-time data and reliable information provided by GeM to make informed procurement decisions, improve supply chain performance, and foster professionalism within procurement teams.

While the study offers valuable insights, we do not claim generalization of the results. The sample is limited to North Indian states, which may not capture regional variations in GeM adoption and perception. Future research may extend this analysis to other regions or sectors to enhance generalizability. Secondly, understanding the barriers faced by non-users or reluctant adopters could offer critical feedback for platform design, training, and policy outreach. Expanding the evidence base through broader, more randomized national studies will be essential for refining procurement reforms and building a truly inclusive digital governance ecosystem. Exploring the long-term impact of GeM on procurement efficiency and governance outcomes would also be valuable. Further studies may investigate the role of training and capacity building in enhancing platform adoption and satisfaction among both buyers and suppliers.

In a developing country context, this study highlights the transformative potential of E-procurement systems like GeM in institutionalizing transparency, efficiency, and trust in public administration. By capturing the voices of both buyers and suppliers, this study contributes actionable insights to improve implementation and scale-up strategies for digital procurement reforms in India and similar governance environments globally. Countries seeking to modernize their public procurement systems can draw from India's experience with GeM to design stakeholder-inclusive platforms that align with governance priorities.

ACKNOWLEDGMENTS

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ANNEXURE-I

	Interview Schedule	
S.No.	Item/Statement	Code
1.	There is an increase in accountability of procurement officials after implementation of GeM.	AC1
2.	GeM has led to improved monitoring of procurement system.	AC2
3.	GeM has led to increase in accountability on seller side	AC3
4.	After the introduction of GeM, automated workflow availability has increased the accountability of officials.	AC4
5.	GeM has led to reduction in scope for fraud in procurement	CC1
6.	There are adequate checks and balances to ensure buyers don't select specific vendors by selecting specific quality requirements (QRs)	CC2
7.	GeM has led to reduction of collusion among vendors in procurement process	CC3
8.	GeM has resulted in reduction in red tapism in procurement process	CC4
9.	GeM has reduced opportunities for officials to subvert the procurement process for private gains	CC5
10.	There is reduction of lobbying in procurement activity after implementation of GeM	CC6
11.	GeM has reduced favoritism in procurement activity	CC7
12.	GeM has led to faceless procurement activity	CC8
13.	There is elimination of middlemen in procurement activity after introduction of GeM.	CC9
14.	There is reduction of bid rigging after implementation of GeM in procurement activity	CC10
15.	There is reduction in cartel formation after implementation of GeM in procurement activity	CC11
16.	GeM has simplified procurement process	EB1
17.	There is reduction in paper work after implementation of GeM	EB2
18.	GeM provides adequate product specifications to ensure right product is supplied	EB3
19.	There is improvement in supply chain management performance after implementation of GeM in procurement activity	EB4
20.	GeM has increased buying and selling avenues	EB5
21.	GeM provides real time access to information	EB6
22.	GeM provides reliable information	EB7
23.	GeM provides timely information.	EB8
24.	GeM has improved reach across the country	EB9
25.	GeM ensures fair competition in procurement activities	EB10
26.	GeM has ensured level playing field to all bidders	EB11
27.	GeM has enhanced professionalism in public procurement	EE1
28.	GeM has led to increase in reliability in procurement activity.	EE2
29.	There is improvement in work flow after implementation of GeM in procurement.	EE3
30.	There is reduction in lead time in procurement activity after introduction of GeM.	EE4

31.	There is reduction in requirement of manpower for undertaking procurement	EE5
32.	There is increase in accuracy in procurement procedure after implementation of GeM.	EE6
33.	GeM has led to decrease in transactional cost of procurement	EE7
34.	GeM has led to reduction in unplanned procurement	EE8
35.	GeM has resulted in reduction in administrative burden on procurement officials.	EE9
36.	GeM has created transparency in procurement activity.	TR1
37.	It is easier to trace financial transactions after implementation of GeM in procurement activity.	TR2
38.	GeM has led to openness in procurement activity.	TR3
39.	GeM has led to creation of open market.	TR4
40.	There is availability of equal information to all concerned after implementation of GeM.	TR5
41.	GeM has led to increase in accessibility to procurement guidelines.	TR6