Cost and Management Accounting Practices in Indian Hotels: Impact on Efficiency and Service Quality

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ABSTRACT

This study investigates the impact of cost and management accounting (CMA) practices on operational efficiency and service quality in the hotel industry of Uttar Pradesh, India. Drawing on the Resource-Based View (RBV) and the Service-Profit Chain framework, the research conceptualises CMA practices as strategic organisational resources that enhance service outcomes through improved operational performance. A quantitative, cross-sectional survey design was adopted, collecting data from 476 hotels across various categories, ownership types, and locations. Using structural equation modelling (SEM), the study examines the relationships between five dimensions of CMA practices—budgeting, costing, performance measurement, decision support, and technology and analytics—operational efficiency, and service quality. The findings reveal that costing, decision support, and technology and analytics significantly enhance operational efficiency, while budgeting and performance measurement show no significant effects. Operational efficiency has a strong positive influence on service quality and mediates the effects of costing, decision support, and technology and analytics on service outcomes. The results highlight the strategic importance of adopting modern, technology-driven CMA practices to achieve operational excellence and deliver superior guest experiences. This study extends accounting and hospitality literature by providing empirical evidence from an emerging economy context and offers practical insights for hotel managers, policymakers, and professional bodies. It underscores the need for data-driven, analytics-enabled accounting systems to strengthen competitiveness and enhance service quality in dynamic hospitality environments.

Keywords: Cost and Management Accounting, Operational Efficiency, Service Quality, Hospitality Industry, Structural Equation Modelling, India
JEL Classifications: M41, Z32

1. INTRODUCTION

The hospitality sector plays a pivotal role in driving economic growth and employment in emerging economies such as India, contributing significantly to GDP and international tourism receipts (Rauch et al., 2015). Within this sector, hotels operate in an increasingly competitive environment characterised by rising customer expectations, cost pressures, rapid technological change, and evolving service standards. In this context, the effective application of Cost and Management Accounting (CMA) practices has become critical, not only for financial control but also for enhancing operational performance and customer satisfaction (Akbaba, 2006).

In recent years, global shifts in management accounting have emphasised integrated performance measurement, activity-based costing, advanced decision-support tools, and the use of analytics for real-time monitoring (Alzoubi et al., 2021). While such practices have been widely studied in manufacturing and certain service industries, their adoption and impact within the hotel industry-particularly in developing regions-remains underexplored. Existing literature in hospitality management tends to focus on marketing, service delivery, and human resources, with comparatively limited attention given to the role of CMA in linking operational efficiency to service quality outcomes (Alzoubi et al., 2021).

The hotel sector in India, and more specifically in the state of Uttar Pradesh, presents a unique context for such an investigation. Uttar Pradesh is a major tourism hub, attracting both domestic and international visitors to heritage cities such as Varanasi, Agra, and Lucknow. Despite its tourism potential, the sector faces challenges including seasonal demand fluctuations, high fixed costs, and varying levels of managerial expertise (Vij, 2012). These conditions demand rigorous cost management and performance monitoring to maintain competitiveness while ensuring exceptional service delivery.

This study addresses the gap by empirically examining the relationship between five key dimensions of CMA practices-Budgeting, Costing, Performance Measurement, Decision Support, and Technology and Analytics—and service quality outcomes, with Operational Efficiency as a mediating variable.

The contributions of this study are threefold. First, it extends the application of CMA research into the hospitality industry in an emerging economy context, offering empirical evidence from a region underrepresented in the literature. Second, by incorporating operational efficiency as a mediator, it provides a nuanced understanding of how accounting practices influence service outcomes, thus bridging accounting and service management research. Third, the findings offer actionable insights for hotel managers, policymakers, and professional bodies seeking to enhance both financial and service performance in the tourism sector.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Theoretical Foundation

The present study is anchored in the Resource-Based View (RBV) of the firm and the Service-Profit Chain framework. The RBV asserts that firms achieve sustainable competitive advantage when they possess valuable, rare, inimitable, and non-substitutable resources (Hung, 2018). Within the hotel industry, cost and management accounting (CMA) practices constitute such intangible resources, providing managers with structured, reliable, and actionable information for strategic decision-making. Complementing this, the Service-Profit Chain (Heskett et al., 2008) posits that improvements in internal processes and operational performance ultimately lead to enhanced service quality, customer satisfaction, and organisational profitability. Integrating these perspectives, the conceptual model of this study positions operational efficiency as the mechanism through which CMA practices translate into superior customer service performance.

2.2. Financial and Analytical Components of Economic Security in Tourism and Hospitality Enterprises

A recent study by Illiashenko and Lytovchenko (2023) examines the economic security of tourism and hotel industry enterprises, particularly in crisis contexts such as recent events in Ukraine that have had devastating consequences for businesses. The authors identify two fundamental components of economic security: the financial component, which encompasses all available and attracted financial resources, their management and rational use, and

additional financial opportunities; and the analytical component, consisting of various analytical methods and techniques for comprehensive security analysis across all enterprise levels. The research reveals that the financial component of modern tourism and hospitality enterprises is currently at a low level due to negative factors including inflation, rising exchange rates, insufficient government financing programs, financial instability of counterparties, and low investment activity. The analytical component includes specific "accounting and analytical methods" such as balance and reporting analysis, budgeting, benchmarking, break-even analysis, sensitivity analysis, SWOT analysis, JIT systems, LIC analysis, and VVC methods, all designed to create clear information systems for managerial decision-making. These financial and analytical components form the indispensable foundation of economic security, emphasizing that high-quality forecasting, timely warning systems, and responsive measures are top priorities for tourism and hotel industry management to achieve stable long-term security.

2.3. CMA Practices in the Hospitality Sector

Hotels operate in a complex environment characterised by high fixed costs, fluctuating demand, and service delivery that relies heavily on labour and quality consistency (Reichheld and Sasser, 1990). Effective CMA practices can help managers navigate these challenges by ensuring that decisions are informed by accurate cost information, strategic planning, and real-time performance monitoring. Over the past two decades, CMA has evolved from a narrow focus on cost control to a broader emphasis on performance management and value creation (Hogreve et al., 2022). While manufacturing industries have been the primary focus of CMA research, there is a growing need to understand how these practices function in service industries such as hospitality, particularly in emerging economies.

This study examines five dimensions of CMA practices-budgeting, costing, performance measurement, decision support, and technology and analytics—and their impact on operational efficiency and service quality in the hotel industry in Uttar Pradesh, India. This context is particularly relevant because Uttar Pradesh is a major tourism hub with diverse hotel formats, from heritage properties to international chains, yet research on the adoption and impact of CMA in this region remains scarce.

2.4. Budgeting

Budgeting is a cornerstone of financial management, providing a structured framework for planning, resource allocation, and performance evaluation (Hung, 2018). In hotels, the budgeting process often involves detailed forecasts for each department—rooms, food and beverage, events, and ancillary services (Ferrary, 2015). Research in service organisations has found that rigorous budgeting practices are positively linked to both cost control and operational performance (Hussein et al., 2023). In the hospitality sector, a well-implemented budgeting process not only constrains unnecessary spending but also ensures resources are allocated to areas that enhance guest experiences. Therefore, budgeting is expected to contribute positively to operational efficiency by ensuring that resources are utilised optimally in line with strategic goals.

2.5. Costing

Accurate costing enables hotels to understand the profitability of different services, set competitive prices, and identify cost-saving opportunities. Activity-based costing (ABC), for example, assigns overhead costs to services based on actual resource usage, which is particularly important in multi-service settings like hotels (Zahara and Indayani, 2022). Studies suggest that hotels adopting advanced costing methods can better control operating expenses and improve profitability. In the context of this study, it is anticipated that robust costing practices will enhance operational efficiency by reducing waste, improving pricing accuracy, and supporting better resource allocation.

2.6. Performance Measurement

Performance measurement systems extend beyond traditional financial metrics to include customer satisfaction, internal process efficiency, and innovation capabilities (Ali et al., 2021). In the hotel industry, balanced scorecards and key performance indicators (KPIs) are used to monitor service standards, employee productivity, and customer feedback. (Grobelna, 2021) highlights that a multi-dimensional performance measurement system aligns operational activities with strategic objectives, thus promoting continuous improvement. This alignment is critical for operational efficiency, as it ensures that resources are directed toward initiatives that enhance both productivity and service delivery.

2.7. Decision Support

Decision-support practices involve the use of tools such as cost-volume-profit analysis, make-or-buy assessments, and scenario modelling to guide strategic and operational decisions (Ćurlin et al., 2024). In hotels, these tools are essential for determining optimal staffing levels, evaluating outsourcing options, and assessing the financial viability of new services (Park and Lee, 2021). Decision support systems help managers make choices that balance cost considerations with service quality requirements, thereby improving operational efficiency. The ability to evaluate alternative courses of action and select the most efficient path is a hallmark of well-developed CMA systems (Kwok and Lau, 2019).

2.8. Technology and Analytics

Advancements in technology have transformed CMA by enabling real-time data capture, integration, and analysis (Pizam et al., 2022). In hotels, property management systems (PMS), point-of-sale (POS) systems, and analytics dashboards provide managers with timely insights into occupancy rates, revenue streams, and cost structures (Yang et al., 2021). The integration of accounting data with operational systems facilitates prompt responses to emerging issues, enhances forecasting accuracy, and supports evidence-based decision-making. Technology and analytics, therefore, are expected to enhance operational efficiency by streamlining processes, reducing errors, and improving information flow (Tavitiyaman et al., 2022).

2.9. Operational Efficiency as a Mediator

Operational efficiency refers to the ability of an organisation to deliver services using the optimal combination of inputs to achieve desired outputs (Cuc et al., 2023). In the hotel industry, this can be reflected in metrics such as cost per occupied room, labour hours per room, inventory turnover, and energy consumption. (Siagian, 2023) argue that CMA practices directly enhance operational efficiency by improving resource allocation, cost control, and process management (Aas et al., 2015). Once operations become more efficient, managers can redirect resources to improve service delivery, increase responsiveness, and maintain consistent quality. Thus, operational efficiency is positioned as a mediating variable that explains how CMA practices influence service quality. This is consistent with the Service-Profit Chain, which asserts that internal efficiency improvements translate into better customer experiences (Pitra et al., 2023).

It follows logically that higher adoption of CMA practices should lead to improved operational efficiency, and in turn, enhanced service quality. For example, a hotel with a robust budgeting system may optimise its labour scheduling, reducing idle time while maintaining adequate staffing levels to serve guests promptly. Similarly, the use of technology and analytics may allow early identification of service bottlenecks, enabling swift corrective action before customers are affected.

2.10. Service Quality in the Hotel Industry

Service quality is a central driver of customer satisfaction, loyalty, and competitive advantage in hospitality (Parasuraman and Berry, 1991). This study represents a comprehensive follow-up to the original SERVQUAL development, focusing on refining and validating the service quality measurement instrument across multiple service contexts and customer populations. It encompasses multiple dimensions, including reliability, responsiveness, assurance, empathy, and tangibles. This research strengthened the theoretical foundation and practical utility of SERVQUAL as a standardized service quality measurement tool, demonstrating its robustness across multiple service industries and customer populations while identifying areas for continued development and application. Operational efficiency supports service quality by ensuring that processes are streamlined, resources are readily available, and employees have the capacity to focus on guest needs. (Pena et al., 2013) emphasise that process efficiency is directly linked to customers' perceptions of service quality, as delays, inconsistencies, and errors often result from operational shortcomings. Therefore, the link between operational efficiency and service quality is both intuitive and supported by empirical evidence.

2.11. Hypotheses Development

Drawing from the literature and the theoretical frameworks discussed, it is anticipated that the adoption of budgeting, costing, performance measurement, decision support, and technology and analytics practices will be positively related to operational efficiency in hotels. Furthermore, operational efficiency is expected to be positively related to service quality. Finally, operational efficiency is proposed as a mediating mechanism through which CMA practices influence service quality. In essence, hotels that effectively implement a broad range of CMA practices are more likely to achieve operational excellence, which in turn enables them to deliver superior service quality to their customers.

- H_1: Budgeting practices are positively associated with operational efficiency in hotels

- H$_2$: Costing practices are positively associated with operational efficiency in hotels
- H$_3$: Performance measurement practices are positively associated with operational efficiency in hotels
- H$_4$: Decision-support practices are positively associated with operational efficiency in hotels
- H$_5$: Technology and analytics practices are positively associated with operational efficiency in hotels
- H$_6$: Operational efficiency is positively associated with service quality in hotels
- H$_7$: Operational efficiency mediates the relationship between cost and management accounting practices (budgeting, costing, performance measurement, decision support, technology and analytics) and service quality in hotels.

3. RESEARCH METHODOLOGY

This study adopted a quantitative, cross-sectional survey design to explore the relationships between cost and management accounting (CMA) practices, operational efficiency, and service quality in the hotel industry in Uttar Pradesh, India. A survey approach was considered appropriate because it enabled the collection of standardised data from a broad range of hotels, facilitating statistical testing of the hypothesised relationships and the mediation effects specified in the conceptual model. The research was explanatory in nature, aiming to test theoretically grounded relationships through empirical evidence.

The target population consisted of hotels operating in the state of Uttar Pradesh, covering categories from one-star to five-star, heritage properties, boutique hotels, and other recognised formats. This region provided a rich context for the investigation due to its significance as a tourism hub, including destinations such as Agra, Lucknow, and Varanasi. These cities attracted both domestic and international travellers but faced operational challenges such as seasonality, high fixed costs, and varied managerial capabilities. The unit of analysis was the individual hotel, with the survey directed to senior managers or departmental heads in accounting, finance, or operations who had the knowledge to comment on both CMA practices and performance outcomes. A stratified sampling strategy was employed to ensure representation across hotel categories and ownership types, including independent properties, national chains, international chains, and franchises. The study sought a minimum of 200 valid responses to provide adequate statistical power for mediation analysis.

Data were collected using a structured questionnaire adapted from established measures in prior research and contextualised for the hospitality industry. The instrument was divided into sections covering eligibility screening, organisational profile, CMA practices, operational efficiency, service quality, and additional contextual variables such as digital maturity, organisational culture, and training. CMA practices were measured across five dimensions—budgeting, costing, performance measurement, decision support, and technology and analytics—using a five-point Likert scale ranging from strongly disagree to strongly agree. The study developed a structured scale displays in Table 1 to measure budgeting, costing, performance measurement, decision support,

technology and analytics, operational efficiency, and service quality. Items assessed budgeting practices, costing systems, performance metrics, decision-making tools, and the use of technology and analytics. Operational efficiency was measured through cost control, productivity, and process optimisation, while service quality focused on guest satisfaction, responsiveness, and compliance with standards. The items were adapted from established literature to ensure reliability and relevance to the hotel industry.

The questionnaire was pilot-tested with a small group of hotel managers in Uttar Pradesh to ensure clarity, relevance, and reliability. Feedback from the pilot was used to refine wording, eliminate ambiguities, and confirm the appropriateness of the scale format. Cronbach's alpha values of 0.70 or higher were targeted for all constructs to ensure internal consistency.

The final questionnaire was distributed electronically to the selected hotels, with follow-up telephone calls and, where feasible, in-person visits to encourage participation. Respondents were assured of confidentiality and informed of the academic purpose of the study. As an incentive, a summary of the research findings was offered to participants upon completion of the study. Data collection was conducted over a period of approximately 10-12 weeks.

The data analysis process involved several stages. Descriptive statistics were used to summarise the profile of the sample. Reliability and validity were assessed through Cronbach's alpha, composite reliability, average variance extracted, and discriminant validity tests. Correlation analysis was conducted to examine the relationships between variables. SEM analysis tested the direct effects of CMA practices on operational efficiency and of operational efficiency on service quality. Mediation analysis was carried out using the bootstrapping method, following the approach recommended by Ringle et al. (2022), to determine whether operational efficiency mediated the relationship between CMA practices and service quality. Multicollinearity diagnostics were performed to ensure the robustness of the regression results.

Ethical considerations were addressed by obtaining approval from the relevant institutional review body before data collection began. Participation was voluntary, and informed consent was obtained from all respondents. Data were anonymised to protect the identity of participating hotels and individuals. Sensitive financial figures were not requested; instead, the study focused on practices, trends, and perceptions.

This methodological approach ensured a rigorous, reliable, and valid examination of the conceptual model. It was designed to generate findings that were both theoretically meaningful and practically relevant for accounting researchers, policymakers, and hospitality industry practitioners.

Table 2 presents the demographic characteristics of the surveyed hotels and respondents. The sample consists of a diverse range of hotels across five major cities in Uttar Pradesh, with the highest representation from Prayagraj (35.0%), followed by Kanpur (32.7%), Varanasi (15.8%), Lucknow (9.6%), and Agra (6.9%).

Table 1: Scale development

Construct	Item code	Statements	Source
Budgeting	BG1	Our hotel prepares formal budgets for all key operational areas.	Pitra et al., 2023
	BG2	Budgeting is used as a primary tool for resource allocation.	Guilding, 2003
	BG3	Budgets are reviewed regularly and updated when necessary.	Campos et al., 2022
	BG4	Variance analysis is performed to compare actual results with budgeted figures.	Yembergenov et al., 2022
	BG5	Departmental managers are actively involved in budget preparation.	Uyar and Bilgin, 2011
	BG6	Budgets are aligned with the hotel's strategic goals.	Sapkota et al., 2023
	BG7	Budget performance is linked to managerial evaluation.	Nihat Hanioglu, 2022
Costing	CG1	The hotel uses a structured costing system for products and services.	Nihat Hanioglu, 2022
	CG2	Overhead costs are allocated accurately to different departments.	Dau et al., 2024
	CG3	Costing data is regularly updated to reflect market changes.	Keating, 1991
	CG4	The costing system supports pricing decisions effectively.	Ghaderi et al., 2024
	CG5	The hotel uses activity-based costing or similar modern techniques.	Patiar, 2016
	CG6	Costing information is integrated with performance evaluation.	Duçi, 2021
	CG7	Managers use cost reports for operational decision-making.	Vij, 2012
Performance measurement	PM1	The hotel tracks both financial and non-financial performance indicators.	Pereira-Moliner et al., 2012
	PM2	Key performance indicators (KPIs) are clearly defined for each department.	Hung, 2018
	PM3	Performance measures are regularly reviewed for relevance.	Pitra et al., 2023
	PM4	Balanced Scorecard or similar frameworks are used in performance evaluation.	Bahadur et al., 2024
	PM5	Employees are aware of the performance metrics that apply to them.	Tirado and Mavlutova, 2023
	PM6	Performance reports are used to support continuous improvement.	Foroudi, 2019
	PM7	Performance outcomes influence managerial incentives.	Chand, 2010
Decision support	DS1	Management accounting information is used in major investment decisions.	Hung, 2017
	DS2	Financial analysis is performed before introducing new services or packages.	Chand and Lal, 2008
	DS3	Scenario and sensitivity analyses are used for strategic planning.	Kwok and Lau, 2019
	DS4	Decision support tools are integrated with hotel management systems.	Ćurlin et al., 2024
	DS5	Cost–benefit analysis is applied to operational projects.	Ćurlin et al., 2024
	DS6	Decision-making processes are data-driven rather than intuitive.	Park and Lee, 2021
	DS7	CMA reports support both short-term and long-term decisions.	Kwok and Lau, 2019
Technology and analytics	TA1	The hotel uses accounting software for financial and operational reporting.	Richter et al., 2023
	TA2	Data analytics tools are used to identify cost trends.	Tavitiyaman et al., 2022
	TA3	Technology is integrated into budgeting and forecasting processes.	Tavitiyaman et al., 2022
	TA4	Real-time data is available for decision-making.	Gasaymeh, 2018
	TA5	Predictive analytics is used for occupancy and revenue forecasts.	Mwangi and Kaluyu, 2023
	TA6	Data security measures are in place for financial systems.	Sandri and Ghani, 2023
	TA7	Staff are trained to use analytics tools effectively.	Hussein et al., 2023
Operational efficiency	OE1	Cost per occupied room has shown improvement over the past year.	Grobelna, 2021
	OE2	Labour hours per room are maintained within target levels.	Minh et al., 2015
	OE3	Inventory waste is minimized through effective controls.	Alsharari, 2020
	OE4	Energy and utilities usage is monitored and optimized.	Jasinskas et al., 2016
	OE5	Operational processes are streamlined to reduce delays.	Blanco González and Font Aranda, 2022
	OE6	Staff productivity has improved due to better resource allocation.	Mishra and Panda, 2021
	OE7	Downtime and operational disruptions are minimal	Ghosh and Jhamb, 2021
Service quality	SQ1	Guest satisfaction scores have improved over the past year.	Manaktola and Jauhari, 2007)
	SQ2	The hotel consistently complies with established service standards.	Dhar, 2015
	SQ3	Response time to guest requests is prompt and efficient.	Chand, 2010
	SQ4	The number of guest complaints has decreased.	Sadiq et al., 2022
	SQ5	Staff demonstrate professionalism and courtesy at all times.	Ali et al., 2021
	SQ6	Service delivery meets or exceeds guest expectations.	Parasuraman and Berry, 1991
	SQ7	Repeat customer rates have increased.	Parasuraman and Berry, 1991
	SQ8	Online reviews and ratings have improved in the past year.	Parasuraman and Berry, 1991

In terms of hotel categories, boutique hotels (17.7%) and heritage properties (17.5%) form a significant portion, followed closely by five-star (16.5%) and three-star (16.0%) establishments, ensuring representation across various service formats.

Ownership patterns indicate that national chains dominate the sample (46.0%), followed by international chains (31.0%), franchises (14.6%), and independent properties (8.3%). Regarding hotel size, 28.3% of hotels have 50-99 rooms, 25.4% have fewer than 50 rooms, and 31.2% operate with more than 150 rooms, reflecting a balanced distribution across small, medium, and large-scale establishments.

In terms of operational tenure, 34.4% of hotels have been in operation for 2-5 years, while 30.8% have 6-10 years of experience, and 19.8% exceed 20 years, indicating both established and emerging players. A majority of hotels report annual occupancy rates between 60% and 79% (53.5%) and 80% or above (31.7%), highlighting strong tourism demand in the region.

Respondents were predominantly from operations (35.6%), marketing and sales (29.6%), and general management (29.2%), with the majority possessing over 11 years of professional experience (54.1%). Educationally, most respondents held master's

Table 2: Demographic profile of the respondents

Demographic variables	Categories	Frequency	Percentage
City/Location	Agra	33	6.9
	Lucknow	46	9.6
	Varanasi	76	15.8
	Kanpur	157	32.7
	Prayagraj	168	35.0
Hotel category	1-Star	40	8.3
	2-Star	40	8.3
	3-Star	77	16.0
	4-Star	75	15.6
	5-Star	79	16.5
	Heritage	84	17.5
	Boutique	85	17.7
Ownership type	Independent	40	8.3
	National chain	221	46.0
	International chain	149	31.0
	Franchise	70	14.6
Number of rooms	<50	122	25.4
	50-99	136	28.3
	100-149	77	16.0
	150-199	73	15.2
	200 and above	72	15.0
Years in operation	<2 years	22	4.6
	2-5 years	165	34.4
	6-10 years	148	30.8
	11-20 years	50	10.4
	More than 20 years	95	19.8
Average annual occupancy rate	Below 40%	29	6.0
	40-59%	42	8.8
	60-79%	257	53.5
	80% and above	152	31.7
Department of respondent	Finance	27	5.6
	Operations	171	35.6
	General management	140	29.2
	Marketing and sales	142	29.6
Years of experience in current role	<2 years	24	5.0
	2-5 years	41	8.5
	6-10 years	155	32.3
	11-20 years	184	38.3
	More than 20 years	76	15.8
Highest educational qualification	High school/diploma	4	0.8
	Bachelor's degree	103	21.5
	Master's degree	158	32.9
	Doctorate (PhD)	102	21.3
	Professional certification	113	23.5

degrees (32.9%), professional certifications (23.5%), or doctorates (21.3%), indicating a well-qualified managerial cohort.

Table 3 presents the construct loadings, composite reliability, average variance extracted (AVE), Cronbach's alpha, and variance inflation factor (VIF) for the measurement model. All constructs show strong reliability, with Cronbach's alpha values ranging from 0.791 to 0.938, exceeding the recommended threshold of 0.70 (Hair et al., 2010). Composite reliability values for all constructs are above 0.80, confirming internal consistency, while AVE values are above 0.50, demonstrating convergent validity. Additionally, the VIF values are within acceptable limits, indicating no multicollinearity concerns. Overall, the results confirm that the measurement model is robust, reliable, and valid for assessing the relationships among budgeting, costing, performance measurement, decision support,

technology and analytics, operational efficiency, and service quality.

Table 4 presents the Heterotrait-Monotrait (HTMT) criterion results used to assess discriminant validity among the constructs. All HTMT values are below the recommended threshold of 0.85, indicating that the constructs are distinct and measure different underlying concepts. The highest observed HTMT value is between performance measurement and costing (0.79), which is still within acceptable limits (Ringle et al., 2022). These results confirm that budgeting, costing, performance measurement, decision support, technology and analytics, operational efficiency, and service quality are well-differentiated constructs in the measurement model.

Figure 1 illustrates the Structural Equation Modeling (SEM) model, depicting the relationships between CMA practices, operational efficiency, and service quality. It highlights operational efficiency as a mediating variable linking CMA practices to improved service quality outcomes.

Table 5 presents the results of hypothesis testing, providing a comprehensive understanding of the direct and mediating effects of cost and management accounting (CMA) practices on operational efficiency and service quality. Out of the eleven hypotheses tested, six were supported, indicating significant relationships, while five were rejected due to a lack of statistical significance.

The findings indicate that costing (H_2), decision support (H_3), and technology and analytics (H_6) have significant positive effects on operational efficiency, with path coefficients of 0.28, 0.197, and 0.385 respectively, all statistically significant at P < 0.001. These results suggest that the adoption of structured costing systems, the integration of decision-support mechanisms, and the utilisation of advanced technologies and analytics considerably enhance the operational capabilities of hotels. Such practices enable better resource allocation, improved pricing accuracy, and real-time insights, which together contribute to higher operational efficiency.

In contrast, budgeting (H_1) and performance measurement (H_5) do not exhibit a significant impact on operational efficiency, as indicated by very low path coefficients of 0.01 and 0.018, along with high P-values above 0.65. This implies that traditional budgeting processes and static performance evaluation methods, while useful for planning and monitoring, do not directly improve operational processes in the context of the hotels examined.

The relationship between operational efficiency and service quality (H_4) is found to be highly significant, with a path coefficient of 0.695 and P < 0.001. This highlights that improvements in operational efficiency directly enhance the quality of service delivered to guests by reducing delays, optimising processes, and enabling staff to focus more effectively on customer needs.

Furthermore, mediation analysis reveals that operational efficiency serves as a significant mediator between certain CMA practices and service quality. Specifically, costing (H_8), decision support (H_9), and technology and analytics (H_{11}) exert indirect positive effects on service quality through their influence on operational efficiency.

Table 3: Construct loadings, composite reliability, AVE, Cronbach alpha and VIF

Construct	Item code	Construct loadings	Composite reliability	AVE	Cronbach alpha	VIF
Budgeting	BG1	0.785	0.906	0.579	0.887	3.2
	BG2	0.758				2.935
	BG3	0.771				2.873
	BG4	0.798				1.884
	BG5	0.723				2.121
	BG6	0.792				2.361
	BG7	0.792				2.35
Costing	CG1	0.809	0.864	0.595	0.812	2.113
	CG2	0.812				2.117
	CG3	0.819				2.204
	CG4	0.774				2.295
	CG5	0.772				2.382
	CG6	0.797				1.496
	CG7	0.756				1.465
Performance measurement	PM1	0.726	0.836	0.523	0.791	1.773
	PM2	0.75				1.708
	PM3	0.74				1.939
	PM4	0.786				1.814
	PM5	0.769				1.354
	PM6	0.725				2.286
	PM7	0.735				2.334
Decision support	DS1	0.731	0.899	0.569	0.866	1.47
	DS2	0.874				2.105
	DS3	0.859				2.9
	DS4	0.851				2.781
	DS5	0.86				2.967
	DS6	0.774				1.905
	DS7	0.741				1.865
Technology and analytics	TA1	0.775	0.909	0.589	0.887	1.861
	TA2	0.71				1.949
	TA3	0.782				2.493
	TA4	0.781				2.325
	TA5	0.749				2.196
	TA6	0.81				2.488
	TA7	0.849				2.738
Operational efficiency	OE1	0.794	0.896	0.552	0.865	2.654
	OE2	0.782				2.728
	OE3	0.769				2.034
	OE4	0.727				2.065
	OE5	0.783				2.188
	OE6	0.745				2.095
	OE7	0.788				2.16
Service quality	SQ1	0.758	0.938	0.657	0.924	1.445
	SQ2	0.879				2.465
	SQ3	0.867				2.575
	SQ4	0.883				2.857
	SQ5	0.853				2.917
	SQ6	0.786				2.465
	SQ7	0.803				2.582
	SQ8	0.728				2.402

Table 4: HTMT criterion

	BG	CG	DS	OE	PM	SQ	TA
BG							
CG	0.696						
DS	0.531	0.707					
OE	0.472	0.743	0.733				
PM	0.508	0.79	0.642	0.53			
SQ	0.352	0.527	0.623	0.763	0.42		
TA	0.413	0.652	0.658	0.713	0.545	0.597	

This finding underscores that these practices enhance customer experiences by improving internal processes and operational

performance. Conversely, budgeting (H_7) and performance measurement (H_{10}) do not exhibit significant indirect effects, confirming their limited role in improving service quality via operational efficiency.

Overall, the results demonstrate that contemporary, technology-driven CMA practices are critical for achieving operational excellence, which in turn leads to superior service quality. Traditional budgeting and static performance measurement approaches appear less impactful in this context, suggesting the need for hotels to adopt more dynamic, data-driven management accounting systems to remain competitive and improve guest satisfaction.

Table 5: Hypothesis testing result

Path	Hypothesis	Original sample (O)	Sample mean (m)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P-values	Result
BG->OE	H_1	0.01	0.01	0.041	0.238	0.812	Rejected
CG->OE	H_2	0.28	0.279	0.048	5.865	0	Accepted
DS->OE	H_3	0.197	0.196	0.055	3.549	0	Accepted
OE->SQ	H_4	0.695	0.696	0.027	25.388	0	Accepted
PM->OE	H_5	0.018	0.021	0.04	0.451	0.652	Rejected
TA->OE	H_6	0.385	0.385	0.045	8.626	0	Accepted
BG->OE->SQ	H_7	0.007	0.007	0.029	0.238	0.812	Rejected
CG->OE->SQ	H_8	0.195	0.194	0.034	5.68	0	Accepted
DS->OE->SQ	H_9	0.137	0.137	0.039	3.473	0.001	Accepted
PM->OE->SQ	H_{10}	0.012	0.014	0.028	0.449	0.653	Rejected
TA->OE->SQ	H_{11}	0.268	0.268	0.032	8.354	0	Accepted

Figure 1: SEM model
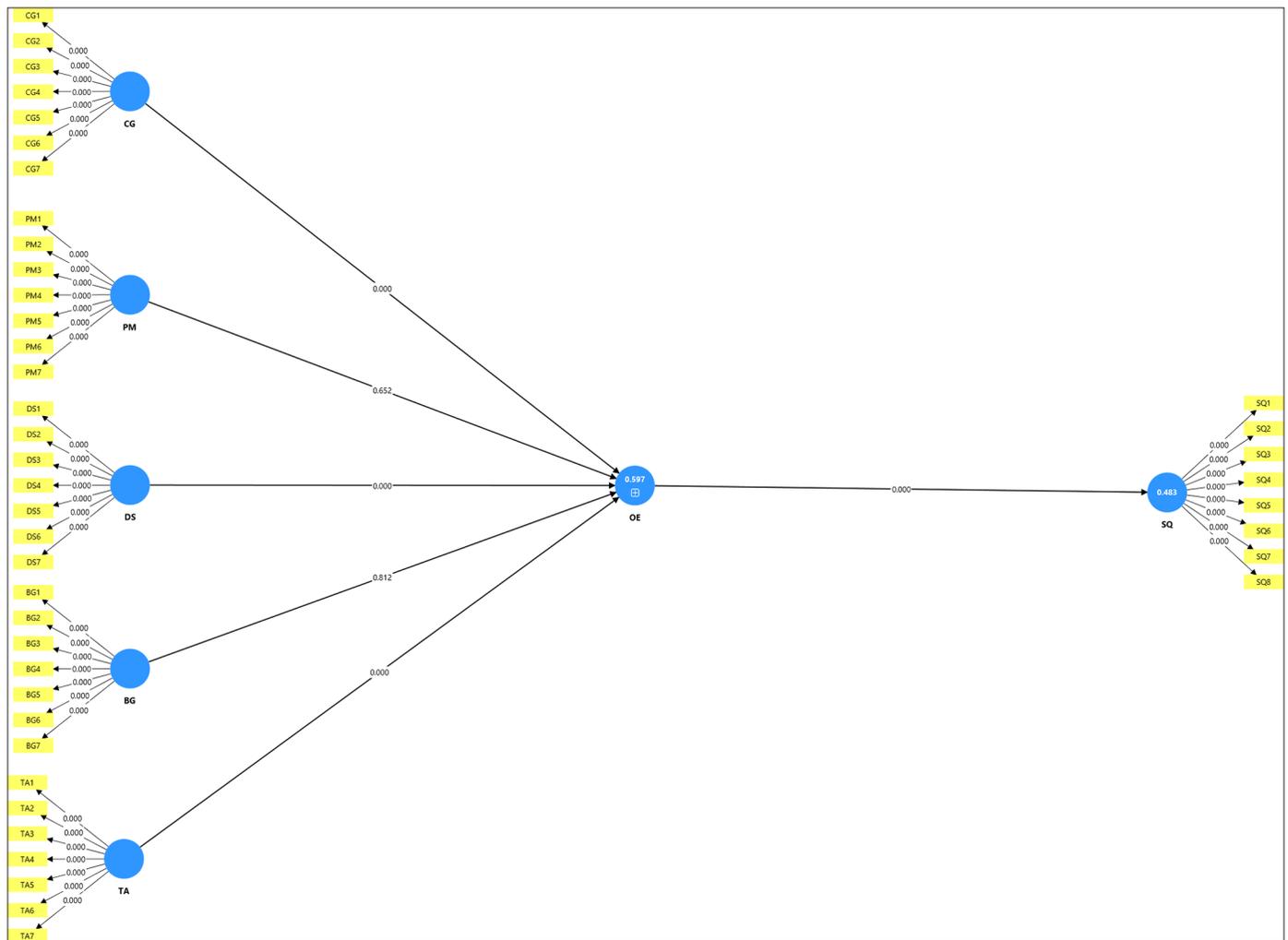
4. DISCUSSION

The findings of this study provide important insights into the role of cost and management accounting (CMA) practices in shaping operational efficiency and service quality in the hotel industry within Uttar Pradesh, India. The results demonstrate that among the five dimensions of CMA practices examined, costing, decision support, and technology and analytics exhibit significant positive effects on operational efficiency, whereas budgeting and performance measurement do not. Moreover, operational efficiency strongly predicts service quality and mediates the relationships between specific CMA practices and service outcomes. These findings offer several theoretical, managerial, and policy-related implications.

The significant influence of costing practices supports prior studies emphasising the importance of accurate cost allocation and pricing mechanisms in resource-intensive service settings such as hotels (Ahmad et al., 2010). Structured costing systems allow managers to identify cost drivers, reduce inefficiencies,

and adopt competitive pricing strategies, thereby enhancing operational efficiency. Similarly, the positive effect of decision-support tools aligns with findings from Patiar, 2016, who argue that scenario modelling and cost–benefit analyses enable managers to evaluate alternatives effectively and make informed choices under uncertainty.

The strong impact of technology and analytics highlights the transformative role of digital integration in the hospitality industry. The adoption of real-time reporting systems, predictive analytics, and property management tools improves decision-making speed and accuracy, thereby streamlining operations. This result resonates with Prodromou and Savvides (2024), who emphasised the increasing reliance of hotels on technological infrastructures to manage dynamic market demands and enhance service delivery.

In contrast, the non-significant effects of budgeting and performance measurement on operational efficiency diverge from traditional perspectives in management accounting literature (Mohan et al., 2025). One possible explanation lies in the unique operational context of Uttar Pradesh hotels, where variability in demand, seasonality, and heterogeneous service formats may limit the relevance of static budgeting frameworks and rigid performance indicators. In such dynamic environments, conventional planning mechanisms may fail to deliver meaningful operational insights, underscoring the necessity of more adaptive, technology-enabled approaches.

5. CONCLUSION

This study examined the impact of cost and management accounting practices on operational efficiency and service quality in the hotel industry of Uttar Pradesh, India. The results demonstrate that modern CMA practices, particularly costing systems, decision-support tools, and technology and analytics, significantly enhance operational efficiency, which in turn drives superior service quality. Conversely, traditional practices such as budgeting and static performance measurement appear less influential in dynamic hospitality environments.

By integrating insights from RBV and the Service-Profit Chain framework, the study advances theoretical understanding while offering actionable recommendations for managers, policymakers, and professional bodies. The findings emphasise the need for hotels to embrace data-driven, technology-enabled accounting systems to remain competitive and deliver exceptional service experiences.

5.1. Theoretical Implications
This study makes several contributions to the literature on management accounting and hospitality performance. First, it extends the application of Resource-Based View (RBV) theory by conceptualising CMA practices—particularly costing, decision-support systems, and analytics—as valuable, rare, and non-substitutable organisational resources that enhance operational efficiency and competitive positioning (Kazemian et al., 2022). By empirically demonstrating their contribution to performance, the study enriches RBV-based discussions in service industries.

Second, the findings integrate the Service-Profit Chain framework (Yee et al., 2011) by highlighting operational efficiency as a critical link between internal capabilities and customer-facing outcomes. The mediation analysis reveals that CMA practices influence service quality indirectly by enabling process optimisation and resource alignment, thereby bridging accounting and service management research.

Finally, by focusing on the underexplored context of the Indian hotel industry, this study addresses the paucity of empirical research in emerging economies. The results demonstrate how variations in managerial sophistication, technological adoption, and resource constraints shape the effectiveness of accounting practices, offering a nuanced theoretical understanding of CMA within diverse institutional contexts.

5.2. Practical Implications
For hotel managers, the results underline the strategic importance of adopting modern, technology-enabled CMA practices. Investment in structured costing systems and advanced decision-support tools can enhance profitability and operational control by identifying cost drivers, improving pricing strategies, and supporting evidence-based decisions. Furthermore, leveraging analytics and real-time reporting technologies enables proactive responses to market fluctuations and optimises resource utilisation, ultimately improving guest experiences.

For policymakers and industry associations, the findings highlight the need to promote digital transformation initiatives across the hospitality sector, particularly among mid-sized and independent hotels that often lack technological sophistication. Supportive measures, such as training programs, subsidies for adopting advanced management systems, and workshops on analytics-driven decision-making, could bridge capability gaps and elevate industry standards.

For professional accounting bodies, the study offers insights into evolving competency requirements. Future training should emphasise the integration of technology, analytics, and decision-support frameworks into accounting curricula to better prepare practitioners for dynamic service environments.

5.3. Limitations
Despite its contributions, this study has several limitations that provide avenues for future research. First, the cross-sectional design restricts causal inference, as relationships between variables are assessed at a single point in time. Longitudinal studies would enable more robust conclusions regarding causality. Second, the study focuses exclusively on Uttar Pradesh, which, while an important tourism hub, may limit the generalisability of the findings to other regions with different operational contexts. Comparative studies across multiple states or countries could enhance external validity.

Additionally, the study relies on self-reported data from hotel managers, which may introduce response bias. Incorporating objective performance data, such as financial statements or customer satisfaction metrics, would strengthen the validity of

the findings. Finally, the research does not account for potential moderating variables such as organisational culture, leadership style, or competitive intensity, which may influence the effectiveness of CMA practices.

5.4. Future Research Directions

Future studies could adopt longitudinal designs to better understand the causal mechanisms linking CMA practices, operational efficiency, and service quality. Comparative research across different states or countries would help identify contextual factors influencing the adoption and effectiveness of CMA systems. Researchers may also explore the moderating effects of organisational culture, leadership style, and technological readiness on the relationships examined.

In addition, future studies could investigate the role of sustainability-driven accounting practices, such as environmental costing or social performance measurement, to reflect the increasing emphasis on sustainable tourism. Expanding the scope to include customer-centric variables, such as loyalty or perceived value, would provide a more comprehensive understanding of service outcomes.

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