



“Implementing cost accounting in Saudi higher education: Drivers, progress, and resource implications”

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IMPLEMENTING COST ACCOUNTING IN SAUDI HIGHER EDUCATION: DRIVERS, PROGRESS, AND RESOURCE IMPLICATIONS

Abstract

This study examines the adoption and implementation of cost accounting practices in Saudi Arabian public universities following their shift from cash-based to accrual-based accounting. Guided by the resource-based view (RBV) framework, it tests four hypotheses related to drivers of cost adoption, cost tracking and allocation abilities, calculation method frequencies, and resources needed for successful cost implementation. Data from 171 financial managers and accountants across all 30 public universities were analyzed using descriptive statistics, correlations, and regression models. Results reveal a negative correlation between cost adoption and organizational factors, with external pressures – including regulatory requirements and negotiations over funding – serving as the primary catalysts. Universities demonstrate a strong capacity to track and allocate direct costs, with over 90% able to manage them; however, indirect cost management remains limited, with only 12% able to allocate indirect costs, indicating early-stage development. Cost implementation is further positively associated with the use of detailed cost calculation and allocation methods and perceived organizational resource needs, including financial policies, skilled personnel, and advanced management systems. Findings suggest that, despite external pressures, resource constraints hamper full implementation. These findings support the RBV assertion that internal capabilities are crucial for gaining a strategic advantage. Successful cost implementation depends on internal resource development and organizational capacity-building, which can transform cost accounting from a symbolic compliance exercise into a strategic tool for transparency, decision-making, and institutional efficiency.

Keywords

public universities, higher education, cost accounting, accrual accounting, performance management, public sector

JEL Classification

M40, H11, H52, H83

INTRODUCTION

Higher education's ability to enhance economic mobility while developing a skilled workforce requires greater national and global funding support. Institutional factors, however, have contributed to impeding the long-term sustainability of higher education funding (IMF, 2021). As education costs rise, the question of higher education funding has been addressed through debates on academic program accountability, financial management practices, and resource allocations (Agasisti & Catalano, 2013; Rompotis & Balios, 2025). The rapid change of the education system worldwide, including Saudi Arabia, calls for a reconfiguration of budgets and related policies, with increasing emphasis from multiple stakeholders on return on investment, transparency, and institutional outcomes (Macheridis & Paulsson, 2021; Pattaro et al., 2022). The inflated cost of tuition and the student debt crisis have heightened demands for evidence of higher education institutions' ability to promote economic mobility and produce a competent workforce (Glater, 2015). Such interest is linked with a focus on access and equity as broad societal objectives



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of education (Modugno & Di Carlo, 2019). Hence, higher education now faces a pressing need to modernize and adopt new ways and tools to improve its management and effectiveness as well as to foster systemic change (Clark et al., 2025; Umar et al., 2025).

Cost accounting has emerged as an essential tool for governments and higher education institutions to understand the costs associated with providing services or managing resources. The collection of unit and center costs and revenues data, activity-based costing analysis, and the creation of metrics to measure aspects like teaching, research, community engagement, and outreach are essential and necessary (Jovanović et al., 2019; Van Helden & Huijben, 2014). Implementing successful cost accounting promotes efficiency and economy (Modugno & Di Carlo, 2019; Moynihan & Hawes, 2012), allows for accountability and sustainability (Lutilsky et al., 2016), and supports effective decision-making (Magretta, 2011). Consequently, there is increasing global interest in cost accounting systems for government entities (Mohr, 2017; Schoute & Budding, 2017; Ter Bogt, 2008).

The study examines cost accounting adoption and implementation among public universities in Saudi Arabia, following governments' publicly announced shift from cash-based accounting to accrual accounting. Despite the increasing adoption of accrual accounting practices by governments worldwide, there is a lack of empirical research specifically examining the adoption and implementation of accrual accounting among Saudi Arabian universities (Alnesafi, 2025; Hassan, 2005). This study strives to narrow this gap by investigating the adoption and implementation of cost accounting practices in Saudi Arabia's public universities.

1. LITERATURE REVIEW

The study is based on the resource-based view (RBV) perspective. The RBV is a strategic management theory that seeks to identify the sources of competitive advantage that organizations can exploit and use in their business. RBV highlights the firm's internal resources and capabilities as the most important sources of sustained competitive advantage (Barney, 2000; Bryson et al., 2007). The perspective was originally applied to the private sector, and only recently have scholars considered RBV appropriate for public sector organizations aiming at efficiency, effectiveness, and accountability, due to increasing external pressure and resource constraints (Szymaniec-Mlicka, 2014). Situated within strategic management theory (Omalaja & Eruola, 2011), RBV shifts focus from external factors to internal organizational resources and capabilities as sources of competitive advantage (Barney, 2000; Grant, 1999). It emphasizes the strategic role of tangible resources such as financial resources, as well as intangible ones, such as knowledge, competences, and skills (Guesalaga et al., 2018; Wernerfelt, 1984).

This focus on internal resources and capabilities is especially significant when applying change man-

agement strategies to reforms of financial management systems in the public sector. Traditionally, most public sector accounting operations have been based on cash accounting principles, including budgeting methods such as top-down budgeting. As organizations worldwide adopt New Public Management (NPM) and International Public Sector Accounting Standards (IPSAS), many have shifted from traditional cash-based budgeting to accrual accounting due to the positive impact of financial information on public management (Liguori et al., 2012; Rogošić, 2021). Implementing accrual accounting requires organizations, including universities, to effectively use their internal capabilities. Although the adoption of accrual accounting and NPM varies across countries (Agasisti et al., 2015), identifying internal capabilities that facilitate successful implementation aligns with the RBV. This highlights how these resources can enhance public sector financial management (Jovanović et al., 2019).

The global implementation of IPSAS, despite its goal to harmonize and improve financial reporting, has seen varied progress across nations. Some countries have adopted accrual or modified accrual basis of accounting (EUA, 2008), while some continue to use cash-based or are in the initial phases of transi-

tioning, such as the case in Saudi Arabia (Alnesafi, 2025). In 2016, Saudi Arabia made a significant step with Royal Decree 13059 mandating the accrual basis of accounting. The Accrual Accounting Center is currently leading efforts to improve transparency and accountability through various workshops and pilot projects, aiming for nationwide adoption aligned with the Saudi 2030 Vision. The expected benefits include improved financial management and decision-making, though challenges such as staff training, IT system updates, and stakeholder engagement remain.

This transformation has resulted in the modernization of public sector accounting systems, turning attention to performance information in terms of the quantity and quality of government activities and services, as well as their efficiency and effectiveness (Van Helden & Uddin, 2016). Consequently, the current trend in public sector accounting necessitates a fuller understanding of the relationship of cost accounting practices to public sector productivity, as it is important for the national economy's performance and the general welfare of society. According to Lau et al. (2017), high-quality internationally comparable input and output measures are critical for the measurement of public sector productivity, which demands sound accounting information.

The emphasis on performance and the modernization of public sector accounting are closely linked to the adoption and implementation of cost accounting principles (Da Silva & Behr, 2025; Dharmayuni et al., 2024). As public organizations evaluate the quality and quantity of government operations, the systematic measurement and analysis of associated costs becomes essential. Even when the use of cost accounting is not compulsory, it provides managers with valuable information about costs and processes (Dimitrić et al., 2016). Thus, public sector accountants have to develop tailor-made cost reports in a way that meets public management's needs. Additionally, senior government officials play a pivotal role in the effective development and implementation of cost accounting due to its influence on governance efficiency (IFAC, 2000).

Effective and successful completion of cost accounting tasks requires the ability to track direct costs, as well as indirect costs that will need to be

allocated to a variety of units and activities. While recording direct expenses involves simply assigning them to the activities that they relate to, indirect expenses, like utilities or rent, are enjoyed by multiple units within the organization and must be monitored carefully. Costs like these will need to be allocated on a regular basis using a rational and consistent methodology (Hornngren et al., 2015; Jovanović et al., 2019). Mastering these skills will allow stakeholders to better understand how public universities operate financially, which could ultimately lead to increased budgeting prowess as well as transparency and accountability in resource stewardship and management, especially given the state of continuous reforms and the accompanying managerial roles of public universities.

Public university costs can be calculated in different ways. The total cost of operating the university can be calculated at one level (i.e., a university-wide level). On a smaller level, costs can be determined by breaking down which units or schools are incurring costs. Public universities can also calculate how much it costs them to provide certain services. This can be broken down by programs like teaching, research, consulting, and student support. Universities can calculate the cost per student, which helps assess the affordability of higher education and expected funding for public universities (Clark et al., 2025; Jovanović et al., 2019). Together, these methods provide a holistic overview of the various ways to understand public universities' cost structures and implementation.

Implementing cost accounting in the public sector, however, is not without its challenges. Barriers such as cultural and operational change management, skills gap, and technological infrastructure weakness limit its use (Abawari et al., 2024; Alqudah et al., 2022). Successful implementation demands advanced financial systems and software like ERP platforms for real-time processing, skilled staff to drive implementation, and robust policies and procedures to maintain consistency and compliance (Alonge et al., 2024). The ongoing training of staff members and deployment of data integration tools, along with strong management support, help secure organizational buy-in and allocate resources while overcoming resistance, which are essential for

making strategic investments and encouraging coordinated efforts toward sustainable and effective cost accounting in public universities (Kihuba et al., 2016).

This study uses survey data to investigate the current state of cost accounting system adoption and implementation in Saudi Arabian public universities. While interest in cost accounting and its applications is growing, empirical evidence specific to Saudi Arabia remains limited (Alnesafi, 2025; Hassan, 2005). Exploring an aspect of cost accounting practices that has been neglected in Saudi universities constitutes this study's main contribution to the literature. The study is also conducted at the right time, as the education sector in Saudi Arabia is going through numerous reforms and modernization programs. These initiatives have placed efficiency and cost control at the forefront as spending continues to rise due to population growth, expansion of programs, and social/cultural impacts. The objectives of the study align with Saudi Vision 2030, which envisions Saudi Arabia being a global leader in education.

The aim of this study is to investigate the drivers, progress, and resource implications of implementing cost accounting in Saudi higher education. It examines the drivers of cost adoption, changes in costing practices, ability to track and allocate costs, methods for frequent cost calculation, and the resources required for successful cost implementation. Based on the conceptual framework and previous empirical findings, this study developed four hypotheses as follows:

- H1: The level of cost accounting adoption and implementation in Saudi public universities is positively influenced by organizational factors more than by non-organizational factors.*
- H2: The level of cost accounting adoption and implementation is positively associated with the universities' ability to track and allocate both direct and indirect costs.*
- H3: The level of cost accounting adoption and implementation in Saudi public universities is positively associated with the frequency of employing detailed cost calculation methods.*

H4: The level of cost accounting adoption and implementation in Saudi public universities is positively associated with the perceived needs for organizational resources.

2. METHODS

This study utilizes a quantitative approach. Four hypotheses are developed to facilitate empirical testing and are operationalized through a questionnaire that captures relevant data on each construct. Data were gathered through a semi-structured questionnaire (Appendix A) developed based on the empirical findings concerning cost accounting's implementation and use in public sector management (Jovanović et al., 2019; Liguori et al., 2012; Van Helden & Uddin, 2016). The survey is regarded as a valuable exploratory tool in management accounting research (Ryan et al., 2002) and has been widely applied in the literature (Bracci et al., 2019; Malmqvist et al., 2019). The questionnaire was distributed to a sample of financial managers and accountants from public universities in Saudi Arabia. The sample includes participants from diverse universities to enhance representativeness across different institutional contexts. These universities were chosen because they represent the primary institutions undergoing the recent shift from cash-based to accrual-based accounting. Respondents were selected based on their expertise in cost accounting, financial management, and performance evaluation, as well as their understanding of the higher education system's structural, organizational, and contextual characteristics. They have direct involvement in implementing and managing cost accounting practices, making them appropriate informants.

As Saudi Arabia has up to 30 public universities within the government-funded higher education system, it was not feasible to draw a truly representative sample from the entire population. As a result, the analysis resorted to a convenience sample, which can be created quickly and easily. Convenience sampling is a non-probability sampling technique frequently used when involving a large number of participants (Cepêda & Monteiro, 2020; Monteiro et al., 2022; Monteiro et al., 2021). According to Comrey and Lee (2013), the follow-

ing ranges can be used to describe the sample sizes: very good if it is around 1,000 or more, excellent – approximately 500, good – 201 to 300, adequate – 101 to 200, and poor – less than 50. These numbers are not strict cutoffs but rather rules of thumb. To achieve an adequate sample size for robust analysis, 250 questionnaires were distributed to financial managers and accountants at the universities. A total of 171 valid completed questionnaires were received, resulting in a response rate of 68.4%, which is considered appropriate for this survey method and further analysis (Zikmund et al., 2013).

A semi-structured questionnaire was designed and conducted through Google Forms, organized into two main sections. The first includes questions about the participants to identify trends or correlations among different groups, while the second covers key dimensions of the study through four subsections. These subsections employ statements with a three-point scale ranging from ‘low’ to ‘high’ to facilitate clear and straightforward responses. The statements explore and assess participants’ perceptions of cost accounting practices, as well as the implementation of cost accounting systems, with an emphasis on the tracking and allocation of both direct and indirect costs. Many of these statements were drawn from existing literature to ensure their validity and reliability. The study formulated the proposition based on the reasons for adopting cost accounting in universities, the ability to track and allocate costs, the frequency of cost calculation, and the required resources for implementing full cost accounting (Brusca et al., 2019; Jovanović et al., 2019). To test the questionnaire’s applicability and ensure participant understanding, a pilot study was conducted with two academics and three university financial managers (Malmqvist et al., 2019), revis-

ing the survey based on their feedback to enhance clarity and completeness.

The survey took place between September and December 2024. The intended recipients were sent an email with a link to access the online survey and a statement of the study’s purpose. The survey was designed in a manner that would keep all information provided anonymous and confidential. A multiple call with reminders was implemented to achieve maximum returns and adequate data collection. Personal calls were conducted with specific targeted recipients to ensure their response was received. The ethical issue of informed consent was addressed by requesting participants to click next to “I consent to participate.” Using the SPSS program, data were analyzed by calculating descriptive statistics, including the mean and standard deviation of responses. Frequency distributions in percentages were used to determine the frequency of cost accounting practices and the degree to which they were implemented. Correlation was used to test the strength of a relationship between variables. Linear regression was used to see how the change in one or more independent variables affects the change in dependent variables.

The demographic data of 171 respondents from public universities are summarized in Table 1. The majority are male (55.9%), though accounting remains popular among females, indicating some gender imbalance. Most respondents (91.8%) hold a diploma or higher, including 8.2% with a master’s degree, supporting their cost accounting competency. About 97.1% are financial managers or accountants, reflecting direct oversight by professionals. While 83.0% lack formal cost training, 17.0% have attended relevant programs. Most respondents (73.7%) are under 44 years old, and 80.7% have more than 5 years of accounting ex-

Table 1. Demographic information

Category	Answers	Freq.	Percent	Category	Answers	Freq.	Percent
Gender	Male	134	78.4	Cost Training	Trained	29	17.0
	Female	37	21.6		Non-trained	142	83.0
Education	Diploma	63	36.8	Age	22–32	48	28.1
	Bachelor	94	55.0		33–44	78	45.6
	Master	14	8.2		45–54	31	18.1
	Ph.D.	0	0		More than 54	14	8.2
	Fin. Manager	28	16.4		0–5 years	33	19.3
Position	Accountant	138	80.7	Experience	6–10 years	85	49.7
	Others	5	2.9		More than 11	53	31.0

perience; 31.0% have more than 11 years. Overall, the demographic profile confirms their suitability for studying cost accounting practices in public universities.

3. RESULTS AND DISCUSSION

An in-depth analysis was conducted to identify the drivers of adoption and whether organizational factors have a greater positive influence on the adoption and implementation of cost accounting among financial managers and accountants in Saudi Arabian public universities, compared to non-organizational factors (*H1*). The findings reveal distinct perceptions regarding the importance of various drivers, with some factors emerging as the primary catalysts for adoption.

The most influential drivers, based on mean importance scores, are primarily driven by governmental mandates and standards (see Table 2). Notably, negotiating the financing system with the government was ranked as the most significant driver, with a mean score of 4.83 out of 5. Adherence to the Royal Decree to adopt IPSAS was the second most important driver, with a mean score of 4.70. The need to determine the costs of education programs ranked third with a mean score of 4.50. Over 75% of respondents rated these three specific drivers as highly important, demonstrating a strong consensus on their significance.

Conversely, the least influential driver was being required by the board of university affairs, with a mean score of 2.27, indicating minimal inter-

nal governance influence compared to external pressures. Internal organizational factors, such as compliance with government subsidies, had a mean score of 2.90 and were the second least influential, playing a comparatively minor role.

The study further explores the universities' capacity to accurately track and allocate both direct and indirect costs across organizational units, which is a critical aspect of cost accounting implementation (*H2*). The findings provide insights into the current state of cost management practices within Saudi public universities. Table 3 displays the relative frequencies for each category, while the descriptive statistics indicate how costs are tracked and allocated to respective cost locations or organizational units within the universities.

The data in Table 3 reveal a high level of capability in tracking and allocating direct costs. An overwhelming 90.2% of respondents indicated that their universities are able to track direct expenses with the source of the incurred cost, with a mean score of 4.80 out of 5 (SD = 0.8). Similarly, 87.5% confirmed the ability to allocate direct expenses to the relevant organizational units or cost centers, with a mean of 4.53.

The capacity to track and allocate indirect costs appears less developed. Only 22.9% of respondents reported that their universities are able to track indirect expenses with the source of cost incurred, with a mean score of 2.85. Furthermore, just 12.2% indicated their universities allocate indirect expenses to organizational units or cost centers, with a mean of 2.40.

Table 2. Reasons for adopting cost accounting in universities

Category of reasons for cost adoption	Influence (%)			Mean	SD	Rank
	L	M	H			
Organizational reasons						
Required by the board of the universities' affairs	51.3	22.1	26.6	2.27	1.40	10
To make a decision about resource allocation to faculties and departments	60.4	31.5	8.1	3.24	1.41	7
To determine the costs of education programs and evaluate financial feasibility	4.6	20.3	75.1	4.5	0.93	3
To set fees and tuition charges	58.6	32.2	9.2	3.25	1.39	6
To disclose the costs of activities in the university's annual report	19.9	35.8	44.3	3.95	1.15	4
To make comparisons with previous years and other universities	74.6	21.5	3.9	3.16	1.48	8
Non-organizational reasons						
Required by the government to adopt IPSAS	2.8	7.8	89.4	4.7	0.73	2
To adhere to the government requirement for approving academic and service offers	55.8	33.2	22.6	3.4	1.31	5
To comply with the government to subsidize	32.8	54.3	12.9	2.9	1.53	9
To negotiate the financing system with the government	0.0	6.8	93.2	4.83	0.62	1

Table 3. Costs tracking and allocation ability

Ability to track and allocate costs	Monitor costs (%)			Mean	SD	Rank
	L	M	H			
Direct costs						
Able to track direct expenses with the source of the cost incurred	0.0	9.8	90.2	4.80	0.8	1
Able to allocate direct expenses to the organizational units/cost centers	2.2	10.3	87.5	4.53	0.9	2
Indirect costs						
Able to track indirect expenses with the source of the cost incurred	53.3	23.8	22.9	2.85	1.27	3
Able to allocate indirect expenses to the organizational units/cost centers	56.1	31.7	12.2	2.40	1.32	4

The study further examines the positive relationship between the level of cost accounting adoption and implementation in Saudi public universities and the frequency of employing detailed cost methods to calculate, track, and allocate costs across various categories (H3). The findings shed light on how frequently Saudi public universities utilize different cost calculation techniques, which serve as a key indicator of their overall cost accounting.

Table 4 provides insight into the frequency of use of each costing method. Almost all universities apply a university-wide cost calculation approach most frequently (mean = 4.79; SD = 0.83). An overwhelming 95.8% of respondents indicated high or very high usage of this approach. This approach clearly reflects current cost management practices. Calculating costs per organizational unit or cost center is the next most frequent costing method, with an average rating of high frequency applied by about 42.2% of universities (mean = 3.35; SD = 1.37). Cost calculations per type of service and per student are relatively rare, with mean scores of 2.23 and 1.78, respectively, and usage frequencies of 23.1% and 17.4%.

The study further explores the positive association between the level of cost accounting adoption and implementation in Saudi public universities and the perceived need for internal organizational resources to enhance the effective application of cost accounting practices (H4). The analysis

highlights key resources that significantly influence the development of effective costing systems, based on the perceptions of financial managers and accountants.

The survey results in Table 5 indicate that certain resources are universally recognized as critical for advancing cost accounting practices. Notably, financial management systems (e.g., ERP) received the highest importance rating, with a mean score of 4.70 out of 5, and 92.3% of respondents indicated a high or very high need. Close behind are cost tracking and allocation policies (mean = 4.66), and training and development programs (mean = 4.61), both ranking highly in perceived necessity.

Interestingly, support for additional financial personnel and management was found to be the least needed, with mean scores of 3.42 and 3.78, respectively. This suggests that respondents believe the existing personnel are sufficiently capable, provided that management support focuses on training and technology. Consequently, the priority appears to be on technological and procedural resources rather than expanding human resources at this stage.

Pearson correlation coefficient was applied to identify the correlation. The relationship between the variables used within this study was identified using correlation analysis, as portrayed in Table 6. Cost accounting adoption is moderately correlated with organizational factors as reflected by

Table 4. Costs calculation method frequency

Method of costs calculation	Freq. of use (%)			Mean	SD	Rank
	L	M	H			
For the whole university	4.2	0.0	95.8	4.79	0.83	1
Per organizational unit/place of cost	42.2	18.5	39.3	3.35	1.37	2
Per the type of provided service	61.5	15.4	23.1	2.23	1.63	3
Per student	78.3	4.3	17.4	1.78	1.28	4

Table 5. Perception of required resources for cost accounting implementation

Required resources	Need of a resource (%)			Mean	SD	Rank
	L	M	H			
Financial management systems – ERP	0.0	7.7	92.3	4.70	1.04	1
Financial personnel	36.2	42.1	21.7	3.42	2.12	8
Financial policies and procedures	4.4	11.4	84.2	4.58	1.62	4
Cost tracking and allocation policies	0.0	10.4	89.6	4.66	1.48	2
Training and development programs	6.4	7.1	86.5	4.61	1.42	3
Data integration tools	9.1	9.7	81.2	4.34	1.65	5
Management support	41.9	25.3	32.8	3.78	2.16	7
Stakeholder engagement platforms	47.8	16.7	35.5	3.92	1.39	6

a correlation coefficient of 0.208 ($p = 0.110$). Cost accounting adoption has a strong positive relationship with the ability to track costs and allocate them ($r = 0.819$; $p = 0.000$). Cost adoption also positively correlates with frequent calculations ($r = 0.744$; $p = 0.000$) and the resources needed ($r = 0.598$; $p = 0.000$). Organizational factors have a positive correlation with the ability to track costs and allocate them ($r = 0.520$; $p = 0.015$), frequent calculations ($r = 0.733$; $p = 0.012$), and resources needed ($r = 0.749$; $p = 0.011$). There is a high correlation between the ability to track and allocate costs and frequent calculations ($r = 0.750$; $p = 0.003$) as well as between the ability to track and allocate costs and resources needed ($r = 0.682$; $p = 0.001$). The correlation results show that most relationships between variables were significant at the 0.01 or 0.05 levels.

Linear regression determines whether one independent variable or multiple independent vari-

ables affect a dependent variable. The relationship is then used to predict and determine causal effects. Table 7 reports the results of the linear analysis. Almost all of the variables were found to have an effect on cost accounting adoption. The constant is -0.441 , significant at $p = 0.002$. The ability to track costs and allocate costs ($B = 0.346$, $p = 0.007$), frequency of calculation methods ($B = 0.352$, $p = 0.011$) and resources required ($B = 0.325$, $p = 0.004$) were found to have a positive relationship and significance. This finding means that as each independent variable increases, the dependent variable show improvement. However, organization factors ($B = -0.356$, $p = 0.039$) were found to have a negative relationship with the improvement of the dependent variable.

This study employs the resource-based view (RBV) framework to examine the adoption and implementation of accounting and provides an exten-

Table 6. Correlation analysis of the study variables

Variables		Cost accounting adoption	Organizational factors	Ability to track and allocate	Frequent calculation method	The required resources
Cost accounting adoption	Pearson Correlation	1	0.208	0.819**	0.744**	0.598**
	Sig. (2-tailed)		.110	.000	.000	.000
	N	171	171	171	171	171
Organizational factors	Pearson Correlation	0.208	1	0.520*	0.733*	0.749*
	Sig. (2-tailed)	.110		.015	.012	.011
	N	171	171	171	171	171
Ability to track and allocate	Pearson Correlation	0.819**	0.520*	1	0.750**	0.682**
	Sig. (2-tailed)	.000	.015		.000	.001
	N	171	171	171	171	171
Frequent calculation method	Pearson Correlation	0.744**	0.733*	0.750**	1	0.524**
	Sig. (2-tailed)	.000	.012	.003		.001
	N	171	171	171	171	171
The required resources	Pearson Correlation	0.598**	0.749*	0.682**	0.524**	1
	Sig. (2-tailed)	.000	.011	.000	.000	
	N	171	171	171	171	171

Note: * Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Table 7. Linear regression analysis of the study variables

Variable	Coefficient				t-value	Sig.
	Unnormalized coefficient		Standardized Coefficients			
	B	Std. Error	Beta			
(Constant)	-0.441	0.286	-	-0.176	0.002	
Organizational factors	-0.356	0.053	0.089	-6.184	0.039	
Ability to track and allocate costs	0.346	0.078	0.365	5.331	0.007	
Frequent calculation method	0.352	0.075	0.282	4.534	0.011	
The required resources	0.325	0.075	0.308	5.338	0.004	

sive insight into the present state of cost accounting in Saudi Arabia's higher education system after its transition from cash-based to accrual-based accounting. The empirical findings provide robust support for some hypotheses while challenging others, offering valuable insights into how internal resources and organizational factors shape strategic capacity in this context.

The findings revealed that non-organizational factors have a greater influence than organizational factors, leading to the rejection of *H1*. External drivers (such as government mandates to adhere to IPSAS and negotiations over financing systems) were identified as the primary catalysts, with over 75% of respondents rating these drivers as highly influential. In contrast, internal drivers, like directives from the university board, were rated significantly lower, indicating minimal internal governance impact. This aligns with prior research in public sector management, which highlights external regulatory pressures as the main triggers for management accounting reforms and cost accounting adoption (Arnaboldi et al., 2015; Chatti et al., 2025; Rogošić, 2021). This result aligns with RBV thinking that external triggers instigate resource configurations, though internal absorptive capacity dictates how far they implement. External regulation mandates are an example of these external triggers that encourage universities to leverage their internal resources to meet policy requirements. The lack of a significant internal governance effect implies internal organizational dynamics are presently secondary drivers of adoption.

The findings revealed that the level of cost accounting adoption and implementation is positively associated with universities' ability to track and allocate both direct and indirect costs, supporting *H2*. The data confirm strong capacity in tracking

and allocating direct costs, with 90.2% of public universities able to track direct expenses and 87.5% able to allocate them. In contrast, indirect costs are less well managed; only 22.9% of public universities can track indirect expenses, and 12.2% can allocate indirect costs. These findings support earlier research (Horngren et al., 2015; Jovanović et al., 2019), emphasizing that organizational capacity to handle complex cost structures – especially indirect costs – is crucial for mature cost management systems. The results suggest that while direct cost management is well established, indirect cost management remains underdeveloped due to resource constraints. The strong direct cost capabilities suggest that internal resources are in place for core cost tracking. The weaker indirect cost management indicates resource limitations, which inhibit comprehensive costing, supporting the RBV's assertion that organizational capabilities are crucial for strategic advantage.

Results indicated that the implementation of cost accounting in Saudi public universities is positively associated with the frequency of employing detailed cost calculation and allocation methods, supporting *H3*. The frequency of allocating direct and indirect costs to organizational units and cost centers correlates with the maturity of cost management. The widespread use of broad university-wide cost calculation methods suggests a foundational level of cost management. However, less than 23.1% of public universities employed more granular techniques, such as allocating costs per service or per student, reflecting lower adoption levels of detailed methods. These findings align with Aljabr and Al-Mutawa (2025), Hamid (2021), and Jovanović et al. (2019), emphasizing that detailed cost calculation methods are linked to the maturity of cost management. The limited use of detailed costing methods indicates resource constraints that are currently prevalent in many Saudi

universities. These constraints hinder the transition from basic to advanced cost management, highlighting the importance of internal resource development to enhance strategic capabilities. The results align with the RBV's proposition that resource availability determines the sophistication of management practices.

The findings revealed that the adoption and implementation of cost accounting in Saudi public universities is positively associated with the perceived needs for organizational resources, supporting *H4*. High mean scores for resource needs – particularly ERP systems, cost policies, and training programs – reflect a strong internal awareness of resource gaps necessary for effective advancement of cost accounting practices. Despite external pressure, many universities struggle to implement these practices due to internal resource constraints. This lack of resources hinders their ability to fully adopt cost accounting. The findings align with those of Alqudah et al. (2022), Musa and Abraham (2025), Pasape and Godson (2022), and Abdulkarim et al. (2020), highlighting perceived resource needs as critical barriers to full adoption. Recognizing these needs indicates organizational readiness to invest in capacity-building, consistent with RBV's emphasis on developing valuable, rare, and inimitable resources. The alignment of perceived needs with actual resource gaps highlights a strategic opportunity for universities to reconfigure and develop internal capabilities to enhance their competitive advantage in financial management. The empirical evidence supports the core RBV assertion that internal resources and capabilities are fundamental determinants of how well organizations adopt complex management systems like cost accounting. External pressures act as catalysts, but the depth of implementation hinges on the universities' internal resource endowments, such as technology infrastructure, policies, and skilled personnel.

Using RBV theory, the results suggest that the resources and capabilities an organization possesses determine its competitive position and success. In Saudi public universities, a lack of vital resources, such as clear policies and procedures, efficient data systems, trained staff, and technological infrastructure, limits progress to-

ward effective cost accounting. Implementing such systems requires financial investment in infrastructure, staff training, and cultural integration. Without embedding cost accounting into daily operations, universities cannot realize their full benefits. External pressures alone are insufficient to motivate or enable universities to transition to an accrual basis effectively.

Saudi Arabia's university education system operates within a complex financial and demographic context that complicates the relationship policy implementation (Haslam & Marriott, 2006). The existing funding model, coupled with resources and capabilities gaps, has hindered progress and effective adoption of cost accounting. Current models are inadequate for providing relevant and reliable information needed for decision-making and performance monitoring at micro and macro levels. Although a shift toward accrual-based accounting and regulations has led to some improvements, universities remain in the early stages of implementation. A comprehensive approach addressing internal capacity and systemic challenges is essential to realize the full benefits of cost accounting in Saudi higher education.

Examining cost accounting adoption through RBV highlights key insights with significant practical implications. Frameworks such as IPSAS provide a holistic view of cost tracking and allocation, but successful implementation depends on the institution's ability to leverage its resources. To strengthen their management accounting systems, universities must develop and reconfigure their resources and competencies to respond effectively to rapid changes (Hansen & Ferlie, 2016). Universities with capabilities aligned to accrual-based cost accounting will better understand their actual costs, enabling more informed financial decisions and improved responsiveness to evolving demands from government and regulators.

The introduction of cost accounting to Saudi public universities underscores the need for clear financial policies and systematic procedures. Universities should define guidelines for tracking and reporting costs aligned with their financial objectives. Moreover, providing target-

ed training for financial staff is crucial, as qualified personnel are key to progress. Such training enhances skills in cost accounting applications, fostering improved financial systems for data collection and analysis. Knowledge sharing and resource integration can further promote innovation and operational efficiency.

To create a meaningful cost accounting solution, universities must fully commit to integrating effective financial management tools and data solutions into their operations. RBV explains that while technology can help create efficiency and competitive advantages, universities should focus on real-time data integration to manage tracking, reporting, and resources accurately. These solutions allow universities to find savings and simplify processes by working across departments to share knowledge. Advanced financial solutions allow universities to operate

with accountability and strategically plan for the future with better use of their resources and faster adaptations to market changes.

This study focused on the theme of accrual accounting and cost management. The study provided implications for policymakers and university leaders. From the research evidence gathered, it was determined that government funding cuts and managerial discretion affect accounting systems, as well as internal organizational forces and institutional culture, which have an effect on the success and sustainability of cost accounting programs. Internal development of resources and reform strategic moves will improve implementation success. This tailored analysis of university strengths and weaknesses, along with actionable recommendations, enhances the likelihood of effective adoption and long-term success.

CONCLUSION

This study aims to examine the implementation of cost accounting practices in Saudi Arabian public universities, focusing on adoption drivers, cost tracking and allocation, calculation methods, and the resources needed for successful implementation. It provides an extensive insight into the present state of cost accounting in Saudi Arabia's higher education system. Findings show that cost accounting in Saudi Arabia is still in its development stage, but with noticeable efforts. Government directives aligned with IPSAS serve as the initiating mechanism. Universities require internal resources to practice cost accounting consistently. Regulators can encourage or push universities to comply with the rules, but resource availability will determine whether universities practice cost accounting as a ritual or a strategic tool. The study shows that resource mobilization and organizational capacity are boundary conditions that can facilitate or impede the conversion of pressure from external regulators into desired actions. For the adoption and implementation of cost accounting in Saudi Arabia to move beyond symbolic compliance and become an agent of effectiveness and sustainability, resource development and organizational capacity should be key components of the strategic planning of all such reform.

Although this study offers in-depth information on the experience of and results achieved from applying cost accounting in Saudi Arabian public universities, some limitations need to be considered in future research. Further studies could attempt to include the views of other stakeholders, such as academic leaders, administrators, and policymakers, to better understand enablers and barriers of cost accounting implementation. Since the current study only acquired views from financial managers and accountants, having other stakeholders discuss the process may provide better insight into the nuances of implementation as well as identify barriers or success factors not listed in this study. Qualitative methods like interviews and case studies can also assist in identifying contextual factors related to success and the use of internally generated resources within the confines of a specific university or country. Future research could also compare multiple countries to determine how social, cultural, and economic variations affect cost management reform in higher education and mitigate this study's limits of generalization beyond Saudi Arabia.

AUTHOR CONTRIBUTIONS

Conceptualization: Sulaiman Alsughayer.
 Data curation: Sulaiman Alsughayer.
 Formal analysis: Sulaiman Alsughayer.
 Funding acquisition: Sulaiman Alsughayer.
 Investigation: Sulaiman Alsughayer.
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 Project administration: Sulaiman Alsughayer.
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 Software: Sulaiman Alsughayer.
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 Validation: Sulaiman Alsughayer.
 Visualization: Sulaiman Alsughayer.
 Writing – original draft: Sulaiman Alsughayer.
 Writing – review & editing: Sulaiman Alsughayer.

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APPENDIX A. Questionnaire

Dear Participant,

Thank you for agreeing to take part in this important research study. This empirical study investigates the implementation of cost accounting in public universities in Saudi Arabia, particularly in light of the recent transition from cash-based to accrual-based accounting systems.

As educational institutions face increasing scrutiny regarding financial management and resource allocation, understanding the factors that influence the adoption of cost accounting practices has never been more critical. This survey aims to explore various dimensions of this transition, including:

- The specific factors that influence the adoption of cost accounting in your institution.
- Changes in accounting practices and processes resulting from this transition.
- Challenges faced during the implementation of accrual-based accounting systems.
- The resources and support necessary for successful implementation.

Your insights are invaluable and will contribute significantly to our understanding of cost accounting in the educational sector.

Please be assured that all responses will be kept completely anonymous. I will not collect any identifying information, and your participation will be confidential. The data collected will be used solely for academic purposes and will be presented in aggregate form. I truly appreciate your time and participation in this survey, and we look forward to your valuable input.

Thank you for your contribution.

Sincerely,
The Researcher

Consent Statement:

Thank you for considering participation in this survey. Your involvement is completely voluntary, and you may choose to withdraw at any time without any consequences. The information collected will be kept confidential and used solely for research purposes. By continuing with the survey, you acknowledge that you have read and understood the purpose of the study and consent to participate. Please indicate your consent by clicking "I consent to participate" below to continue with the survey.

- I consent to participate
 I dissent to participate

Table A1. Section 1: General Information

Category	Answers
Gender	<input type="checkbox"/> Male, <input type="checkbox"/> female
Education	<input type="checkbox"/> Diploma, <input type="checkbox"/> Bachelor, <input type="checkbox"/> Master, <input type="checkbox"/> Ph.D.
Position	<input type="checkbox"/> Financial manager, <input type="checkbox"/> accountant, <input type="checkbox"/> other...
Age	<input type="checkbox"/> 22-32, <input type="checkbox"/> 33-44, <input type="checkbox"/> 45-54, <input type="checkbox"/> above 54
Experience	<input type="checkbox"/> 0-5 years, <input type="checkbox"/> 6-10 years, <input type="checkbox"/> more than 11 years
University Name	(optional):

Table A2. Section 2: Part A: Reasons for adopting cost accounting in universities

Using the scale below, please indicate your level of agreement or disagreement with the following statements:

N	Category of reasons for cost adoption	L	M	H
1	Required by the government to adopt IPSAS			
2	Adhere to the requirement by the government to approve academic and service offers			
3	Adhere to requirement by government to subsidize			
4	Required by the board of the universities' affairs			
5	To make a decision about resource allocation to the faculties and departments			
6	To determine the costs of education programs and evaluate financial feasibility			
7	To set fees and tuition charges			
8	To disclose the cost of activities in the university's annual report			
9	To negotiate the financing system with the government			
10	To make comparisons with previous years and other universities			

Table A3. Section 2: Part B: Cost tracking and allocation ability

Using the scale below, please indicate your level of agreement or disagreement with the following statements:

N	Ability to track and allocate costs	L	M	H
1	Able to track direct expenses with the source of the cost incurred			
2	Able to track indirect expenses with the source of cost incurred			
3	Able to allocate direct expenses to the organizational units/cost centers			
4	Able to allocate indirect expenses to the organizational units/cost centers			

Table A4. Section 2: Part C: Cost calculation method frequency

Using the scale below, please indicate your level of agreement or disagreement with the following statements:

N	Method of costs calculation	L	M	H
1	For the whole university			
2	Per organizational unit/place of cost			
3	Per the type of provided service			
4	Per student			

Other method of cost calculation, please describe

Table A5. Section 2: Part D: Required resources for full cost accounting implementation

Using the scale below, please indicate your level of agreement or disagreement with the following statements:

N	Required resources for cost implementation	L	M	H
1	Financial management systems –ERP			
2	Financial personnel			
3	Financial policies and procedures			
4	Cost tracking and allocation policies			
5	Training and development programs			
6	Data integration tools			
7	Management support			
8	Stakeholder engagement platforms			

Other required resources for full cost accounting implementation, please describe

Thank you once again for taking the time to share your thoughts. I appreciate your contribution and look forward to using your feedback to contribute to the field of accounting.