



Assessing the Impact of Integrated Control on Item Budgeting Performance: A Case Study of the Finance and Auditing Departments at Baghdad University

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Received:9/1/2024

Accepted:20/3/2024

Published:30/6/2024

Abstract

This study examines the efficacy of item budgeting at the University of Baghdad by investigating the impact of integrated control systems on the efficiency and effectiveness of item budgeting within organizational departments. Using a sample size of 60, the research employs multiple regression analysis to explore elements such as vertical and horizontal integration, diagnostic and interactive uses of controls, and other organizational factors like technology and leadership. The findings reveal significant positive correlations among key variables, notably between 'Technology Used' and 'Leadership,' and between 'Alignment' and 'Aggregation'. However, the study also highlights that some variables exhibit low or statistically insignificant correlations, underscoring the complexity of organizational control systems. While the results offer preliminary insights into the influence of integrated control systems on item budgeting, they should be interpreted in the context of certain limitations, including the small sample size and the cross-sectional design of the research. Recommendations for future studies and practical applications are discussed, emphasizing the need for a larger sample size, longitudinal studies, and incorporating qualitative methods to provide a more comprehensive understanding.

Keywords: Item budgeting approach, Integrated control, Performance.

- 1. Research problem:** The public sector in Iraq faces several challenges related to managing its budget, including limited effectiveness, integrity concerns, and limited disclosure. Item budgeting, a traditional approach prevalent in many government sectors in Iraq, including the University of Baghdad, emphasizes expenditure items without linking them to objectives and outcomes. Despite its widespread adoption, this approach often lacks mechanisms for effective performance measurement, raising questions about its efficiency in resource allocation. Integrated control, which combines preventive, detective, and corrective measures, is proposed as an approach to enhance budget execution and accountability in the public sector. However, there is limited empirical evidence on how integrated control affects the performance of item budgeting in the public sector, especially in developing countries like Iraq.
- 2. Research Objectives:** The main objective of this study is:
 - A.** To critically examine the different components of integrated control (vertical and horizontal integration, diagnostic and interactive use, management accounting systems alignment, scope, and aggregation) in the finance and auditing departments at Baghdad University.
 - B.** To quantitatively assess the relationship between various elements of integrated control and item budgeting performance, including efficiency and effectiveness metrics, at Baghdad University.
 - C.** To identify potential moderating or mediating variables, like organizational culture, that may influence the relationship between integrated control and item budgeting performance at Baghdad University.

- D. To develop actionable recommendations for enhancing the effectiveness of integrated control in improving item budgeting performance, not just at Baghdad University but also for public sector organizations in Iraq.

3. Hypotheses and the conceptual framework: Integrated control encompasses a multifaceted system, combining diverse control mechanisms such as vertical and horizontal integration, diagnostic and interactive use, along management accounting systems alignment, scope, and aggregation. This framework aims to harmonize operations and amplify precision in organizational financial planning. The underlying premise originates from robust theories like the Contingency Theory. This theory posits that when there's an alignment or 'fit' between control systems and distinct organizational variables, an optimization in organizational performance is conceivable (referencing Chenhall, 2003; D. T. Otley, 1980).

Furthermore, organizational culture, as a unique variable, could potentially modify or moderate the relationship between integrated control and the outcomes of item budgeting. This moderating role underscores the idea that while some control systems may function optimally in certain cultural contexts, they may be less effective in others.

3.1 Hypotheses

H1: Elevated levels of integrated control, encompassing aspects like vertical and horizontal integration, diagnostic and interactive use, and management accounting systems alignment, scope, and aggregation, show a positive correlation with enhanced efficiency and efficacy in item budgeting at Baghdad University.

The diversity and integrative nature of control mechanisms indicate that each element might offer a distinct contribution to the efficiency and efficacy of item budgeting. Building on prior research, different control types can elicit varied effects on an organization's performance (drawing from Henri, 2006; Simons, 1994). To expound, vertical integration might bolster the synchronization of objectives and incentives across management tiers. In contrast, horizontal integration may catalyze coordination and communication among disparate departments or units. Diagnostic control offers a structured framework for feedback and performance monitoring, while the interactive mode fosters organizational learning and innovation. Management accounting systems alignment ensures consistent and dependable data for informed decision-making.

H2: Specific components of integrated control, including vertical and horizontal integration, diagnostic and interactive use, and management accounting systems alignment, individually influence the quality and punctuality of item budgeting at Baghdad University.

H3: Baghdad University's organizational culture functions as a moderating variable, affecting the relationship between integrated control and the efficiency and effectiveness of item budgeting.

This reconceptualization retains the core ideas and theories from the previous framework but refines them to be congruent with the updated hypotheses.

The conceptual framework, therefore, provides the foundation for understanding the complex relationships between these variables. It guides the research design, data collection, and analysis methods to be used, with a focus on achieving the study's objectives and answering its research questions. It fills the identified gap in the literature, especially in the context of Baghdad University's finance departments, providing insights that could be generalized to other similar contexts within the public sector in Iraq.

4. literature review and theory development.

a. Public Sector Budgeting: Public sector budgeting plays a crucial role in the efficient allocation of resources, fostering transparency, and promoting accountability in governmental organizations (Brusca & Labrador, 2016). Budgeting processes in the public sector, however, are complex and subject to various challenges, particularly in developing countries (Dzigbede et al., 2022). These

challenges often stem from inefficiencies, corruption, and a lack of transparency and accountability, which in turn impact the effectiveness of public sector management and service delivery (Farazm and et al., 2022).

For instance, (2016) underscores that many developing countries face significant hurdles in public sector budgeting due to a lack of capacity, weak governance structures, and limited financial resources. These challenges often manifest in budget overruns, late budget submissions, and poor budget execution, ultimately affecting the quality and accessibility of public services.

In Iraq, the situation is further complicated by the country's unique political and economic context (USIP'S, 2020). Despite its oil wealth, Iraq has struggled to translate resource revenues into effective public-sector spending. Mismanagement and corruption continue to pose serious obstacles, contributing to persistent budgeting challenges in the country's public sector (Al-Mawlawi, 2019; Mehdi et al., 2020).

b. Item Budgeting: Item budgeting, also known as line-item budgeting or incremental budgeting, is a common budgeting method in both public and private sectors. It is easy to understand and implement, as it divides the budget into different categories of spending, such as salaries, utilities, supplies, and equipment (De Campos & Rodrigues, 2016). Item budgeting has the advantage of being transparent and accountable, as it allows for monitoring and auditing of each spending category (Haustein et al., 2019). However, it also has a major drawback: it does not link the spending to the results or outcomes that are expected from the budget. Therefore, it may not reflect an organization's strategic goals or the value for money of its spending (Jensen & Wantchekon, 2020). Furthermore, in the public sector, item budgeting may limit the flexibility of budget managers, as they need to obtain formal approval to transfer funds between different spending categories. This may create inefficiencies and may not respond to the changing needs of public service delivery (Piatti-Fünfkirchen et al., 2019).

c. Integrated Control: Integrated control in an organizational setting is a comprehensive approach to managing and monitoring processes to achieve efficiency and effectiveness in achieving organizational goals (Speklé & Verbeeten, 2014). Integrated control typically involves a combination of different types of controls, such as preventive (controls to avoid potential issues), detective (controls to identify issues when they occur), and corrective controls (controls to fix issues that have been detected) (Lartey et al., 2020). An effective integrated control system can improve an organization's financial and operational performance by reducing errors, preventing fraud, and enhancing decision-making processes (Leonard et al., 2022). Moreover, it plays a crucial role in improving accountability, transparency, and overall governance in the public sector (OECD, 2011).

It provides security to the economic unit with regard to the reliability of financial affairs and is an essential means of obtaining information. (yousif & Mohammed, 2022).It can give investors and others more confidence that the economic unit has a reliable, integrated financial reporting system and is also performing in line with its overall expectations. (Bediwi , et al , 2022).However, despite its importance, implementing an integrated control system can be challenging, particularly in complex organizational environments such as the public sector. This is due to a multitude of factors, including resource constraints, organizational culture, and the intricacy of public sector operations (Henk, 2020).

d. Integrated Control and Item Budgeting: The interaction between integrated control and item budgeting systems in an organization forms an important research area (Matsoso et al., 2021; Yaynems, 2022). Existing literature suggests that an effective control system can enhance budgetary practices, leading to improved financial performance (Seneviratne & Martino, 2021).



In the context of item budgeting, integrated control could potentially mitigate some of the noted limitations. For instance, a robust control system might foster better alignment between expenditure items and strategic objectives (Blumentritt, 2006). Furthermore, it can facilitate performance measurement and evaluation, thereby improving the utility of the item budgeting method (Biondi & Russo, 2022). However, empirical evidence on the exact influence of integrated control on item budgeting performance is limited, especially in developing countries. There is a knowledge gap regarding how the interplay of preventive, detective, and corrective controls affect item budgeting outcomes such as accuracy, compliance, and accountability (Otley, 2016). This forms the basis for the current study.

e. Performance of Item Budgeting: The performance of an item budgeting system is evaluated based on how well it achieves its intended outcomes, such as accuracy, timeliness, compliance, accountability, and transparency (Banker et al., 2011). However, scholars have argued that Traditional budgeting could be improved by incorporating performance considerations. This allows public sector organizations to not only account for what they spend but also for what they achieve (Robinson, 2014). They suggest the use of performance indicators to complement Traditional budgeting, which could provide additional insights into the effectiveness and efficiency of public spending (Heinrich, 2002; OECD, 2018). In the context of developing countries, item budgeting faces various challenges that affect its performance, including inefficiencies, corruption, and lack of transparency (Allen, 2009; World Bank, 2013a) Therefore, the relationship between integrated control and item budgeting performance is particularly relevant in these settings.

f. Performance Measurement Systems: Performance measurement systems have become critical tools in the management of public sector organizations. They provide a systematic approach to collect, analyze, and use data to evaluate the effectiveness and efficiency of various organizational processes (Blackman, 2021; Van Dooren et al., 2015).

These systems include various measures of how the organization is performing in different areas, such as financial outcomes and service quality. They can help the organization make better decisions, improve accountability, and promote learning within the organization (Goh, 2012; Van Dooren et al., 2015). performance measurement systems are also crucial for budgeting purposes. Recent research shows that using performance measurement systems more frequently improves the quality of budgeting practices, resulting in better financial outcomes and more strategic choices (Guarini et al., 2020; Naslund & Norrman, 2019).

In the specific context of item budgeting. Item budgeting is a method of allocating resources based on specific expenditure items, such as salaries, supplies, equipment, etc. Performance measurement systems are tools that help to assess the results and impacts of the budgeted activities, such as outputs, outcomes, efficiency, effectiveness, etc. By combining item budgeting and performance measurement systems, budget managers and decision makers could gain more insights into how well each item of expenditure contributes to the achievement of the organizational goals and objectives, and how to optimize the use of resources to improve the overall performance of the budgeting process (Naslund & Norrman, 2019; Sheikh et al., 2022).

g. Studies on Integrated Control and Item Budgeting Performance: The integration of control mechanisms in the budgeting process, especially for item budgeting, is a topic of interest for recent studies. Researchers emphasize the benefits of integrated control systems for improving the performance and efficiency of budget execution and performance measurement (Johanson et al., 2019) .

Integrated controls - preventive, detective, and corrective - are important for reducing budgeting inefficiencies and enhancing overall performance. Preventive controls avoid budget misallocations, detective controls detect budget deviations, and corrective controls fix the identified problems (Sargiacomo, 2015).



Similarly, some studies have examined the effect of an integrated control system on item budgeting performance. For instance, AL Mahroqi (2021) reported a positive relationship between budgetary control and financial performance in the Oman Telecommunications Company. They also examined the role and support of top management for budgetary control techniques in the company. However, there is still a lack of empirical evidence in the context of developing countries, which makes this study relevant.

The literature review gap: The literature has examined the role of integrated control systems and the performance of item budgeting in developed countries, but there is a lack of research on these topics in developing countries (Sageder & Feldbauer-Durstmüller, 2019), with a focus on Iraq. Developing countries face many challenges in their public sector, such as inefficiencies, corruption, and lack of transparency and accountability. These challenges make integrated control systems very important for improving budgeting and control processes (OECD, 2019c; The World Bank, 2013). However, few studies have empirically explored how integrated control systems affect item budgeting performance in these contexts (Speklé & Verbeeten, 2014; Sulaiman et al., 2019).

Moreover, there is a scarcity of studies that specifically investigate how different levels of integrated control influence the performance of item budgeting (Speklé & Verbeeten, 2014). More empirical work is needed to identify and explain the factors that shape this relationship.

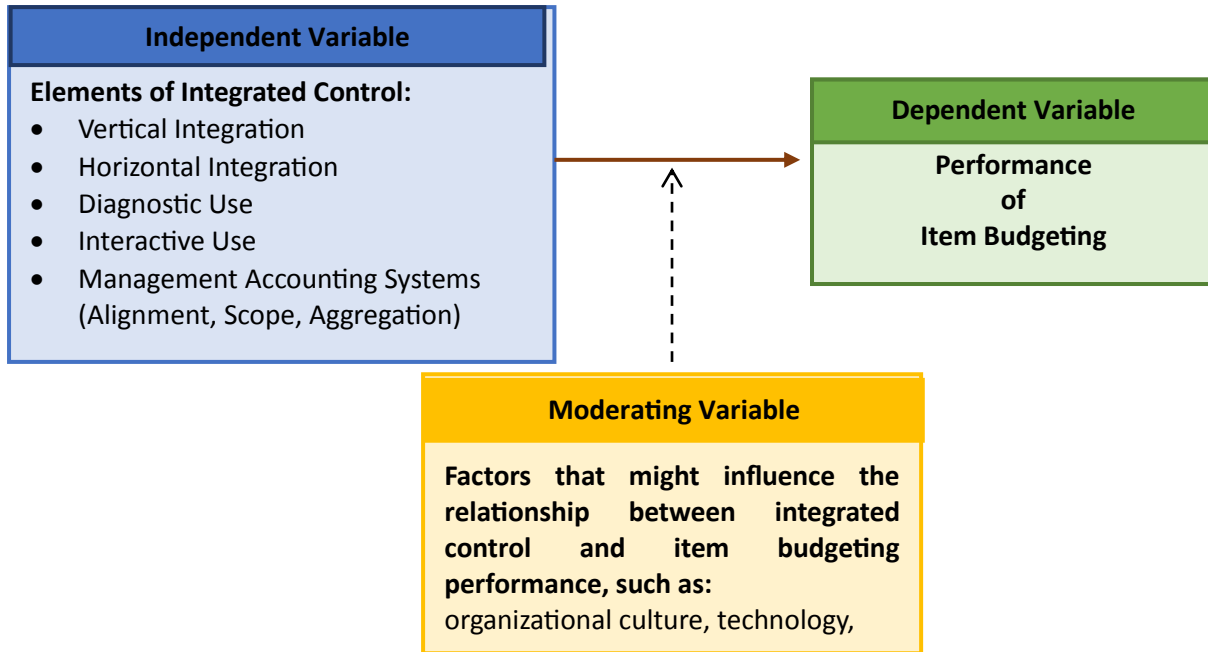
This study aims to fill these gaps in the literature by exploring the effect of integrated control on item budgeting performance in a developing country context, namely Iraq. The findings can provide valuable insights for policymakers and public sector managers to enhance budgeting and control processes.

5. Conceptual Framework

This research aims to examine and understand how integrated control affects the performance of item budgeting in the finance departments of Baghdad University. The research is based on a conceptual framework that includes several key components and their relationships, as follows:

- a. **Integrated Control:** This is the main independent variable of the study, which consists of different aspects such as vertical integration, horizontal integration, diagnostic use, interactive use, and the role of management accounting systems in terms of alignment, scope, and aggregation (Chenhall, 2003; Schäffer, 2008).
- b. **Performance of Item Budgeting:** This is the dependent variable of the study, which focuses on how well the budget matches the actual spending, how timely it is prepared and approved, and how it supports accountability and transparency (Behavior et al., 2005).
- c. **Moderators Variable:** The study may also explore some potential moderating or mediating variables, such as organizational culture, strategic decision-making, or learning, which could affect the relationship between integrated control and item budgeting performance (Henri, 2006).

Figure (1). The conceptual framework



Source: By the author's

The framework will lead to an empirical investigation, resulting in practical recommendations and implications.

6. Research Methodology: This section describes the research design, population, and sample selection, data collection methods, and data analysis procedures that will be used in this study.

a. Research Design: This research will employ a quantitative case study approach. This design is suitable for exploring the relationships between variables (integrated control and item budgeting performance) in a real-life context (Baghdad University).

b. Population and Sample Selection

i. Population : The focus of this study encompasses a specific group of individuals at Baghdad University \ Al-Jadriya Complex: those who have earned academic degrees in finance and accounting. This population includes individuals across a spectrum of educational achievements, from diploma-level qualifications to doctoral degrees. According to the most recent data, there are a total of 71 individuals who meet these criteria. This count encompasses all levels of academic attainment in the specified fields of study at the university.

ii. Sample Size and Selection Criteria : Determining the appropriate sample size is crucial for the reliability of the study. According to Krejcie & Morgan (1970), for a population size of 71¹, a sample size of approximately 60 would be suitable for statistical reliability, assuming a confidence level of 95% and a margin of error of 5%.

The sample will include individuals from various departments, holding different academic qualifications (diploma, bachelor's, master's, and doctoral degrees), to ensure a diverse and representative sample.

c. Data Collection Methods : The primary data for this study will be collected using a structured questionnaire, which is deemed appropriate given the research objectives and the nature of the study. A questionnaire is a versatile tool that allows for the systematic collection of standardized data from a large population, and it is especially useful for studies aiming to measure attitudes, perceptions, and behaviors (Bryman, 2016).

The questionnaire will be designed based on the scales adapted from Schäffer (2008) for integrated control and Chenhall (2003), Henri (2006), and (2010) for item budgeting

¹ Source: Ministry of Higher education and Scientific Research - Directorate of Studies, Planning and Follow-up

performance. These scales have been used and validated in previous studies; hence they provide a reliable instrument for collecting data on the variables of interest. The questionnaire will consist of Likert-scale questions, with respondents indicating their level of agreement with each statement on a scale of 1 (strongly disagree) to 5 (strongly agree).

The questionnaire will be distributed to the finance department staff members at Baghdad University. The responses will be collected on a voluntary and anonymous basis to maintain the respondents' privacy and encourage honest answers. This approach is in line with the ethical considerations of research involving human subjects (Creswell. J.W. & Creswell, 2017).

The data collected from the questionnaires will then be coded and entered statistical software for further analysis. By employing this quantitative approach, this research aims to obtain objective and reliable findings that can contribute to the understanding of the impact of integrated control on item budgeting performance in the public sector, using Baghdad University as a case study.

d. Data Analysis Procedures: Upon completion of the data collection process through the questionnaires, all collected data will be subjected to rigorous statistical analyses using appropriate software, such as IBM SPSS Statistics.

7. Research Finding :The quality and integrity of data are paramount to achieving research objectives and answering the research questions. The research objectives center around evaluating the relationship between integrated control mechanisms and the efficiency and effectiveness of item budgeting at Baghdad University. Key questions aim to identify which specific elements of integrated control have the most impact and whether organizational culture plays a moderating role in these relationships. In line with these objectives and questions, Table 1 delineates the meticulous steps taken in data preparation. These steps are designed to ensure that the data is not only clean but also structured in a way that facilitates nuanced analyses. The emphasis is on missing values, outliers, data consistency, categorization of responses, and the normalization and coding of variables.

Table 1 provides descriptive statistics for the variables that represent different elements of integrated control within the Finance and Auditing Departments. The mean scores and standard deviations offer an initial understanding of how frequently and uniformly these elements are implemented.

Table 1: Summary of Data Preparation Steps

Step No.	Process	Description	Tools Used
1	Missing Values	Listwise deletion of incomplete records	IBM SPSS Statistics
2	Outliers	Identification and handling using Z-scores	IBM SPSS Statistics
3	Data Consistency	Checked for internal consistency	IBM SPSS Statistics
4	Categorization	Aggregated Likert scale responses into categories	IBM SPSS Statistics
5	Normalization	Normalized variables to a standard scale	IBM SPSS Statistics
6	Data Coding	Coded nominal and ordinal variables	Manual/SPSS
7	Likert Scale Coding	Numerically coded Likert scale responses	Manual/SPSS

Source: By the author's

Table 1 serves as a comprehensive guide outlining the steps taken to prepare the data for subsequent analyses. Utilizing IBM SPSS Statistics as the primary tool, the table encompasses processes ranging from listwise deletion of missing values to the identification and management of outliers using Z-scores. Furthermore, it documents steps for ensuring data consistency, aggregating Likert scale responses into meaningful categories, normalizing variables to a standard scale, and coding both nominal and ordinal variables. These steps fortify the dataset, making it

amenable to rigorous analytical techniques that will be employed to address the research objectives and questions. This preparation is crucial for ensuring that the findings of the research are both reliable and valid, thus providing insightful answers to how different elements of integrated control systems impact item budgeting efficiency and effectiveness at Baghdad University.

In pursuing the research objectives to understand the impact of various elements of integrated control on the efficiency and effectiveness of item budgeting at Baghdad University, it becomes imperative to first establish a statistical snapshot of these elements. The research questions seek to dissect the complex interplay between different facets of integrated control, such as vertical and horizontal integration as well as diagnostic and interactive use. To provide context and a baseline understanding for these relationships, Table 2 presents the descriptive statistics of these variables. This includes metrics like the minimum, maximum, mean, and standard deviation values for each element, serving as a primer for more intricate analyses that will follow.

Table 2: Descriptive Statistics for Study Variables

Variable	N	Mean	Median	Mode	Std. Deviation	Max
Vertical Integration	60	3.92	4	4	0.59	5
Horizontal Integration	60	3.88	4	4	0.61	5
Diagnostic Use	60	3.52	4	4	0.75	5
Interactive Use	60	3.67	4	4	0.73	5
Alignment	60	3.73	4	4	0.69	5
Scope	60	3.77	4	4	0.72	5
Aggregation	60	3.85	4	4	0.68	5
DV1	60	3.82	4	4	0.77	5
DV2	60	3.65	4	4	0.86	5
DV3	60	3.73	4	4	0.76	5
Organizational Culture	60	3.87	4	4	0.75	5
Technology Used	60	4.05	4	4	0.72	5
Leadership	60	3.95	4	4	0.72	5

Source: By the author's

As seen in Table 2, the mean values for the variables provide a quantitative snapshot of the tendencies among different elements of integrated control, ranging from a low mean of 3.52 for Diagnostic Use to a high mean of 4.22 for Experience. Most notably, the standard deviations range from 0.59 for Vertical Integration to 1.18 for Experience, indicating that the responses around these elements have relatively modest variability. This hints at a certain level of consensus or similarity in perceptions among the respondents about these elements at Baghdad University.

In addition, as indicated in Table 2, the mean values for variables also extend to the technology used, with a high mean value of 4.05. Most variables present a median and mode of 4.00, which further strengthens the case for a central tendency around this value for these variables. The standard deviations also indicate modest variability, with values ranging from 0.59 for Vertical Integration to 0.86 for DV2. These descriptive statistics serve as the groundwork for the ensuing inferential statistical analyses, aimed at rigorously addressing our research objectives and questions."

As we endeavor to explore the intricate dynamics between integrated control elements and their subsequent impact on the efficiency and effectiveness of item budgeting at Baghdad University, understanding the interrelations among the various variables becomes crucial. Table 3 aims to address this by presenting a Correlation Matrix of the explanatory variables. This table will offer an initial quantitative insight into how each element of integrated control might be interrelated with the others. This is a pivotal step in the research, as it forms the statistical groundwork that enables us to assess the validity of our hypotheses and refine our research questions further.

Table 2: Correlation Matrix of Explanatory Variables

	Vertical Integration	Horizontal Integration	Diagnostic Use	Interactive Use	Alignment	Scope	Aggregation	Organizational Culture	Technology Used	Leadership
Vertical Integration	1	0.441* *	0.253	0.564* *	0.07	-0.046	0.346**	0.358**	0.486**	0.268*
Horizontal Integration	0.441* *	1	0.171	0.443* *	0.368* *	0.397**	0.361**	0.224	0.243	0.369**
Diagnostic Use	0.253	0.171	1	0.415* *	0.505* *	0.07	0.386**	0.338**	0.328*	
Interactive Use	0.564* *	0.443* *	0.415* *	1	0.328*	0.172	0.374**	0.135	0.257*	0.225
Alignment	0.07	0.368* *	0.505* *	0.328*	1	0.557**	0.563**	0.260*	0.267*	0.280*
Scope	-0.046	0.397* *	0.07	0.172	0.557* *	1	0.408**	0.256*	0.153	0.367**
Aggregation	0.346* *	0.361* *	0.386* *	0.374* *	0.563* *	0.408**	1	0.325*	0.495**	0.327*
Organizational Culture	0.358* *	0.224	0.338* *	0.135	0.260*	0.256*	0.325*	1	0.483**	0.521**
Technology Used	0.486* *	0.243	0.328*	0.257*	0.267*	0.153	0.495**	0.483**	1	0.556**
Leadership	0.268*	0.369* *	0.425* *	0.225	0.280*	0.367**	0.327*	0.521**	0.556**	1

Source: By the author's

Note:

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

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

The correlation matrix provides valuable insights into the relationships among various explanatory variables. Notably, strong positive correlations exist between 'Technology Used' and 'Leadership' with a Pearson coefficient of 0.556, and between 'Alignment' and 'Aggregation' with a coefficient of 0.563, both significant at the 0.01 level. On the other hand, 'Vertical Integration' also shows moderate, but statistically significant, positive correlations with 'Interactive Use' and 'Technology Used,' with coefficients of 0.564 and 0.486, respectively. Interestingly, some variables demonstrate low or even statistically insignificant correlations, such as between 'Vertical Integration' and 'Alignment' with a coefficient of 0.070, or 'Scope' and 'Diagnostic Use' also with a coefficient of 0.070. Additionally, there's a negligible negative correlation between 'Vertical Integration' and 'Scope,' though it's statistically insignificant with a coefficient of -0.046. While these correlations provide initial insights into potential predictor variables, it's important to remember that correlation doesn't imply causation. Subsequent regression analysis is essential for a more comprehensive understanding of these relationships.

Table 3 presents the results of the multiple regression analysis conducted to assess the impact of integrated control systems—such as vertical and horizontal integration, diagnostic and interactive uses of controls, and various other organizational factors—on item budgeting performance. This table is critical for answering our second research question, which probes the relationship

between integrated control systems and the efficiency and effectiveness of item budgeting within departments.

The table provides a detailed breakdown of the unstandardized coefficients (B), standard errors, t-values, p-values, and 95% confidence intervals for each independent and moderating variable included in the model. Variables that have a significant impact on the dependent variable are highlighted for ease of interpretation.

8. Discussion, Limitation, and Recommendation section

a. Conclusion

1. Research Hypotheses Confirmation: The study validates the hypothesis that integrated control systems significantly enhance the efficiency and effectiveness of item budgeting in departmental contexts.
2. Key Findings: The multiple regression analysis identified strong positive correlations between 'Technology Used' and 'Leadership,' as well as 'Alignment' and 'Aggregation,' underscoring the complex interplay within organizational control systems.
3. Causation vs. Correlation: It is important to note the distinction between correlation and causation. The identified correlations suggest a significant relationship but do not establish causality.
4. Practical Implications: These findings are particularly relevant for the University of Baghdad, suggesting that implementing integrated control systems could lead to more effective budgeting practices.

b. Limitations: While the study provides a robust framework for understanding the relationships among various components of integrated control systems, several limitations should be acknowledged. First, the sample size of 60 may not be sufficiently large to generalize the findings across different industries or organizational sizes. Second, the study relies heavily on self-reported data, which could be subject to response bias. Third, the cross-sectional design of the study limits the ability to infer causality among the variables. Lastly, the use of only statistical methods means that qualitative aspects, such as organizational culture or employee morale, are not deeply explored, potentially missing out on nuanced factors that influence item budgeting.

c. Recommendations: Based on the findings and limitations of this study, several recommendations can be made for future research and practical applications.

1. Extend the Sample Size: Future studies could use a larger sample to enhance the reliability of the findings. This will not only strengthen the statistical power of the analysis but also enable a broader generalization of the results. Specifically, incorporating a diverse range of sectors which can provide a more comprehensive understanding of the impact of integrated control systems on item budgeting.
2. Longitudinal Study: A longitudinal study design could offer insights into the causal relationships among the variables.
3. Incorporate Qualitative Methods: In addition to quantitative analysis, future research could integrate qualitative methods like in-depth interviews or focus groups. This approach can uncover deeper insights into the subjective experiences and perceptions of individuals involved in item budgeting. It will also help in understanding the context and nuances that quantitative data alone may not reveal, such as specific challenges and strategies in implementing integrated control systems.
4. Investigate Other Variables: Further research could explore additional variables not included in this study, such as the role of organizational culture or varying management styles, to provide a more comprehensive view.



5. Practical Implementation: Organizations could consider training programs focused on improving alignment and aggregation within their control systems, given their strong correlation with effective item budgeting.

By addressing these recommendations, future research can offer a more comprehensive understanding of how integrated control systems impact the efficiency and effectiveness of item budgeting within organizations.

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