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Investigating the Usage of Shiraz Municipality Managers from the Management Accounting Information System in Budgeting

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Abstract

Objectives: In management accounting literature, the budget is considered the foundation of the management control process in most organizations. Budgeting and management accounting information systems are control tools that rely on each other, acting as two sides of the same coin.

Design/methodology/approach: The research method utilized in this study is an exploratory survey. All managers of the Shiraz municipality are the statistical population for this research. Sampling was not employed in this study. To test the research hypotheses, SPSS software version 24, "one-sample t-test," and "one-way analysis of variance" tests were utilized.

Results: The research findings suggest that the utilization of the management accounting system in the budgeting process by managers at various levels in the Shiraz municipality is above average, but still has room for improvement. Additionally, the results indicate that there is no significant difference in the usage of the management accounting information system and the budgeting system among managers at different levels. Based on these results, enhancing the status of the management accounting system within the budgeting process is necessary in the Shiraz municipality.

Innovation: A review of studies conducted in Iran reveals that no research has yet demonstrated the role of accounting system information in municipal budgeting systems. Therefore, this study is innovative and represents a unique opportunity to be implemented for the first time in one of Iran's metropolitan municipalities.

Keywords: Management Accounting System, Information, Shiraz Municipality, Budgeting

1. Introduction

Although the budget is considered the cornerstone of the management control process in most organizations and is widely used in management accounting literature, it is often incomplete (Damrongsukniwat et al., 2011). Different uses of the budget have been developed in the management accounting literature (Amans et al., 2015), presenting various views, theories, and definitions.

The discussion on accounting changes has gained momentum in recent years (Finodella et al., 2016). Governments are transitioning from traditional budgeting to operational budgeting, and municipalities, as local governments, are following suit. Shiraz municipality has been a pioneer in using operational budgeting, leading to significant changes in the management accounting information system of the municipality.

Given the importance of financial management in Shiraz municipality, it is crucial to formulate efficient budgets. Effective budget development requires information from the organization's accounting system. The success or failure of using management accounting systems in public sector organizations is discussed in the literature, but there is no clear evidence (Jacobs et al., 2004). Therefore, information management and management accounting systems are of special importance.

This study aims to answer the question of how managers in Shiraz municipality utilize information from the management accounting system in their budgeting process. Past research highlights the necessity for organizations to utilize the management accounting information system (Namazi, 2013). However, no research in Iran has proven the role of accounting system information in municipal budgeting. Therefore, this study is innovative and aims to be the first of its kind in a metropolitan municipality like Shiraz Municipality.

Research Literature

As an essential and sensitive tool for planning government operations and activities, the budgeting system has undergone significant stages of development, becoming a complex technical and financial system (Namazi and Kamali, 2013). Budgeting and management accounting information systems are control tools that rely on each other as two sides of a scale (Adebayo and Lotta, 2006). Generally, information from the management accounting system is used to make decisions regarding resource allocation between operating units in budgeting (Chow et al., 1988).

The management accounting information system is a flexible system designed to meet management information needs in alignment with management goals (Hansen and Mowen, 2007). The structure and content of reports prepared by the management accounting information system may vary from one organization to another for this purpose (Wijaya et al., 2015). Choe's (2004) research also supports this claim, as he found differences in the content of management accounting information between Australian and Korean organizations.

In management literature, managers' main duties typically involve planning, organizing, leading, monitoring, and controlling. Decision-making is foundational to all managerial duties, with its importance in management equated to decision-making itself. Access to comprehensive, accurate, and timely information is crucial for successful decision-making (Ghanbari et al., 2012). Namazi (2013) states that management accounting is an information system that collects, records, classifies, and summarizes financial and non-financial information for internal decision-makers, particularly management, for tasks like budgeting, planning, control, and economic decisions.

Changing business conditions have influenced managers' approaches to planning and controlling organizational activities. The accounting information system is part of the management information system, with management accounting responsible for meeting managers' information needs for planning and control (Hilton, 1997). Managers rely on management accounting information for planning and controlling

the organization, requiring abundant and high-quality information (Hilton, 1997). Some researchers believe that the majority of information needed for decision-making in organizations is accounting information (Dastgir et al., 2012). The information provided by the management accounting information system may include financial information, production (product or service), employees, and marketing (Riahi-Belkaoui, 2002). Therefore, the role of management accounting information systems in organizations is crucial (Vijaya et al., 2015). Participation plays a significant role in the functioning of management accounting information systems, as managers' accounting information systems should serve as a control tool with the involvement of people and managers (Tsui, 2001).

To enhance the qualitative aspects of information, accountants must establish a solid accounting system. If the accounting system is not a reliable source of information, the data it produces will not be useful. Management accountants must consider the organization's goals to create an optimal system, which may include maximizing production or service provision, increasing market share, minimizing costs, enhancing services and public welfare, and promoting social responsibility (Namazi, 2013).

According to Busch (2002), new techniques and strategic management accounting information systems can help reduce an organization's budget problems. Information asymmetry among representatives can lead to conflicts of interest and potential budget issues in environments where such asymmetry exists (Libby, 2003). Information asymmetry is identified as one of the internal factors that can impact an organization's budget (Fisher et al., 2002). In public sector organizations like metropolitan municipalities, information asymmetry among managers at different levels is more likely due to their larger size compared to private sector companies. Thus, the strategic accounting information system is a factor that can influence information asymmetry levels within an organization and subsequently affect its budget problems, as supported by Daumoser et al. (2016). One strategic management accounting information system is the organization's budgeting system.

Operational budgeting systems in Shiraz Municipality are likely to undergo changes due to information asymmetry for two reasons. Firstly, the accounting basis is shifting from adjusted cash to an accrual basis. Accrual accounting provides more comprehensive and detailed information compared to cash accounting (Biswas et al., 2015; Sabouri, 2016). Secondly, the use of costing systems helps determine more precise information about the cost of goods and services provided (Namazi, 1987 and 1988). Transitioning from the traditional budgeting system to the operational budgeting system, part of the strategic management accounting information system, is expected to mitigate the organization's budgetary problems by reducing information asymmetry. Therefore, it is anticipated that information from the management accounting information system will be integrated into the budgeting model in Shiraz Municipality.

Organizations typically use budgets as tools for communication, planning, motivation, and performance evaluation (Gallani et al., 2015). The balanced scorecard system, proposed as a powerful strategy tool in recent years, is part of the strategic management accounting information system, aiding in overcoming obstacles to strategy implementation. Balanced scorecards evaluate an organization's performance from four perspectives: financial, customer, inter-organizational processes, learning and growth, creating a balance between them. Municipalities can establish strategic goals in various aspects to enhance revenues, customer satisfaction, productivity, and service quality.

Currently, performance evaluation in Shiraz Municipality focuses on meeting legal requirements and achieving municipal evaluation goals. Internal evaluations are conducted on an ad-hoc basis, scattered across different departments, lacking an integrated system for evaluating the municipality's performance. The implementation of operational budgeting since 2013 in Shiraz Municipality requires fundamental

changes in management information systems, accounting systems, and overall management style. It is expected that the implementation of operational budgeting has led to significant changes in the strategic management accounting information system of Shiraz Municipality and its subgroups in recent years, enabling managers to utilize this information for budget performance evaluation.

Research indicates that information from management accounting systems is crucial for improving hospital performance (Hamid et al., 2010). The structure and content of reports prepared by management accounting information systems vary across organizations. Studies show differences in management accounting information content between Australian and Korean organizations. Management accounting control systems have been shown to reduce budget surpluses in high work uncertainty conditions. The interactive effect of budget participation and management accounting systems on manager performance differs between Western and Chinese managers. Studies in hospital settings reveal a positive relationship between budget motivation, attitude, and performance in public hospitals. Information asymmetry creates an environment conducive to increasing budget slack (Faria and Silva, 2013).

In Italy, research results have shown that participatory budgeting does not affect the use of management accounting information. Commitment to budget goals cannot directly affect budget performance, but commitment to budget goals can influence budget performance through the use of management accounting budget information (Masinati and Rizzo, 2014). Recent research evidence from Wang et al. (2018) has shown that investment in information technology in the health sector improves the financial performance and productivity of hospitals. Additionally, there is evidence of the importance of the qualitative characteristics of accounting information in hospitals regarding the adoption of information systems (Handayani et al., 2017).

Based on the literature presented above, the hypotheses of this research are as follows:

First hypothesis: The information in Shiraz municipality's accounting system possesses the necessary qualitative characteristics for the budgeting system as perceived by managers at various levels.

Second hypothesis: The accounting system and its information have a significant impact on the budgeting model of Shiraz municipality according to managers at different levels.

Third hypothesis: The accounting system and its information play a significant role in assessing the budget performance of Shiraz municipality from the perspective of managers at various levels.

Research method

This research is applied research that utilizes a survey method. To gather research texts and literature, library studies were conducted using Persian and Latin books, theses, specialized publications, and electronic databases. The most common methods of data collection in the survey research method are personal interviews and the use of questionnaires. In this research, the questionnaire method was utilized for data collection. Initially, a briefing session was held with each respondent to explain the importance of the research and its concepts before answering the questionnaire. Due to the large sample size, the data distribution follows the normal distribution, and the research hypotheses were tested using the "one-sample t-test and one-way ANOVA at a confidence level of 95%".

The statistical population of this research includes all managers of Shiraz municipality in 2017. The sample size is equal to the entire statistical population, therefore, no sample or sampling method was used. 230 questionnaires were distributed among the members of the statistical community, with 202 collected and 186 deemed appropriate after follow-up by the researcher.

To evaluate the usage of information by Shiraz municipality administrators, a questionnaire designed

by the researcher was employed. This questionnaire consists of three dimensions and 31 questions. The first dimension evaluates the quality features of the system with 11 questions. The second dimension assesses the role of the management accounting system in the budgeting model with 4 questions. The third dimension evaluates the role of the management accounting system in budget performance with 16 questions covering financial aspects, customers, learning and growth, and internal processes, each with 4 questions. A seven-option Likert scale with scores from 7 to 1 was used in the questionnaire, which also includes five general questions about respondents' gender, age, education level, management level, and work history.

The validity and reliability of the measurement tool were also examined. Table 1 displays the results of Cronbach's alpha test for the reliability of the measurement tool, indicating good reliability. Expert professors' opinions were sought to make minor changes in the questionnaires, ensuring content and face validity.

Table 1: result of Cronbach's alpha

Questions related to:…	Cronbach's alpha
Strategic management accounting system	0.971
Qualitative features of the system	0.906
Role of the management accounting system in the budgeting model	0.937
Role of the management accounting system in evaluating budget performance	0.958
Financial aspect	0.958
Customer aspect	0.961
Learning and growth ratio	0.934

Findings

In the first part of the questionnaire, five general questions related to the personal characteristics of the respondents were asked. These questions included gender, age, level of education, organizational level (management level), and work experience. The results obtained from the descriptive analysis of these questions are reflected in Table 2.

Table 2: General Information of Questionnaire

Questions:		frequency
Gender	Female	27.2
	Men	72.8
	Total	100
Age	x<30	11.3
	30<x<40	35.4
	41<x<50	38.7
	x>50	14.6
	100	100
Education	diploma	4.1
	College	9.6
	Bachelor	38.3
	Master	41.6
	Ph.D.	6.4
	100	100
Organization Level	Senior Level	14.3
	Mid-level	29.9
	Operational level	55.8
	Total	100
Work Experience	x<5	10.8
	5<x<10	40.4
	11<x<20	36.4
	x>20	12.4
	Total	100

The results obtained from the descriptive analysis of the general questions of the questionnaire show that out of the 186 respondents, 72.8% are men and the remaining are women. Examining the age of the respondents reveals that 11.3% are under 30 years old, 35.4% are between 30 and 40 years old, 38.7% are between 41 and 50 years old, and only 14.6% are over 50 years old. The analysis of education level shows that 86.3% of respondents have a bachelor's degree or higher. In terms of job roles, 14.3% are senior managers, 29.9% are middle managers, and 55.8% are operational managers. Work experience indicates that 10.8% have less than 5 years, 40.4% have between 5 and 10 years, 36.4% have between 11 and 20 years, and 12.4% have over 20 years of experience.

Table 3 displays the descriptive statistics of the research variables, including minimum and maximum scores, mean and standard deviation, as well as the

results of the "one-sample t-test" to examine the research hypotheses across all management levels. The significance level of the t-statistic in Table 3 indicates the significance of the difference between the average responses of individuals and the test value (number 4) for all research variables at all management levels, except for customer aspects and learning and growth aspects. This suggests that the role of the management accounting system in evaluating budget performance is significant. The average and standard deviation statistics for qualitative characteristics, budgeting model, and budget performance evaluation show that these dimensions in the Shiraz municipal are above average but still below the maximum level (number 7). Financial aspects and intra-organizational processes also show higher than average results but have room for improvement towards the maximum level. Despite the lack of significance in the learning and growth aspect, the average statistics for this indicator suggest that it is below average in the Shiraz municipality.

Table 4 displays the descriptive statistics of the research variables, including the mean and standard deviation, as well as the results of the one-sample t-test to examine the research hypotheses at different management levels. Based on the information in Table 4, the significance level of the t-statistic indicates the importance of the difference between the average responses of respondents and the value of the test item (number 4) in most of the research variables at various management levels. Specifically, the individual results for each level - senior, middle, and operational - for all variables, except the role of the management accounting system in evaluating budget performance, mirror the findings listed in Table 3.

At the senior and operational levels, the role of the management accounting system in evaluating budget performance is not deemed significant. This suggests that at these two management levels, there is no distinguishable variance in the utilization of information from the management accounting system to evaluate budget performance at the average level (number 4).

A one-way ANOVA was conducted to examine differences in research variables among managers with varying levels of management. The results in Table 5 reveal that the only significant difference among senior, middle, and operational managers is in the intra-organizational processes aspect of evaluating budget performance, with a p-value below 0.05. The statistical power for this variable shows acceptable accuracy (maximum power being 1).

Additionally, Table 5 shows no significant differences in the qualitative characteristics of the system, the role of the management accounting system in budgeting, financial aspects, customer aspects, and learning and growth aspects (employees). The management accounting system plays a crucial role in evaluating budget performance and management accounting information systems.

Table 3: The result of one sample t-test at all management levels

Variables		t-statistics				Min
		Test value=4	Standard deviation	Mean	Maximum	
Qualitative features of the system		12.534 (0.0005)	1.25	4.55	6.91	1
Role of the management accounting system in the budgeting model		19.394 (0.005)	1.43	4.97	7	1
Role of the management accounting system in evaluating budget performance	Financial aspect	5.794 (0.0005)	1.37	4.28	6.75	1
	Customer aspect	0.569 (0.570)	1.45	4.03	7	1
	Learning and growth	-0.822 (0.411)	1.39	3.96	7	1
	The internal organization process aspect	7.264 (0.0005)	1.23	4.31	7	1
	Total point	3.847 (0.001)	1.19	4.14	6.69	1
Total		7.165 (0.0005)	1.07	4.27	6.77	1

Table 4: The result of one sample t-test at different management levels

Management Level	Operational			Middle management			Senior management		
Variables	**mean**	**Standard deviation**	**t-statistics**	**mean**	**Standard deviation**	**t-statistics**	**mean**	**Standard deviation**	**t-statistics**
Qualitative features of the system	4.47	1.30	7.723 (0.0005)	4.63	1.21	8.179 (0.0005)	4.68	1.13	6.529 (0.0005)
Role of the management accounting system in the budgeting model	4.87	1.49	12.432 (0.0005)	5.06	1.34	12.407 (0.0005)	5.18	1.36	9.412 (0.0005)
Financial aspect	4.2	1.42	2.952 (0.003)	4.42	1.30	5.086 (0.0005)	4.29	1.29	2.419 (0.017)
Customer aspect	3.98	1.53	-0.230 (0.818)	4.13	1.28	1.655 (0.099)	3.98	1.44	-0.128 (0.898)
Learning and growth	3.92	1.42	-1.149 (0.251)	4.03	1.36	0.413 (0.680)	3.94	1.38	-0.450 (0.653)
The internal organization process aspect	4.21	1.26	3.523 (0.0005)	4.44	1.09	6.280 (0.0005)	4.45	1.33	3.688 (0.0005)
Role of the management accounting system in evaluating budget performance	4.08	1.24	1.347 (0.179)	4.26	1.07	3.766 (0.0005)	4.17	1.2	-1.117 (0.266)
Management accounting information system	4.19	1.10	3.627 (0.0005)	4.38	0.98	6.067 (0.0005)	4.34	1.08	3.435 (0.001)

Table 5: Summary of a One-Way ANOVA for Investigating the Value of Research Variables between Management with Different Management Levels

Variable	source	Sum of squares	Degree of freedom	Mean square	F	P	Statistical power	Effect size
Qualitative features of the system	group	780.13	2	390.06	2.05	0.129	0.423	0.005
Role of management accounting system in budgeting model	group	195.29	2	97.64	2.997	0.051	0.582	0.007
Financial aspect	group	132.92	2	66.46	2.215	0.110	0.453	0.005
Customer aspect	group	63.106	2	31.55	0.942	0.390	0.214	0.002
Learning and growth aspect	group	32.68	2	16.34	0.525	0.592	0.137	0.001
The internal organization process aspect	group	177.38	2	88.69	3.694	0.025	0.679	0.009
Role of the management accounting system in evaluating the budget	group	1339.16	2	669.58	1.862	0.156	0.389	0.005
performance Management accounting information system	group	5656.37	2	2828.18	2.321	0.099	0.471	0.006

Conclusion

In today's complex world, managers require information to effectively oversee their organization's operations. Whether in public or private settings, managers must establish and adhere to a budget for their organization. The Shiraz municipality, as a prominent public sector entity, also needs to establish and operate within a budget. To achieve this, the managers of the municipality rely on information from the management accounting system. The efficiency of this system in budgeting can significantly impact the organization's overall budget efficiency. This study aims to explore the impact of utilizing management accounting system information in the budgeting process by managers at Shiraz municipality.

The results indicate that while there are slight variations in managers' beliefs regarding the qualitative role and importance of management accounting information in budgeting, these differences are significant. Therefore, the first and second

hypotheses of the research are supported. The quality and importance of the management accounting system at Shiraz municipality are rated above average, but there is room for improvement towards optimal levels. Managers should focus on enhancing this system through strategies like training programs to leverage management accounting information for better budget outcomes. Particularly, there is room for improvement in utilizing this information to evaluate customer aspects and employee development.

Further analysis reveal

s no significant differences in the views of senior, middle, and operational managers regarding the role and importance of management accounting information in budgeting. However, the importance of this information in the balanced evaluation of the budget varies across dimensions, with financial aspects and intra-organizational processes being significant. This contradicts expectations, as senior managers were anticipated to utilize this information more extensively. This could be attributed to the technical nature of using management accounting information in budgeting, often delegated to operational and middle managers. Additionally, political influences and lack of necessary infrastructure or training may hinder senior managers from fully leveraging this information.

It is recommended that Shiraz municipality managers emphasize the role of the management accounting system in budgeting, especially in terms of budget performance, through training initiatives. Establishing management accounting units at various organizational levels and hiring experts in the field can also enhance the utilization of management accounting information. The findings of this study contribute to the existing knowledge on

management accounting in the public sector, emphasizing its qualitative role in budgeting and performance evaluation based on the balanced scorecard system.

Overall, the study aligns with previous research both in Iran and internationally, highlighting the importance of investing in information systems for organizational financial performance and productivity.

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