

## **Effectiveness and Efficiency: the Influence of Ministerial Staff Satisfaction in Timor-Leste**

### **Miranda Goretti da Costa Soares**

Master's in Accounting at the Institute Of Business (IOB): Dili, TL.  
Address: Rua Roberto Sampaio Gonzaga - Trindade, CSE/UFSC, Florianópolis - SC, CEP: 88040-900.  
Professor at the Faculty of Economics and Business, Institute of Business (IOB), Timor-Leste.  
E-mail: soaresmiranda952016@gmail.com  
ORCID: <https://orcid.org/0009-0005-6929-6625>

### **Rosana Santos de Oliveira**

Master's in Accounting at the **Federal** University of Santa Catarina (UFSC).  
Address: Rua Roberto Sampaio Gonzaga - Trindade, CSE/UFSC, Florianópolis - SC, CEP: 88040-900.  
E-mail: oliveiraufsc2021@gmail.com  
ORCID: <https://orcid.org/0000-0001-9413-2394>

### **Carlos Eduardo Facin Lavarda**

PhD in Accounting from the University of Valencia.  
Professor in the Department of Accounting Sciences in the Undergraduate and Graduate Programs at the Federal University of Santa Catarina (UFSC).  
Address: Rua Roberto Sampaio Gonzaga - Trindade, CSE/UFSC, Florianópolis - SC, CEP: 88040-900.  
E-mail: elavarda@gmail.com  
ORCID: <https://orcid.org/0000-0003-1498-7881>

## **Abstract**

The study analyzed the influence of intrinsic and extrinsic job satisfaction on the effectiveness and efficiency of managerial performance within the budgetary context of ministerial employees in Timor-Leste. A sample of 119 employees from various ministries in Timor-Leste contributed empirical evidence. Partial Least Squares Structural Equation Modeling (PLS-SEM) and Importance-Performance Map Analysis (IPMA) were used, in addition to descriptive statistics of the variables. The main results suggest that the relationship between intrinsic job satisfaction and managerial performance, in terms of effectiveness and efficiency, was not statistically significant. In contrast, extrinsic job satisfaction showed a positive and significant relationship with both effectiveness and efficiency. Additionally, IPMA analysis revealed that intrinsic satisfaction is indispensable for achieving higher performance in terms of effectiveness and efficiency. This finding reinforces the importance of organizational strategies that promote appreciation of experience and individual recognition in the workplace. From a theoretical perspective, this study broadens our understanding of how job satisfaction dimensions influence managerial performance in governmental contexts of emerging economies, a scarcely explored area. The study's conclusions may guide policies and practices aimed at improving the effectiveness and efficiency of public management in Timor-Leste.

*Submitted on January 20, 2025, and accepted on October 22, 2025, by Anderson Betti Frare after the double-blind review process.*

*This work was previously presented at the 10th UnB Accounting & Governance Conference (UnBAGC) and the 6th UnB Conference of Scientific Initiation.*

**Keywords:** Timor-Leste; Job Satisfaction; Managerial Performance; Intrinsic Job Satisfaction; Extrinsic Job Satisfaction.

### **Practical Implications**

For public managers, the results indicate that efforts should be directed towards the extrinsic satisfaction to enhance managerial performance. Adopting strategies that promote rewards, recognition, good working conditions, and security can increase effectiveness and efficiency. Prioritizing these factors allows managers to optimize resources and processes, strengthen employee well-being, and improve public management and service quality.

## **1. Introduction**

A favorable work environment is fundamental to promoting behaviors that align with organizational objectives. It encourages well-being and stimulates attitudes that contribute to job satisfaction, thereby strengthening them (Pancasila et al., 2020; Soares et al., 2025). Job satisfaction is defined as individuals' attitudes toward internal and external work environment factors (Saha & Kumar, 2018; Warr et al., 1979). It is influenced by various facets ranging from personal characteristics to organizational context elements that directly or indirectly impact individuals' productivity and performance (Gazi et al., 2022).

According to Warr et al. (1979), job satisfaction has two dimensions: intrinsic and extrinsic. The first dimension is associated with internal job elements, such as working conditions and autonomy in performing tasks. The second dimension involves external factors, such as opportunities to use skills and job stability (Soares et al., 2025; Warr et al., 1979).

When individuals are satisfied with their work environment, they tend to perform better in their activities (Bayangkari et al., 2024; Ratnasari et al., 2020). Managerial performance is a notable type of performance and comprises two dimensions: effectiveness, referring to the achievement of organizational objectives through proper task execution and plan fulfillment, and efficiency, concerning the rational use of budgetary resources to achieve these objectives at the lowest possible cost (Soares et al., 2025; Verasvera, 2016).

Organizational literature emphasizes the importance of satisfied individuals in the workplace (Bayangkari et al., 2024; Pancasil et al., 2020), and empirical studies indicate a positive and significant correlation between job satisfaction and performance (Aung et al., 2023; Gazi et al., 2022; McGuigan et al., 2016; Obiunu & Yalaju, 2020; Pancasil et al., 2020). Studies in various contexts confirm this relationship: McGuigan et al. (2016) studied retail employees in Ireland; Obiunu and Yalaju (2020) analyzed the oil and gas sector in Nigeria, considering emotional intelligence and interpersonal communication; Pancasil et al. (2020) examined a coal mining company in Indonesia, investigating motivation and leadership; Gazi et al. (2022) evaluated the sugar industry in Bangladesh; and Aung et al. (2023) investigated construction in Yangon, Myanmar, analyzing demotivational management practices.

Despite these studies, the dimensions of job satisfaction that influence managerial performance, particularly in terms of effectiveness and efficiency, remain unclear, highlighting a gap in the literature. Thus, the present study aimed to analyze the influence of intrinsic and extrinsic job satisfaction on the effectiveness and efficiency of managerial performance within the budgetary context of ministerial staff in Timor-Leste. To this end, a survey was conducted with 119 employees.

The public administration in Timor-Leste is divided into several ministries, each with specific responsibilities. These include the Ministry of Health, the Ministry of Petroleum and Mineral Resources, the Ministry of Public Works, and the Ministry of Finance. These ministries play a crucial role in implementing public policies, providing services to the population, and promoting the country's socioeconomic development (Caeiro et al., 2023). High-quality

management requires Ministries to have trained, qualified, and satisfied staff, which results in superior performance in public administration (Caeiro et al., 2023; Soares et al., 2025).

This research contributes to the literature by providing new empirical evidence on the influence of intrinsic and extrinsic job satisfaction on managerial performance (effectiveness and efficiency). Furthermore, by addressing the little-explored geographical and cultural context of Timor-Leste, it broadens the understanding of how different factors of job satisfaction affect the managerial performance of civil servants in emerging and developing economies.

This study contributes to public management literature by emphasizing the importance of promoting intrinsic and extrinsic job satisfaction in the workplace. Its conclusions can guide policies and practices aimed at enhancing managerial performance and increasing management's effectiveness and efficiency. These policies and practices can ensure that resources are used optimally and transparently, contributing to more effective public services. In addition, creating more satisfying work environments can result in greater professional and personal satisfaction, promoting a fairer and more balanced work environment.

For society, the research aims to improve managerial performance and increase the effectiveness and efficiency of the Ministries' management and, consequently, the quality of services provided to the population. Improved job satisfaction can result in more effective budget execution, ensuring the optimization and transparency of resource use. These improvements can promote better working conditions and well-being for all in Timor-Leste, positively impacting the country's social and economic development.

## **2. Theoretical framework and research hypotheses**

Job satisfaction is widely studied in the field of organizational behavior, as pointed out by Aung et al. (2023). It is characterized as a positive emotional state resulting from the evaluation of work or professional experiences (Locke, 1969; Aung et al., 2023). It also stems from the discrepancy between a person's expectations, needs, or values regarding work and what the work actually offers (Heslop et al., 2002; Soares et al., 2025). Satisfied individuals tend to show greater productivity and willingness to collaborate, which directly contributes to the achievement of organizational goals and the continuous improvement of internal processes (Hemsworth et al., 2024; Oliveira & Lavarda, 2024).

The effort individuals put into their work activities is directly related to job satisfaction (Oliveira & Lavarda, 2024). When individuals are not satisfied, they tend to avoid extra effort and do not strive to perform their tasks in the best possible way (Indarti et al., 2017).

Job satisfaction can be understood in two dimensions: intrinsic and extrinsic (Warr et al., 1979). Intrinsic satisfaction stems from internal job factors, such as the physical conditions of the environment, freedom to choose task methods, relationships with colleagues, recognition for good performance, support from the immediate supervisor, assigned responsibilities, and compensation (Warr et al., 1979). Extrinsic satisfaction refers to external factors, such as the opportunity to use skills, quality of relationships between managers and employees, possibilities for promotion, management of the organization, consideration of employee suggestions, working hours, diversity of tasks, and job security (Warr et al., 1979).

For an individual to be satisfied at work, intrinsic factors must be observed (Warr et al., 1979). Organizations can use these factors to prioritize strategies that increase employee satisfaction, such as improving working conditions, ensuring fair compensation, offering career development opportunities, and promoting a positive organizational culture (Hemsworth et al., 2024). These strategies contribute to greater managerial performance.

Managerial performance relates to the results of activities and is evaluated based on budget usage, considering both quantity and quality (Verasvera, 2016). In a study of Indonesian government officials, Verasvera (2016) suggests ways to measure managerial performance,

emphasizing two dimensions: effectiveness and efficiency. Effectiveness refers to executing each agency's activities to achieve optimal performance with minimal budgetary resources. Programs, policies, and activities are evaluated according to established plans (Soares et al., 2025; Verasvera, 2016). The performance plan functions as a commitment to allocate resources efficiently (Verasvera, 2016; Yuhertiana & Fatun, 2020).

Efficiency, on the other hand, considers the expected levels of achievement and adjusts the budgetary performance plan according to the strategic plan (Verasvera, 2016; Yuhertiana & Fatun, 2020). It involves using budgetary information properly to implement activities, programs, and policies according to needs and priorities, ensuring that resources are applied appropriately (Verasvera, 2016; Yuhertiana & Fatun, 2020).

Studies have demonstrated a positive and significant correlation between job satisfaction and performance (McGuigan et al., 2016; Obiunu & Yalaju, 2020; Gazi et al., 2022; Aung et al., 2023). McGuigan et al. (2016) first identified this relationship among trade workers in Ireland. Later, Obiunu and Yalaju (2020) investigated employees in the oil and gas sector in Nigeria, and Gazi et al. (2022) analyzed sugar industry workers in Bangladesh. Aung et al. (2023) also found this association among construction workers in Myanmar. Although these studies did not specifically address the dimension of intrinsic job satisfaction or managerial performance (effectiveness and efficiency), their findings provide theoretical and empirical support for the proposal of this research, filling existing gaps in the literature.

Based on these studies, it is proposed that higher levels of intrinsic satisfaction are associated with greater managerial performance in terms of effectiveness and efficiency among ministerial employees in Timor-Leste. These employees are more aligned with the Ministries' objectives, achieving desired results more consistently and contributing to effectiveness (Verasvera, 2016; Yuhertiana & Fatun, 2020). At the same time, satisfied employees, who find meaning and challenges in their tasks, tend to be more productive, which improves efficiency (Verasvera, 2016; Yuhertiana & Fatun, 2020). Thus, the first hypothesis is formulated:

**H<sub>1</sub>:** Intrinsic job satisfaction has a positive influence on effectiveness (H<sub>1a</sub>) and efficiency (H<sub>1b</sub>).

In addition to intrinsic factors, extrinsic factors can also exert a relevant influence, as they involve elements external to the job, such as promotion, recognition, stability, and opportunities for professional growth (Oliveira & Lavarda, 2024; Warr et al., 1979). When these aspects are perceived positively by individuals, there tends to be an increase in well-being, which contributes to the improvement of managerial performance (Verasvera, 2016; Warr et al., 1979).

Previous studies have shown a positive relationship between job satisfaction and performance (Pancasila et al., 2020; Islam et al., 2022; Bayangkari et al., 2024). Pancasila et al. (2020) demonstrated that job satisfaction positively influences the performance of employees in a coal mining company in Indonesia. Islam et al. (2022) found that job satisfaction significantly affects the performance of employees in commercial banks in Bangladesh. Bayangkari et al. (2024) observed that job satisfaction has a direct and significant effect on the performance of teachers in Indonesia.

Despite this evidence, a gap remains in the literature regarding how extrinsic job satisfaction influences the effectiveness and efficiency of managerial performance among ministerial employees in Timor-Leste. This study aimed to provide new empirical evidence on variables capable of producing results that are more consistent with the reality of the field of study.

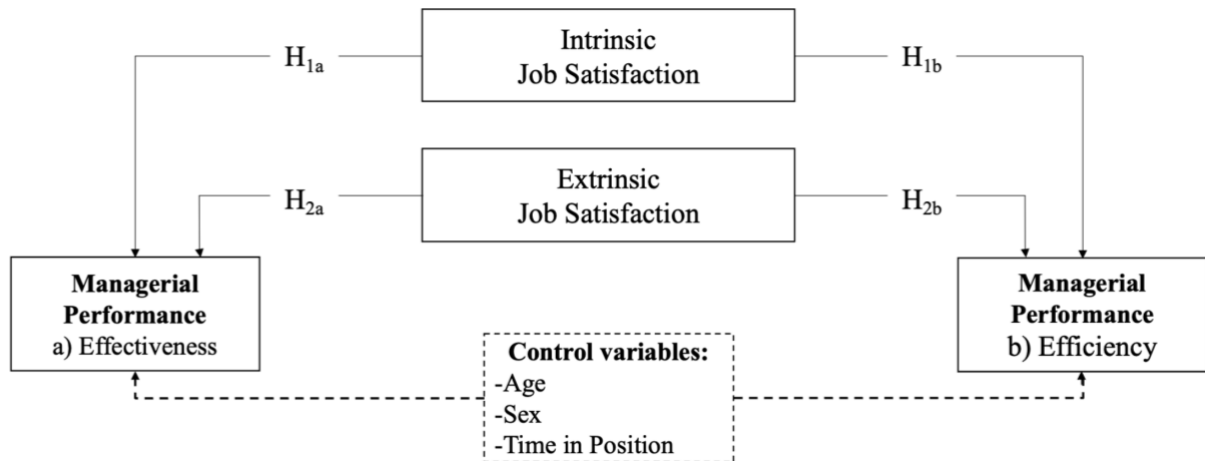
In the context of public administration, it is assumed that satisfaction and performance depend on the nature of the tasks, as well as the conditions and external factors provided by institutions. Considering these factors is essential for planning policies and practices that aim

to improve extrinsic job satisfaction, which can positively impact effectiveness and efficiency. Thus, the second hypothesis of this study is as follows:

**H<sub>2</sub>:** Extrinsic job satisfaction has a positive influence on effectiveness (H<sub>2a</sub>) and efficiency (H<sub>2b</sub>).

Figure 1 shows the theoretical model of the study, which is based on the proposed hypotheses.

**Figure 1**  
*Theoretical model*



In addition to the hypotheses, control variables — sex, age, and time in position — were included to determine if these individual characteristics are related to effectiveness and efficiency.

### 3. Methodology

#### 3.1 Participants and Procedures

A survey was conducted with civil servants from Ministries in Timor-Leste. This sample was chosen due to the accessibility of the participants and the importance of their roles in public administration and the implementation of government policies. Ministry civil servants are responsible for carrying out essential tasks that directly impact the effectiveness and efficiency of government operations (Caeiro et al., 2023; Soares et al., 2025). Furthermore, their knowledge of the internal structures and processes of the Ministries makes them indispensable sources of information on public management in Timor-Leste.

Before data collection could begin, an authorization letter had to be sent to clarify the purpose of the research and the ethical issues involved, such as guaranteeing the anonymity and confidentiality of the participants, obtaining informed consent, and ensuring that participation was voluntary. A total of 135 management-level employees received the request letter.

Data were collected in person and via printed forms from 27 December 2023 to 27 February 2024. Staff from several ministerial units were involved, including the Ministry of Health, Ministry of Petroleum and Mineral Resources, Ministry of Public Works, Ministry of Finance, Ministry of Youth, Sports, Arts and Culture, Ministry of Agriculture and Fisheries, Ministry of Higher Education, Science and Culture, and Ministry of Rural Development and Community Housing. One researcher was assigned to this task. At the end of the process, 119 valid responses were recorded, resulting in an 88.15% response rate.

#### 3.2 Variables and Measurements

All measures were evaluated using a five-point Likert scale. Job satisfaction was measured on a scale ranging from “completely dissatisfied” to “completely satisfied,” while managerial performance was measured on a scale ranging from “strongly disagree” to “strongly agree.” Table 1 presents the relevant information.

**Table 1**  
*Research Constructs and Variables*

Constructs	Variables	Items	References
<b>Job Satisfaction</b>	<u>Intrinsic Job Satisfaction (IJS)</u>	7	Warr et al. (1979); adapted version by
	Extrinsic Job Satisfaction (EJS)	8	Saha and Kumar (2018).
<b>Managerial Performance</b>	<u>Effectiveness (EF)</u>	4	Verasvera (2016); adapted version by
	Efficiency (EFI)	4	Yuhertiana and Fatun (2020).

The job satisfaction construct comprises 15 items, initially developed based on the study by Warr et al. (1979) and later adapted by Saha and Kumar (2018). The instrument was adjusted for the present study based on the adaptations made by Saha and Kumar (2018). The managerial performance construct comprises eight items originally developed by Vera (2016) and used in the version adapted by Yuhertiana and Fatun (2020). The latter had already validated the instrument in the context of public servants, making it suitable for the present research.

The control variables - age, sex, and time in position - were measured as follows: sex was categorized on a binary scale, where 0 represented female and 1 represented male. Age and time in position were expressed in years as continuous variables. These variables were included in the study because individual characteristics can influence organizational decisions and results. Similar studies adopted this type of approach, such as the study by Oliveira and Lavarda (2024).

The instruments were translated into Tetum, the native language. Initially, the instruments were translated from English (job satisfaction) and Indonesian (managerial performance) into Portuguese. The translated versions underwent a pretest with three doctoral students and a professor of management accounting. After making the necessary adjustments, a researcher from Timor-Leste carried out the translation into the native language. Appendix A contains the questionnaire with the relevant changes and adaptations.

### 3. 3 Data Analysis Procedures

Before beginning the data analysis, the completed questionnaires were transcribed from printed format into an Excel spreadsheet. The responses were coded for later import into the analysis software (SPSS and SmartPLS). Descriptive statistics of the variables were performed using SPSS software in the data analysis stage. SmartPLS software was used for hypothesis analysis (Ringle et al., 2022).

In SmartPLS, partial least squares structural equation modeling (PLS-SEM) and Importance-Performance Map Analysis (IPMA) were used. PLS-SEM consists of two stages: the measurement model and the structural model. Due to its effectiveness in understanding the relationships between various constructs, PLS-SEM has been highlighted in research in the areas of social and behavioral sciences (Nitzl, 2018).

In addition, an IPMA analysis was performed in SmartPLS to assess the importance and performance of the constructs in the model. These two analyses were fundamental for a broader discussion of the research results, providing a clearer understanding of the relationships between the variables.

## 4. Presentation of results

### 4.1 Sample Profile

Regarding the sex of the respondents, 74 were male, 42 were female, and three preferred not to answer. The age range was from 25 to 55 years old, with an average of 38 years old. In terms of academic background, 107 respondents held a teaching degree, 9 had a master's degree, and 3 held a bachelor's degree. Of the positions held in the ministry, 55 respondents worked as managers, 34 as department heads, 23 as directors, 3 as ministers, 3 as officers, and 1 as a controller. The length of service in these positions ranged from 1 to 20 years, with an average of 5 years.

Their main activities include executing the budget plan for program and activity allocation, monitoring departmental budgets for activity execution, and managing administration and finance. They are responsible for the Ministry's plan and budget. They also monitor and generate plans, ensure departmental activities, lead and coordinate activities, and ensure the proper implementation of policies and guidelines established by the government or higher administration. Their responsibilities also include procurement and contracts, preparing the service budget based on previously approved activity plans and programs, and executing it in accordance with the principles of legality and economicity. Finally, available resources are organized in the most efficient way possible to achieve the expected goals while minimizing expenses for the Ministry.

## 4.2 Descriptive Statistics

Table 2 presents the descriptive statistics of the study variables, providing an analysis of the participants' behavior and characteristics. Notably, when observing intrinsic job satisfaction, the average scores for the statements were greater than 3. Statements IJS3 and IJS4 stand out with average scores of 4.09 and 4.01, respectively. These results suggest that a significant portion of the staff in the sample population is satisfied with their work colleagues and the recognition they receive for their performance. These are fundamental elements for promoting intrinsic job satisfaction (Warr et al., 1979).

The descriptive statistics for extrinsic job satisfaction also show that the average scores were greater than 3. Statements EJS6 and EJS7 stand out, with averages of 4.18 and 4.03, respectively. These results suggest that a significant proportion of the sample is satisfied with their work schedule and the variety of activities in their professional responsibilities (Warr et al., 1979). These factors are crucial for increasing extrinsic job satisfaction.

In the descriptive statistics of effectiveness, the averages also exceeded 3. Statement EF4 stood out with an average of 4.06. These results suggest that most employees in the sample perceive the performance plan as a commitment to adequate resource provision in public management (Verasvera, 2016).

**Table 2**  
*Descriptive statistics*

Statements	N	Minimum	Maximum	Mean	Standard deviation	Variance
Intrinsic Job Satisfaction (IJS)						
IJS1	119	1	5	3.80	.839	.705
IJS2	119	2	5	3.85	.721	.519
IJS3	119	1	5	4.09	.823	.678
IJS4	119	1	5	4.01	.776	.602
IJS5	119	1	5	3.94	.795	.632
IJS6	119	1	5	3.95	.862	.743
IJS7	119	1	5	3.79	.919	.845
Extrinsic Job Satisfaction (EJS)						
EJS1	119	1	5	3.98	.813	.661
EJS2	119	1	5	3.96	.838	.702
EJS3	119	1	5	3.75	.826	.682
EJS4	119	2	5	3.81	.751	.564

EJS5	119	2	5	3.86	.795	.632
EJS6	119	3	5	4.18	.759	.576
EJS7	119	2	5	4.03	.780	.609
EJS8	119	1	5	3.95	.862	.743
Effectiveness (EF)						
EF1	119	2	5	3.84	.883	.779
EF2	119	2	5	4.04	.848	.719
EF3	119	1	5	3.91	.930	.864
EF4	119	2	5	4.06	.847	.717
Efficiency (EFI)						
EFI1	119	2	5	4.03	.802	.643
EFI2	119	2	5	4.24	.792	.627
EFI3	119	2	5	3.97	.848	.720
EFI4	119	2	5	4.05	.862	.743

Regarding efficiency, the averages exceed 3, with an emphasis on statements EFI2 and EFI4, which have averages of 4.24 and 4.05, respectively. These results suggest that most of the staff in the sample manage efficiently by adjusting the budgetary performance plan according to the strategic plan. Additionally, all activities, programs, and policies are implemented based on needs and priorities to create effectiveness (Verasvera, 2016).

Based on the descriptive statistics, a significant portion of staff in the Ministries in Timor-Leste demonstrate high levels of intrinsic and extrinsic job satisfaction, as well as effectiveness and efficiency. These results underscore the importance of fostering a positive work environment and offer insights for enhancing management and performance. Understanding the perceptions and experiences of employees better enables the development of strategies that optimize the functioning of the Ministries and promote quality public service in Timor-Leste.

#### 4.3 Structural Equation Modeling – PLS-SEM

In the PLS-SEM, the initial phase is the measurement model, which is shown in Tables 3 and 4. For this study, three statements had to be excluded: two from intrinsic job satisfaction (IJS3 and IJS7) and one from extrinsic job satisfaction (EJS1). Excluding these statements was essential to increase the Average Variance Extracted (AVE) values, as recommended by the literature (Hair et al., 2019).

To ensure data quality, reliability was assessed using Cronbach's alpha, composite reliability, and rho\_A. All indices were greater than 0.70 (Hair et al., 2019), indicating internal consistency (Panel A). Additionally, convergent validity was confirmed through AVE with indices above 0.50 (Hair et al., 2019), which reinforces the robustness and precision of the analyzed results (Table 3).

**Table 3.** Measurement model.

**Panel A. Reliability and Validity**

	<b>A</b>	<b>CR</b>	<b>rho A</b>	<b>AVE</b>
Effectiveness	0.744	0.786	0.837	0.565
Efficiency	0.786	0.833	0.859	0.604
Extrinsic Job Satisfaction	0.833	0.845	0.874	0.501
Intrinsic Job Satisfaction	0.754	0.782	0.831	0.501

**Panel B. Discriminant Validity – Fornell-Lacker Criterion**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>1. Effectiveness</b>	<b>0.751</b>			
<b>2. Efficiency</b>	0.741	<b>0.778</b>		
<b>3. Extrinsic Job Satisfaction</b>	0.506	0.474	<b>0.736</b>	
<b>4. Intrinsic Job Satisfaction</b>	0.406	0.402	0.674	<b>0.707</b>



**Panel C. Variance Inflation Factors (VIF)**

	<b>Effectiveness</b>	<b>Efficiency</b>
Extrinsic Job Satisfaction	1.989	1.989
Intrinsic Job Satisfaction	1.965	1.965

Cronbach's Alpha ( $\alpha$ ), Composite Reliability (CR), Average Variance Extracted (AVE).

Discriminant validity was verified using the Fornell-Lacker criterion, which assesses whether the square roots of the AVEs of each construct are greater than their correlations with other constructs (Fornell & Larcker, 1981). This criterion was met, which further reinforces the quality and reliability of the analyzed results (Panel B).

To ensure the absence of multicollinearity among the latent variables, an analysis of Variance Inflation Factors (VIF) was conducted. The results recommend that the VIF values be less than 5, with an ideal value being less than 3 (Hair et al., 2019). The analysis results, presented in Panel C (Table 3), showed that all VIF values were less than 2, indicating the absence of multicollinearity among the study variables. These findings allow us to proceed to the next stage: analyzing the structural model (Table 4).

**Table 4**  
*Structural model*

**Panel D. Hypothesis testing**

<b>Hypothesis</b>	<b><math>\beta</math></b>	<b>Mean</b>	<b>T statistics</b>	<b>P-values</b>	<b>Decision</b>
H <sub>1a</sub> IJS $\rightarrow$ EF	0.129	0.148	1.067	0.286	Reject
H <sub>1b</sub> IJS $\rightarrow$ EFI	0.181	0.205	1.619	0.106	Reject
H <sub>2a</sub> EJS $\rightarrow$ EF	0.389	0.389	3.278	0.001***	Confirm
H <sub>2b</sub> EJS $\rightarrow$ EFI	0.319	0.314	2.797	0.005***	Confirm

**Panel E. Control Variable Testing**

	<b><math>\beta</math></b>	<b>Mean</b>	<b>T statistics</b>	<b>P-values</b>
Age $\rightarrow$ Effectiveness	0.043	0.041	0.452	0.651
Age $\rightarrow$ Efficiency	0.057	0.055	0.525	0.600
Sex $\rightarrow$ Effectiveness	0.227	0.215	1.347	0.178
Sex $\rightarrow$ Efficiency	0.217	0.217	1.305	0.192
Time in Position $\rightarrow$ Effectiveness	0.152	0.155	1.574	0.116
Time in Position $\rightarrow$ Efficiency	0.129	0.130	1.273	0.203

\*\*\* $p < 0.01$ . Intrinsic Job Satisfaction (IJS); Effectiveness (EF); Efficiency (EFI); Extrinsic Job Satisfaction (EJS).  $R^2 = 0.302$ , adjusted  $R^2 = 0.271$ , and  $Q^2 = 0.212$  of effectiveness;  $R^2 = 0.266$ , adjusted  $R^2 = 0.234$ , and  $Q^2 = 0.168$  of efficiency.

The hypothesis tests are presented in Table 4 (Panel D). As can be seen, the hypotheses predicting positive, significant relationships between intrinsic job satisfaction and effectiveness (H<sub>1a</sub>) and efficiency (H<sub>1b</sub>) were not statistically significant. However, the hypotheses suggesting a positive and significant relationship between extrinsic job satisfaction and effectiveness (H<sub>2a</sub>) ( $\beta = 0.389$ ;  $p < 0.01$ ) and efficiency (H<sub>2b</sub>) ( $\beta = 0.319$ ;  $p < 0.01$ ) were confirmed. Regarding the control variables - age, sex, and time in position - in effectiveness and efficiency (Panel E), there was no statistical support in the sample of staff from the Ministries of Timor-Leste.

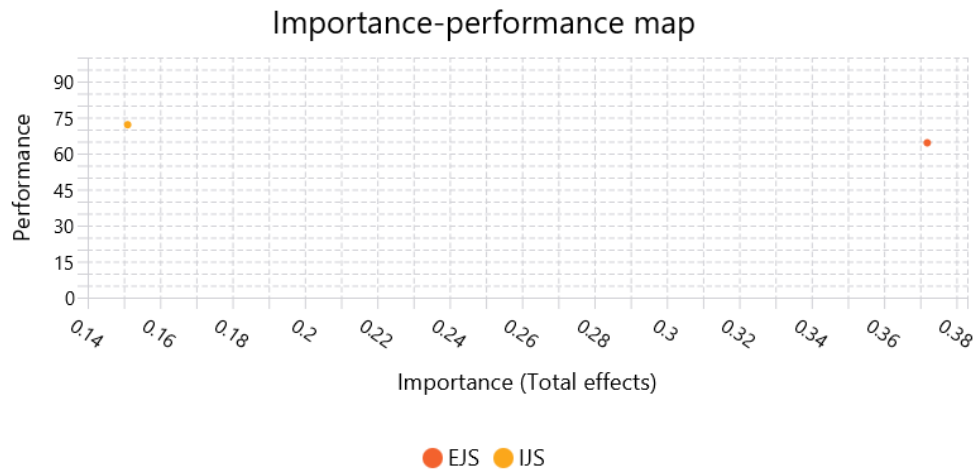
In addition, we considered Pearson's coefficient of determination ( $R^2$ ) and predictive relevance, as assessed by the Stone-Geisser indicator ( $Q^2$ ). These are essential elements to ensure the validation and accuracy of the path model (Hair et al., 2019). The  $R^2$  coefficient, which indicates the explanatory power of the model, was analyzed. According to Cohen (1988),  $R^2$  can be classified as small (2%), medium (13%), or large (26%). In this study, the  $R^2$  values for effectiveness (30.2%) and efficiency (26.6%) indicate considerable explanatory power. Moreover, the predictive relevance of the endogenous variables was evaluated using the Stone-Geisser indicator ( $Q^2$ ), which yielded positive values for all variables (Hair et al., 2019).

#### 4.4 Importance-Performance Map Analysis (IPMA)

In the IPMA for the effectiveness variable (Figure 2), extrinsic job satisfaction ( $\beta=0.372$ ) is identified as the most significant factor contributing to effectiveness. This finding supports the acceptance of H<sub>2a</sub>. Thus, factors such as relationships between Ministry unit managers and employees, chances of promotion, management style, attention to suggestions, working hours, task diversity, and job security (Saha & Kumar, 2018; Warr et al., 1979) are important for staff in the sample to feel greater extrinsic job satisfaction, which results in greater effectiveness in management performance.

**Figure 2**

*Importance-Performance Map (Effectiveness)*

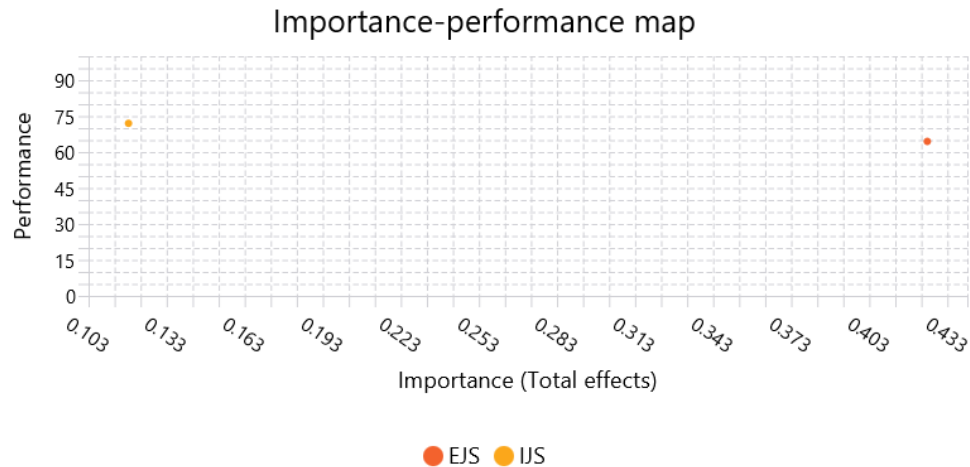


To achieve the highest performance (Figure 2), intrinsic job satisfaction (71.994) must be present in the management of Ministries. Although H<sub>1a</sub> was not significant, this analysis indicates that intrinsic job satisfaction is key to effectiveness.

Figure 3 shows that extrinsic job satisfaction emerges as a significant predictor of greater importance attributed to efficiency by the sample ( $\beta = 0.426$ ). This result also supports the hypothesis of a direct relationship (H<sub>2b</sub>). To show higher performance, sample employees must have intrinsic job satisfaction (71.994), driven by favorable physical working conditions, freedom to choose work methods, recognition, relationships with superiors, responsibility, and remuneration (Saha & Kumar, 2018; Warr et al., 1979).

**Figure 3**

*Importance-Performance Map (Efficiency)*



Although the hypothesis that intrinsic job satisfaction influences efficiency was not statistically significant, the analysis shows that this factor should be considered in the management of Ministries to improve managerial performance.

#### 4.5 Discussion of Results

The statistical results showed that Hypotheses  $H_{1a}$  and  $H_{1b}$ , which predicted a positive, significant relationship between intrinsic satisfaction and effectiveness, as well as between intrinsic satisfaction and efficiency, were not supported. These results contradict previous studies, such as those by Aung et al. (2023), Gazi et al. (2022), and Obiunu and Yalaju (2020), which demonstrated that job satisfaction improves performance.

For ministerial staff in Timor-Leste, it is important to consider the complexity of the relationship between intrinsic satisfaction and effectiveness ( $H_{1a}$ ). While job satisfaction can positively influence performance, as previous studies have shown (McGuigan et al., 2016; Obiunu & Yalaju, 2020), it is crucial to foster healthy and fulfilling work environments for all employees, regardless of their position.

Intrinsic job satisfaction stems from factors such as adequate physical conditions, recognition, quality leadership, assigned responsibilities, and remuneration (Soares et al., 2025; Warr et al., 1979). However, these intrinsic factors were insufficient to foster greater effectiveness in public management performance. This lack of influence may be related to the fact that the analyzed managers hold lifetime job positions, which tends to reduce the impact of these elements on well-being in the management context.

Regarding hypothesis ( $H_{1b}$ ), we found no significant relationship between intrinsic satisfaction and efficiency, suggesting that the stable and possibly less competitive nature of the positions may reduce the importance of intrinsic satisfaction for efficient performance. This result indicates that management policies for this context should be reassessed. Therefore, Ministries should develop more dynamic people management policies that include professional development programs and greater team integration to strengthen the influence of intrinsic satisfaction on the effectiveness and efficiency of public management.

Although hypotheses  $H_{1a}$  and  $H_{1b}$  were rejected, IPMA indicates that intrinsic job satisfaction tends to have the greatest impact on effectiveness and efficiency. This result aligns with previous studies that indicate that job satisfaction fosters performance (McGuigan et al., 2016; Obiunu & Yalaju, 2020; Gazi et al., 2022; Aung et al., 2023), demonstrating that it is a determinant in the managerial performance of ministerial employees in Timor-Leste. These findings corroborate Hemsworth et al. (2024), who recognize the importance of job satisfaction in achieving organizational goals. In the context of the analyzed sample, job satisfaction contributes to better public management.

Hypotheses H<sub>2a</sub> and H<sub>2b</sub>, which posit a positive, significant relationship between extrinsic satisfaction and effectiveness, as well as between extrinsic satisfaction and efficiency, were accepted. These results align with those of similar studies demonstrating a positive relationship between job satisfaction and performance (Bayangkari et al., 2024; Islam et al., 2022; Pancasilla et al., 2020; McGuigan et al., 2016). These results suggest that extrinsic job satisfaction is a more decisive factor in the effectiveness and efficiency of a large portion of the employees of the Ministries of Timor-Leste than intrinsic satisfaction.

In hypothesis H<sub>2a</sub>, which demonstrated the positive influence of extrinsic satisfaction on effectiveness, this finding highlights the importance of factors that promote staff satisfaction, such as the possibility of applying their skills, promotion opportunities, participation in the Ministry's management, and consideration of their suggestions (Saha & Kumar, 2018; Warr et al., 1979), contributing to higher managerial performance in the appropriate use of public resources in Timor-Leste. This allows all activities, programs, and policies to be evaluated considering cost-efficiency criteria, reinforcing effectiveness in public management.

Hypothesis H<sub>2b</sub> predicted the positive influence of extrinsic satisfaction on efficiency, and was confirmed. This satisfaction directly impacts management performance, considering the budget and expected levels of achievement (Verasvera, 2016; Yuhertiana & Fatun, 2020). This highlights the relevance of extrinsic job satisfaction in optimizing the allocation of management resources in public administration in Timor-Leste.

The IPMA results reinforce the importance of extrinsic satisfaction in staff performance effectiveness and efficiency (H<sub>2a</sub> and H<sub>2b</sub>), a finding consistent with previous studies showing that job satisfaction fosters performance (Pancasila et al., 2020; Islam et al., 2022; Bayangkari et al., 2024). These findings suggest that extrinsic factors are essential for achieving better results in public management, promoting well-being at work, and enabling the implementation of programs, activities, and policies for society with greater efficiency and credibility.

The analysis of control variables — age, sex, and time in position — in relation to effectiveness and efficiency revealed no significant influence of individual characteristics on managerial performance. This study raised this issue due to several factors that could interfere with this relationship. Regarding age, one would expect the maturity acquired over time to influence performance (Oliveira & Lavarda, 2024). Sex could reflect homogeneity in the management of ministries (Oliveira & Lavarda, 2024). Time in position would verify whether experience has a greater impact on performance (Oliveira & Lavarda, 2024). These findings suggest that these individual aspects do not affect performance in the sample, which is important for the proper functioning of Ministries and consequently impacts the provision of public services to the population of Timor-Leste.

Therefore, the results highlight the importance of promoting intrinsic and extrinsic satisfaction in Ministries to improve employee performance in budgetary resource management. While extrinsic satisfaction directly influences effectiveness and efficiency, intrinsic satisfaction is also important for creating a satisfactory work environment under internal conditions. Ministry managers in Timor-Leste should consider both dimensions of job satisfaction when developing management strategies to enhance performance and the quality of public service delivery.

## **5. Final considerations**

This study examined the influence of intrinsic and extrinsic job satisfaction on the effectiveness and efficiency of managerial performance within the budgetary context of ministerial staff in Timor-Leste. The analysis of collected data revealed that intrinsic job satisfaction was not significantly related to these dimensions of managerial performance. However, extrinsic job satisfaction demonstrated a positive and significant relationship with employee effectiveness and efficiency. These results highlight that public managers can

develop more aligned strategies to improve managerial performance by considering extrinsic factors of job satisfaction. These strategies promote a work environment that satisfies employees and contributes to better performance in public administration. Therefore, this study shows that policies that appreciate extrinsic factors are critical to optimizing the effectiveness and efficiency of public management.

The implications for theory and public management are evident when we note the direct association between extrinsic job satisfaction and managerial performance. In this context, public managers are encouraged to develop clear promotion policies and implement management practices that value feedback and diverse tasks. These measures can increase the effectiveness, efficiency, and quality of performance in public service. Additionally, intrinsic factors such as working conditions, relationships with other employees, and recognition for work performed should be considered.

The study has some limitations that should be considered. First, the research was conducted only with public servants from a few Ministries in Timor-Leste, which may limit the generalizability of the results to other public or private institutions. Besides that, the use of a self-administered questionnaire may introduce response biases, such as social desirability bias, wherein participants respond in a way that makes them appear more favorable.

Future research could expand the scope of this study by including a broader sample of public employees from different levels of government and regions of Timor-Leste. This would validate and generalize the findings to other cultural and regional contexts. Additionally, exploring other dimensions of job satisfaction, such as satisfaction related to work-life balance and other types of behavioral variables, would be beneficial. Another recommendation is conducting longitudinal studies to observe changes over time and identify causal relationships. Qualitative research methods, such as interviews and focus groups, could complement quantitative data and provide a deeper understanding of public servants' perceptions and experiences.

### Acknowledgments

The authors acknowledge the financial support provided by government agencies: the Foundation for Research and Innovation of the State of Santa Catarina (FAPESC), the National Council for Scientific and Technological Development (CNPq), and the Human Capital Development Fund (FDCH) – Timor-Leste.

### References

- Aung, Z. M., Santoso, D. S., & Dodanwala, T. C. (2023). Effects of demotivational managerial practices on job satisfaction and job performance: Empirical evidence from Myanmar's construction industry. *Journal of Engineering and Technology Management*, 67, 101730. <https://doi.org/10.1016/j.jengtecman.2022.101730>
- Bayangkari, A., Agung, A. G., Yudana, M., & Widiana, I. W. (2024). The Influence of Servant Leadership on Job Satisfaction and Impact on Teacher Performance of Junior High School in the Central Lombok District. *International Journal of Religion*, 5(4), 1–10. <https://doi.org/10.61707/yfefnq32>
- Caeiro, C. B. M., Avianti, I., Koeswayo, P. S., & Tanzil, N. D. (2023). Determinants of budget planning and its implications for managerial performance. *Journal of Southwest Jiaotong University*, 58(2).
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. New York: Psychology Press.
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39. <https://doi.org/10.2307/3151312>

- Gazi, Md. A. I., Islam, Md. A., Shaturaev, J., & Dhar, B. K. (2022). Effects of Job Satisfaction on Job Performance of Sugar Industrial Workers: Empirical Evidence from Bangladesh. *Sustainability*, 14(21), 14156. <https://doi.org/10.3390/su142114156>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hemsworth, D., Muterera, J., Khorakian, A., & Garcia-Rivera, B. R. (2024). Exploring the Theory of Employee Planned Behavior: Job Satisfaction as a Key to Organizational Performance. *Psychological Reports*. <https://doi.org/10.1177/00332941241252784>
- Heslop, P., Davey Smith, G., Metcalfe, C., Macleod, J., & Hart, C. (2002). Change in job satisfaction, and its association with self-reported stress, cardiovascular risk factors and mortality. *Social Science & Medicine*, 54(10), 1589–1599. [https://doi.org/10.1016/S0277-9536\(01\)00138-1](https://doi.org/10.1016/S0277-9536(01)00138-1)
- Indarti, S., Solimun, Fernandes, A. A. R., & Hakim, W. (2017). The effect of OCB in relationship between personality, organizational commitment, and job satisfaction on performance. *Journal of Management Development*, 36(10), 1283–1293. <https://doi.org/10.1108/JMD-11-2016-0250>
- Islam, K. M. A., Karim, Md. M., Islam, S., Haque, Md. S., & Sultana, T. (2022). Exploring the effect of job satisfaction, employee empowerment, and emotional intelligence on bank employee performance: A study on commercial banks in Bangladesh. *Banks and Bank Systems*, 17(3), 158–166. [https://doi.org/10.21511/bbs.17\(3\).2022.13](https://doi.org/10.21511/bbs.17(3).2022.13)
- Locke, E. A. (1969). What is job satisfaction? *Organizational Behavior and Human Performance*, 4(4), 309–336. [https://doi.org/10.1016/0030-5073\(69\)90013-0](https://doi.org/10.1016/0030-5073(69)90013-0)
- McGuigan, C. J., McGuigan, K., & Mallett, J. (2016). Re-examining the job satisfaction–job performance link: a study among Irish retail employees. *The Irish Journal of Psychology*, 36(1–4), 12–22. <https://doi.org/10.1080/03033910.2016.1138874>
- Nitzl, C. (2018). *Management Accounting and Partial Least Squares-Structural Equation Modelling (PLS-SEM): Some Illustrative Examples* (pp. 211–229). [https://doi.org/10.1007/978-3-319-71691-6\\_7](https://doi.org/10.1007/978-3-319-71691-6_7)
- Obiunu, J. J., & Yalaju, J. O. (2020). Influence of Emotional Intelligence, Interpersonal Communication and Job Satisfaction on the Job Performance of Staff in Chevron Nigeria Limited, Warri, Delta State Nigeria. *Academic Journal of Interdisciplinary Studies*, 9(4), 160. <https://doi.org/10.36941/ajis-2020-0070>
- Oliveira, R. S. de, & Lavarda, C. E. F. (2024). Influência da percepção da justiça organizacional no engajamento no trabalho: interveniência da satisfação no trabalho. *Sociedade, Contabilidade e Gestão*, 19(3), 85-105.
- Pancasila, I., Haryono, S., & Sulisty, B. A. (2020). Effects of Work Motivation and Leadership toward Work Satisfaction and Employee Performance: Evidence from Indonesia. *The Journal of Asian Finance, Economics and Business*, 7(6), 387–397. <https://doi.org/10.13106/jafeb.2020.vol7.no6.387>
- Ratnasari, S. L., Sutjahjo, G., & Adam. (2020). The effect of job satisfaction, organizational culture, and leadership on employee performance. *Annals of Tropical Medicine and Public Health*, 23(13). <https://doi.org/10.36295/ASRO.2020.231329>
- Ringle, C. M., Wende, S., & Becker, J.-M. (2022). "SmartPLS 4." Oststeinbek: SmartPLS GmbH, <http://www.smartpls.com>
- Saha, S., & Kumar, S. P. (2018). Organizational culture as a moderator between affective commitment and job satisfaction. *International Journal of Public Sector Management*, 31(2), 184–206. <https://doi.org/10.1108/IJPSM-03-2017-0078>
- Soares, M. G. C., Oliveira, R. S. de, Lavarda, C. E. F., Cortereal, J. T. M., & Mendes, A. C. A. (2025). Determinantes do orçamento baseado em desempenho e seu efeito na eficácia e

- eficiência de gestores do setor público. *Revista de Contabilidade e Organizações*, 19. <http://dx.doi.org/10.11606/issn.1982-6486.rco.2025.233211>
- Verasvera, F. A. (2016). Pengaruh anggaran berbasis kinerja terhadap kinerja aparatur pemerintah daerah (studi kasus pada Dinas Sosial Provinsi Jawa Barat) [O efeito de orçamentos baseados em desempenho sobre o desempenho do aparato do governo local (estudo de caso sobre o Serviço Social Provincial de Java Ocidental)]. *Jurnal Manajemen Maranatha*, 15(2).
- Warr, P., Cook, J., & Wall, T. (1979). Scales for the measurement of some work attitudes and aspects of psychological well-being. *Journal of Occupational Psychology*, 52(2), 129–148. <https://doi.org/10.1111/j.2044-8325.1979.tb00448.x>
- Yuhertiana, I., & Fatun, F. (2020). Performance-based budgeting in public sector and managerial performance with leadership as moderating variable. *International Journal of Service Management and Sustainability*, 5(1), 177-204.

## **APPENDIX A**

### ***Research Instrument***

---

#### **Block A. Job Satisfaction**

Using the following scale, indicate your level of job satisfaction: 1 (completely dissatisfied), 2 (dissatisfied), 3 (neutral), 4 (satisfied), and 5 (completely satisfied).

---

#### **Intrinsic Job Satisfaction**

---

1. With the physical working conditions.
  2. With the freedom to choose your own work method.
  3. With your work colleagues.
  4. With the recognition received for good work.
  5. With your immediate supervisor.
  6. With the amount of responsibility assigned to you.
  7. With your remuneration.
- 

#### **Extrinsic Job Satisfaction**

---

1. With the opportunity to use your skills.
  2. With the relationships between the managers of the Ministry units and the interaction with the employees.
  3. With your chance of promotion.
  4. With the way the organization is managed.
  5. With the attention given to the suggestions you make.
  6. With your work schedule.
  7. With the variety of your work.
  8. Job security.
- 

#### **Block B. Managerial Performance**

Using the following scale, evaluate the alignment of the activities performed with the effective use of the budget in terms of quantity and quality: 1 (strongly disagree), 2 (partially disagree), 3 (neutral), 4 (partially agree), and 5 (strongly agree).

---

#### **Effectiveness**

---

1. When carrying out the activities of each department in the Cabinet, the aim is to provide optimal performance with minimal budget use.
  2. The budget is used by each sector according to the plans that have been prepared.
  3. All activities, programs, and policies are evaluated considering cost efficiency.
  4. The performance plan is used as a commitment to provide resources efficiently.
- 

#### **Efficiency**

---

1. The budget considered expected levels of achievement (results).
  2. The budgetary performance plan is adjusted according to the strategic plan.
  3. The budget in the Cabinet provided the necessary performance information for effective budget implementation.
  4. All activities, programs, and policies are implemented according to needs and priorities to ensure effectiveness.
-