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The Effect of Interactive Performance Measurement System and Participatory Budgeting on Job Challenge and Their Impact on Managerial Performance

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Abstract

This research was conducted on State-Owned Enterprises in Indonesia. This study aims to determine the relationship between interactive performance measurement systems, participatory budgeting and managerial performance, as well as how the role of job challenges on other variables. By using primary data. Purposive sampling is used to determine the sample. The sample used in this study was 37 middle-level managers in SOEs in Indonesian. The analytical method used is the partial least squares structural equation modeling (PLS-SEM) method with SmartPLS. The results showed that the interactive performance measurement system and participatory budgeting had a significant positive effect on managerial performance either directly or indirectly mediated by job challenges.

Keywords
interactive performance measurement systems; job challenge; managerial performance; parcipatory budgeting; state-owned entreprise

I. Introduction

The existence of State-Owned Enterprises (SOEs) in Indonesia has a major role in achieving state revenue and is one of the pillars of the country's economy. SOEs in their management are expected to increase efficiency in productivity to support Indonesia's economic development by providing welfare to the people through the control of the production sector that controls the survival of many people. But in recent years there are still many state-owned companies or state-owned enterprises that think that the company's performance is not good. This can be seen in the last 3 years, namely 2017–2019 (https://bumn.go.id/investor/finance) SOEs experienced an increase in income but the recorded net profit decreased, seeing these symptoms it can be concluded that there is waste in terms of costs so that there is in effectiveness and efficiency of management in managing costs so that the recorded income is increasing and even eroded by a greater increase in costs so that the targeted profit cannot be achieved. Various efforts have been made by the government to increase the income of rural communities.One of the thing that can be seen from the real actionof the meaning of developing villages is the support of the central government, through cross- ministerial efforts to provide space for the developmentof the village potential (Anggraeni & Pitoyo, 2020)

Apart from the aspect of effectiveness and efficiency, there are also many changes in BUMN directors due to being involved in several cases. This is because the current focus of the strategic industry of SOEs has shifted to only temporary profits or short-term profits per period, thus triggering dysfunctional behavior from SOE managers. According to the explanation (Högman, 2011) states that interactive performance measurement systems have the function of changing individual behavior.

Previous research on interactive performance measurement systems has the result of being able to improve individual performance (Bisbe et al., 2007; K. M. Chong &

Mahama, 2014), but the results are contrary to research (Henri, 2006; Simons, 1995; Webster, 2006)suggesting that there is no direct relationship between the use of interactive performance measurement systems on individual performance. This inconsistency also occurs in the results of previous studies between participatory budgeting and performance and the relationship between these variables has problems that are still widely debated but not resolved (Derfuss, 2016). there is possible that psychological factors can mediate between participatory budgeting and performance (Lau, 2015). In research (Rahman et al., 2020; Zubir, 2016)explained that participatory budgeting has a positive influence on managerial performance while research (Iqbal Maulana, Henri Agustin, 2020; Melia & Sari, 2019)suggests that participatory budgeting does not affect managerial performance.

Based on inconsistent results between interactive performance measurement systems (IPMS) and participatory budgeting (PB) on managerial performance (MP), in this study, the researchers used the job challenge variable as a mediation between the interactive performance measurement system and participatory budgeting with managerial performance. The author uses the job challenge (JC) based on the explanation of (Locke et al., 1991) that the work challenges that are present on the employee's task will improve employee performance. Based on this, the question asked in this study is how the role of the job challenge is between interactive performance measurement systems, participatory budgeting, and managerial performance.

II. Review of Literature

One of the goals in measuring performance is to be able to provide an incentive for managers to make optimal intertemporal decisions (Abernethy et al., 2013). Based on this, the interactive performance measurement system, managers are able to acquire strategic information and participate in decision making (Yuliansyah, 2016; Yuliansyah & Khan, 2015; Yuliansyah & Razimi, 2015). According to the explanation (Adler & Chen, 2011), interactive performance measurement systems can be a tool to reduce interference in sending information among company members and in a psychological way can remind group members of a company. Every company always tries to maximize the benefits it gets. Various strategies are applied to achieve these goals. The company will always keep its performance looking good in the eyes of its stakeholders. But in reality, companies are often faced with various obstacles that can cause a decline in performance and even financial difficulties and eventually go bankrupt. And of course the company will try to cover up this unhealthy condition from its stakeholders. One of them is by way of earning management (Utami, in Sitanggang et al, 2020). (K. M. Chong & Mahama, 2014) have the view that the greater the use of interactive performance measurement will create an environment that can motivate group members to evaluate and discuss all decisions, then can increase the quality of decisions, focus on the keys to success, and be effective and efficient in the use available resources. Based on this, it is predicted that this interactive performance measurement system can improve managerial performance.

H1: IPMS has a positive effect on MP

Employees who consider their aspirations to be respected and have an influence on the budget made will have more consequences and moral responsibility to increase managerial performance in line with what is desired on the budget (Indriartoro & Supomo, 2002; Kung et al., 2013). With a good participatory budget, managerial performance can increase, because when the budget preparation made in a participatory way is accepted, the

management and employees under it will have a sense of individual responsibility to realize organizational goals because of their contribution to making it.

H2. PB has a positive effect on MP

Based on research (Henri, 2006) explains that when the performance measurement system is used interactively, the characteristics that arise are the presence of 2-way communication that is created between superiors and employees. The occurrence of this communication provides job satisfaction and also encourages self-improvement, creativity, and problems fixing abilities (Moulang, 2015) and will also provide motivation for company members in achieving their targets (Sakka et al., 2016). An interactive performance measurement system is believed to be able to help workers to find work challenges (Dahlan et al., 2019) and deal with them (Paul T.Y. Preenen et al., 2019).

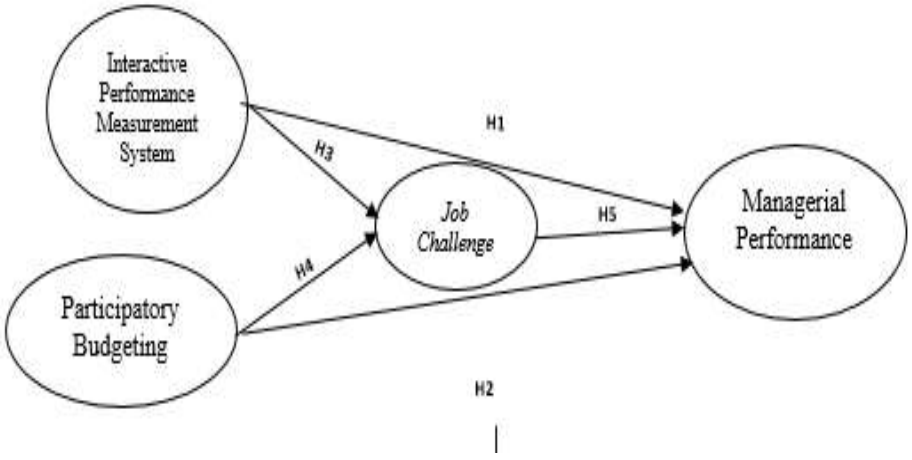
H3. IPMS has a positive effect on JC

Participatory budgeting is an interaction between company members so that there is an exchange of information in that area. With this contribution through ideas and suggestions, this is where both employees and superiors will feel the job challenge. Work challenges will stimulate company members to try hard to complete their work (Van den Broeck, A., De Cuyper, N., De Witte, H., & Vansteenkiste, 2010). In participatory budgeting processes with task uncertainty conditions will increase motivation and work challenges (V. K. Chong et al., 2005).

H4. PB has a positive effect on JC

Behind the work seen by the company, members is a job challenge or job challenges have consequences that are beneficial for company members. Therefore, company members can receive benefits from carrying out challenging jobs (P.T.Y. Preenen, 2010). According to (Locke et al., 1991) proposed that the purpose of a job should be clear and challenging to improve employee performance. By carrying out challenging tasks, it is hoped that they can develop the insight and passion of their employees or managers.

H5. JC has a positive effect on MP



III. Research Methods

The type of research that the researcher uses is a quantitative approach using descriptive and verification analysis methods that aim to show systematic and factual facts and the relationship between variables that are traced by collecting data, processing, analyzing, interpreting in statistical tests. The population of this research is all state-owned enterprises in Indonesia as many as 115 SOEs. For sampling, the sampling technique used is purposive sampling. In this study, the researchers used data sources from primary data that focused on information obtained through the first party (Sekaran, U., & Bougie, 2016) namely middle managers because managers at this level are executors who are directly related to consumers and the allocation of available sources of funds. owned by the company (Wulandari, 2018). From 89 samples of state-owned enterprises, we got 37 respondents who can be used.

IV. Results and Discussion

The data analysis method in this study used the partial least squares structural equation modeling (PLS-SEM) method with SmartPLS. Researchers agree that smartPLS is considered appropriate for studies with non-normal data, small research samples (Ali et al., 2018; do Valle & Assaker, 2016; Richter et al., 2016). PLS-SEM analysis requires two sequential steps: a measurement model and a structural equation model. Full detailed information about respondents sample in table 1 .

Table 1. Respondent Sample

No.	Category	Frequency	Percentage
1	**Sex**		
	– Male	30	81,1%
	– Female	7	18,9%
2	**Education**		
	– Diploma-undergraduate (S1)	25	67,6%
	– Postgraduate (S2)	12	32,4%
3	**Unit**		
	– Finance/Accounting	14	37,8%
	– Production/Marketing/Core Business	23	62,2%
4	**Length of service**		
	– Less than 3 years	14	37,8%
	– 3 – 5 years	12	32,4%
	– More than 5 years	11	29,8%

4.1 Measurement Model Evaluation

To find out whether the indicators used to measure the four latent variables have a high degree of conformity, Cronbach's alpha (CA) and composite reliability (CR) calculations are performed to check reliability. According to (Hair, 2013; Hanseler, 2012)the composite reliability value between 0.70 to 0.90 is considered satisfactory. In the table 2 it can be seen that all variables have good reliability. Thus the reliability measurement model of this study is good. To test the validity, use convergent validity by

looking at the average variance extracted (AVE) value. A good AVE value has a value above 0.5. In the table below, it can be seen that all variables have an AVE value of more than 0.5.

Discriminant validity with Fornell–Larcker. Still according to (Hair, 2013) if the square root of the average variance extracted is smaller than the correlation value between latent variables, it indicates a discriminant validity problem. In the table 3, it can be seen that the square root of the average variance extracted (diagonal row) of each latent variable is still greater than its correlation value with other latent variables. Therefore, the criteria for discriminant validity have been met

Table 2. Factor Loading Cronbach's alpha (CA), Construct Reliability (CR) and Average Variance Extracted (AVE)

Variable	CA	CR	AVE
IPMS	0,794	0,857	0,547
PB	0,875	0,904	0,613
JC	0,798	0,859	0,550
MP	0,905	0,922	0,569

Table 3. Fornell-Larcker Criterion

Latent Variable	IPMS	PB	JC	MP
IPMS	**0,740**			
PB	0,144	**0,783**		
JC	0,559	0,431	**0,741**	
MP	0,548	0,569	0,705	**0,755**

4.2 Structural Model Evaluation

Structural model evaluation is used to test hypotheses using R2, t-statistics, and p-value. In the table 4 can be seen the results of testing the hypothesis.

H1. IPMS has a positive effect on MP

IPMS has a significant positive relationship with MP with a t-statistic value of 2.137> 1.96, with a significant level of 0.017 <0.05. Then H1 can be accepted.

The interactive performance measurement system has a significant positive relationship to managerial performance. So it can be said that SOEs that can implement a good interactive performance measurement system tend to have better managerial performance. This is because the interactive performance measurement system can encourage innovation and suggestions, as well as motivate company members to get opportunities related to company goals. These results strengthen the research of (K. M. Chong & Mahama, 2014; Erawati, 2014).

Table 4. Summary of Structural Model Test Results

Path	Coefficient	$t_{statisitcs}$	*p-value*	Adj.R^2	f^2	Q^2
IPMS -> JC	0,508	3,515	0,000	0,405	0,450	0,176
PB -> JC	0,358	2,650	0,004		0,224	
IPMS -> MP	0,275	2,137	0,017	0,601	0,140	0,328
PB -> MP	0,358	2,958	0,002		0,281	
JC -> MP	0,396	2,767	0,003		0,241	

H2. PB has a positive effect on MP

PB has a significant positive relationship with MP with a t-statistic value of 2.958> 1.96, with a significant level of 0.002 <0.05. Then H2 can be accepted.

Participatory budgeting has a significant positive relationship to managerial performance. So it can be said that SOEs that have higher participatory budgets tend to have better managerial performance. This is because managers who consider their aspirations to be respected and have an influence on the budget made will have more consequences and moral responsibility to increase managerial performance in line with what is desired in the budget. These results strengthen research from (Rahman et al., 2020; Zubir, 2016).

H3. IPMS has a positive effect on JC

IPMS has a significant positive relationship with JC with a t-statistic value of 3.515> 1.96, with a significant level of 0.000 <0.05. Then H3 can be accepted.

The interactive performance measurement system has a significant positive relationship with job challenges. The results of this study provide empirical evidence that SOEs that are better at implementing an interactive performance measurement system tend to have higher job challenges. This is because when the interactive performance measurement system is running, there will be two-way communication between superiors and subordinates. This communication will promote self-improvement, creativity, and problem-fixing abilities (Moulang, 2015) so that the interactive performance measurement system is believed to be able to help workers to find work challenges (Dahlan et al., 2019) and deal with them (Paul T.Y. Preenen et al., 2019). These results strengthen research from (Dahlan et al., 2019; Kanedy, 2017).

H4. PB has a positive effect on JC

PB has a significant positive relationship with JC with a t-statistic value of 2.650> 1.96, with a significant level of 0.004 <0.05. Then H4 is acceptable.

The participatory budget has a significant positive relationship to job challenges. (Sethi & Mittal, 2016) explains that individuals who participate in contributing to the organization will assume that work is considered important for self-esteem and has an emotional connection to the organization. With this contribution through ideas and suggestions, this is where both employees and superiors will feel the job challenge. Work challenges will stimulate company members to try hard to complete their work (Van den Broeck, A., De Cuyper, N., De Witte, H., & Vansteenkiste, 2010). So that participatory budgeting in conditions of task uncertainty will increase motivation and challenging work (V. K. Chong et al., 2005; Govindarajan, 1986).

H5. JC has a positive effect on MP

JC has a significant positive relationship with MP with a t-statistic value of 2.767> 1.96, with a significant level of 0.003 <0.05. Then H5 is acceptable.

Job challenge has a significant positive relationship to managerial performance. With the challenges of work, it is hoped that employees can try harder to be successful in dealing with them. According to (Locke et al., 1991) proposed that the purpose of a job should be clear and challenging to improve employee performance. By carrying out challenging tasks, it is expected to develop the insight and passion of the manager so that it will improve his performance. These results strengthen research from (Dahlan et al., 2020; Kanedy, 2017).

V. Conclusion

Based on this research, it can be concluded that the interactive performance measurement system and participatory budgeting have a significant positive effect on managerial performance, either directly or indirectly, mediated by job challenges. The existence of an interactive performance measurement system can encourage innovation and suggestions, as well as motivate company members to take advantage of opportunities related to company goals. In addition, with participatory budgeting, middle managers who are involved in the budget preparation process will increase their satisfaction at work related to work challenges and motivation, so that middle managers will feel responsible for each of their previously agreed-upon tasks. A good participatory budgeting process will reduce the occurrence of budget bias so that the results of the budget prepared are an illustration of the actual conditions in the field. Here there will be an increase in terms of work challenges received by managers so that they will motivate and be able to bring out their best potential so that performance will increase.

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