
Performance Measurement Information, Job Rotation, Role Stress, and Performance: An Investigation of Local Government

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Abstract:

We investigate performance measurement information (PMI) and role stress in local government using a Multivariate Analysis of Variance.

We find that role ambiguity for public service managers who receive both non-financial and financial PMI is lower than for those who receive either non-financial information only, or financial information only. Performance is significantly higher when role ambiguity is low.

Our results indicate that role ambiguity fully mediates the effects of PMI on performance, but there is no evidence that role conflict mediates those effects. Role ambiguity and role conflict do not mediate the association between job rotation and performance.

Keywords: *financial and non-financial performance information, job rotation, performance measurement, role stress.*

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1. Introduction

The performance of the public sector is a topic of increasing attention today (Coste and Tudor, 2013) to drive performance (Cavalluzzo and Ittner, 2004; Melkers and Willoughby, 2005; Moynihan and Pandey, 2010; Yuliansyah, Gurd, and Mohamed, 2017). Previous studies in the public sector explain how performance measurement improves the quality of decision making (Pattison and Samuels, 2002; Wang, 2002; Willoughby and Melkers, 2000). In addition, PMI can improve planning, budgeting, and communications (Kreklow, 2005; Bodnar and Hopwood, 2010). However, some studies indicate that PMI is still not much used in the public service (Andrews, 2004; Julnes and Holzer, 2001; Swindell and Kelly, 2000).

Julnes and Holzer (2001) suggest that performance measures are not used for decision-making, budget allocation, or monitoring programs. Another study showed that nearly 75% of organizations that collect performance data do not use it in decision making (Swindell and Kelly, 2000). Most governments can display PMI, but few governments use it (Andrews, 2004) despite the tremendous effort put into recording it (Moynihan and Pandey, 2010). Moynihan and Pandey (2010) show that these factors influence the use of PMI in local government: the public service ethos, the role of the leader, organizational culture, administrative flexibility, and the actual availability of the information.

Hall (2008) provides evidence that a comprehensive PMI system has a positive influence on managerial performance to be mediated by role clarity and psychological empowerment. Burney and Widener (2007) show that strategic performance measurement systems (SPMS) positively affect the performance of managers through the systems' relationships with job-relevant information and role ambiguity. Burney and Widener (2007) use goal setting theory and organizational theory as a basis for research. Goal setting theory posits that by having a specific purpose in a formalized SPMS, the workers become clear about what to do.

The fundamental function of the internal control system is to influence human behaviour (Carmichael, 1970; Yuliansyah, Bui and Mohamed, 2016). Internal control in this study includes job rotation and the provision of PMI. When an employee expects rotation, the report will be more accurate (Hertzberg, Liberti, and Paravisini, 2010). Job rotation done correctly positively influences performance (Giachetti, 2010; Choy *et al.*, 2011; Keisidou *et al.*, 2013) However, when the job rotation is short-term, then this can cause problems (Noe *et al.*, 2008).

We choose the public sector, especially local government, for two reasons. First, previous studies do not include the antecedent factors of management in their conceptual model (Kihn, 2010; Thalassinou and Pociovalisteanu, 2009). We propose Role Theory and Contingency Theory to explain the change in the work environment, namely: the job rotation, and in the IT, namely: PMI. Woods (2009) uses a contingency theory where appropriate control depends on the contextual

variables of information and communication technology as well as on the size of the organization. Woods (2009) tests his theory in the public sector because the contextual variables in different business sectors are associated with the public sector.

Kahn *et al.* (1964) suggest that role ambiguity and role conflict are triggered by these factors: personal, interpersonal, and organizational. PMI and job rotation are organizational factors. Rogers and Molnar (1976) explain that PMI is a form of accountability. Parasuraman and Alutto (1981) incorporate shift work as a stress factor in their model. Our use of job rotation as an antecedent variable follows Parasuraman and Alutto (1981) and Rogers and Molnar (1976).

Second, research on behavioural accounting and managerial accounting has not concentrated on the public sector (Kihn, 2010; Yuliansyah and Khan, 2017; Akopova and Przhedetskaya, 2016). Existing studies show mixed results. Choy *et al.* (2011) find a positive effect of job rotation on the performance of public sector organizations as a whole. However, Hill (2009) provides evidence that a change of manager often reduces the performance of individuals and of organizations. This suggests that although job rotation enhances the knowledge, skills and experience of the individual and the organisation, when carried out too fast it will have a negative effect on individual behaviour and therefore on overall performance.

Research on PMI itself is also not conclusive. In the business sector, Patelli (2007), Hall (2008) and Lau (2011) publish conflicting results. Patelli's results (2007) are consistent with the Dynamic Role Theory, which suggests that conflicting roles impair an individual's performance. Hall (2008), using contingency theory, demonstrates that a comprehensive PMI improves managerial performance, mediated by role ambiguity and psychological empowerment. Lau (2011) finds that non-financial measurements influence managerial performance through role ambiguity.

2. Literature Review and Hypothesis Development

2.1 Effect of PMI on Role Ambiguity and Role Conflict

PMI is widely used in the public service for management and decision planning, resource allocation decisions, and incentive schemes (Andrews, 2004). Public managers in local government must implement budgets, exercise authority, and take responsibility. PMI provides essential feedback. Without it, role ambiguity arises; there is no information at all or the information is confusing. The flow of work becomes uncoordinated. The chain of command is broken, and communication fails (Bamber, Snowball and Tubbs, 1989; Vasin *et al.*, 2017; Mikhailova *et al.*, 2017).

Burney and Widener (2007) describe a strategic PMI measuring both financial and non-financial results, reducing role ambiguity. Both Hall (2008), in

manufacturing, and Yuliansyah and Khan (2015), in the service industry, find that such a financial and non-financial PMI is significantly associated with role clarity, indeed, with clarity of both purpose and process. Kloot (1999) and Yuliansyah and Razimi (2015) suggests that the single measures of only financial performance limit the performance of an organization. That is, non-financial measures are equally important. Role theory suggests that the more complete the information received by executives, the more they will understand the decisions to be made. Therefore, the hypotheses in this study are:

H1a: Public managers who receive financial and non-financial PMI will have less role ambiguity than the public managers who receive the non-financial PMI only.

H1b: Public managers who receive financial and non-financial PMI will have less role ambiguity than the public managers who receive financial PMI only.

Burney and Swanson's (2010) research shows that non-financial performance measures are related to the job satisfaction of the manager. Lau (2011) clarifies the separate influences of the financial and non-financial measurements on role clarity. The non-financial measures affect manager performance significantly through role clarity (ambiguity). Lau (2011) says that the effect of a non-financial measurement is stronger than that of a financial measurement.

H1c: Public managers who receive only financial PMI will experience higher role ambiguity than the public managers who receive only the non-financial PMI.

Some scholars suggest that the performance measurement system can communicate organizational priorities (Chenhall, 2005; Simons, 2000; Yuliansyah *et al.*, 2017) and that performance information for each individual can increase understanding of their job (Hall, 2008; 2011). Patelli (2007) shows, consistent with the role dynamic theory, that when a person is under a variety of motivational pressures at the same time, then it can lead to role conflict.

PMI is a portrait of the organization or unit performance, and it should communicate to management at the top level the conditions of the units' underneath. It can synchronise all levels of management to organizational goals thereby decreasing conflict for managers working below.

Extensive use of performance indicators allows agents to identify aspects of their work that are important for the principal (Van Thiel and Leeuw, 2002). Financial measures in local government emphasize the efficiency of an activity, while the non-financial measures emphasize effectiveness. A person given both the financial and the non-financial PMI may feel that the complexity leads to role conflict. Role conflict occurs when a person perceives a discrepancy between the needs of the organisation and their own individual needs.

H1d: Public managers who receive financial and non-financial PMI will experience higher role conflict than the public managers who receive only non-financial PMI.

H1e: Public managers who receive financial and non-financial PMI will experience higher role conflict than the public managers who received only financial PMI.

Non-financial performance measures are closely associated with better managerial performance (Burney and Swanson, 2010; Lau, 2011). The non-financial measurements put more emphasis on the future and on long-term goals. Many people think, on the other hand, that financial measurements are outdated, too general, lacking focus, historical, and incomplete (Lau and Sholihin, 2005).

H1f: Public managers who receive financial PMI will experience higher role conflict than the public managers who receive non-financial PMI.

2.2 Effect of PMI on Performance

Kren (1992) shows a positive relationship between work-related information and managerial performance. Both financial and non-financial information is relevant to the job because it allows the results of past work to be used as a reference for making decisions. Burney and Widener (1997) and Kren (1992) define job-relevant information as only that information used for decision-making.

PMI contains performance indicators. In the preparation phase of the government budget, past performance indicators show the expected performance level, and at the later stage of execution and evaluation of the budget, current indicators assure the efficiency and effectiveness of a program (Wang, 2000). Role theory assumes that a person will fulfil their own behavioural expectations, and others' expectations also. PMI is a formal set of expectations. The more complete the information obtained, the better a public service manager will be at carrying out their role. Single performance measures are not sufficient, because public sector organizations have a variety of stakeholders with different goals, often in conflict (Propper and Wilson, 2003). Immediate financial measurements offer only a short-term perspective to managers who may then neglect the crucial processes that ensure the long-term health of the organization (Kaplan and Norton, 1992).

PMI contains at least two measurements that convey information and clarify strategies (Burney and Widener, 2007). The purpose is to motivate managers to act consistently with each other and with the organization's strategy (Kaplan and Norton, 1996). Kaplan & Norton introduce multidimensional perspectives. Comprehensive PMI is better in improving performance (Feltham and Xie, 1994; Propper and Wilson, 2003).

H2a: Performance of public managers who receive non-financial and financial PMI is higher than performance of public managers who receive only non-financial or financial PMI.

Curristine (2006) says that the majority of governments of countries that are members of the Organization for Economic Co-operation and Development (OECD) try to budget in terms of output and outcome. That is, attention has shifted to non-financial performance measurements of local government performance. Campbell (2008) research shows that promotion and demotion are sensitive to quality of service, a non-financial datum.

Several recent studies confirm that non-financial information is more powerful than financial information in predicating job outcomes (Burney and Swanson, 2010; Lau, 2011). Burney and Swanson (2010) provide evidence that non-financial performance measurements are related to job satisfaction. Individual job satisfaction has a strong correlation with the performance of the individual (Petty, McGee, and Cavender, 1984). Marginson *et al.* (2014) also find that interactive data of non-financial performance is very important in producing positive psychological experiences, and indirectly improving performance.

H2b: Performance of public managers who receive information of only non-financial performance is higher than the public managers who receive only financial information.

2.3 Effect of Job Rotation on Role Ambiguity and Role Conflict

Kahn *et al.* (1964) suggest that the three predictors of role stress are personal, interpersonal, and organizational factors. Job rotation is one of the organizational factors, namely changes in the work environment and the application of the principle of control. In role theory, different groups force different roles on the individual (Robbins and Judge, 2011). This means that in the event of job rotation, the role played by a manager will be different too. Morris (1956) finds that individuals who rotate jobs agree that the process gives them a better understanding of internal and external forces.

Job rotation occurs when an organization deliberately moves employees from one job to another to reduce boredom by giving them varied assignments (Giachetti, 2010). Displacement quantifies the extent of the changes in the work environment (Parasuraman and Alutto, 1981). A company that has a high staff turnover needs less job rotation if it is to increase productivity (Park, 2011).

Weinberg *et al.* (2010) explain that the horizontal rotation stimulates personal growth, increases self-confidence, and gets people fit and job-oriented. Parasuraman and Alutto (1981) incorporate contextual variables of job transfer (shift work) as antecedents of stress factors in the model study. Through job rotation, knowledge

and experience gained in one department is moved to another department (Choy *et al.*, 2011). The literature of executive development indicates that rotation improves the experience of a variety of different roles (Campion, Cheraskin and Stevens, 1994). Job rotation can clarify the role and reduce role ambiguity.

H3a: Public managers who have job rotation with high frequency will have less role ambiguity than public managers who have job rotation with low frequency.

Role conflict can occur in three forms, namely person-to-role conflict, person-to-person conflict and role-to-role (inter-role) conflict (Gibson *et al.*, 2003; Nelson and Quick, 2003). Essentially, one or more of the three occurs when an individual feels incongruity or incompatibility with regard to their needs, or faces actual conflict in their role (Rizzo, House and Lirtzman, 1970). Ideally, of course, job rotation means redesigning or enriching jobs to develop varied skills, task identity, task significance, autonomy and feedback, and it allows managers to improve both motivation and job performance and to reduce the level of stress (Weinberg *et al.*, 2010).

Kaymaz (2010) notes that for an employee to work with many people at different periods of time develops human relationships and enhances internal and external communication between departments. Rotation gives space for open communication with other people who have different behaviours. Individuals who experience job rotation become adaptable and flexible (Campion *et al.*, 1994), decreasing role conflict.

H3b: Public managers who have job rotation with high frequency will experience lower role conflict than public managers who have job rotation with low frequency.

2.4 Effect of Job Rotation on Performance

Many companies rotate jobs to prepare lower-level workers for promotion and to reduce the moral hazard problem (Park, 2010). From a job rotation, an individual is expected to gain additional knowledge and experience from other areas and enhance their capabilities. Job rotation makes all levels of management more effective with the knowledge and experience gained from diverse assignments in several departments (Kaymaz, 2010). Job rotation increases knowledge, skills, and competencies, as well as developing social relationships (Brownell and McInnes, 1986). Sison (2000) explains how job training and job rotation sharpen managerial skills to produce better work performance, and enable managers to overcome obsolescence and develop more effective employee relationships.

Job rotation can be done quickly or slowly depending on the organization. In companies that experience rapid technological change such as in Japan, faster job rotation improves productivity. In companies that require in-depth expertise in a field, as in America, slow job rotation is more effective (Zhonghua and Ye, 2012).

Contingency theory posits that there is no management control which is universally applicable to all types of organizations. The effectiveness of an organization depends on the situation. Contextual variables include the external environment (uncertainty, ambiguity and rapid technological development), technology, and organizational structure, size, strategy, and culture. A good fit means improved performance, while a poor fit implies a decrease in performance (Chenhall, 2003).

H4: Performance of public managers who have job rotation with a high frequency is higher than performance of public managers who have job rotation with a low frequency.

2.5 Effect of Role Ambiguity and Role Conflict on Performance

Role stress is often concomitant with role ambiguity and role conflict. Role ambiguity relates to the uncertainty of expectations of different authorities (Solli-Sæther, 2011). Role ambiguity lowers performance (Solli-Sæther, 2011). Role clarity has a positive effect on the achievement of the organization's business plan and the achievement of objectives relating to the provision of services to the community (Greatbanks and Tapp, 2007).

Fisher (2001) provides evidence that the role ambiguity has a significantly negative association with job performance and job satisfaction. High role conflict and role ambiguity decrease both job satisfaction and performance, which further increases the tendency for an employee to resign from the organization (Senatra, 1980). Similarly, Fried *et al.* (1998) link ambiguity and conflict to lower performance. Role ambiguity causing inappropriate behaviour on the job affects performance negatively (Tubre and Collins, 2000). This is consistent with the role theory.

Bamber *et al.* (1989) find that conflict increases anxiety, again degrading performance. Therefore, it is necessary to reduce role conflict. Abernethy and Stoelwinder (1995) support an environment that decreases role conflict, increases job satisfaction, and enhances the performance of all employees (Fried *et al.*, 1998; Senatra, 1980).

H5a: Role ambiguity experienced by public managers negatively affects their performance.

H5b: Role conflict experienced by public managers negatively affects their performance.

2.6 Role Ambiguity and Role Conflict as Intervening Variable between PMI and Job Rotation to Job Performance

Role theory states that when the behaviours expected from individuals are inconsistent, then they feel stress and dissatisfaction, and perform poorly (Rizzo *et*

al., 1970). Therefore, stress is to be minimised at work. Katz and Kahn (1978) and Rizzo *et al.* (1970) say that the antecedents of role stress are three factors: personal, interpersonal, and organizational. Rogers and Molnar (1976) see two organizational variables, namely: intra-organizational and inter-organizational. One intra-organizational variable, for example, is accountability. An example of an inter-organizational variable is resource exchange. PMIs contain information to clarify how much effort must be made to eliminate stress, or at least reduce it.

Hall (2008) fully mediates the comprehensive PMI and managerial performance with role clarity. Burney and Widener (2007) also find that strategic PMI significantly increases role clarity (that is, decreases ambiguity), and clarity is an important intervening variable between strategic PMI and performance.

H6a: PMI affects performance through the reduction of role ambiguity.

Patelli (2007) indicates that diversity of measurement causes role conflict, which then negatively affects performance. This is consistent with the role dynamic theory. Simultaneous performance measures of financial and non-financial roles can lead to conflict because they highlight the difficulty of fulfilling both. Any activity in local government performance will be measured by the level of efficiency (financial measures) and effectiveness (non-financial measures). In fact, it would be difficult to optimize both in one fiscal year due to the inertia of the non-financial long-term orientation of the public service.

H6b: PMI affects performance through increased role conflict.

Rizzo *et al.* (1970) describe role ambiguity and role conflict as intervening variables that mediate the effect of diversity on organizational outcomes. Exchange of leadership is one of the inter-organizational variables (Rogers and Molnar, 1976). Job rotation is a form of exchange of intra-organizational resources to improve the adaptability and flexibility of a person (Campion *et al.*, 1994).

Adaptability and flexibility could be expected to decrease the role conflict of a manager who is not able to meet the expectations of the job due to incompatible demands (Fogarty *et al.*, 2000; Kren, 1992; Rizzo *et al.*, 1970). Many previous studies agree that job rotation is positively related to performance (Bei, 2009; Champion *et al.*, 1994; Choy *et al.*, 2011; Kaymaz, 2010; Mourdoukoutas and Roy, 1994; Ortega, 2001).

H6c: job rotation affects the public manager's performance through a reduction in role ambiguity.

H6d: job rotation affects the public manager's performance through a reduction in role conflict.

3. Research Methods

Data in this study comes from laboratory experiments carried out in two areas in Indonesia: Yogyakarta and Lampung (Way Kanan regency). Two independent variables are investigated, namely PMI and job rotation. Control is done on the inherent variables in the subjects, such as age, gender, and level of education, by random assignment tested with the chi-square test.

A 2x3 between variable factorial design is used in this experiment to test whether the performance of public managers (the dependent variable) is affected by two independent variables, PMI and job rotation, through a variable intervening: role ambiguity or role conflict. PMI is manipulated at three levels, namely non-financial information alone, financial information alone, and financial and non-financial information together. The job rotation is manipulated at two levels, low frequency and high frequency. Testing of hypotheses 1 and 3 uses Manova, while hypotheses 2 and 4 use Anova. Hypothesis 5 uses multiple regression, while hypothesis 6 uses path analysis.

Table 1. *Experimental Design*

		PMI		
		Non-Financial	Financial	Financial & Non-financial
Job Rotation	Low Frequency	1	2	3
	High Frequency	4	5	6

4. Results and Discussion

In experimental studies, randomization is important. Tests using the Chi-Square Tests ($df = 5$, $n = 96$) show that there is no significant difference between the experimental conditions for gender (Pearson $\chi^2 = 2.986$, $p > 0.702$), for location (Pearson $\chi^2 = 1.415$, $p > 0.923$), for age (Pearson $\chi^2 = 154.447$, $p > 0.07$), for duration of work (Pearson $\chi^2 = 94.843$, $p > 0.485$), and for length of service (Pearson $\chi^2 = 48.708$, $p > 0.525$). The Kolmogorov-Smirnov test shows that the variables age ($p > 0.074$) and length of service (0.138) are normally distributed.

The manipulation check confirms that the participants understand and feel that the action is correctly given. The result of the manipulation check for the variable PMI in Yogyakarta is 91% and in Lampung is 92%. The results of the manipulation check for the variable rotation of the first questions to the subject position in Yogyakarta and Lampung show the same figure, 94%. The second question to the Yogyakarta region shows 100% of the subjects answering correctly, while in Lampung 99% of the subjects answer correctly.

Testing of hypotheses 1 and 3 uses Manova, so it is necessary to conduct the: normality test, and the homogeneity test of variance and covariance. The normality

test by Kolmogorov Smirnov says that data are normally distributed. Levene's test shows that the variance is homogeneous. Similarly, a homogeneity test of covariance shows no difference between covariates.

Table 2. *The mean of Role Ambiguity, Role Conflict and Performance*
Panel A. Independent Variable I

PMI	Mean Ambiguity	Role	Mean Conflict	Role	Mean Performance	N
Non-Financial	4.50		5.03		2.997	30
Financial	3.97		4.73		3.030	30
Financial and Non-Financial	3.42		4.28		3.039	36

Panel B. Independent Variable II

Job Rotation	Mean Ambiguity	Role	Mean Conflict	Role	Mean Performance	N
Low Frequency	3.86		4.90		2.935	49
High Frequency	4.00		4.40		3.115	47

Testing of H1a, H1b, and H1c is based on Multiple Comparisons Tukey HSD by using the results in Table 3. The results indicate lower role ambiguity for the public managers who receive financial and non-financial information than for the public managers who receive only non-financial PMI, which means that H1a is supported. Mean difference between the two is 1.08 ($p = 0.036$, $p < 0.05$).

Table 3. *Mean Differences of Role Ambiguity with Tukey*

	PMI (I)	PMI (J)	Mean Differences (I-J)	Sig.	Conclusion
Tuke	F & NF	NF	-1.08**	0.036	H1a supported
y	F & NF	F	-0.55	0.284	H1b not supported
	F	NF	-0.53	0.316	H1c not supported

PMI= PMI, NF=Non-financial, F=Financial,

F & NF=Financial and Non-Financial

** significant at $p < 0.05$

Table 3 also shows that the H1b and H1c are not supported. These results are not in line with Lau (2011) showing that the non-financial measures influence managerial performance through role ambiguity.

Supporting H1a means giving support to role stress theory, in which a person gets complete and clear information about the tasks that must be done and a clearer direction of what to do. Financial information and non-financial together may lead to

pressure on the individual. Supporting H1a also means that role stress theory applies to public sector organizations, especially local government.

The mean of role ambiguity in job rotation with a low frequency is 3.90, whereas the mean of role ambiguity in job the rotation with high frequency is greater at 4.02. Although there is a mean difference of 0.12 in role ambiguity on the second level of treatment, these results were not statistically different, and H3a is not supported. The Manova produce F count 0.084 with $p = 0.772$ ($p > 0.05$) means that there is no difference in the role ambiguity with low-frequency and high-frequency job rotation.

Not supporting H3a does not affect the role ambiguity. These results do not support the role stress theory. The results suggest that environmental changes faced by public managers, either fast or slow, do not affect the clarity of work implementation.

Testing for H3b is by generating Manova F count 1.815 with $p = 0.181$ ($p > 0.05$), which means that there is no difference in the role conflict with the low-frequency job rotation and high frequency, and H3b is not supported.

Table 4. *Mean Differences of Role Conflict with Tukey*

	PMI (I)	PMI (J)	Mean Differences (I-J)	Sig.	Conclusion
Tukey	F & NF	NF	-0.77*	0.096	H1d not supported
y	F & NF	F	-0.47	0.308	H1e not supported
	F	NF	-0.30	0.532	H1f not supported

* significant at $p < 0.10$

Test results of H1d, H1e, and H1f show that there is no difference in the role conflict in giving three levels of PMI: non-financial, financial, and both. Thus, H1d, H1e, and H1f are not supported.

In role theory, someone who is fully informed about a job is expected to perform the job better. The results of the ANOVA test resulted in an F counting of 0.008 with $p = 0.992$ ($p > 0.05$). This means that there is no difference in performance from giving the third level of PMI (H2a and H2b are not supported). De Lancer Julnes & Holzer (2001) suggest that the decision-making process at the stage of adoption and implementation of the information use in the government's performance is influenced by rational and political factors and organizational culture. When political factors are dominant, public management becomes irrational and PMI is not considered in the decision process.

Our results agree with Lau and Sholihin (2005): non-financial performance data alone or financial data partially do not affect the behaviour of managers. Kasdin

(2010) reveals that the failure of performance data to motivate public managers in the government is because the measurements are numerous, and complicated, and difficult to use. Another factor is the lack of incentive when the program is completed successfully (Kasdin, 2010). These results provide direction for future research to consider the incentive variable to improve performance.

Testing H4 shows that there is a difference of 0.18, but this result is not statistically significant with a calculated F of 0.328; $p = 0.568$ ($p > 0.05$). It means that H4 is not supported. These results do not support the contingency theory and are not in line with previous studies that say job rotation does have a positive effect on outcomes (Kaymaz, 2010). We suggest that PMI and job rotation are not contextual factors that affect performance in local government.

H5a is that role ambiguity experienced by public managers negatively affects their performance. The r coefficient of -0.276 ; $p = 0.01$ ($p < 0.05$) means that H5a is supported, agreeing with Yitzhak et al. (1998), Fogarty *et al.* (2000), Caillier (2010), and Singh and Dubey (2011), and Caillier (2010). Table 5 below shows that H5b is not supported. This result is consistent with Burney and Widener (2007).

Table 5. Results of Regression Testing

Dependent Variable	Independent Variable	Coefficient t	t-value	p-value	Conclusion
Performance	Role Ambiguity	-0.276	-2.627	0.010	H5a supported
	Role Conflict	0.146	1.394	0.167	H5b not supported

Path analysis shows that PMI does not directly affect performance through role ambiguity. Coefficients from the influence of PMI on role ambiguity are -0.217 ; $p < 0.05$. Similarly, the coefficients generated from the test of role ambiguity effect on the performance is -0.276 ; $p < 0.05$. Negative coefficients in the model indicate that more complete measurement of performance information (financial and non-financial) causes lower role ambiguity. Furthermore, a low role ambiguity can improve job performance. However, the direct effect of PMI on job performance coefficient is -0.022 ; $p > 0.05$, which is not significant. These results indicate that H6a is supported.

This study supports the contingency theory that the ambiguity of the role as one of the situational factors needs to be considered when choosing the type of PMI that can improve performance. These results also provide support to the role stress theory. When a person is given adequate information relating to the task they must do, it can reduce role ambiguity and eventually can improve job performance. Table 6 also shows that role conflict does intervene between PMI and the performance of the work. This result means that H6b is not supported. Path analysis shows no evidence that job rotation affects job performance, either directly, or indirectly

through role ambiguity and role conflict. These results indicate that H6c and H6d are not supported. It means that job rotation in local government does not have an impact on the psychological aspects of the work and performance of local government managers.

Table 6. *The Results of Path Analysis*

Dependent Variable	Independent Variable	Path Coefficient	t-value	p-value	Conclusion
Ambiguity	PMI	-0.217	-2.145	0.035	P<0.05
Performance	PMI	-0.022	-0.212	0.833	p>0.05
Performance	Ambiguity	-0.276	-2.627	0.010	P<0.05
H6a supported					
Conflict	PMI	-0.172	-1.702	0.092	p>0.05
Performance	PMI	-0.022	-0.212	0.833	p>0.05
Performance	Conflict	0.146	1.394	0.167	p>0.05
H6b not supported					
Ambiguity	Job Rotation	0.030	0.292	0.771	p>0.05
Performance	Job Rotation	0.088	0.864	0.390	p>0.05
Performance	Ambiguity	-0.276	-2.627	0.010	P<0.05
H6c not supported					
Conflict	Job Rotation	-0.137	-1.352	0.180	p>0.05
Performance	Job Rotation	0.088	0.864	0.390	p>0.05
Performance	Conflict	0.146	1.394	0.167	p>0.05
H6d not supported					

Many hypotheses are not supported. Especially for the testing related to the job rotation, we lack literature that can explain it. Therefore, in-depth interviews are conducted with local government public managers, with the hope of getting answers to why this hypothesis is not supported. Interviews are conducted by one of the public managers who has experienced high and low rotation.

Interviewees have experienced job rotation with low and high frequency, so that the answers given are valid. The names of officers who rotate through the Regional Employment Agency of Lampung province are not given for confidentiality reasons. Another way is to observe the news in the local newspaper relating to job rotations for two years. Observations indicate three public managers who have experienced rapid and slow rotation, but only one person is willing to be interviewed.

Why does rotation not affect the performance of official position? The answer given is as follows:

Job rotation does not affect the performance of public managers because basically the pattern of employment in the local government system has been formed, meaning that the work for each employee is already well known. Therefore, the change of leadership that can occur at any time does not affect the work to be completed. The work becomes duties and functions of each employee, duties that must be completed on time. Leaders, in this case, serve as controllers only. Therefore, job rotation for experienced public managers has no effect on role ambiguity and role conflict for teams working beneath them.

5. Conclusion

This study tests the utility of Role Theory and Contingency Theory in explaining the phenomena occurring in public sector organizations, especially local government. Role theory is used in research to explain the relationship of accounting performance measures of financial and non-financial business sector behaviour (Lau, 2011; Patelli, 2007), as well as the application of the controlling principles (Burkert *et al.*, 2011), but before now, no studies test this theory in the public sector. The paradigm change into the New Public Management occurring in government in Indonesia since 2000 prompts these hypotheses.

Specifically, the role theory is divided into three types, namely: the role stress theory, role expansion theory, and the role dynamics theory. In the role dynamics theory, performance measure is a motivational pressure transmitted to individuals to influence their role (Patelli, 2007). We show that both financial and non-financial PMI improve the performance of local public managers through decreasing role ambiguity, compared to either non-financial information or financial information alone. These results support the role dynamics theory.

In the business sector, research on performance measures is not conclusive. Patelli (2007), Hall (2008) and Lau (2011) show conflicting results. Only Patelli's (2007) results are consistent with the Role Dynamic Theory, which suggests that diverse measurements create role conflict that eventually has a negative influence on individual performance. Multidimensional performance data put pressure simultaneously on subordinates, creating role conflict. However, Patelli (2007) shows that diversity does not affect the measurement of role ambiguity, contrary to the results of Hall (2008).

Lau (2011) demonstrates that non-financial measurements have a stronger negative effect on role ambiguity than financial measures do. The non-financial measures give clarity of role in achieving organizational goals.

The apparent conflict may be due to differences in methodology and research context. Patelli (2007) measures organizational performance to establish an incentive plan, while Lau (2011) measures individual performance.

Contingency theory is used to investigate the effect of contextual variables in the public sector. Contextual variables in the business sector may differ from those in the public sector (Woods, 2009). Contextual factors refer to changes in the work environment variables, for example job rotation, and information technology variables, for example PMI.

PMI and job rotation are parts of the management control system. Effective PMI and job rotation practices can contribute to management control. The issues raised in this study have not been investigated in public sector organizations.

We find that PMI improves performance through the reduction of role ambiguity. These results may encourage the use of PMI, which is not optimally used in local government now. Role ambiguity may be one factor in contextual variables in local government. Other studies indicate that rotation does not affect the performance of public managers either directly or indirectly through role ambiguity and role conflict. These results emphasise the need to explore other theories that could explain the phenomenon. Franco and Bourne (2003) suggest that the system as applied to the public sector becomes ineffective because of political agendas that ultimately distort the system.

6. Limitations and Recommendations for Future Research

This study has limitations, primarily on two things: the use of paper and pencil in the implementation of the experiment, and not allowing job rotation to be done as real experience.

First, the implementation of experiments using paper and pencil is because of technical constraints faced by experimental subjects when using the computer. Most experimental subjects, who are government employees, are not familiar in using computers, so many errors occur. It is quite disturbing in the process of implementation of the experiment. However, the use of paper and pencil in this study also introduces a weakness, that is, the work of most subjects cannot be processed because the required data is not entered.

Second, laboratory experiments have a weakness in that it is difficult to create the same situation regarding the actual rotational position in the field. For example: a new working environment (leadership and subordinate's relationship) and the complexity of the actual work to be performed. This makes the subject's responses less profound.

Future studies are advised to do a different test on the performance of public managers based on job duration duties, between public managers whose main duty and function from previous position is are still related to the duty and function of new job and public managers whose main duty and function from previous position are not still so related.

Specifically, further research should include variables related to the experience of new duties. This can methodologically be the basis of these variables that deserve to be tested in future studies. In theory the experience can be one of the personal factors that will certainly affect individual performance in the future.

References:

- Abernethy, M.A. and Stoelwinder, J.U. 1995. The role of professional control in the management of complex organizations. *Accounting, Organizations and Society*, 20(1), 1-17.
- Andrews, M. 2004. Authority, acceptance, ability and performance-based budgeting reforms. *International Journal of Public Sector Management*, 17(4), 332-344.
- Akopova, S.E., Przhedetskaya, V.N. 2016. Imperative of State in the Process of Establishment of Innovational Economy in the Globalizing World. *European Research Studies Journal*, 19(2), 79-85.
- Bamber, E.M., Snowball, D. and Tubbs, R.M. 1989. Audit structure and its relation to role conflict and role ambiguity: An empirical investigation. *Accounting Review*, 285-299.
- Bei, Z. 2009. Some thoughts on the practice of job rotation in accounting in colleges and universities. *Management Science and Engineering*, 3(3), 91-95.
- Bodnar, G.H. and Hopwood, W.S. 2010. *Accounting System Information*. Boston, Person Education.
- Brownell, P. and McInnes, M. 1986. Budgetary participation, motivation, and managerial performance. *Accounting Review*, 587-600.
- Burkert, M., Fischer, F.M. and Schäffer, U. 2011. Application of the controllability principle and managerial performance: The role of role perceptions. *Management Accounting Research*, 22(3), 143-159.
- Burney, L.L. and Widener, S.K. 2007. Strategic Performance Measurement Systems, Job-Relevant Information, and Managerial Behavioral Responses--Role Stress and Performance. *Behavioral Research in Accounting*, 19, 43-69.
- Burney, L.L. and Matherly, M. 2007. Examining Performance Measurement from an Integrated Perspective. *Journal of Information Systems*, 21(2), 49-68.
- Burney, L.L. and Swanson, N.J. 2010. The relationship between balanced scorecard characteristics and managers' job satisfaction. *Journal of Managerial Issues*, 166-181.
- Caillier, J.G. 2010. Factors affecting job performance in public agencies. *Public Performance and Management Review*, 34(2), 139-165.
- Campbell, D. 2008. Nonfinancial Performance Measures and Promotion-Based Incentives. *Journal of Accounting Research*, 46(2), 297-332.
- Campion, M.A., Cheraskin, L. and Stevens, M.J. 1994. Career-related antecedents and outcomes of job rotation. *Academy of management journal*, 37(6). 1518-1542.

- Carmichael, D.R. 1970. Behavioral hypotheses of internal control. *The Accounting Review*, 45(2), 235-245.
- Cavalluzzo, K.S. and Ittner, C.D. 2004. Implementing performance measurement innovations: Evidence from government. *Accounting, Organizations and Society*, 29(3), 243-267.
- Chenhall, R.H. 2003. Management control systems design within its organizational context: Findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, 28(2-3), 127-168.
- Chenhall, R.H. 2005. Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: An exploratory study. *Accounting, Organizations and Society*, 30(5), 395-422.
- Choy, C.S., Salleh, K., Noh Syed Ahmad, S. and Syed Omar Sharifuddin, S.I. 2011. KM implementation in a public sector accounting organization: An empirical investigation. *Journal of Knowledge Management*, 15(3), 497-512.
- Coste, A.I. and Tudor, A.T. 2013. Service performance-between measurement and information in the public sector. *Procedia-Social and Behavioral Sciences*, 92. 215-219.
- Currstine, T. 2006. Performance information in the budget process. *OECD Journal on Budgeting*, 5(2), 87-131.
- Feltham, G.A. and Xie, J. 1994. Performance measure congruity and diversity in multi-task principal/agent relations. *Accounting Review*, 429-453.
- Fisher, R.T. 2001. Role stress, the type A behavior pattern, and external auditor job satisfaction and performance. *Behavioral Research in Accounting*, 13(1), 143-170.
- Fogarty, T.J., Singh, J., Rhoads, G.K. and Moore, R.K. 2000. Antecedents and consequences of burnout in accounting: Beyond the role stress model. *Behavioral Research in Accounting*, 12, 31.
- Franco, M. and Bourne, M. 2003. Factors that play a role in managing through measurement. *Management Decision*, 41(8), 698-710.
- Fried, Y., Ben-David, H.A., Tiegs, R.B., Avital, N. and Yeverehyahu, U. 1998. The interactive effect of role conflict and role ambiguity on job performance. *Journal of occupational and organizational psychology*, 71(1), 19-27.
- Giachetti, R.E. 2010. *Design of enterprise systems: Theory, architecture, and methods*: CRC Press.
- Gibson, J., Ivancevich, J., Donnelly, J. and Konopaske, R. 2003. *Organizations: Behavior, structure, processes*: Plano, TX, Business Publications, Inc.
- Greatbanks, R. and Tapp, D. 2007. The impact of balanced scorecards in a public sector environment: Empirical evidence from Dunedin City Council, New Zealand. *International Journal of Operations & Production Management*, 27(8), 846-873.
- Hall, M. 2008. The effect of comprehensive performance measurement systems on role clarity, psychological empowerment and managerial performance. *Accounting, Organizations and Society*, 33(2-3), 141-163.
- Hall, M. 2011. Do comprehensive performance measurement systems help or hinder managers' mental model development? *Management Accounting Research*, 22(2), 68-83.
- Hertzberg, A., Liberti, J. and Paravisini, D. 2010. Information and incentives inside the firm: Evidence from loan officer rotation. *The Journal of Finance*, 65(3), 795-828.
- Hill, G.C. 2009. The effect of frequent managerial turnover on organizational performance: A study of professional baseball managers. *The Social Science Journal*, 46(3), 557-570.

-
- Julnes, P.L. and Holzer, M. 2001. Promoting the utilization of performance measures in public organizations: An empirical study of factors affecting adoption and implementation. *Public administration review*, 61(6), 693-708.
- Kahn, R.L., Wolfe, D.M., Quinn, R.P., Snoek, J.D. and Rosenthal, R.A. 1964. Organizational stress: Studies in role conflict and ambiguity.
- Kaplan, R.S. and Norton, D.P. 1992. The Balanced Scorecard--Measures That Drive Performance. *Harvard Business Review*, 70(1), 71-79.
- Kaplan, R.S. and Norton, D.P. 1996. Linking the Balanced Scorecard to Strategy. *California Management Review*, 39(1), 53-79.
- Kasdin, S. 2010. Reinventing reforms: How to improve program management using performance measures. *Really. Public Budgeting & Finance*, 30(3), 51-78.
- Katz, D. and Kahn, R.L. 1978. *The social psychology of organizations*. Wiley, New York.
- Kaymaz, K. 2010. The Effects of Job Rotation Practices on Motivation: A Research on Managers in the Automotive Organizations. *Business and Economics Research Journal*, 1(3), 69.
- Keisidou, E., Sarigiannidis, L., Maditinos, D. and Thalassinou, I.E. 2013. Customer satisfaction, loyalty and financial performance: A holistic approach of the Greek banking sector in *Marketing Intelligence and Planning*, 31(4), 259-288, Emerald Group Publishing Ltd., DOI: 10.1108/IJBM-11-2012-0114.
- Kihn, L.A. 2010. Performance outcomes in empirical management accounting research: Recent developments and implications for future research. *International Journal of Productivity and Performance Management*, 59(5), 468-492.
- Klout, L. 1999. Performance measurement and accountability in Victorian local government. *International Journal of Public Sector Management*, 12(7), 565-584.
- Kreklow, S. 2005. Using performance measures to improve performance. *Government Finance Review*, 21(6), 52-54.
- Kren, L. 1992. Budgetary Participation and Managerial Performance: The Impact of Information and Environmental Volatility. *The Accounting Review*, 67(3), 511-526.
- Lau, C.M. 2011. Nonfinancial and financial performance measures: How do they affect employee role clarity and performance? *Advances in Accounting*, 27(2), 286-293.
- Lau, C.M. and Sholihin, M. 2005. Financial and nonfinancial performance measures: How do they affect job satisfaction? *The British Accounting Review*, 37(4), 389-413.
- Marginson, D., McAulay, L., Roush, M. and Van Zijl, T. 2014. Examining a positive psychological role for performance measures. *Management Accounting Research*, 25(1), 63-75.
- Melkers, J. and Willoughby, K. 2005. Models of performance and measurement use in local governments: Understanding budgeting, communication, and lasting effects. *Public Administration Review*, 65(2), 180-190.
- Mikhailova, S.S., Moshkin, I.N., Tsyrenov, D.D., Sadykova, T.E., Dorzho-Nimaevna Dagbaeva, S. 2017. A Spatial Analysis of Unevenness in the Social-Economic Development of Regional Municipal Units. *European Research Studies Journal*, 20(2B), 46-65.
- Morris, J.R. 1956. Job rotation. *The Journal of Business*, 29(4), 268-273.
- Mourdoukoutas, P. and Roy, U. 1994. Job rotation and public policy: Theory with applications to Japan and the USA. *International Journal of Manpower*, 15(6), 57-71.
- Moynihan, D.P. and Pandey, S.K. 2010. The big question for performance management: Why do managers use performance information? *Journal of public administration research and theory*, 20(4), 849-866.

- Nelson, D.L. and Quick, J.C. 2003. *Organizational Behavior: Foundations, Realities and Challenges*, 4.
- Noe, R.A., Hollenbeck, J.R., Gerhart, B. and Wright, P.M. 2008. *Human resources management*: Chicago, Irwin.
- Ortega, J. 2001. Job rotation as a learning mechanism. *Management science*, 47(10), 1361-1370.
- Parasuraman, S. and Alutto, J.A. 1981. An examination of the organizational antecedents of stressors at work. *Academy of management journal*, 24(1), 48-67.
- Park, Z. 2010. Job rotation, employment, promotion, cohort effect, and other issues. (Working Paper): www.ssrn.com.
- Park, Z. 2011. A theory of job design and promotion: SSRN, Working Paper.
- Patelli, L. 2007. Behavioral Responses to Measurement Diversity in Individual Incentive Plans: Role Conflict, Role Ambiguity and Model-of-Man.
- Pattison, S. and Samuels, N. 2002. Trends and issues in performance-based budgeting. *Spectrum-Lexington*, 75(2), 12-13.
- Petty, M.M., McGee, G.W. and Cavender, J.W. 1984. A meta-analysis of the relationships between individual job satisfaction and individual performance. *Academy of management review*, 9(4), 712-721.
- Propper, C. and Wilson, D. 2003. The use and usefulness of performance measures in the public sector. *Oxford review of economic policy*, 19(2), 250-267.
- Rizzo, J.R., House, R.J. and Lirtzman, S.I. 1970. Role conflict and ambiguity in complex organizations. *Administrative science quarterly*, 150-163.
- Robbins, S.P. and Judge, T.A. 2011. *Organizational behavior*. Pearson.
- Rogers, D.L. and Molnar, J. 1976. Organizational antecedents of role conflict and ambiguity in top-level administrators. *Administrative science quarterly*, 598-610.
- Senatra, P.T. 1980. Role conflict, role ambiguity, and organizational climate in a public accounting firm. *Accounting Review*, 594-603.
- Simons, R. 2000. *Performance measurement and control systems for implementing strategy*. New Jersey, Prentice-Hall.
- Singh, A.P. and Dubey, A.K. 2011. Role of Stress and Locus of Control in Job Satisfaction Among Middle Managers. *IUP Journal of Organizational Behavior*, 10(1).
- Sison, P.S. 2000. *Personnel and human resources management*: Rex Bookstore, Inc.
- Solli-Saether, H. 2011. Transplants' role stress and work outcome in IT outsourcing relationships. *Industrial Management and Data Systems*, 111(2), 227-245.
- Swindell, D. and Kelly, J.M. 2000. Linking citizen satisfaction data to performance measures: A preliminary evaluation. *Public Performance & Management Review*, 30-52.
- Thalassinos, I.E. and Pociovalisteanu, M.D. 2009. The Structural Funds and the Economic and Social Cohesion Process. *Annals-Economy Series* 1, 313-330.
- Tubre, T.C. and Collins, J.M. 2000. Jackson and Schuler (1985) revisited: A meta-analysis of the relationships between role ambiguity, role conflict, and job performance. *Journal of management*, 26(1), 155-169.
- Van Thiel, S. and Leeuw, F.L. 2002. The performance paradox in the public sector. *Public Performance & Management Review*, 25(3), 267-281.
- Wang, X. 2000. Performance measurement in budgeting: A study of county governments. *Public Budgeting & Finance*, 20(3), 102-118.
- Wang, X. 2002. Assessing performance measurement impact: A study of US local governments. *Public Performance & Management Review*, 26(1), 26-43.

-
- Weinberg, A., Cooper, C., Sutherland, V. and Bond, F. 2010. *Organizational stress management: A strategic approach*: Palgrave Macmillan.
- Willoughby, K.G. and Melkers, J.E. 2000. Implementing PBB: Conflicting views of success. *Public Budgeting & Finance*, 20(1), 85-120.
- Woods, M. 2009. A contingency theory perspective on the risk management control system within Birmingham City Council. *Management Accounting Research*, 20(1), 69-81.
- Vasin, M.S., Gamidullaeva, A.L., Rostovskaya, K.T. 2017. The Challenge of Social Innovation: Approaches and Key Mechanisms of Development. *European Research Studies Journal*, 20(2B), 25-45.
- Yuliansyah, Y., Bui, B. and Mohamed, N. 2016. How Managers Use PMS to Induce Behavioural Change in Enhancing Governance. *International Journal of Economics and Management*, 10(2), 509-530.
- Yuliansyah, Y., Gurd, B. and Mohamed, N. 2017. The significant of business strategy in improving organizational performance. *Humanomics*, 33(1), 56-74.
- Yuliansyah, Y. and Khan, A.A. 2017. A re-visit of the participative budgeting and employees' self-efficacy interrelationship –empirical evidence from Indonesia's public sector. *International Review of Public Administration*, 22(3).
- Yuliansyah, Y. and Khan, A.A. 2015. Strategic Performance Measurement System: A Service Sector And Lower Level Employees Empirical Investigation. *Corporate Ownership and Control*, 12(3), 304-316.
- Yuliansyah, Y. and Razimi, M.S.A. 2015. Non-financial performance measures and managerial performance: the mediation role of innovation in an Indonesian stock exchange-listed organization. *Problems and Perspectives in Management*, 13(4), 135-145.
- Zhonghua, C. and Ye, W. 2012. Research frontiers in public sector performance measurement. *Physics Procedia*, 25, 793-799.