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The Impact of Human Resources Investment for Public Sectors

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Abstract. In a time of globalization, public and private sectors alike generally consider human resource (HR) to be a key element for competitive power in organizations. The object of this study is to measure the training investment on innovation and improvement in the public sector, so as to improve the quality of public sector HR and help the public sector enhance its competitiveness. Regression analysis was conducted to determine whether employee participation acted as a mediator for the relationship between learning effects, budget rationality and communication to employees. Total sample size of 1470 fall within the survey. The result shows that relationship between Budget rationality and Innovation & improvement was mediated by Employee Participation

Keywords: Human resource investment, Employee participation, Innovation & improvement

1. Introduction

In the 21st century, public and private sectors alike, generally consider human resource (HR) to an important and critical factor in influencing an organization to face the age of globalization and competition. Thus, public sectors have come under increasing pressure to justify its very existence through calls for operational efficiency and improvements in service quality (Ken, 1997). Human resource (HR) is one of critical success factors for successful business process re-engineering in the public sectors (Rodney & John, 1999). To increase the effectiveness, the organizations are increasingly depending on HR (Indrit, Cate, & Sally Rao, 2011).

Therefore, "Investment in People (IiP)" has become a popular theme in recent HR management field. A study of 1,600 UK organizations were accredited for IiP shows that 70% of the organizations expressed that it increased its competitiveness and productivity; 80% indicated it increased customer satisfaction and effectively improved the organization's corporate image; Furthermore, 90% of the organizations consider such accreditation to have enhanced internal communication, team collaboration and motivation (Rajan, 2004). This is evidence of the value to organizations which implemented investment in HR. Becker (1975) was more straightforward to consider investment in human capital to yield higher return than non-human capital. In Taiwan, there is no suitable measurement index to assess the yield of investment in HR. Because of the rigidity of the public sector, many officials have gradually eroded their native intelligence, loosing creativity and competitiveness to respond to changing environment.

For these reasons, the object of this study is to measure the training investment on innovation and improvement in the public sector, so as to improve the quality of public sector HR and help the public sector enhance its competitiveness. The results of this study may aid the public sector in developing a strategic direction in HR investment, with practical recommendations to all departments to assist organizational diagnosis.

2. Literature and Hypotheses

When an organization plans its human resource, it should conduct an overall review of its HR requirement and HR capabilities. Decision on HR is devised from taking into consideration the external environment and the competitive strategy of the organization, so as fully deploy the capabilities of its HR to

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materialize the objectives of competition (Armstrong, 1991; Wright & McMahan, 1992). Investment in employee development means equipping employees with knowledge and competence development (Kuvaas & Dysvik, 2009). HR planning focuses on the rationality of training budget to motivate employee participation. In addition, employee's participation will result in higher self-efficacy, further mediate the effect of participation on performance (Latham, Winters, & Locke, 1994). The areas in which entrepreneurship is seen as most critical were planning, budgeting and human resources (Morris & Jones, 1999). Therefore, organizational innovation & improvement and human resource planning were significantly and positively related to innovative performance.

A good forecast for HR requirement prepares the organization for development of future strategies and HR development (Armstrong, 1991) which will produce positive effects on organization performance and employee productivity (Muse, Rutherford, Oswald, & Raymond, 2005). It also enhances the utilization of existing HR to achieve the greatest innovation and improvement.

Whether employee will develop a sense of need to participate in training depends on whether the training meets the needs of the employee. The final results of learning can be evaluated from learning assessment model (Philips, 1996). The training needs of staff via two-way communication to promote the employee's participation, and thus enhance the innovation and improvement.

Communication and participation transformed the Organization into change agents. Furthermore, the described technique can help organizations develop a sense of self-reliance with regards to problem-solving capabilities (Hammond, Gresch, & Vitale, 2011), and organizational innovation has significant relationship with employees' involvement in business processes (Dolles, 2010). The following four hypotheses are proposed:

H1：Budget rationality has a positive effect on Innovation & improvement.

H2：Communication has significant influence on Innovation & improvement.

H3：The relationship between Budget rationality and Innovation & improvement was mediated by Employee Participation.

H4：The relationship between Communication and innovation &improvement was mediated by Employee Participation.

3. Methodology

3.1. Data collection

Subjects participated in the study were mainly departments in the city government, and does not include departments resident outside the government facility. Since the data collection method involved general survey, the total numbers of staff in the 34 departments form the survey population. A total of 32 departments and sample size of 2533 fall within the survey. In October 2006, the questionnaires were issued to the general secretary of each of the department who were requested to distribute same internally and return to the Bureau of Human Resource Development after completion. All questionnaires were received by 22 November. The total number of returned questionnaire included 32 departments and 1734 responses. The return rate was 68.46% and the total number of valid responses amount to 1470.

3.2. Measures

We also used a mixture of positive and negative questions in order to minimize response bias. The questionnaires were then pretested using a sample of managers in Taiwan. All constructs in this study were measured on a seven-point Likert type scale: (1) Innovation and Improvement, (2) Budget Rationality, (3) Communication to Employee, (4) Employee Participation. Accordingly, we included sex, employee age, and position ranking as control variables.

In the sample collected male accounts for 46.3 and 53.7 % for the female. Age distribution: Age 31-50 account for 73.2%, second by 16.1% of employee age above 51, and the youngest employee below age 30 is only 10.6 %. Education: 48.5% holds university degree, approaching half of the sample; second is diploma degree with 26.2 %; master degree account for 19 % while high school account for only 6.3% of the sample. Rank level: 61.5% of the sample holds position ranking between 6th to 9th rank level, rank level 1 to 5

accounts for 35.4 %, and the smaller group of rank level 10 to 14 is 3.1%. Position: in the sample collected, non-managerial positions were the most, 77.7 %, managerial positions account for 22%, only five of the department heads responded, accounting for only 0.4%. Current education status: only 15% of the employee is undertaking education. Participation in training: the purpose is to understand the status of employees of Kaohsiung city government participating in training.

3.3. Reliability and Validity

The purpose of conducting factor analysis in the study was to extract measurement indices with Eigen value larger than 1. Then using principal component analysis, factor loading were calculated to evaluate the validity of each of the measurement dimension. Internal consistency is concerned with whether the questions in the questionnaire are similar in property. The most common statistical coefficient used to indicate internal consistency is Cronbach's alpha (i.e. the Alpha Model under Reliability Analysis in SPSS). Usually, the alpha value should be above 0.7 for the scores to each question to be summated to the score of the questionnaire.

From the results of factor analysis and analysis for reliability, the questionnaire developed under this study should very high levels of reliability and validity. The Cronbach's alpha for budget rationality, employee communication, employee participation and innovation & improvement are 0.893, 0.901, 0.895 and 0.903. All 4 are above the 0.7 level recommended in the literature, which indicates sound internal consistency of the questionnaire, thereby ensuring the results of the measurement is trustworthy.

4. Results

The pairwise correlations, means, and standard deviations, for the major variables in this study are listed in the Table 1. Since significant correlations were found among variables, we further investigated potential multicollinearity using variance inflations factors (VIFs). The maximum VIF obtained in any of the models for substantive variables was substantially below the rule-of-thumb cutoff 10 for regression models. Thus, multicollinearity was not considered an important issue for these results.

Table 1. Correlation, means and standard deviations

Variable	1	2	3	4	Mean	Std. Dev.
1. Budget Rationality	1				4.7766	.73856
2. Employee Communication	.457***	1			4.2831	.91360
3. Employee participation	.381***	.724***	1		4.3528	.90464
4. Innovation & Improvement	.530***	.249***	.281***	1	5.2822	.81217

N=1470, * p< .05，**p< .01，***p< .001

Regression analysis was conducted to determine whether employee participation acted as a mediator for the relationship between learning effects, budget rationality and communication to employees. First, we included the control variable, budget rationality and employee communication to examine the direct effect on innovation and improvement. Subsequently, we used Baron and Kenny's (1986) four-step approach in which several regressions conducted in order to demonstrate mediation.

We used a linear regression analysis with budget rationality and employee communication as the predictor variable and innovation & improvement as outcome variable (Table 3). A significant positive association was demonstrated between budget rationality and innovation & improvement (β = 0.532 , p<0.001). Thus, hypothesis 1 was supported. But there was no significant difference between employee communication and innovation & improvement (β = -0.002 , *ns*). Thus, hypothesis 2 wasn't supported.

Therefore, the first requirement for mediation was partially fulfilled (Hypothesis 4 was not supported). In step 2, budget rationality and communication had significant difference on employee participation (Table 2). Finally, employee participation was entered regression. Result indicated that the relationship between Budget rationality and employee participation on innovation & improvement was significant (β = 0.532 , p<0.001). The relationship between Budget rationality and Innovation & improvement was mediated by Employee Participation. Therefore, hypothesis 3 was supported. The regression result presents as Figure 1.

Table 2. Results of Hierarchical Regression Analysis: Effects of Employee Participation

		Regression Mode	
	Variable	Model 1	Model 2
Step 1	Sex	.077	-.015
	Age1	-.071	.021
	Age2	-.187	-.040
	Age3	-.124*	-.079*
	Ranking1	-.014	-.020
	Ranking2	-.026	-.036
Step 2	Budget rationality		.055**
	Communication		.692***
R^2		.005	
$\triangle R^2$		.521	
F		2.164	185.679
$\triangle F$		2.164	729.234***

* p< .05，**p< .01，***p< .001

Table 3. Results of Hierarchical Regression Analysis: Effects of innovation & improvement

	Variable	Model 1	Model 2	Model 3
Step 1	Sex	-.049	.094	-.142
	Age1	.077	.124*	.129*
	Age2	.042	.139	.145
	Age3	-.029	-.014	-.001
	Ranking1	.094	.097	.101
Step 2	Ranking2	.124	.138*	.144*
	Budget rationality		.532***	.523***
	Communication		-.002	-.117***
Step 3	Employee Participation			.166***
R^2		.007	.288	.301
$\triangle R^2$		.007	.281	.013
F		1.504	68.342	64.669
$\triangle F$		1.504	267.081***	25.408***

* p< .05，**p< .01，***p< .001

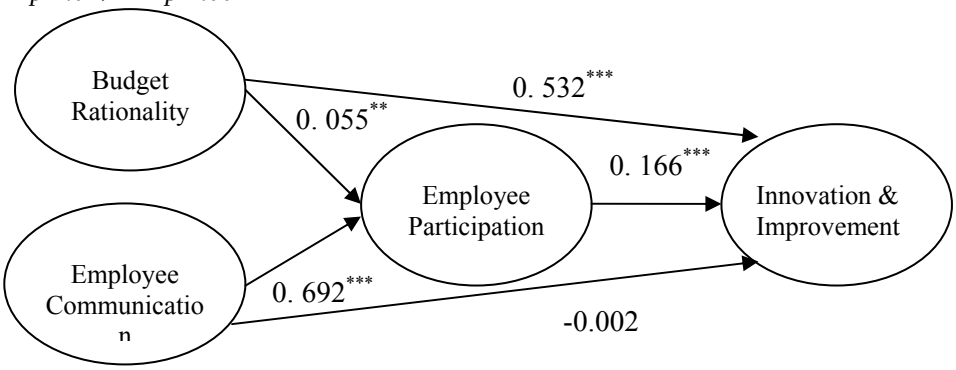

Figure 1. The results of the empirical causal model

5. Conclusion

If Organization allocates training budget rationally will motivate employee participation, and influence the innovation & improvement of employees. In addition, employee's participation will result in higher self-efficacy, and also will mediate the effect of participation on performance.

Even though budget rationality has a positive effect on employee participation, employee's participation is a crucial mediating process of the innovation & improvement. Budget rationality goes through employee's participation, still influence the innovation & improvement of employees.

On other side, the communication has a positive effect on employee's participation, while communication has no effect on the innovation & improvement of employees. Public sectors are increasingly facing the challenge of "doing more with less" "getting better all the time" (Fryer, Antony, & Douglas, 2007). Innovation and Improvement have become just in public sector conversation. But it's worth noting that the relationship between Communication and innovation & improvement may be interfered by Employee Participation.

This study measured the effectiveness of investment in human resource in various departments of the city government, and gained an understanding of the gaps in such investment. It can be used as a reference in planning future investment in human resource and employee training, so as to promote the quality of public official.

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