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ENHANCING CORPORATE PRODUCTIVITY PERFORMANCE THROUGH WORKER COMPETENCE DEVELOPMENT

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ABSTRACT

Organizations concerned with the productivity of their workers do so in the realization that organizational performance cannot be separated from that of the workers. Often organizations have sought to enhance their performance through deliberate efforts to develop the competences of their workers as a major plank of competence management. Such efforts include project works, skill training, and mentoring. This paper examines these and their contributions to the productivity performance of corporations in Nigeria in terms of cost minimization, time minimization, waste minimization, product line, output level, and product quality; and recommends courses of action for their application by both management practitioners for Human Resource Management and scholars for research.

KEYWORDS: Cost Minimization, Mentoring, Output Level, Product Line, Product Quality, Project Work, Skill Training, Time Minimization, and Waste Minimization

INTRODUCTION

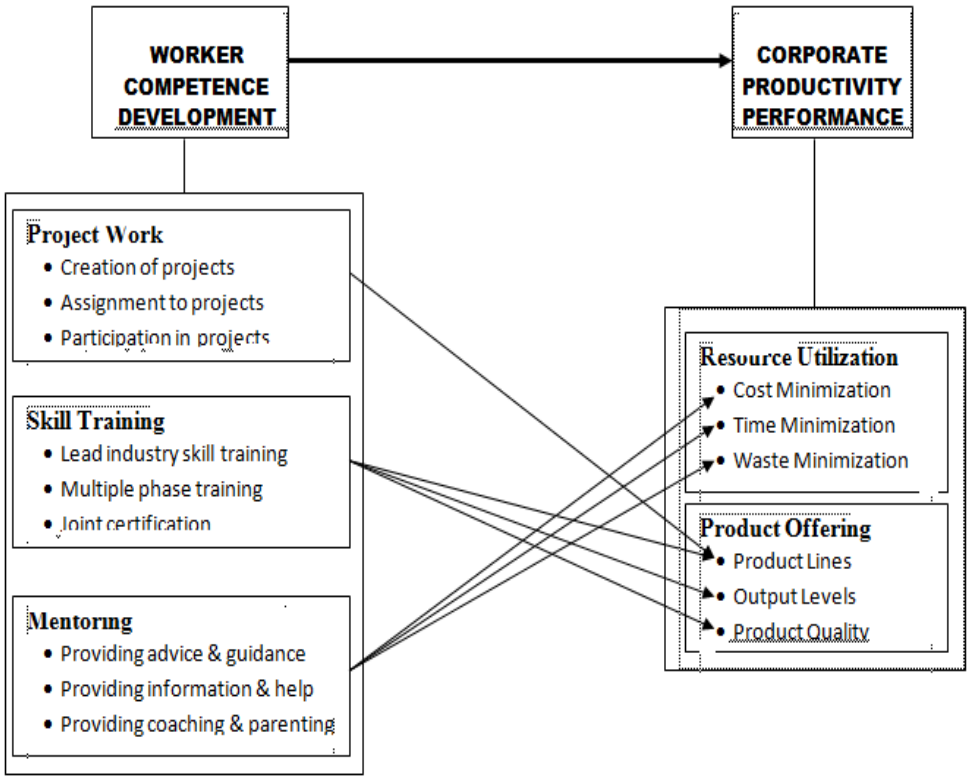
Society depends on organizations to provide it with goods and services. Organizations, in turn, depend mainly on their workers for the production of these. Perhaps, Wert her & Davies (1996:6) had this fact in mind when they asserted that "… central to any strategy, to any use of resources, are the employees…" (xxx); and made reference to the Union Carbide plant slogan: "Assets make things possible, people make things happen." The dependence on the employees entails a dependence on their competences which organizations must manage properly. The Competence Management process involves several functions; one of which is Competence Planning (Zeb-Obipi, 2015a). Another important function of Competence Management is Competence Development; and in the face of the challenges facing business today, there is an increasing need to pay attention to this function.

The business challenges of effective and efficient performance are becoming more worrisome in the face of globalization and turbulent environment. These challenges have affected the cost of doing business, time for task accomplishment and product delivery, resources and products non-compliance with specifications (waste), and the amount, variety and quality of output by businesses. In other words, businesses seek to minimize cost, time and waste while maximizing product lines, level and quality. Zeb-Obipi (2015b) considered these as measures of Corporate Productivity Performance. One route to achieving these is through is through the development of the competences of employees. Taking three dimensions of competence development (project works, skill training, and mentoring), this paper investigates the relationship between competence development and corporate productivity performance. The paper seeks to answer the following research questions:

- To what extent does project work affect corporate productivity performance?
- To what extent does skill training affect corporate productivity performance?
- To what extent does mentoring affect corporate productivity performance?

REVIEW OF RELEVANT LITERATURE

Competence Development is the Worker Competence Management function of enabling workers to enhance already acquired, or acquire lacking, competences. It encompasses the tasks and activities in the "Transfer Phase" of North and Reinhardt (2003) model of competence management. This phase include competence transfer (coaching and mentoring), networking competences (project teams and research groups), and competence updating or creation (on the job and other learning events). There is, indeed, a variety of competence development or training options (Armstrong, 2001). For the purpose of this study, we have selected one from each of the foregoing three classifications. These are: (i) project work, (ii) skill training, and (iii) mentoring. Figure 1 conceptually and operationally lays out these as measures of competence development and how they relate to the measures of corporate productivity performance.



Source: Adapted from Zeb-Obipi (2008, 2015b).

Figure 1: Operational Framework of Competence Development and Corporate Productivity Performance

Project work (Pw) is problem-oriented, based on action learning and is susceptible to continuous improvement (Zeb-Obipi, 2008). These are factors that have implications for all the measures of CPP, especially product quality as illustrated by writers on quality management. According to Wright and Noe (1996), projects allow workers to play a variety of roles, require different tasks and so diverse competences are developed and make them responsible for

improving their knowledge and skills. It appears to us that such diverse and improved competences would result in better productivity performance.

Similarly, skill training (St) affects performance. By its features, it ensures the mastery of techniques, processes and operations through the acquisition of series of "can-do" competences, says Evans (1990: 328). According to him, saving of time and money are made when operators of a technique or process have sufficient mastery. Claims like the above, about skill training (St), are responsible for our anticipated relationship between it and several measures of CPP. These measures are product line, output level, product quality, time, cost and waste minimization. Thus, it could be proposed that the more, better and systematic the skill training an organization provides in its management of competences, the more and better the product lines, output levels and product quality it can offer and the higher the time, cost and waste minimization it can achieve.

Competence development also affects corporate productivity performance through Mentoring (M). According to Johnson and Ridley (2004: xv): "Mentoring is associated with positive personal and career outcomes." In Figure 1, we have identified the tasks involved in mentoring to include providing advice and guidance, information and help, and coaching and parenting; and these have a number of effects. For instance, Johnson and Ridley (2004) have listed such effects as benefits for mentored protégés, mentors and their organization. For the mentored protégé, there are the benefits of enhanced promotion rates, higher salaries, accelerated career mobility, improved professional identity, greater professional competence, increased career satisfaction, greater acceptance within the organization, decreased job stress and role conflict, and mentoring of others. For the mentor, the benefits include internal satisfaction and fulfillment, enhanced creativity and professional synergy, career and personal rejuvenation, development of a loyal support base, recognition by the organization for developing talent, and the pleasure associated with shaping future generations. For the organization, there is an "increased productivity, enhanced organizational commitment, decreased turnover, and accelerated development of in-house talent…. It is apparent that competent mentoring has the potential for win-win outcomes for protégés, mentors and the organizations they serve." (Johnson and Ridley, 2004: xvi).

It could be deduced from the above lists of the benefits of mentoring that it correlates with CPP. In other words, the greater, the better, or the more systematic the mentoring relationships in an organization are, the higher its productivity performance. This is because it provides competences that could minimize time, cost and wastes in the organizations. It is indeed associated with all these and probably other measures of CPP just like the related tasks of Project Work and Skill Training (st) in CD. The possible indications of the relationships between these tasks on one hand, and the measures of CPP on the other hand, provide us with the bases for the hypotheses relating competence development and CPP stated below:

H_{A1}:	Project work is associated with product quality.
H_{A2}:	Skill training is associated with product lines.
H_{A3}:	Skill training is associated with product quality.
H_{A4}:	Skill training is associated with output levels.
H_{A5}:	Mentoring is associated with time minimization.
H_{A6}:	Mentoring is associated with cost minimization.
H_{A7}:	Mentoring is associated with waste minimization.

DATA COLLECTION METHOD

The methodology employed is the same with that used in an earlier study (Zeb-Obipi, 2015b). The study is a quantitative, co-relational, interrogative, cross-sectional, and field survey. The unit of analysis is the organization; and One Thousand, Five Hundred and Sixteen (1,516) companies in Nigeria listed in a business directory, "Profile of Business Opportunities in Nigeria" by the Aba and Port Harcourt of Chambers of Commerce (2005), constituted an accessible population. Using the Sampling Fraction Method of determining a sample size (Baridam, 1990), 75 of these companies were selected through a stratified systematic probability sampling technique across three sectors: oil, manufacturing and service sectors. Data from both primary and secondary sources were used; the primary data were those of the nominal and ordinal scales, and were generated through a questionnaire employing Likert scales and distributed to the sampled organizations. The data generated, from the 70 copies of the questionnaire returned and on each of the measures of the variables (see the appendix, Tables), were used to test the hypotheses using the rank correlation statistics of Spearman's rho (p), Kendall's tau (*T*), and Pearson's Product Moment Correlation Co-efficient (r) using SPSS.

RESULTS

For each of the hypotheses, the scores obtained on the two relevant item-variables were employed in the test. The results from the test are displayed in Table 1. Only one of the hypothesized relationships, H_{A2}, has a correlation coefficient that is significant; and even at that, the co-efficient is negative. We would seek possible explanations. Nevertheless, we found three previously not stated relationships between CD and CPP with significant correlation coefficients. These are UR_5, UR_6 and UR_{19}. We have, therefore, accepted them alongside H_{A2}. The rest with insignificant coefficients have been rejected and this means the acceptance of their null varieties. In view of this decision, we now have one accepted hypothesis and three newly found or serendipitous associations involving CD. These are:

(i)	H_{A2}:	Skill training is significantly associated with the product lines of an organization.
(ii)	UR_5:	Competence development is significantly associated with cost minimization.
(iii)	UR_6:	Competence development is significantly associated with waste minimization.
(iv)	UR_{19}:	Mentoring is significantly associated with the product of an organization.

Apart from the negative coefficient we have noted with the CD related results; we found two more interesting things. Firstly, all, except one, of them have coefficients that are significant on all three test statistics. Secondly, all of them show relatively or moderately strong relationships. Those in the first category mainly passed on one test statistic with weaker coefficients. The first hypothesis here (H_{A1}) states that project work (Pw) is associated with product quality (Pq). This hypothesis was rejected as it has no correlation co-efficient that is statistically significant. The next rejected hypothesis was H_{A3}. We could not find any co-efficient that is statistically significant on it. It states that skill training (St) is associated with product quality (Pq). We had to reject it. Similarly, all subsequent alternate research hypotheses were rejected. They include the hypotheses on the association between skill training (St) and output level-Ol (H_{A4}), mentoring (M) and time minimization-Tm (H_{A5}), and mentoring (M) and waste minimization-Wm (H_{A6}). They all had no significant correlation co-efficient. In fact, most of them had negative coefficients.

Even the only accepted hypotheses (H_{A2}) had a negative, but moderately strong and significant co-efficient at 0.05 level. It states that skill training (St) is associated with product lines (Pl). By the test results, it means that there is a negative significant relationship between skill training (St) and product lines (Pl). This may seem surprising. Could it be true that an organization that increases skill training to develop worker competence could suffer reduction in its product lines? This could be true in certain circumstances. Suppose a company has several product lines. Assume that it elects to provide more skill training in a few of these product lines for several reasons that could be anticipated. Deficient performance in, even possible abandonment of, the others could be envisaged. This tally with a conventional wisdom: the more skill one acquires in one expertise area, the less skills one could have in another expertise area or the more narrowing down of expertise areas.

Table 1: Results of Test of CD-CPP Specific Hypotheses

PREDICTOR VARIABLE	*STATISTICS*	CRITERION VARIABLE								ACCEPT
		Po	**Pl**	**Ol**	**Pq**	**RU**	**Tm**	**Ctm**	**Wm**	
CD	*R*	**Dimension**	-0.03	0.23	0.17	**Dimension**	0.18	0.37**	0.32**	
	Rho		-0.01	0.14	0.11		0.17	0.29*	0.27*	
	T		-0.02	0.13	0.10		0.16	0.27*	0.26*	
	Hypothesis		UR_1	UR_2	UR_3		UR_4	**UR_5**	**UR_6**	**H_{A2}**
Pw	*R*	-0.11	-0.25	-0.08	-0.85	0.07	0.03	0.21	-0.13	
	Rho	-0.12	-0.18	-0.10	0.11	0.07	0.05	0.18	-0.12	
	T	-0.11	-0.16	-0.10	-0.09	0.07	0.05	0.17	-0.11	**UR_5**
	Hypothesis	UR_7	UR_8	UR_9	H_{A1}	UR_{10}	UR_{11}	UR_{12}	UR_{13}	
St	*R*	0.16	-.39*	-0.06	0.05	-0.09	0.02	0.02	-0.02	**UR_6**
	Rho	0.23	-0.24	-0.04	0.08	-0.04	0.07	0.15	0.01	
	T	0.22	-0.23	-0.04	0.08	-0.04	0.07	0.15	0.01	
	Hypothesis	UR_{14}	**H_{A2}**	H_{A3}	H_{A4}	UR_{15}	UR_{16}	UR_{17}	UR_{18}	**UR_{19}**
M	*R*	0.35*	0.25	0.16	-0.02	-0.010	0.00	0.22	0.28	
	Rho	0.30	0.29	0.11	-0.8	-0.17	-0.05	0.23	0.25	
	T	0.28*	0.25	0.10	-0.07	-0.15	-0.04	0.21	0.23	
	Hypothesis	**UR_{19}**	UR_{20}	UR_{21}	UR_{22}	UR_{23}	H_{A5}	H_{A6}	H_{A7}	

Source: SPSS Output

Keys

CD= Competence Development	Ru= Resource Utilization
Pw= Project Work	Tm= Time Minimization
St= Skill Training	Cm= Cost Minimization
M= Mentoring	Wm= Waste Minimization
Po= Product Offering	** = Correlation is significant at the 0.01 level in a 2-tailed test
Pl= Product Line	* = Correlation is significant at the 0.05 level in a 2-tailed test
Ol= Output Level	H= Hypothesized Relationship
Pq= Product Quality	UR= Un-hypothesized Relationships

The point being made here is supported by our literature review. On the index formation for Product line, three indices were selected, namely: line growth, modernization and pruning. Line pruning involves a reduction in product lines.

This suggests some negative relationships. In this instance, the more and better the skill training provided, the better the line pruning obtained through rather a movement in an opposite direction – more profitable lines or items kept and less profitable ones removed. Indeed, it is possible to conceive situations where Product lines are pruned down to allow for the concentration and development of competences on a few. We, therefore, accept this negative relationship.

Three other CD – CPP specific relationships emerged from our data analysis reported in Table 1. The first labeled UR_5 is between Competence Development (CD) and Cost minimization (Ctm). This has a positive and moderately strong co-efficient (r = 0.4) that is significant at 0.01 level. The second is between Competence Development (CD) and Waste minimization (Wm) and is labeled UR_6. It has a positive and moderately strong co-efficient (r=0.3) that is significant at 0.01 level. A relationship between Mentoring (M) and the Product (P) dimension was also found (UR_{19}). It has a positive and moderately strong co-efficient (r=0.4) that is significant at 0.05 level.

A summary of the foregoing interpretations is as follows: (a) Project work has no significant relationship with product quality. (b) Skill training has a negative and significant relationship with product lines. (c) Mentoring has no significant relationship with time, cost and waste minimization; but has with an organization's product offering. (d) Competence development generally, however, has significant relationship with cost and waste minimization.

DISCUSSIONS OF FINDINGS

Competence development by the organizations in this study affects their productivity performance through skill training and mentoring. This finding answers our second and third research questions. It emerges from the tests of the hypotheses relating competence development to corporate productivity performance. In an attempt to answer the research questions, we had proposed relationships involving the three measures of competence development namely: project work, skill training and mentoring. We found no significant relationships involving project work as hypothesized. This contradicts the extant literature.

Wright and Noe (1996) have argued that project work allows workers to play a variety of roles, requires different tasks that allow for the development of diverse competences, and enables workers to be responsible for improving their knowledge and skills. We had, therefore, thought that such variety, diversity and improvements of competences through project work would lead to a higher productivity performance. The results we obtained do not support this. A possible explanation could be the lack of deliberate application of project work as one of the means for competence development in Nigeria. Our position is informed by the fact that in organizations, such as the US Air force, where it has been so employed, it has been adjudged the most effective means of competence development (Tossell *et al*, 2016).

With respect to skill training, we found it to be negatively associated with product lines. Following Evans' (1990) point of view, we thought that skill training should positively affect performance through the mastery of techniques, processes and operations it provides. However, the negative significant association we found involving skill training did not surprise us when we related it to that suggested by Evans (1990) with respect to the saving of time and money. These have negative relationships with skill training. This is because, the more or better the skills a worker acquires through training, the less time and money he would spend (waste) on a job involving such skills. We could not, however, find significant relationships skill training has with time, cost and waste minimization. We found it to have rather a negative relationship with product lines; but even this, it could be argued, as we have done in our interpretation, is consistent with the postulations of Evans (1990: 238). The reasons for this have already been explained; and perhaps a better result would

have been obtained if the study had used the construct of "amount" as in amount of time, money and waste.

A third instance of the effect of competence development on corporate productivity performance we found is through mentoring. Our results show that mentoring is significantly associated with the product offering of a company. From Johnson and Ridley's (2004) list of benefits of mentoring as a means of competence development, we deduced that the greater, better or systematic the mentoring relationships in an organization, the higher its productivity performance. This is because it provides competences that could minimize time, cost and waste. However, though with no significant specific relationship with these, the found association between mentoring and the product of a company is supported by Johnson and Ridley's work (2004). Given the fact the product of a company is one of the dimensions of productivity performance, this supports our finding that competence development affects performance through mentoring. We, therefore, conclude that competence development affects corporate productivity performance.

RECOMMENDATIONS

Given the findings of this study and conclusion above, it is apt to offer the some recommendations that should enhance productivity through the development of workers' competences. There is the need for organizations to employ project work as a deliberate means of developing the competences of their workers. They should anticipate competences that need to be developed from a given project; and create such a project, assign the target workers to the project, and ensure their participation to acquire or enhance those competences to increase productivity.

There is the need to pay more attention to skill training as an avenue for competence development for enhanced productivity. Such a training should go beyond the ritual of just providing training to "fulfill all righteousness", reward "loyal subordinates", earn "extra cash" by way of training allowances, or escape from work to "have fun"; but should encompass training in leading industry skills, in multiple phases, and with a theory-practice balance. This should be the reason for professional certification instead of having such certification for status symbol more than it is for improving productivity.

There is also the need to employ mentoring as a tool for developing the competences of workers if corporate productivity would be ultimately enhanced as often desired. Organizations should institutionalize mentoring through the deliberate fostering of mentoring relationships in organizations. Leaving organizational members to create such relationships, if they choose to and at their time and method of choice, would hardly result in the expected productivity increase. Indeed, no organizational member should be without a mentor and mentee; and the mentoring relationship must be able to offer information, help, advice, guidance, and coaching in a manner that can be likened to "**organizational parenting**". By taking these measures to develop the competences of workers, corporate productivity performance would be enhanced.

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APPENDICES

Appendix: Distribution of Data Collected Across Three Sectors

Table 2: CD and CPP Scores in the Oil Industry in Nigeria

Items	A	B	C	D	E	F	G	H	I	G	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	SUM
CD	3	3	4	4	4	4	3	4	4	5	5	4	4	4	5	3	4	4	4	4	4	4	4	4	95
CD1	4	3	3	3	4	2	4	3	4	3	4	3	3	3	4	3	3	3	3	3	4	2	3	4	78
CD2	4	4	3	4	4	4	4	4	4	5	5	4	4	4	4	5	4	4	4	3	4	4	4	4	97
CD3	3	2	0	2	3	4	0	0	5	5	5	0	0	4	3	4	2	0	0	2	0	0	0	5	49
PO	4	4	4	4	4	4	0	4	5	5	4	4	5	4	4	5	4	3	5	5	4	4	4	5	99
PO1	0	0	0	3	0	3	3	0	3	3	4	0	4	4	5	3	0	2	0	0	0	0	0	4	36
PO2	3	3	4	4	4	4	4	4	4	4	4	3	5	4	3	4	4	4	3	3	4	3	3	5	90
PO3	3	5	5	5	5	5	5	4	4	5	5	4	5	4	4	5	3	5	5	4	5	0	5	4	104
RU	4	4	4	4	4	3	3	4	4	3	5	4	4	4	4	4	4	3	4	4	4	4	3	4	92
RU1	4	3	3	3	3	3	3	3	4	4	4	3	3	3	3	3	3	4	3	3	3	3	4	5	80
RU2	3	4	3	4	0	3	3	3	4	4	4	4	4	3	4	3	4	3	4	4	4	3	4	4	83
RU3	4	4	4	3	3	3	3	3	4	4	4	4	3	4	3	3	3	3	3	3	3	5	3	4	83
Maximum possible score on a dimension by all companies (MPSD) =120 (Rows total)																									

Source: Responses to the questionnaire processed through SPSS Data Editor

Table 3: CD and CPP Scores in the Manufacturing Industry in Nigeria

Items	A	B	C	D	E	F	G	H	I	G	K	L	M	N	O	P	Q	R	S	T	U	V	SUM
CD	3	4	4	4	4	4	4	4	4	4	4	3	4	3	3	4	4	3	3	2	4	4	80
CD1	4	3	3	2	3	5	4	3	3	3	3	3	3	4	4	3	3	3	3	2	2	0	66
CD2	4	4	4	3	4	5	5	4	4	4	5	4	4	4	3	4	4	4	3	3	1	4	84
CD3	0	2	0	2	0	3	3	4	0	2	2	0	0	2	2	5	2	2	3	3	2	4	83
PO	4	4	3	4	4	4	4	4	4	5	4	4	4	5	4	5	4	5	5	3	5	4	92
PO1	3	3	4	3	3	2	4	0	0	3	0	0	3	3	0	0	3	3	4	4	5	0	50
PO2	4	4	5	4	4	3	3	4	4	4	3	4	4	4	4	4	4	4	2	2	5	4	83
PO3	4	5	4	5	5	4	4	4	4	5	4	5	5	4	5	5	5	4	4	3	5	5	95
RU	3	4	3	4	4	3	4	3	5	4	3	3	3	3	3	3	4	4	3	2	5	4	77
RU1	3	3	4	3	3	4	4	3	3	3	4	3	3	3	4	4	3	3	3	1	5	4	73
RU2	4	4	0	4	4	3	3	3	4	3	3	4	4	3	3	3	3	3	3	3	4	3	71
RU3	3	3	3	4	4	3	3	3	4	3	3	3	3	3	4	4	3	3	3	2	4	3	71
Maximum possible score on a dimension by all companies (MPSD) =110 (Rows total)																							

Source: Responses to the questionnaire processed through SPSS Data Editor

Table 4: CD and CPP Scores in the Service Industry in Nigeria

Items	A	B	C	D	E	F	G	H	I	G	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	SUM
CD	3	4	4	4	4	4	3	3	4	4	0	4	3	5	3	5	4	4	4	4	4	4	3	5	89
CD1	3	4	3	2	3	4	4	4	3	4	2	3	3	2	3	2	3	2	3	4	2	0	4	0	67
CD2	4	5	4	4	4	4	3	3	4	3	5	4	5	4	5	5	4	4	4	3	4	5	5	5	100
CD3	0	3	2	0	3	0	0	2	3	2	2	4	4	5	2	3	2	0	0	0	0	0	0	0	37
PO	4	5	5	4	4	3	4	3	4	3	5	5	5	5	4	5	4	3	4	4	5	4	4	4	100
PO1	3	2	2	0	0	0	3	4	3	2	3	0	3	4	3	3	3	0	3	0	3	0	3	3	50
PO2	4	4	4	4	4	3	5	5	4	4	4	4	4	5	4	5	4	4	5	3	3	4	3	4	97
PO3	5	5	0	4	3	4	4	5	4	5	5	5	5	4	4	5	5	5	4	5	0	5	5	5	101
RU	4	5	4	3	3	4	4	4	3	3	4	3	3	0	4	3	3	4	3	4	4	4	3	3	82
RU1	4	3	3	3	4	3	3	3	4	4	3	3	3	3	3	4	4	3	4	3	3	3	3	4	80
RU2	3	4	3	4	3	3	4	3	3	3	4	3	4	3	3	4	4	3	3	4	3	4	4	3	82
RU3	3	4	4	4	4	4	3	4	4	3	3	3	4	4	3	4	4	4	4	3	3	3	3	4	86
Maximum possible score on a dimension by all companies (MPSD) =120 (Rows total)																									

Source: Responses to the questionnaire processed through SPSS Data Editor

Table 5: Keys to items in Tables 2-4

A-X	= Labels for sample elements (24 Oil, 22 Manufacturing, & 24 Service companies)
CD-CD3	= Competence Development Concept and Measures (Competence Development, Project Work, Skill training, & Mentoring)
PO-PO3	= Product Offering Concept and Measures (Product Offering, Product Lines, Output Level & Product Quality)
RU-RU3	=Resource Utilization Concept and Measures (Time, Cost & Waste Minimization)

Source: Tables 2-4