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STUDY OF THE RELATIONSHIP BETWEEN KNOWLEDGE WORKERS, BANKING WORK ENVIRONMENT AND PRODUCTIVITY OF COMMERCIAL BANKS IN KUCHING

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Abstract

This study seeks to understand the relationship between knowledge workers, the banking work environment and the impact of the work environment on the productivity of the commercial banks in Kuching. Information for the study was collected through two sets of questionnaires. Among the findings of the study were that bank employees generally fitted the definition of knowledge workers. However, their being non-avid readers of serious and intellectually stimulating reading materials threatens this status. The findings of the study also supported the long held belief that staff are an organisation's greatest assets. Further, it was found that there was room for improvement in terms of enhancing the conduciveness of the banking work environment, the management of knowledge workers and knowledge management for improved banking productivity and competitive edge.

1.0 INTRODUCTION

Economists have long considered labour and capital as the primary factors of production. Today, this appears to have become less true. It is increasingly apparent that the accumulation and application of knowledge can significantly determine the wealth of an individual or nation. In fact, as far back as in 1969, Peter Drucker had argued that 'knowledge' is the true 'factor of production'. Knowledge differs from the other factors of production in that it enjoys unlimited mobility. It can be transferred from one country to another to increase the recipient country's stock of productive resources without the originating country suffering any loss from the 'outflow'.

Information and communication technology (ICT) and ICT products represent effective tools for facilitating the creation, flow, management, processing and utilization of knowledge. This implies that worker's ability to master and effectively use ICT and ICT products is crucial in determining their capacity to use knowledge to add value to the production process. As such, for the purpose of this study, bank knowledge workers are defined as bank employees who are computer literate, multi-disciplined, able to use and derive value from information and who perpetually monitor and upgrade their skills to remain relevant to the banks they are serving.

Malaysia started laying the foundation to transform itself into a knowledge-based economy in the mid 1990s, among others, with the launching of the Multimedia Super Corridor (MSC) and the National Information Technology Agenda (NITA). Both the government and the private sector undertook continuous efforts in the area of upgrading the workforce's education and learning, building information infrastructure, improving the Research & Development system and capability and exploiting global knowledge.

The commercial banking sector was among the forerunners in contributing towards the nation's drive to become a knowledge economy. This, to a significant extent, was due to the increasing knowledge content and complexity of banking operations. Indeed, knowledge workers have become some of the most important factors contributing to the growth and development of the commercial banking industry. Knowledge workers by themselves however will not contribute towards an improvement in productivity. Similar to other workers, the proper management of knowledge workers is essential to ensure their effective contribution. This requires an understanding of knowledge workers and an effective application of knowledge management strategies.

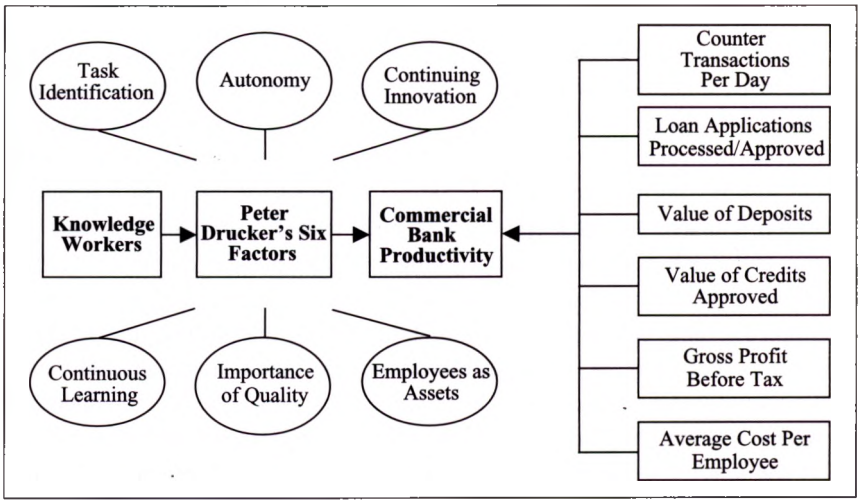
2.0 THEORETICAL FRAMEWORK

Knowledge workers have been identified as instrumental in providing corporations with a competitive edge in the twenty-first century. According to Drucker (1999), knowledge workers are the single most important asset of an organisation. However, to derive full value from its pool of knowledge workers, an organisation needs to manage them effectively. Drucker (1999) also suggests that organisations must provide a conducive environment for knowledge workers to work and contribute. The environment, according to him, should take into consideration the following six factors:

- **Task identification:** Task is defined as the work that needs to be done to achieve the objective. Knowledge workers should as far as possible identify and define the task themselves and concentrate on the identified task.
- **Autonomy:** The responsibility for their productivity must be imposed on the knowledge workers themselves, that is knowledge workers must manage themselves.
- **Continuing innovation:** This should be part of the work, the task and the responsibility of knowledge workers.
- **Continuous learning:** Knowledge work requires continuous learning and teaching on the part of the knowledge workers.
- **Importance of quality:** While quality may be more of judgment rather than measurement, the quality of knowledge work is equally, if not more important than quantity.
- **Employees as assets:** Knowledge workers own the means of production since the knowledge is specific to them and is highly portable. Knowledge workers are mobile and the organisation needs them more than they need the organisation. In treating knowledge workers as assets, organisations need to be able to attract and retain them, increase their productivity and transform their increased productivity into performance capacity.

The theoretical framework adopted for this study incorporates Drucker's (1999) six environmental factors and the definition of knowledge workers as mentioned earlier. The productivity of commercial banks is measured using established banking productivity measures. The framework is presented diagrammatically as follows:

Figure 1: The Theoretical Framework



3.0 METHODOLOGY OF THE STUDY

The sampling frame of this study covers all the 37 commercial bank branches in Kuching. 15 commercial bank branches participated in this study, giving a response rate of 40.5 percent.

Data for the study were collected through two questionnaires; one of which (the 'manager questionnaire') was distributed to the managers-in-charge and the other (the 'staff questionnaire') to the other employees of the commercial banks. The 'manager questionnaire' collected information on the profile and productivity initiatives of the commercial banks in Kuching.

It consists of the following sections: Background of the branch and head office, productivity performances of the commercial banks, authority and decision making, quality assurance system, and human resource development. The 'staff questionnaire' solicits information on the staff's personal background, education level, work experience, social and professional involvement, recreational activities, personal advancement, language, communication and IT skills, authority, duties and responsibility and innovation and improvement initiatives.

SPSS software was used to process and interpret the data collected. Both descriptive and inferential statistics like frequency, mean, Pearson correlation and multiple regressions were used to analyze the data.

4.0 ANALYSIS AND DISCUSSION

4.1 Profile of Commercial Bank Employees in Kuching

Information collected through the 'staff questionnaire' showed that the average bank employee in Kuching was between 30-39 years old, married and possessed 5-9 years of work experience. He/she holds a Sijil Pelajaran Malaysia (O-level school certificate) and occupies a clerical level position. Prior to the present job, he/she had worked in either a service sector job or in a financial institution. The average bank employee is multi-tasked, having undergone 1 job transfer and 2 job rotations since working with the present employer. He/she owned a personal computer, was highly computer-literate and used the computer for more than 9 hours a week, mainly for working and surfing the Internet. He/she was multi-lingual, fluent in more than one major language, and was a good communicator and listener. The average bank employee had attended 1-5 job-related training programmes over the past 3 years. He/she was aware of the vision and mission of the bank, had a formal written job description and his/her inputs were sought in the formulation of the job description.

The average bank employee was aware of his/her job responsibilities and able to fulfil them adequately. Consultations with the supervisor were frequent, averaging once a day. He/she made some decisions appropriate to his/her level but at times found the formal reporting system restrictive and inhibiting his/her personal development. On average, he/she contributed 1-3 ideas over the past 12 months towards the improvement of his/her bank. Generally, he/she was not involved with any social, recreational or professional organisations. Also, he/she spent relatively limited time on reading.

The profile of an average bank employee outlined above suggested that they have the knowledge to undertake their work and were able to apply ideas, concepts and information in order to meet the requirements of the job. Besides that, the average employee was able to use information technology and to combine technology with his/her knowledge to add value to the work. It may therefore be concluded that commercial bank employees are knowledge workers.

4.2 The Relationship Between Work Environment Factors and Productivity of Commercial Banks in Kuching

This section seeks to analyse the relationship between commercial bank's work environment and productivity using correlation analysis and multiple regression analysis. Variables identified as proxies for Drucker's six environmental factors were based on logic and were in line with the general expectations in the banking industry. The proxies identified are as follows:

Task identification

- Percentage of staff who knew the mission and vision of the bank (TVM).

Autonomy

- Percentage of staff who indicated that the existing formal reporting and monitoring system were restrictive and inhibiting to their personal development (AUA).
- Authority for middle management staff. (AUM) Dummy variable value of 1 was assigned for middle management staff who have adequate authority and autonomy to achieve their objectives/target; a value of 0 was assigned if otherwise.

Innovation

- Percentage of staff who have contributed suggestions and ideas for improvement (ICSI). Dummy variable value of 1 was assigned if their suggestions and ideas had been adopted in the last 12 months; a value of 0 was assigned if otherwise.
- Existence of formal policy to encourage staff contribution of ideas (IPSI). Dummy variable value of 1 was assigned if formal policy exist; a value of 0 was assigned if otherwise.

Continuous Learning

- Percentage of staff who has attended training programmes more than 3 times a year (CLTR).
- Percentage of staff who have been rotated more than 4 times (CLRO).
- Percentage of staff who read more than 1 hour per week (READ1)
- Encouragement by banks to pursue higher education (CLHRD). A dummy variable value of 1 was assigned if the bank encouraged their staff to pursue higher education; value of 0 was assigned if otherwise.

Importance of Quality

- Response time to customer's complaints (QFR). A dummy variable of 1 is assigned for response time of less than 3 days; a value of 0 is assigned if response time exceeded 3 days.
- Frequently review quality system (QRQ). A dummy variable of 1 is assigned if the bank reviewed its quality system once in less than 6 months; value of 0 is assigned if more than 6 months.

Staff as Assets

- Labour Cost per employee (LCost)
- Size of the bank (SIZE)
- Percentage of males in the bank (SMALE).
- Percentage of graduates in the bank (SGRAD).
- Percentage of staff aged less than 40 years old (SYOUNG).
- Average years of tenure with the current employer (STENURE).
- Percentage of overseas graduates (SOVERSEA).
- Schemes to reduce staff turnover (SRTO). A dummy variable value of 1 if the bank had schemes to reduce staff turnover; 0 if otherwise
- Incentives for staff performance (SI). A dummy variable value of 1 if the bank had given more than 3 incentives in the past 12 months; 0 if otherwise

The following dependent variables were used:

- Loan to deposit ratio (LODEP). This is a widely used productivity measurement for the banking sector (Bank Negara, 2001)
- Gross profits (LNPROFIT). The natural log of gross profit is used as an alternative measure.

Values of the selected explanatory variables are as shown in Appendix 1.

4.3 Results of Correlation Analysis

The following relationships were found from the correlation analysis between the dependent and independent variables:

- Fixed asset size has a negative relationship with gross profit. ($r = -0.74$). This may be explained by the long gestation period required to recoup fixed asset investments.
- The number of graduates is negatively related to the gross profit. ($r = -0.64$). One possible explanation for this phenomenon is the "knowing-doing" gap in which the knowledge of graduates are not fully utilised to add value to the banks.
- The percentage of staff who contributed ideas had a positive relationship with the percentage of staff rotated frequently ($r = 0.602$). Through rotation, staff gained exposure and are in a better position to contribute ideas.

4.4 Multiple Regression Analysis

Four multiple regression models were constructed to assess the impact of the independent variables on the productivity of the banks. These models represent the combinations of independent variables that were found to be statistically significant and to increase the value of the adjusted R Square.

For Models 1 and 2, the dependent variable is the loan to deposits ratio (LODEP) whereas for Models 3 and 4, it is the natural log of gross profit (LNPROFIT). The natural log of gross profit is used to normalise the distribution. The slopes for the functional forms of Models 3 and 4 measure the relative change in Y for a given absolute change in X (Gujarati, 1988:148). The models were tested using Variance Inflation Factor (VIF) and were found to have very low multicollinearity among the independent variables

The 'a priori' expectation is that the independent variables will positively affect the productivity of the banks. The unit of analysis is at bank or group level. The four models were:

$LODEP_i=a_i+b_1AUA_i+b_2ICSI_i+b_3QFR_i+b_4SI_i+U_i$ ..... (1)
$LODEP_i= a_2+c_1AUA_i+c_2ICSI_i+c_3CLTR_i+c_4SI_i+U_i$..... (2)
$LNPROFIT= a_4+d_1TVM_i+d_2AUM_i+d_3CLPO_i+d_4SYOUNG_i+U_i$..... (3)
$LNPROFIT_i= a_5+e_1AUM_i+eIASIi+e_3CLHED_i+e_4QRQi+E_5SRTO_i+U_i$..... (4)

Fitting the estimated values of the coefficients into the multiple regression models above yielded the following results:

Model 1: LODEP = $42.7 - 0.17\,AUA_i - 0.41ICSI_i + 2.79QFR_i + 9.17SIi + Ui$
Model 2: LODEP = $36.4 - 0.13AUA_i - 0.37ICSI_i + 0.13CLTR_i + 10.65SI_i + Ui$
Model 3: LNPROFIT = $13.7 - .0.6TVM_i - 0.025AUM_i - 0.028CLPO_i + 0.07SYOUNG_i + Ui$
Model 4: LNPROFIT = $18.4 + 0.23AUM_i - 1.74IASI_i - 2.01CLHED_i - 0.065QRQ_i - 1.8SRTO_i + U_i$

All the four models explained over 75% of the variation in the dependent variables. Model 4 has the highest R square of 83.4, followed by Models 2, 3 and 1 with R square values of 0.824, 0822 and 0.765 respectively.

The following findings were made:

- The "Number of ideas adopted", and the "Proportion of staff contributing ideas" have negative relationships with the gross profits and loan to deposit ratio. There are two possible explanations for this, the first being that the ideas contributed were in areas which have no impact on the profits while the second explanation is that, the ideas contributed were related to the 'chores' rather than the 'tasks'.

- The "Percentage of staff attending training regularly (more than 3 times a year)" has a positive but insignificant relationship with loan to deposit ratio. As with the case of "Number of graduates" and gross profits, the explanation for this may be the existence of the 'knowing-doing gap'.
- "Frequency of review of quality assurance system" has a negative relationship with gross profit. This may be explained by the fact that frequent reviews resulted in the proliferation of red-tape which impacts negatively on profit.
- "More than 3 incentives were given to the staff for the past 12 months" has a positive and significant relationship with the dependent variables. This indicates the importance of incentives for the motivation of staff.
- "Proportion of younger staff who were less than 40 years old" has positive and significant relationship with the dependent variables. This implies that older staff are less productive than their younger colleagues. A possible explanation for this may be the 'burn-out' factor attributable to older staff and the lack of strategies to minimize the impact of the 'burn-out'.
- "Proportion of staff who knew the vision and mission of the bank" is negatively related to profit. It was found that this was due to the misperception among bank staff pertaining to their understanding of the vision and mission of the banks.

5.0 CONCLUSION

The findings of this study point to the fact that commercial bank workers fitted the definition of knowledge workers. However, a disturbing finding is that the majority of bank workers spent relatively little time on reading. Further, there is a preference for light and leisurely reading materials rather than heavier and more intellectually stimulating ones. As reading of the latter materials represents one of the most versatile and effective means to acquire knowledge and to keep abreast with current knowledge in various fields, these findings created doubts as to whether or not bank employees could continue to qualify as knowledge workers in the future particularly in an era where the amount of knowledge is estimated to double every 25 years (Drucker, 1969).

The fact that among Drucker's six environmental work factors affecting productivity, only one factor, that is "Staff as assets" showed a positive and significant relationship with bank productivity, implying that commercial banks in Kuching should strive to motivate their staff and treat them as assets. For the case of the older employees, the 'burn-out' factor should be recognised and prevented or delayed from manifesting itself through appropriate knowledge worker management strategies.

The existence of the "knowing-doing gap' among bank knowledge workers requires the serious attention of the bank's management. The gap appeared to arise from the need for banks to maintain a relatively rigid system of decision-making and procedures in order to protect their customer's interest. This need reduces the opportunities for knowledge workers to apply the knowledge which they gained through the formal education system or on-the-job training to add value to their work and to the bank. Effective knowledge workers and knowledge management are required to reduce the gap and harness the full potential of the knowledge workers.

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Appendix 1: Values of The Selected Explanatory Variables

Factor	Variable	Description	A	B	C	D	E	F	G	H	I	J	K	L	Average (%)
Task Identification	TVM	% staff Knows M&V of the bank	100	100	86	100	95	73	72	56	55	94	100	90.5	85.4
	TMSK	>40% of staff had multiple tasks	0	1	1	0	1	1	1	0	0	1	0	1	
Autonomy	AUA	Adequate autonomy (staff)	66	77	46	72	57	65	69	53	61	72	72.7	90.5	67.1
	AUM	Adequate authority (middle management)	1	0	1	1	1	1	0	0	1	1	0	1	
Innovation	IPSI	Formal policy to contribute ideas	0	0	0	1	1	1	0	0	0	0	0	0	
	ICSI	% of staff contributing ideas	81	72	80	80	85	65	75	76	83	100	90.9	81	81
	IASI	Ideas adopted >3 for the last 12 months	1	0	1	1	1	0	0	0	0	1	1	0	
Continuous Learning	CLTR	frequency of attending training programs >3 times a year (%)	38	27	20	16	35	27	21	6.6	11	12	9.1	4.8	19
	CLPO	% of staff rotated >4 times	0	6.7	0	17	31	23	24	9.1	7.7	50	57.1	10	19.6
	CLHED	Encourage to pursue higher education	1	1	1	1	1	1	1	1	1	1	0	1	
	READ1	% of staff read more than 1 hour per week	84	71	78	82	87	91	86	87	81	82	70	60	80
Importance of Quality	QFR	Respond time<3 days	0	1	1	1	1	1	1	0	1	1	1	1	
	QRQ	Freq of reviewing quality system < 6 months once	0	0	1	0	1	0	0	0	0	1	0	0	
Staff as Assets	SI	Incentive>3 per year	0	0	1	0	0	1	0	0	0	1	0	1	
	SMALE	% males	47	56	47	28	35	34	34	46	33	55	9.1	52.4	39.9
	SGRAD	% graduates	33	11	0	20	10	11	14	3.3	0	11	9.1	19.1	11.9
	SYOUNG	% age <40	95	88	93	76	80	81	83	83	89	77	100	85.7	86.1
	DTENURE	average years with current employer	6.1	5.2	6.8	11	11	9.9	9.1	10	8.8	11	5.55	10	8.9
	SOVERSEA	% overseas graduates	14	0	0	16	5	7.6	6.8	13	11	5.6	18.2	14.3	9.4

* 1 indicates that the proxy exists for the particular bank branch, 0 if otherwise.
** the alphabet A to L identifies the bank branches under study