

## Organizational Commitment Development Model in Semiconductor Industry

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### Abstract

The purposes of this study were to find out the organizational commitment of supervisors in Semiconductor industries, the factors affecting on organizational commitment of supervisors. Four factors comprising job characteristic, job satisfaction, leadership and organizational commitment were selected for attention and introduce the organizational commitment development model.

The findings were that the organizational commitment level of the supervisors' organization in every group classified by demographic factor was average. The main factors relating to the organizational commitment found at high statistical significance and positive relationship were job satisfaction and leadership factors. The job characteristic factor showed no statistical significance relationship. The high predictor factors affecting the organizational commitment of supervisors' organization as whole were; job satisfaction factor and leadership factor especially job satisfaction factor was the main contribution of organizational commitment. The best predictive variables among those 13 variables arranged in consecutive order were the supervision, compensation, position power and autonomy. A six steps of organizational commitment development model comprised definition of opportunity, analysis and identification of cause, setting job commitment action, implementation, confirmation and standardization.

**Keywords:** Organizational Commitment, Semiconductor Industry

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## 1. Introduction

Nowadays, the effective utilization of resources is the crucial factor in the success and goal derivation of every organization. Among all resources, human resource is an important factor affecting the effectiveness and competitiveness of the organization in the business world. In addition, human resource development is the main essential strategy in our organizational development. With high quality human resources, rapid development in other aspects is possible. Therefore, the effort for any development without human resource aiming is difficult to accomplish.

Psychological studies revealed that job commitment produces more effective work. Such organizational commitment may yield higher production and profits. However, individual differences do exist in job commitment, for instance, salary expectations and psychological rewards such as being connected to other persons in the organization. Some may need to acquire social status. The differing needs results in different levels of organizational commitment, which affects the performance and profits of the organization. Thus, it is essential for the organization direction to pay attention to human resource management and effective manipulation, starting from the employee selection and placement, planning and developing together with maintaining well-qualified employees in the organization [1] [2] and [3].

The organizational commitment of a person to the organization is shown in the confidence and acceptance of the good values of the organization. A good example

of this case is the semiconductor industry, which exists in a strong competitive market. The products are rapidly being developed to catch up with new and continuous changing technologies as seen from specifications of latest models of electronic equipment such as computers and mobile phones. These are continuously developed for smaller and more effective products to satisfy consumers' needs. The products were adopted in terms of production techniques, designs and quality, resulting in the development of the organization in job designs for the employees' work satisfaction which also raised the employees' commitment to the job and work efficiency. However, semiconductor industries are very dynamic causing high stress and reduced work efficiency among employees, especially the supervisors – mediating policies of the organization and the employees. Therefore, the supervisors without organizational commitment to the job do not want to remain in such organizations. They have less faith and acceptance of the goal and ethics of the organization. In addition, they make no effort in work dedication, which lowers their efficiency to the point of affecting the organization. Low organizational commitment also leads to absence, work tardiness or resignation, which results in higher expenses for the organization [4].

Realizing the importance of the problem, the researcher designed a study on organizational commitment of supervisors in a semiconductor industry to find out the level of organizational commitment and what factors are relative and affecting

organizational commitments. Another important factor of the research was the personal factor affecting supervisors' organizational commitment. Nevertheless, according to the principles of human resource management, it is advisable that we consider "Right – person/Right – job Matching" theory. So, another important factor to be considered in this research is 'demographic factor', which obviously has an influence on a supervisor's organizational commitment.

## 2. Research Objectives

To obtain the answers to the research problems, the objectives were set as following.

2.1 To study the level of the organizational commitment in the supervisors' organization.

2.2 To determine the factors affecting on the organizational commitment of the supervisors to their organization.

2.3 To introduce the organizational commitment development model for improving the organizational commitment of supervisors.

## 3. Research Procedure

Questionnaires were used in conducting this research and were developed and improved by gathering information from relevant documents and research. There were five parts in one questionnaire.

The first part concerned demographic factor, comprising the following 5 variables: sex, age, education, work in service, and status. This part contained both multiple-choice questions and others that required an explanation and discussion. The second part had 15 questions and concerned job characteristic factor, Comprised the following 5 variables; skill variety, task identity, task significance, autonomy and feedback. The third was aimed to calculate job satisfaction of a supervisor, comprising the following 5 variables: coworker, supervision, work itself, promotion and compensation. There were 45 questions altogether. The fourth part had 25 questions and was about the leadership factors, comprising of the following 3 variables; leader-member relationship, task-structure and position-power. The fifth, and last, had an objective to figure out via 14 questions, how much a supervisor feels committed to his/her position and the organization.

To assess the accuracy of the content, five experts within the fields of business, management, industry, leadership, and human resource development were recruited to test, rate, and examine all the measures. All the items were certified for content validity by the five experts. Item validation results questionnaires were appropriate since they are consistent with the objectives of the research questions. The questionnaire quality was tested for reliability using Cronbach's alpha coefficient. The alpha coefficient was 0.973.

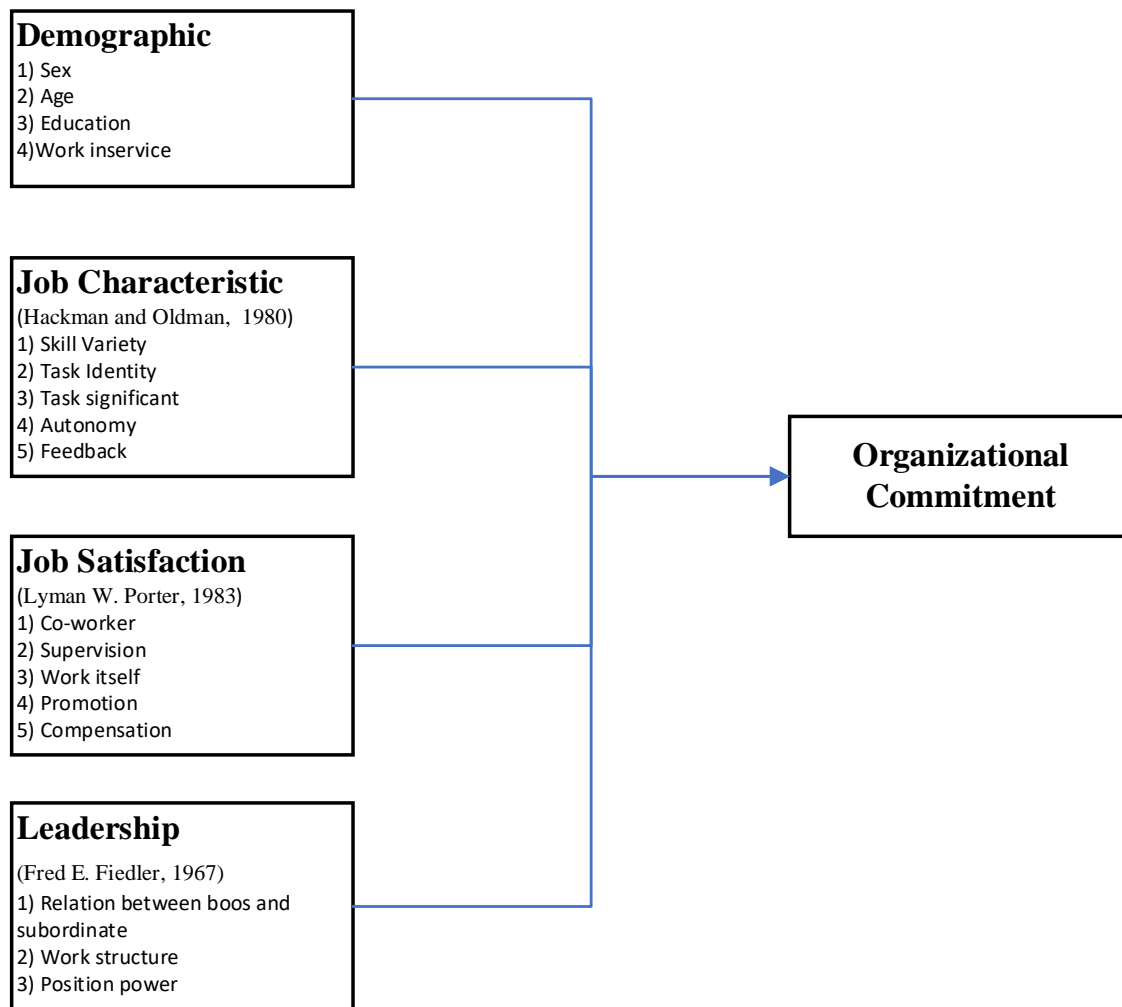


Figure 1: Research Framework

#### 4. Findings

##### 4.1 Organizational commitment level of supervisors

To sort out basic data showing the percentage of supervisors answering the questionnaires, according to demographic factors, the results were as follows:

**Sex:** The number of samples in male supervisors is 71 or 91.0 percent. The sample number in female supervisors is 7 or 9.0 percent.

**Age:** The ranges of the age were categorized into three groups, i.e. below 31 years old, 31 to 35 years old, and 36 and above. The number of the samples below in

the 30-year-old group was 28 or 35.9 percent, the sample number in the 30 to 35 year-old group was 22 or 28.2 percent and the sample number in the 36 and above was 28 or 35.9 percent.

**Education:** The ranges of education were categorized into three groups, i.e. below bachelor, bachelor, and higher bachelor. The number of the samples in below bachelor group was 13 or 16.7 percent, the sample numbers in bachelor group was 60 or 76.9 percent and the sample number in the higher bachelor group was 5 or 6.4 percent.

Work in service: The ranges of work in service were categorized into four groups, i.e. below 6 years, 6 to 10 years, 11 to 15 years, and more than 15 years. The number of the samples in below 6 years group was 7 or 9.0 percent, the sample numbers in 6 to 10 years group was 39 or 50.0 percent, the sample numbers in 11 to 15 years group was 21 or 26.9 percent and the sample number in the more than 15 years group was 11 or 14.1 percent.

Status: The number of samples in single supervisors was 34 or 43.6 percent versus 44 married supervisors or 56.4 percent.

In this section, the study on organizational commitment level of the supervisors classifying by demographic factors which were sex, age, education, work in service and status is shown in table 1.

**Table 1:** Mean, Standard Deviation and level of organizational commitment by classification of demographic factors.

Variable		Mean	S.D.	Commitment level
Population		3.8867	0.2725	Moderate
Sex	Male	3.8932	0.2768	Moderate
	Female	3.8200	0.2323	Moderate
Age	Young (<31)	3.8614	0.2798	Moderate
	Middle-age (31-35)	3.8750	0.2591	Moderate
	High (>35)	3.9211	0.2816	Moderate
Education	Below bachelor	3.8723	0.3017	Moderate
	Bachelor	3.9100	0.2675	Moderate
	Higher bachelor	3.6440	0.1383	Moderate
Work in service	Below 6 years	3.8429	0.2175	Moderate
	6 to 10 years	3.8626	0.2948	Moderate
	11 to 15 years	3.9195	0.2580	Moderate
	More than 15 years	3.9373	0.2672	Moderate
Status	Single	3.8871	0.2726	Moderate
	Married	3.8864	0.2756	Moderate

\* Organizational commitment level: The degree of retention and intention of supervisors are good in their job which organizational commitment levels were lowest (1.00-1.49), modulated low (1.50-2.49), average (3.50-4.49), above average (4.50-5.49), modulated high (5.50-6.49) and highest (6.50-7.00).

From table 1, to determine the organizational commitment level of the supervisors was derived from the analysis of mean and standard deviation. The results

showed that the organizational commitment was average regardless of the following factors: sex, age, education, work in service or status.

## 4.2 Factors affecting on the organizational commitment of supervisors

### 4.2.1 Main factors

The four main factors, which were job characteristic factor, job satisfaction factor and leadership factor with 13 variables were all considered to figure out the regression model of the mentioned factors affecting on organizational commitment of supervisors.

All these factors were analyzed by correlation and regression analysis.

The association between main factors, which were job characteristic, job satisfaction and leadership, and organizational commitment of supervisors taken into account, the simple correlation on main factors is shown in table 2.

**Table 2:** Correlations of main factors

	Job characteristic	Job satisfaction	Leadership	Organizational commitment
Job characteristic	1.000	.073	.096	.162
Job satisfaction		1.000	.284*	.380**
Leadership			1.000	.392**
Job commit				1.000

\* Correlation is significant at the 0.05 levels

\*\* Correlation is significant at the 0.01 levels

The main factor correlations were .162 in job characteristic, .380 in job satisfaction and .392 in leadership and were positive as expected. This means that as main factors increase there will be a higher organizational commitment level for supervisors. The

analysis of data was found that job satisfaction and leadership factors were significantly related to organizational commitment of supervisors while the job characteristic factor was not statistically significant on organizational commitment.

**Table 3:** Main factors coefficient

Variable	b	Std. Error	Beta	t	Sig. level
Constant	2.519	.442		5.700	.000
Leadership	.002	.001	.309	2.932	.004
Job satisfaction	.014	.005	.292	2.770	.007
R = .482      R <sup>2</sup> = .232      Adjusted R <sup>2</sup> = .212      S. Est = .242					

In Table 3 indicated that the coefficients of main factors. It can be concluded that the best predictor factors were leadership and job satisfaction factors

where standardized coefficients (beta) were .309 and .292 in consequently. The multiple correlation coefficient(R) of regression model was .482. The standard error of the

estimate was .242 and the adjusted R square was .212 that was 21.2 percent of the variability in the data was accounted for regression model. The regression model of organizational commitment of supervisors in term of main factors is following.

$$\text{Organizational commitment} = 2.519 + 0.002 * (\text{Work environment}) + 0.014 * (\text{Job satisfaction})$$

#### 4.2.2 Predictor Variables

The discussion in this section starts with the application of the regression analysis to the data collection and then presents an alternative model. The main purpose of this research was on forecast, the multiple regression and stepwise

multiple regression model were our alternative model because it produced more realistic forecast of the organizational commitment of supervisors.

The estimated equation presented in table 4 was used to forecast the organizational commitment level of supervisors. The predictor variables included apart from the full multiple regression are skill variety, task identity, task significant, autonomy, feedback, co worker, supervision, work itself, Promotion, compensation, relationship, structure, and position power. The predictor variable coefficients are shown in Table 4.

**Table 4:** Coefficient of variables

Variable	B	Std. Error	Beta	t	Sig. level
Constant	.552	.269		2.052	.044
Skill variety	.004	.003	.051	1.276	.207
Task identity	.004	.004	.040	.942	.350
Task significant	.000	.003	-.001	-.012	.990
Autonomy	.018	.005	.166	3.763	.000
Feedback	.000	.004	-.004	-.098	.922
Co worker	-.001	.004	-.015	-.352	.726
Supervision	.092	.005	.901	18.109	.000
Work itself	-.005	.004	-.055	-1.213	.230
Promotion	-.002	.004	-.030	-.651	.518
Compensation	.058	.005	.531	12.213	.000
Relation	.000	.000	.049	1.054	.296
Structure	-.006	.005	-.052	-1.189	.239
Position power	.101	.010	.487	10.181	.000
R = .950      R <sup>2</sup> = .902      Adjusted R <sup>2</sup> = .882      S. Est = .093					

Data in Table 4 indicated that the reason for autonomy, supervision, compensation and position power is obvious and its effect is statistically significant above

95 percent and the remaining variables are not statistically significant on organizational commitment. The multiple correlation coefficient (R) of regression model was .950.

The standard error of the estimate was .093 and the adjusted R square was 0.882 that was 88.2 percent of the variability in the data was accounted for the regression

model. The model might be more effective with the deletion of the variables which were not statistically significant by applying the stepwise multiple regression method.

**Table 5:** Coefficients of best variables

Variable	B	Std. Error	Beta	t	Sig. level
Constant	.381	.160		2.378	.020
Supervision	.096	.004	.941	22.582	.000
compensation	.059	.004	.539	13.623	.000
Position power	.104	.009	.499	11.901	.000
Autonomy	.016	.004	.151	3.880	.000
R = .945      R <sup>2</sup> = .893      Adjusted R <sup>2</sup> = .887      S. Est = .091					

Data in Table 5 indicated that the coefficients of the best predictor variables. It can be concluded that the best predictor variable was supervision where standardized coefficient (beta) was .941. The four remaining predictor variables arranged the important predictor variables in consecutive order were compensation, position power and autonomy with their standardized coefficients equal to .539, .499 and .151 respectively. The multiple correlation coefficient (R) of regression model was .945. The standard error of the estimate was .091 and the adjusted R square was 0.887 that was 88.7 percent of the variability in the data was accounted for the regression model. The regression model of organizational commitment of supervisors in term of the best predictor variables is following.

#### Unstandardized model:

$$\text{Job commitment} = .381 + .096*(\text{Supervision}) + .059*(\text{compensation}) + .104*(\text{Position power}) + .016*(\text{Autonomy})$$

#### Standardized model:

$$\text{Job commitment} = .941*(\text{Supervision}) + .539*(\text{compensation}) + .499*(\text{Position power}) + .151*(\text{Autonomy})$$

#### 4.2.3 Organizational Commitment Development Model (OCDM)

The concept of building the organizational commitment model was discussed with an emphasis on the organizational commitment requirements. The modeling discussions were introduced and applied the quality management concept for structuring the organizational commitment development model. Thus, the researcher used a quality management guide and brainstorming tool for gathering

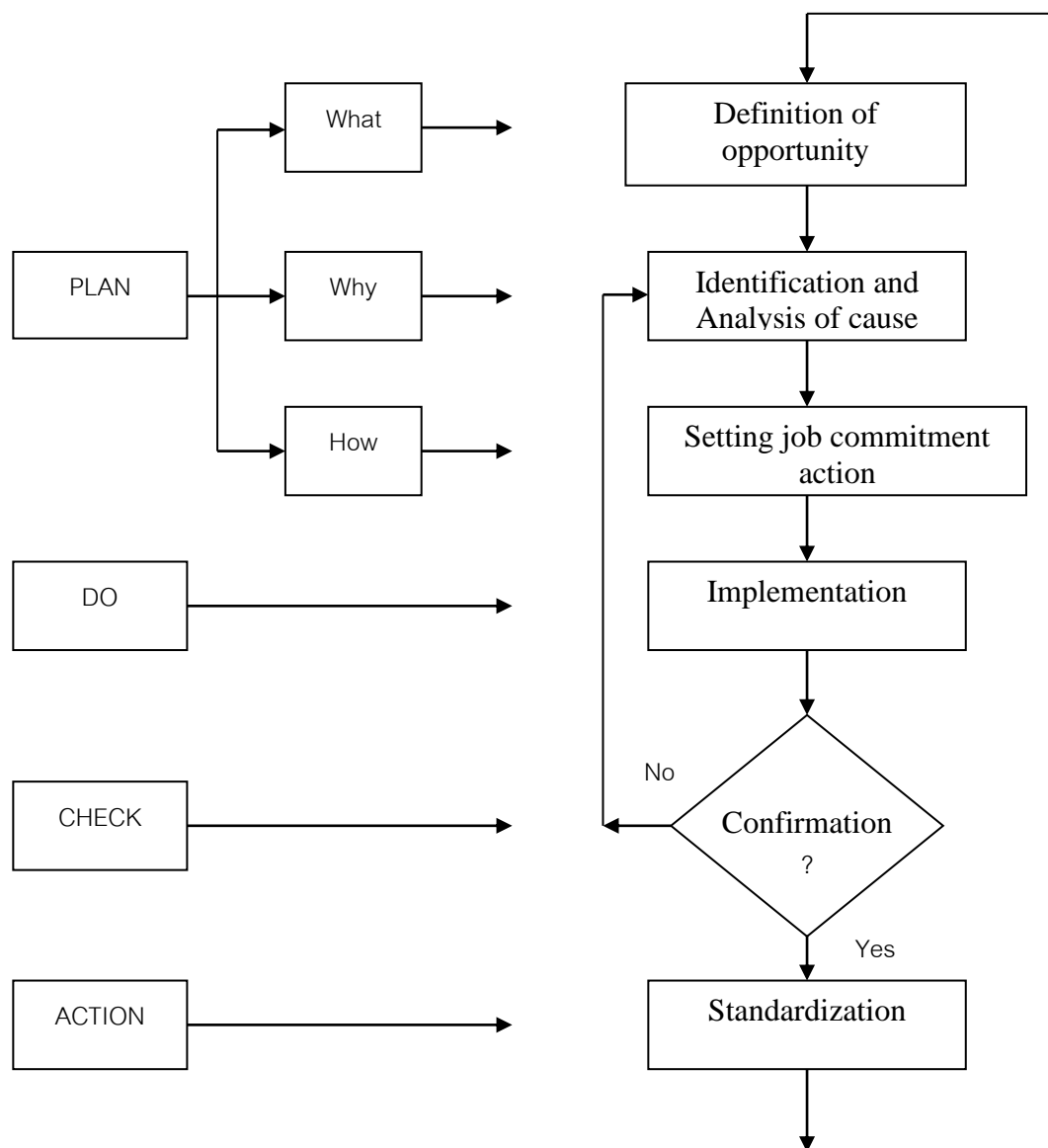
data and developed the model. To improve the organizational commitment of supervisors, the best way to improve job commitment is using the PDCA cycle and the model guide used the six steps approach [5] for improving organizational commitment of supervisors.

#### 4.2.3.1 Definition of opportunity:

Frequently a cause or solution is stated as “problem or opportunity”. It should be understood to avoid skipping most of

opportunity. The opportunity can be described by the observed facts and by the comparable facts related to what, where, when and magnitude.

4.2.3.2 Identification and Analysis of cause: Use the Pareto principle to highlight major contribution and select the opportunity for improving organizational commitment. The analysis of cause could determine the most likely cause.



**Figure 2:** Organizational Commitment Development Model (OCDM)

4.2.3.3 Setting organizational commitment action: To decide on the most appropriate action to improve the organizational commitment for supervisors.

4.2.3.4 Implementation: If the solution is a success, then the appropriate action should be incorporated into the organizational commitment development program.

4.2.3.5 Confirmation: Confirm that procedure and actions are being adhered to and that the new level of organizational commitment is being maintained. Aim for future improvement.

4.2.3.6 Standardization: Modify the necessary systems including policies, practices, and procedure, to prevent recurrence of organizational commitment cause. Documentation was preferable in this step.

## 5. Summary

The organizational commitment level of the supervisors' organization in every group classified by demographic factor was average. The main factors relating to the organizational commitment found at high statistical significance and positive relationship were job satisfaction and leadership factors. The job characteristic factor showed no statistical significance relationship. The high predictor factors affecting the job commitment of supervisors' organization as whole were; job satisfaction factor and leadership factor especially job satisfaction factor was the main contribution of organizational commitment. The best predictive variables among those 13 variables arranged in

consecutive order were the supervision, compensation, position power and autonomy. The Organizational commitment development model (OCDM) was a useful tool for improving the organizational commitment level for supervisors. The OCDM model had six steps comprising definition of opportunity, identification and analysis of cause, setting organizational commitment action, implementation, confirmation and standardization. This model was applied by the quality techniques and tools of PDCA cycle.

## 6. Discussion

In general, the finding indicated that the predictor variables affecting on the organizational commitment of supervisors in semiconductor industries were supervision, compensation, position power and autonomy. This study would recommend that Human Resource managers should be familiar with these predictor variables that affecting on the organizational commitment as above mentioned. They should develop the supervision and position power for supervisors by training and make understanding on three roles: coach, advisor and performance appraisal. As such, Supervisors should be taught how to help subordinates develop and implement their career plans in one-on-one counseling sessions and should be instructed on how to integrate counseling into their performance appraisal and selection activities. For position power, Human resources should specify an authorization and specify clearly the power granted to supervisors so that they manage equally and

fairly, eliminating any “gray areas”. The other variable affecting job commitment that fosters increased feeling of personal responsibility for work out comes is autonomy of supervisors. When the job provides substantial autonomy of the persons performing it, work outcome will be reviewed by their own effects, initiatives and decisions, rather than on, say that adequacy of instructions from the boss or on a manual of job procedures. As autonomy increase, individuals tend of feel more personal responsibility for successes and failure that occur on the job and are more willing to accept personal accountability for the outcomes of their work. The part of job characteristic was aligned with [6] that her research showed more concrete results on employees’ attitudes toward their work. Most of the job characteristic variables are rated on the 2 out of 7 scale; that is, employees felt that they have fairly little autonomy in their work, that their work is a fairly small input toward the whole product, that their work required a fairly limited number of skills to finish the task, that their work is fairly insignificant, and that they got fairly little feedback from their manager or co-workers. The main factors relating to the organizational commitment found at high statistical significance and positive relationship were job satisfaction and leadership factor that the leadership factor was also in line with [7] [8] and [9] that the study aims to identify the leadership of district education office (DEO) in Kedah. This study also attempts to identify the relationship between organizational leadership and organizational commitment

among the officer’s district education office (DEO) in Kedah. The analysis found a significant difference between the organizational leadership in district education office. The results also reveal that a significant relationship does exist between positive organization commitment and leadership behavior.

Because of the importance that compensation holds for their lifestyle and self-esteem, individuals are concerned that they be paid a fair and competitive wage. Organizations are concerned with pay, not only because of its importance as a cost of doing business but also because it motivates important decision of employees about taking a job and working on the job. The designing compensation plans, it is important that an organization choose an approach that is in alignment with its organization philosophy and that supports its organizational goals. The basic changes in organization today and the new global challenges and opportunities, there is growing search for new direct compensation approaches in the hope that they will better focus employees on achieving organization goals. Such new approaches to pay include broad banding, pay for knowledge and team pay plans. The traditional approach to pay still also provides the best answer because this approach rests on the use of a job evaluation plan and the review of market salary data. So, the researcher recommended Human resource management should apply both compensation approaches for improving pay structure. Also, the useful programs to develop supervisors-to-be and supervisors

with less management experience should be set. The plan may be incorporated in the company's human resource development plan. The training methods may be provided as follows: (1) Intensive Training: The training should be made into two parts. The first part is to educate and develop management qualifications such as leadership and human relationship. The second part of the training is the science of management such as knowledge on business management, human resource management, financial, assets, planning, organization development, rules and laws relating to the job. (2) Supervisor seminar program: The Company should set up a regular supervisors' seminar at a suitable time to provide the opportunity for the supervisors to exchange ideas and knowledge, and also discuss problems. The seminar would promote a good understanding and coordination to solve problems between work units, resulting in a more effective work management.

## 7. Recommendation for further researches

There are several opportunities for enhancement of this study through additional research. One of the more significant efforts would be to change to different population. The research on this subject should be carried out with the executive population, since the results of this research were limited to the population of the studied supervisors only. Therefore, a new research focused on the higher levels of management.

A second opportunity for further research would be to compare the

population of supervisors between the government and private sectors. Results of the research would bring about guidelines for co-management between government offices and private organizations.

In Finally, the further study on factors affecting resignation of the company executives should be made on a sample of the resigned executives. The results would indicate the real causes of resignation, which should prove useful for the development of factors preventing future resignations.

## References

- [1] Fred E. Fiedler. (1967). A Theory of Leadership Effectiveness. McGraw-Hill, New York.
- [2] Fred E. Fiedler, Martin M. Chemers and Linda Mahar. (1977). Improving Leadership Effectiveness: The leader Match concept. John Wiley & Sons, New York.
- [3] Gareth R. Jones. (2000). Organizational Theory. Prentice Hall, Upper Saddle River, New Jersey.
- [4] Richard Hackman and Greg R. Oldman. (1980). Work Redesign. Addison-Wesley, Massachusetts.
- [5] Masaaki Imai (1991) Kaizen: The Key to Japan's Competitive Success. McGraw-Hill Education. New York.
- [6] Nildes Raimunda Pitombo Leite. (2014). Organizational Commitment and Job Satisfaction: What Are the Potential Relationships? Brazilian Administration Review, 11(4), 476-495.



- [7] Richard L. Daft. (2001). Essentials of Organization Theory and Design. South-Western, Ohio.
- [8] Richard M. Streers and Lyman W. Porter. (1983). Motivation and Work Behavior. McGraw-Hill, New York.
- [9] Zulfikri Ab Talib. (2015). Organizational Leadership and Organizational Commitment of Kedah District Education Officers. Global Journal of Interdisciplinary Social Science, 4(2), 7-12.