

Analysis of turnover Intention among manufacturing technicians in electronic industry

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ABSTRACT

This study aims to examine the influences of the plan to further study, career growth and discriminatory treatment on turnover intention among technicians in electronic industry in Malaysia. The objectives are: (i) To identify the relationship between the plan to further study and turnover intention among factory technicians, (ii) To identify the relationship between career growth and turnover intention among factory technicians, and (iii) To identify the relationship between discriminatory treatment factors and turnover intention among factory technicians. The population involved in this study were the manufacturing technicians at an electronic factory. Survey questionnaires were used to collect data. A total of 110 questionnaires were analyzed. Pearson correlation coefficient and regression analysis were used to measure the degree of relationship between variables. The findings showed that all independent variables; plan to further study, career growth and discriminatory treatment, were positive moderately correlated with turnover intention.

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1. Introduction

The manufacturing sector is one of the main contributors to Malaysian economic growth. This sector contributed more than 30 % of Malaysian's export for the past few years and offered job and skill advancement opportunities in Malaysia [1]. In 2016, it contributed 23 % to total Gross Domestic Product (GDP) and electrical, electronic and optical sub-sector was the largest contributor of gross output value with RM322 billion according to economic census 2016 [2].

In recent years, the landscape of electronic manufacturing sector has transformed considerably from labour intensive to advanced capital equipment intensive. This transformation aligned with Malaysia's Economic Transformation Program (ETP) which focus on high value added products and advanced manufacturing technology. With this transformation, the roles of factory technicians who are responsible for setting up, trouble shooting and maintaining the advanced equipment have intensified enormously.

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To maintain the sector's contribution to the economy, retention of these skilled workers in this sector is necessary. Losing these workers or also known as turnover, not only affects the volume of output it contributes to the economy, but organizations will face with other related problems. Generally, when employees leave, the company has to replace them with the new ones which might involve the cost of recruitment, advertisement, time spent on administering and conducting selection process, and expenses required in inducting and training new employees [3]. In manufacturing sector in particular, turnover causes problems such as miss out operation targets, high cost of overtime claim incurred to temporary replaced manufacturing technician leave from the job, increased work pressure to the remaining employees and dropped in employee motivation [4].

Avoiding genuine turnover can be accomplished by understanding the turnover intention because past research has proven that turnover intention is the immediate antecedent to actual turnover [5]. Turnover intention is the employees' plan to leave their jobs [6]. Studies on the determinants of turnover intention concluded that emotional fatigue, dissatisfaction with salary and career growth opportunities and lower levels of essential job satisfaction, were the main predictors of turnover intention [7]. Also, unfair treatment [8], pay, promotional opportunities, work-life balance, career development, relationship with supervisors and lack of recognition [3], planning to further study to increase individual's economic self-sufficiency [9-10] and discriminatory treatment [11] also contributed to turnover intention.

This study analyzed the relationship of three determinants, which are plan to further study, career growth and discriminatory treatment, with turnover intention among technicians. Figure 1 shows the conceptual framework of this study.

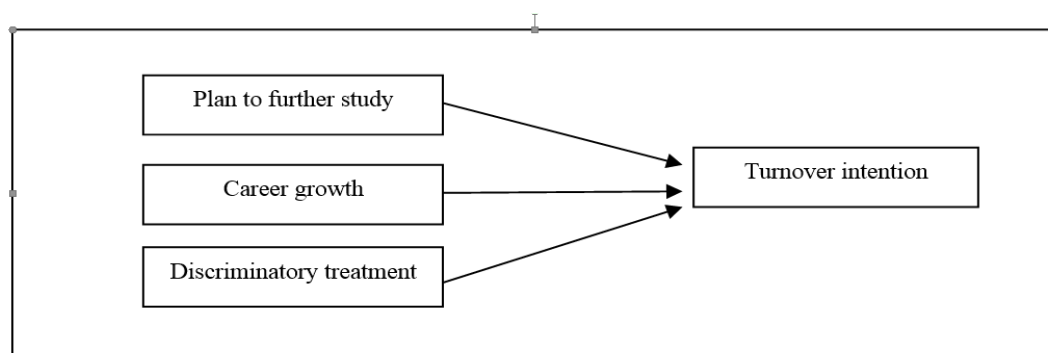


Fig. 1. Conceptual framework

Plan to further study refers to workers' intention to continue their studies or education to enhance academic qualification level. It involves formal learning or education process which takes place at universities, colleges or institutions that award academic degrees or professional qualifications. When employee identifies the needs for additional knowledge or skills to be considered for a promotion or to keep a job, further educational need will be activated and expressed [12]. This learning intention directs the participative behaviour of an employee, leading to an educational demand [13]. The ultimate step in the decision-making process is the actual participation in further education.

According to previous research, it has been confirmed that education level enhancement and targeted skills training assisted to increase individual's economic self-sufficiency [9-10]. On the other hand, deprioritizing further education and training causes low skill workers remain stuck in low paying jobs and they are unable to acquire the knowledge and skills to progress into higher paid job

category [10]. The way out for low-skill and limited knowledge working adults to obtain the further education is depending on all-inclusive workforce development method in the organization.

The second determinant is career growth. According to Jans [14], career growth is the employee's perceptions of the possibilities of development and progression within an organization. In other words, it denotes the opportunity for the employees to take new challenges and responsibilities. If employees perceive they have greater opportunity for career growth, the relationship between career growth and intention to leave was negative. On the hand, if they perceive less opportunity for career development, the relationship was positive [15].

Next, discriminatory treatment refers to unfair treatments perceived by employees. According to a survey conducted among adults who have left a job in the US, it is found that unfair treatment was the single largest driver of turnover affecting all groups [16]. Discrimination or unfair treatment in the workplace take various forms and can be related to variety of reasons such as employee's gender, generation, race or ethnically and age [17]. A study by Nunez-Smith *et al.* [18] found that non-majority at workplace were significantly more likely leave the job due to workplace discrimination.

2. Scope and Objectives of Study

This study involved only technicians at the electronic company. The objectives of this study are:

- i. To identify the relationship between the plan to further study and turnover intention among factory technicians
- ii. To identify the relationship between career growth and turnover intention among factory technicians
- iii. To identify the relationship between discriminatory treatment factors and turnover intention among factory technicians

3. Research Method

3.1 Research Instrument

This study employed quantitative method and used survey questionnaire for data collection. The questionnaire comprises of 3 sections;

Section A - demographic questions.

Section B - statements regarding factors that influence technicians turnover intention.

Section C - statements regarding turnover intention.

Section A comprised of questions on age, gender, race, education level, years of service in the organization and salary level. Statements in Section B and C were adapted from two human resource journals which are The American Review of Public Administration [19] and Public Personnel Management [20]. For each statement in Section B and C, the respondents had to indicate the extent to which they agree or disagree along a five-point Likert scales which are 1 for "Strongly Disagree", 2 for "Disagree", 3 for "Neutral", 4 for "Agree" and 5 for "Strongly Agree".

3.2 Population and Samples

The population in this study were the manufacturing technicians at an electronic factory in Kedah. The total population were 160 technicians who worked on a 12-hour shift schedule. According to Krejcie-Morgan table, the required sample size for 160 populations is 113 respondents. This study

employed probability sampling method where the questionnaires were randomly distributed to the respondents.

4. Research Findings

A sum of 113 questionnaires was given out and 113 responses received, contributing 100 percent response rate. However, three responses were excluded from the analysis, as the answers were all neutral. Thus, only 110 cases were analysed. SPSS 16 was used to analyse the data.

4.1 Demographic Analysis

77% of respondents were male and 23% were female. They were divided into three age-group categories, 21–30 years old, 31–40 years old and above 41 years old. The largest group is between 31-40 years old which represents 61% of total population. Regarding academic qualification, 94% of them were diploma holders, 4 percent had bachelor degree and the remaining 2 percent had Sijil Pelajaran Malaysia qualification. The summary of the demographic profile of respondents is shown in Table 1.

Table 1
Demographic Profile of Respondents

Demographic	Variable	Frequency	Percent	Valid Percent	Cumulative Percent
GENDER	MALE	84	76.4	76.4	76.4
	FEMALE	25	22.7	22.7	99.1
	Total	110	100	100	
AGE	21-30 YEARS OLD	23	20.9	20.9	20.9
	31-40 YEARS OLD	68	61.8	61.8	82.7
	41-50 YEARS OLD	19	17.3	17.3	100
	Total	110	100	100	
RACE	MALAY	52	47.3	47.3	47.3
	CHINESE	37	33.6	33.6	80.9
	INDIAN	16	14.5	14.5	95.5
	OTHERS	5	4.5	4.5	100
EDUCATION LEVEL	SPM	2	1.8	1.8	1.8
	POST SCHOOL				
	CERTIFICATE OR	103	93.6	93.6	95.5
	DIPLOMA				
	BACHELOR DEGREE	5	4.5	4.5	100
YEARS OF SERVICE IN ORGANISATION	Total	110	100	100	
	BELOW 2 YEARS	2	1.8	1.8	1.8
	2-5 YEARS	5	4.5	4.5	6.4
	5-8 YEARS	33	30	30	36.4
	8-11 YEARS	41	37.3	37.3	73.6
MONTHLY SALARY	ABOVE 11 YEARS	29	26.4	26.4	100
	RM1001-RM2000	7	6.4	6.4	6.4
	RM2001-RM3000	17	15.5	15.5	21.8
	RM3001-RM4000	84	76.4	76.4	98.2
	ABOVE RM4001	2	1.8	1.8	100
Total	110	100	100		

4.2 Pearson Correlation Analysis

Pearson Correlation Analysis is a tool to verify the relationship of the dependent variable (DV) and independent variable (IV). From the Pearson Correlation coefficients, it can determine whether the variables are positively or negatively related. The correlation transformer can calculate various measures of association between the two input columns. In this context, the null hypothesis asserts that the two attributes are not correlated, and the alternative hypothesis asserts that the two attributes are correlated.

Table 2 shows that there is a significant correlation between the plan to further study and turnover intention. The correlation of plan to further study is moderate score where $r = 0.308$ at p value = 0.002 of significant level (2-tailed). Thus, it shows that 'plan to further study' is positively related to turnover intention.

Table 2
 Pearson Correlation for Plan to Further Study

		IV1 PLAN TO FURTHER STUDY	DV TURNOVER INTENTION
IV1 PLAN TO FURTHER STUDY	Pearson Correlation	1	.308**
	Sig. (2-tailed)		0.002
	N	110	110

*. Correlation is significant at the 0.01 level (2-tailed).

Table 3 shows that there is significant correlation between career growth and turnover intention. These variables are also positively related at moderate level.

Table 3
 Pearson Correlation for Career Growth

		IV2 CAREER GROWTH	DV TURNOVER INTENTION
IV2 CAREER GROWTH	Pearson Correlation	1	.363**
	Sig. (2-tailed)		0
	N	110	110

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4
 Pearson Correlation for Discriminatory Treatment

		IV3 DISCRIMINATORY TREATMENT	DV TURNOVER INTENTION
IV3 DISCRIMINATORY TREATMENT	Pearson Correlation	1	.349**
	Sig. (2-tailed)		0
	N	110	110

** . Correlation is significant at the 0.01 level (2-tailed).

Similar to the relationship between plan to further study and career growth with turnover intention, there is moderate positive correlation ($r = 0.349$ at p value = 0.000 of significant level 2-tailed) between discriminatory treatment and turnover intention as shown in Table 4.

4.3 Result of Regression Analysis

The coefficient of determination was compared to determine the percentage variation in the independent variable. F value was to compute the significant of R^2 with F-distribution at the 5 % level of significance.

Table 5 indicates the summary of regression analysis. The multiple correlation coefficient (R) is 0.492 which means that there is a significant relationship between the dependent variable and the set of the predictors comprising of a plan to further study, career growth and discriminatory treatment. Besides that, the coefficient of determination (R^2) of 0.242 indicates that 24.2% of the variation in turnover intention can be explained by all the independent variables. Meanwhile, the residual of 75.8 % is explained by other variables out of the model. As we can see, Durbin-Watson value is 2.498 and the value more than 2. Thus, the result was good and accepted.

Table 5
 Summary of regression analysis

Model	R ^a	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.492	.242	.221	.302	.242	1.128E1	3	106	.000	2.498E0

a. Predictors: (Constant), IV3DISCRIMINATORY TREATMENT, IV1FURTHER STUDY, IV2CAREER GROWTH

b. Dependent Variable: DVTURNOVER INTENTION

5. Summary of Research Finding

5.1 Plan to Further Study

The research results confirmed that plan to further education is an influential factor and it was positively related to turnover intention among technicians. This research result is consistent with the findings of the previous study completed by Ajzen and Fishbein [12] and Baert *et al.* [13]. The employees who realize the requirement for additional knowledge, competency or skills to be considered for advancement or to keep a job, will establish learning intention as a result of the manifestation of the need to learn. The learning intention activates the participative behaviour of the employee and triggering the employee to an educational demand.

In this study, the technicians had some difficulties to enrol in part time program due to their rotating shift schedule and the off days or rest days were not consistent throughout the months. As a result, they have the intention to leave their current jobs to meet their educational needs.

5.2 Career Growth

Based on the findings of this research, the technical career growth was confirmed as an influential factor and any increase in career growth opportunity will reduce the technician turnover intention and lack of career growth will increase the technician turnover intention. The findings of this study

indicated that respondents perceived that they have lack opportunities for career growth where the relationship between career growth and intention to leave is positive.

The technician is a non-executive post. In this factory, they were offered career growth opportunity where they have two promotion opportunities to a higher grade. The highest position they can reach is a senior technician. However, employees who have reached the senior technician positions will stick there without any clear or limited opportunity to progress further.

The demographic analysis of this study indicated that 26 percent of the technicians have more than fifteen years of service and 41 percent have been working between eight to eleven years. Most of them were senior technicians. This factor explained why there is a positive relationship between career growth and intention to leave.

5.3 Discriminatory Treatment

In this research, discriminatory treatment was confirmed as the most influential factor. This research result is consistent with the conclusion of the previous study conducted by Robbins and Judge [17] who stated that bosses must recognize the issue of discrimination at workplace and must come out with serious action to solve the problematic situation which is proven to improve employee determination, reduced turnover and increase efficiency and lower the costs of human rights protests and lawsuit cases.

The performance appraisal process for technicians is conducted by their immediate supervisor. Human resource officers monitor and counter check the execution process to ensure fairness and integrity principles are complied. Unfortunately, because of the performance evaluation process has some degree of subjectivity, the perception or actual discriminatory treatment could happen.

6. Conclusion

This study shows that all three independent variables are proven to be moderate influential factors for turnover intention. The most influential factor is discriminatory treatment at workplace followed by career growth factor. Plan to further education is the least influential factor. Thus, to prevent employees from leaving the organization, the employer should improve workplace treatment, provide better and clearer career growth path and provide opportunities for the workers to continue their educations such as sponsoring tuition fees.

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