

THE APPLICATION OF JOB CHARACTERISTICS MODEL ON GENERATION Y EMPLOYEES IN ZHONGGUANCUN SCIENCE PARK (Z-PARK) OF CHINA

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ABSTRACT

Job characteristics based on job design will lead to different psychological conditions, and psychology states will affect the individual behavior and the outcomes of work (Hackman, & Oldham, 1975). As Gen Y (Ad Age, 1993) continues to grow and enter the workforce, the need to effectively manage Gen Y employees become paramount for managers and business leaders. This research examines the relationships among the three critical psychology states of job characteristics model and job satisfaction, absenteeism and turnover intention and the relationships among job satisfaction, absenteeism, and turnover intention on Generation-Y employees in Z-Park. Study participants were the employees from 21–30 years old in Z-Park. The findings indicated that the Z-Park Gen Y employees' perceptions of the three critical psychology states of JCM positively affect job satisfaction but negatively affect turnover intention and the Z-Park Gen Y employees' perceptions of job satisfaction negatively affect turnover intention.

INTRODUCTION

The Generation Y, or the "Millennials", is said to be dependent on digital technology (Ad Age, 1993). It is in this generation that mobile phones, PCs and portable entertainment devices became affordable and readily available when the Gen Y were in their teens or early 20s. As this generation came of age during the 1990s, during the Digital Revolution, terms such as "Net Generation" and "First Digitals" are sometimes used to describe Gen Y. Many Chinese between the ages of 21 and 30 grew up as the only child in their household because of China's one-child policy. The

Gen Y normally refers to people born between 1980–1989 in China depend on the traditional generation division. In English this group is also sometimes called China's Generation Y (Michael Stanat, 2005). As they have moved from school into jobs, organizations have noticed that this generation makes different demands and needs to be motivated in new ways. The population of ages 21–30 in China is more than 200 million (China's fifth population census, 2000). How to motivate Gen Y is becoming a new and significant research topic in China for the

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managers in companies.

Zhongguancun Science Park was originated from the "Electronics Street" in Beijing, backdated to the early 1980s. It was established as the first national science park in 1988 with the approval by the Chinese government. Zhongguancun focus on the development of electronic information, energy, environmental protection, bio-engineering and new medicine, new materials and other areas of high-tech industries (Administrative Committee of Zhongguancun Science Park, 2007).

There is no doubt that the high-tech enterprises in Zhongguancun, the Gen-Y employees have deservedly become a main force(Si Lu,2009). The percentage of Generation-Y employees in Z-park is almost 51% in 2007. And the number is 49% in 2006 (Beijing Statistical Yearbook 2007).

Hackman and Oldham thought that the more those three psychological states of job characteristics model are presented, the greater will be employees' satisfaction and the lower their absenteeism and likelihood of leaving the organization (Hackman, J.R. and Oldham, G. R., 1975). The main questions for this study are:

1. What are the relationships between the three critical psychology states of job characteristics model and job satisfaction ,absenteeism and turnover intention on Generation-Y employees in Z-Park ?
2. What are the relationships between job satisfaction and absenteeism, turnover intention on Generation-Y employees in Z-Park ?

LITERATURE REVIEW

All people have a hierarchy of needs that begins at the bottom with physiological needs, such

as food and shelter, and moves upward through safety, love, and esteem needs toward the pinnacle of self-actualization (Maslow 1943). And while these needs may have been the driving force for previous generations, it is not for Generation Y.

Instead, Generation Y is approaching employment with the goals and needs espoused in the self-actualization category, which "refers to the desire for self-fulfillment, namely, to the tendency for him to become actualized in what he is potentially.

Frederick Herzberg(1968) developed the motivator/hygiene theory or two-factor theory. The two-factor theory assumes that factors producing job satisfaction (motivators, or intrinsic rewards) differ from those producing job dissatisfaction (hygiene factors, or extrinsic rewards). Today's workforce is as diverse as ever. The findings of M. Baldonado, and Janice Spangenburg 's study revealed that Gen Y cohort placed great importance to both hygiene and motivator factors in their motivational needs. Growth and personal life were both important to Gen Y employees(M. Baldonado , Janice Spangenburg, 2009). Their study is one of the only few to directly address Gen Y motivational needs utilizing Frederick Herzberg's two-factor theory of motivation

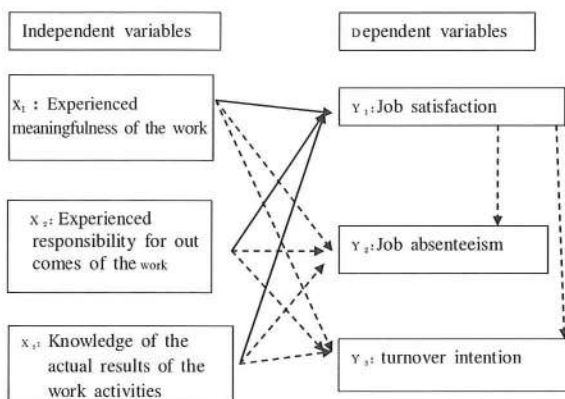
Job design focusing on changing the content and/or process of a specific job to increase job satisfaction and performance (Kinicki & Kreitner, 2008). A team of researchers examined the various methods for conducting job design and integrated them into an interdisciplinary framework (M A Campion & P W Thayer, 1895)that contains four major approaches: mechanistic, motivational, biological, and perceptual-motor. Three key motivational techniques: job enlargement, job enrichment and a contingency approach called the job characteristics model (Kinicki

&Kreitner, 2008).The job characteristics model :proposes that any job can be described in terms of five core job dimensions (Hackman & Oldham, 1975). And three critical psychology status fostered by the five core jib characteristics (Hackman, J. R., & Oldham, G. R., 1975) The three critical psychology are :experienced meaningfulness of the work, experienced responsibility for outcomes of the work and knowledge of the actual results of the work activities..

Consequently our hypotheses are:

1. The Z-Park Gen Y employees' perceptions of the three critical psychology states of JCM positively affect job satisfaction.
2. The Z-Park Gen Y employees' perceptions of the three critical psychology states of JCM negatively affect work absenteeism.
3. The Z-Park Gen Y employees' perceptions of the three critical psychology states of JCM negatively affect turnover intention.
4. The Z-Park Gen Y employees' perceptions of job satisfaction negatively affect work absenteeism.
5. The Z-Park Gen Y employees' perceptions of job satisfaction negatively affect turnover intention.

The Framework of this study:



Note: —————> denotes positive relationship,

—————> denotes negative relationship

METHODOLOGY

To obtain a suitable number of sample; Taro Yamane formula was used to calculate sample size as follow (Yamane, 1967).

$$n = \frac{N}{1 + N(e^2)}$$

n = Number of sample

N = Number of people lives in Chonburi, Thailand

e = Error of sampling. In this study was 5 percent.

According to Taro Yamane theory, because the total target population were more than 100,000 people depending on data of the Beijing Statistical Yearbook 2007, the researcher used sample size in 400 sets to study the relationship between the three-critical psychology states of JCM ,the job satisfaction, absenteeism and the turnover intention. The data were collected by asking people who work in Z-Park. The researcher explained the purpose of the study to respondents who were the target population of this research. Only the people who look like young were invited to participate in this survey. The design of the questionnaire in this study is divided into 4 parts: 1) Critical psychology states 2) job satisfaction 3) Job absenteeism and 4) turnover intention. All items (excepts the job absenteeism and the personal information ,e.g. age, sex; etc.)will be measured using a 5–point Likert scale. The number of each sub-park doing the questionnaires was not average but depending on the scope of each sub-park and 379 questionnaires were received . But only 360 respondents belonged to the target population of this study. After removing the unreliable questionnaires and the cases with missing data, 349 questionnaires were used for data analysis

purposes. Thus, the response rate of this survey was 87.25%.

A test was been done in advance before carrying out a formal investigation in order to understand the measure of reliability of the various dimensions. 50 questionnaires were distributed to the respondents the test the reliability of every dimension. When items are used to form a scale they need to have internal consistency. The items should all measure the same thing, so they should be correlated with one another. A useful coefficient for assessing internal consistency is Cronbach's alpha (Cronbach LJ,1951). 46 questionnaires were received and effective . Table 3.1 shows that the Cronbach's Alpha of every dimension is an acceptable moderate range. We think that the Cronbach's Alpha is acceptable if it is higher than 0.7. Only the Feedback and the Work itself are lower than 0.7 but they will increase while the size of sample is larging.

Table 3.1 Reliability Test of Every Dimension

	Cronbach's Alpha
Skill Variety	0.81
Task Identity	0.81
Task Significance	0.71
Autonomy	0.75
Feedback	0.69
Leaders' Behavior	0.77
Management Measures	0.80
Returns	0.77
Collaboration	0.75
Work itself	0.67
Turnover Intention	0.89

Table 3.1 Reliability Test of Every Dimension

This research preliminary described and explained the

frequency, percentage, mean and standard deviation of sample variables to get the sample characteristics. The size of sample is 349. There are 157 male employees and 192 female employees. To the distribution of age, 21 years old to 25 years old staff's number is 173 which takes a part almost of 50%. 26 years old to 30 years old employees' amount is 176, half of the total number. The average age is 25.98 years. On the part of the working years, 278 persons accounting for 79.7% of total sample size have worked for 1–5 years. 62 persons' working years is longer than 5 years but shorter than 10 years. Only 9 persons' working years is over 10 . On the part of education background, the biggest percentage 65.0% comes from the employees who have a bachelor degree. And this feature is corresponding to the human resources needing of the high-tech industry clusters. The percentage of under bachelor is 22.6% and 12.3% accounting for over bachelor. On the part of department which the Gen Y employees are in , the selling department has the biggest percentage of 38.7%. The second is " the other departments". It's 21.2%. On the part of income, almost 53.6% of Gen Y employees sample in Z-Park earn 2000 ? to 4000? per month. 19.8% employees' salary per month is less than 2000 ?. The salary more than 4000 ? takes a percentage of 26.2%. The Table 3.2 summaries the sample characteristics.

Table 3.2. Sample Characteristics Analysis

Sample charector	Mean	Std. Deviation	Category	Frequency	Percent (%)
Gender			Male	157	45.0
			Female	192	55.0
Age	25.98	2.562	21-25	173	49.6
			26-30	176	50.4
Years of working	3.78	2.771	1-5	278	79.7
			6-10	62	17.8
			11-15	9	2.5
Education Backgroud			Under Bachelor	79	22.6
			Bachelor	227	65.0
			Over Bachelor	43	12.3
Department			R&D	28	8.0
			Manufacture	38	10.9
			PQM	20	5.7
			Selling	135	38.7
			Finance	20	5.7
			Administration	34	9.7
			Others	74	21.2
Income			< 2000 ¥	69	19.8
			2000-4000 ¥	187	53.6
			> 4000 ¥	93	26.2

RESULTS

4.1 The Variables Correlation Analysis. The three critical psychology states and the job satisfaction all have the medium positive relationship ($0.3 < r < 0.8$, $p < 0.01$). There aren't enough evidence to support the relationship among the three critical psychology states and the absence rate ($r < 0.1$, $p > 0.01$). But the absence rate has a weak positive relationship with the turnover intention ($r = 0.169$, $p < 0.01$). And the turnover intention has a medium negative relationship with the work meaningfulness and the job satisfaction ($|r| > 0.3$, $p < 0.01$). The other two critical psychology are weakly negatively related to the turnover intention ($|r| < 0.2$, $p < 0.01$). Table 4.1 summaries the correlation coefficient : See Table 4.1.

Table 4.1. The correlation coefficient between variables

	EMW	ERW	KRW	JS	AB	TI
EMW	1					*
ERW	0.574**	1				
KRW	0.647**	0.500**	1			
JS	0.451**	0.387**	0.439**	1		
AB	0.038	0.078	0.016	-0.046	1	
TI	-0.304**	-0.271**	-0.255**	-0.367**	0.169**	1

Notes : Experienced meaningfulness of the work is abbreviated to EMW. Experienced responsibility for out comes of the work is abbreviated to ERW. Knowledge of the actual results of the work activities is abbreviated to KRW. Job satisfaction is abbreviated to JS. Absenteeism is abbreviated to AB. Turnover Intention is abbreviated to TI.

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

REGRESSION ANALYSIS

Hypotheses 1: Model JS showed in the Table 4.2 showed focused on the three critical psychology and the job satisfaction. The range of R Square was from 0 ~ 1. the large the valve, the better (Geoge &Mallery, 2003). The adjusted R Square showed that the model 1 accounts for 30% of the variation in the job satisfaction. The F statistic represents a probability value ,p, associated with R to reveal the significance of this relationship among this independent variables and this dependent variable (Geoge &Mallery, 2003). The F valve of 13.099 ($p < 0.001$) indicated a significant relationship among the three critical psychology states and the job satisfaction. And it indicated a high statistical significance. The coefficients for the regression equation, which measure predicated values of the dependent variable (Geoge &Mallery, 2003). In the other words, the coefficients B of the three critical psychology states tell the actual effect of them on the job satisfaction. The coefficient B of the "Experienced meaningfulness of the work " is 0.207 ($p < 0.01$). It indicated a high statistical significance and positive effect of the experienced meaningfulness of the work on the job satisfaction. The coefficient B of the "Experienced responsibility for out comes of the work" is 0.089 ($p < 0.05$). It indicated statistical significance and positive effect of the experienced responsibility for the out comes of the work on the job satisfaction. The coefficient B of the "Knowledge of the actual results of the work activities" is 0.219 ($p < 0.001$). It indicated a high statistical significance and positive effect of the knowledge of the actual results of the work activities on the job satisfaction.

Hypotheses 2: AB Model 1 showed in Table 4.2 focused on the three critical psychology and the job absenteeism. The adjusted R Square showed that

the model 2 was 0.027. The F valve of 0.863 ($p > 0.05$) didn't indicate significant relationship among the three critical psychology states and the job absenteeism. This is corresponding to the correlation analysis between the three critical psychology and the job absenteeism.

Hypotheses 3: TI Model 1 showed in Table 4.2 focused on the three critical psychology and the turnover intention. The adjusted R Square showed that the model 3 accounts for 12% of the variation in the turnover intention. The F valve of 4.161 ($p < 0.001$) indicated a significant relationship among the three critical psychology states and the turnover intention. And it indicated a high statistical significance. The coefficient B of the "Experienced meaningfulness of the work" is -0.267 ($p < 0.05$). It indicated statistical significance and negative affect of the experienced meaningfulness of the work on the turnover intention. The coefficient B of the "Experienced responsibility for out comes of the work" is -0.111 ($p > 0.05$). It didn't indicate statistical significance and negative affect of the experienced responsibility for the out comes of the work on the turnover intention. The coefficient B of the "Knowledge of the actual results of the work activities" is -0.114 ($p > 0.05$). It didn't indicate a statistical significance and negative affect of the knowledge of the actual results of the work activities on the turnover intention. Table 4.2 The regression analysis.

Dependent Constant	JS 1.905(3.563***)	AB model 1 1.177(0.961)	TI model 1 3.397(3.732***)	AB model 2 1.965(1.62)	TI model 2 3.538(4.008***)
Male	-0.007(0.133)	-0.032(-0.248)	0.024(0.287)	-0.032 (-0.251)	0.017(0.182)
Age	-0.009(-0.453)	0.008(0.188)	0.041(1.244)	-0.001 (-0.021)	0.042(1.321)
WY	-0.028(-1.636)	0.011(0.269)	-0.033(-1.128)	0.013 (0.335)	-0.052(1.785)
UnBa	0.196(1.589)	0.074(0.262)	0.107(0.51)	0.057(0.202)	0.247(1.203)
Ba	-0.01(-0.104)	-0.042 (-0.202)	0.13(0.831)	-0.044 (-0.208)	0.123(0.801)
Selling	0.071(1.235)	-0.096(0.729)	0.003(0.033)	-0.089 (-0.675)	0.038(0.392)
IC < 2000	-0.272(-2.785**)	0.136(0.606)	0.202(1.216)	0.008(0.038)	0.165(1.023)
2000-4000	-0.055(-0.799)	-0.181 (-1.149)	0.057(0.486)	-0.252 (-1.647)	0.091(0.815)
EMW	0.207(3.171**)	0.059(0.397)	-0.267(-2.404*)		
ERW	0.089(2.266*)	0.112(1.24)	-0.111(-1.667)		
KRW	0.219(3.681***)	-0.078(-0.57)	-0.114(-1.132)		
JS				-0.07(-0.642)	-0.549 (-6.940***)
F	13.099***	0.863	4.161***	0.834	6.619***
R Square	0.300	0.027	0.12	0.022	0.149

Notes: Male is a dummy variable for male or female. The working years is abbreviated to WY. For the dummy variable education background uses UnBa for under bachelor shortened and Bachelor is abbreviated to Ba. Selling department is abbreviated to selling. Income < 2000¥ is abbreviated to IC < 2000. Income 2000¥ ~ 4000¥ is abbreviated to 2000-4000. Experienced meaningfulness of the work is abbreviated to EMW. Experienced responsibility for out comes of the work is abbreviated to ERW. Knowledge of the actual results of the work activities is abbreviated to KRW. Job satisfaction is abbreviated to JS. Absenteeism is abbreviated to AB. Turnover Intention is abbreviated to TI. This table in parentheses are the t statistics, t -values are reported in the brackets, where *p < 0.05; **p < 0.01; ***p < 0.001.

Hypotheses 4: AB model 2 focused on the job satisfaction and the job absenteeism. The adjusted R Square was 0.022. The F value of 0.834(p>0.05) didn't indicate a significant relationship among the job satisfaction and the job absenteeism. This is corresponding to the correlation analysis between the job satisfaction and the job absenteeism.

Hypotheses 5: TI Model 2 showed in Table 4.2 focused on the job satisfaction and the turnover intention. The adjusted R Square showed that the model 5 accounts for 14.9% of the variation in the turnover intention. The F value of 6.619 (p<0.001)

indicated a significant relationship among the job satisfaction and the turnover intention. And it indicated a high statistical significance. The coefficients B of the job satisfaction tell the actual affect of them on the Turnover intention. The coefficient B of the the job satisfaction is - 0.549 (p<0.001). It indicated a high statistical significance and negative affect of the job satisfaction on the turnover intention.

DISCUSSION AND CONCLUSION

DISCUSSIONS AND THE IMPLICATIONS

The regression analysis results indicated that

the Gen Y employees' three critical states and the job satisfaction have positive correlation in Z-Park. They are negatively related to the turnover intention. The job satisfaction is negatively related to the turnover intention. But we can't get enough evidence to support the relationship between the three critical states and the job absenteeism. We also can't get the evidence to support the relationship between the job satisfaction and the job absenteeism. A study by Hackman and Lawler (1971) provides evidence that job characteristics can directly affect employee attitudes and behavior at work. These authors suggested that employees should react positively to five "core" dimensions adapted from those used previously by the work design (i.e., variety, task identity, work significance, autonomy, feedback) (Hackman & Oldham, 1976). Second, the regression analysis results of AB model 1 and AB model 2 didn't support the hypotheses 2 and the hypotheses 4. Satisfaction and absenteeism for reasons unrelated to the following points: 1, Invisible absence. The so-called implicit absence in the company system is not constrained or technical evaluation beyond the control of the situation when the staff absence occur. 2, Penalty system. Too strict system of sanctions could lead to staff absenteeism reduced income or even fired. Third, high turnover often means that employees are unhappy with the work or compensation. The lack of career opportunities and challenges, dissatisfaction with the job-scope or conflict with the management have been cited as predictors of high turnover (Dijkstra, & Eelco, 2008). The results of the study uncovered several factors that can influence turnover intention on the Gen Y employees in Z-Park. Identified in the study as statistically significant job characteristics that can be influenced by management are training, autonomy, feedback, task significance, and skill variety. With the results of

this study, management can better design development jobs to ensure that these employees, who will leave the companies stay. Fourth, the regression analysis result of TI model 2 supported the hypotheses 5. Low turnover indicates that none of the above is true: employees are satisfied, healthy and safe, and their performance is satisfactory to the employer. However, the predictors of low turnover may sometimes differ than those of high turnover. Aside from the fore-mentioned career opportunities, salary, corporate culture, management's recognition, and a comfortable workplace seem to impact employees' decision to stay with their employer (Dijkstra, & Eelco, 2008)

THE RESEARCH LIMITATIONS AND RECOMMENDATION FOR FUTURE RESEARCH

The sample size is too small. Sample collection centers in the park only a few companies, the results of this study can not be effectively used for all the Gen Y employees in Z -Park. Considering the cost of time and fund, the company managers who are commissioned distributed questionnaires to employees to fill, it is difficult to achieve the objective random sampling. It could not confirm whether sufficient for the questionnaire clear understanding of the problems. And the questionnaire is made by translating English that may cause confusion because the word recognition error. Respondents answered the questions subjectively in this study. This can't measure the variables objectively enough. All the variables in this study were obtained through the same questionnaire, the results of this study may be have the common method bias.

Areas requiring further research include (a) measuring the difference between the Gen Y employees and the other generation employees; (b) determining whether the features of Gen Y in Z-Park fit the other

high-tech industries park; (c) measuring the application effect of the other motivational theories about job design on Gen Y employees in Z-Park.

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