

Examining Herzberg's Two Factor Theory in a Large Chinese Chemical Fiber Company

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Abstract—The validity of Herzberg's Two-Factor Theory of Motivation was tested empirically by surveying 2372 chemical fiber employees in 2012. In the valid sample of 1875 respondents, the degree of overall job satisfaction was more than moderate. The most highly valued components of job satisfaction were: "corporate image," "collaborative working atmosphere," and "supervisor's expertise"; whereas the lowest mean score was 34.65 for "job rotation and promotion." The top three job retention options rated by the participants were "good image of the enterprise," "good compensation," and "workplace is close to my residence." The overall evaluation of the level of thriving facilitation workplace reached almost to "mostly agree." For those participants who chose at least one motivator as their job retention options had significantly greater job satisfaction than those who chose only hygiene factors as their retention options. Therefore, Herzberg's Two-Factor Theory of Motivation was proven valid in this study.

Keywords—Employee job satisfaction, Job retention, Traditional business, Two-factor theory of motivation.

I. INTRODUCTION

TODAY'S companies are facing tough competition worldwide due to fast globalization and liberalization initiatives. More companies are regarding their human capital as a key to business success and sustainability [1]. In fact, various research findings have indicated that employee job satisfaction had positive association with perceived organizational effectiveness [2], organizational commitment [3], work engagement [4], employee retention [5], the health of workers [6], and life satisfaction [7]. Therefore, understanding job satisfaction levels of employees would be a useful process to help companies achieve greater efficiency and competitiveness.

In Taiwan, traditional businesses have been facing demands to manage organizational change, to deal with disequilibrium of human resource structure, to require constant innovation, and to compete with low-cost competitors [8]. In order to identify major aspects of the change needs, a large Chinese chemical fiber company conducted an evidence-based approach to figure out factors influencing the employees' job satisfaction and the reasons for their job retention.

II. LITERATURE REVIEW

A. Job Satisfaction and Its Related Factors

Although there was no universally agreement on the definition of job satisfaction, many researchers regarded it as a multidimensional structure [9] and referred it as the degree to which people enjoyed in doing their jobs [10], [11]. In this study, job satisfaction was examined in a multidimensional perspective and was related to the degree to which an employee's perceived work experiences match his or her expectations.

There were a variety of factors that could have influenced on the results of job satisfaction studies [12], [13]. In order to better capture key indicators of job satisfactions on traditional business workers, it's necessary to conduct a semi-structured interview beforehand. After interviewing 32 representative employees of the chemical fiber company, ten job satisfaction components were identified to have stronger effects on their attitudes toward the company. These 10 indicators of job satisfaction were:

Corporate Image: It referred to how the reputation of a corporation was perceived in the minds of employees and publics. Many researches revealed that corporate image had a positive correlation with job satisfaction [14].

Supervisor's Expertise: It referred to how the immediate supervisor's ability and management skills could help achieve organizational goals. Many researches revealed that supervisor's expertise had a significant positive correlation with job satisfaction [15].

Collaborative Working Atmosphere: It referred to how colleagues were willing to be supportive of others to achieve organizational goals. Many researches revealed that collaborative working atmosphere had a significant positive correlation with job satisfaction [16].

Compensation System: It referred to how the regular pay system was regarded as fair, well-structured, and competitive. Many researches revealed that compensation had a significant positive correlation with job satisfaction [17]–[19].

Employee Benefits: It referred to how the benefits and services were regarded as diverse, flexible, fair, and competitive. Many researches showed that benefits had a significant positive correlation with job satisfaction [20].

Job Rotation and Promotion: It referred to how the job rotation and promotion policies were regarded as fair, complete, and practicable. Many researches revealed that job rotation and/or promotion had a significant positive correlation with job

satisfaction [21]–[23].

Professional Development: It referred to the degree to which the firm invested resources to improve employee capabilities and to check for effectiveness. Many researches revealed that professional development had a significant positive correlation with job satisfaction [24].

Performance Management: It referred to how the appraisal methods were regarded as fair, diverse, objective, and informative. Many researches revealed that performance management had a significant positive correlation with job satisfaction [25].

Communication Management: It referred to the degree to which all the channels of communication within an organization were regarded as effective, correct, and fair to all employees. Many researches revealed that communication management had a significant positive correlation with job satisfaction [26].

Change Management: It referred to how the firm took action in shaping organizational change to cope with the turbulent environment. Many researches revealed that change management had a significant positive correlation with job satisfaction [27].

B. Herzberg's Motivation-Hygiene Theory

In the late 1950s, Frederick Herzberg and his colleagues inferred from their in-depth interview findings that the determinants of job satisfaction were very different from those of causing job dissatisfaction. According to Herzberg, hygiene factors were job context factors, when satisfied, tended to eliminate dissatisfaction, yet, when presented in a job, did not add to satisfaction [28]. Examples of hygiene factors included company policies, supervision, relationship with supervisor and peers, work conditions, salary and benefit, status, job security, and personal life. Compared to hygiene factors, motivators or job content factors were intrinsic to the job itself and could lead employees to job satisfaction, but when absented, did not lead to dissatisfaction [28]. Several motivators were: achievement, work itself, recognition, responsibility, advancement opportunities, and personal growth.

Many researchers examined Herzberg's theory across diverse organizational enterprises, populations, cultures, demographic variables, and/or methods; not surprisingly, conflicting results were obtained [29], [30]. Since Herzberg's theory was still seen as valid [31], the job retention options in this study were further classified based on Herzberg's classification scheme to examine how this theory could be applied to traditional business workers.

C. Thriving Facilitation Workplace

According to Spreitzer, Porath, and Gibson, thriving was defined as the psychological state in which individuals experience both a sense of vitality and learning [32]. Employees with thriving attributes were not only productive but also involved in shaping the bright future for themselves and the firms. In order to sustain a long-term competitive

advantage, enterprises should particularly focus on providing decision-making discretion, sharing information, minimizing incivility, and offering performance feedback to their employees [1]. In order to take a broader view of the chemical fiber company, it's necessary to examine how the workplace culture could facilitate employee thriving.

To sum up, the aim of this study was not only to examine whether Herzberg's two-factor motivation theory could applied to a traditional Chinese business, but also to provide an evidence-based approach for the company to better understand employee concerns and to enable to take action on the feedback provided.

III. METHODS

A. Participants

A chemical fiber company was established in Taiwan in 1970, the total population of this company was recorded to be 2372 people in April 2012 (foreign laborers were excluded from the total). The survey was conducted by an independent research unit and there were 1875 valid participants (79.05%) in this study.

According to the demographic data, the average age of the participants was 43.07 years ($SD=10.08$); actually, 60 percent of the employees were middle-aged and older ($n=1126$). The average number of years in current position was 16.57 years ($SD=10.70$), about 37 percent of all employees ($n=701$) had more than 21 years of service to the company. For those employees who served more than 21 years, 34.66% of them held managerial positions. The average employment years was 19.63 years ($SD=10.58$). Most employees had high school diplomas ($n=721$, 38.45%) or college educations ($n=419$, 22.35%). More than half of the employees served as technicians or operators ($n=1077$, 57.44%).

B. Instruments

The Employee Satisfaction Survey (ESS) was used to gather chemical fiber workers' attitudes toward their jobs. There were three parts of the ESS: demographic questions (10 items), job satisfaction questionnaire (JSQ, 80 items), and specific work-related issues (2 items).

The demographic questions of the ESS included 10 items, such as age, gender, location, employment status, educational level, length of employment, working years in current position, job category, etc.

The first specific work-related issue was about job retention options. A total of 20 items were administered, the 11 items were derived from the semi-structured interview, and the rest items were extracted from the 2011 employ job satisfaction and engagement by the Society for Human Resource Management (SHRM). These items were then carefully categorized by 3 experts, 14 items were identified as hygiene factors, whereas 6 items were motivation factors. Each participant could choose no more than 3 items and ranked them in descending order.

The second specific work-related issue was about the thriving facilitation workplace index. These 4 items were based on Spreitzer and Porath's perspective. A 7-point Likert

scale was used to measure the items. The scale ranged from 1 “completely disagree” to 7 “completely agree,” a higher total score indicated the workplace culture could facilitate employee thriving.

The job satisfaction questionnaire had 10 components, each component contained 8 items (four items were positively worded and the rest were negatively worded). These 10 job satisfaction components were extracted from a semi-structured interview with 32 representative employees. Five experts carefully reviewed the items of each component and the S-CVI/Ave was 0.95. Overall Cronbach's alpha coefficient of the job satisfaction questionnaire was 0.98 and Cronbach's alpha coefficients for each subscale ranged from 0.81 to 0.92. Participants responded to items using a 7-point Likert scale with responses ranging from 1 “strongly disagree” to 7 “strongly agree.” With the negative statements being reverse-scored, higher mean scores indicating more positive job satisfaction.

IV. RESULTS

A. Job Satisfaction

TABLE I
MEANS AND STANDARD DEVIATIONS FOR THE JSQ

2012 JSQ (<i>n</i> = 1875)	Mean	SD
Corporate Image	46.04	8.15
Collaborative Working Atmosphere	42.92	8.77
Supervisor's Expertise	41.23	10.15
Professional Development	38.78	8.88
Communication Management	37.27	9.71
Change Management	36.34	8.04
Employee Benefits	35.52	9.75
Performance Management	34.98	9.84
Compensation System	34.79	8.43
Job Rotation and Promotion	34.65	9.77
Total (80 items)	382.53	75.52

In Table I, means and standard deviations for all measured variables in the Job Satisfaction Questionnaire were presented. The average level of overall job satisfaction was near the “somewhat satisfied” response ($M = 382.53$, $SD = 75.52$). The top three of the mean subscale score were Corporate Image ($M = 46.04$, $SD = 8.15$), Collaborative Working Atmosphere ($M = 42.92$, $SD = 8.77$), and Supervisor's Expertise ($M = 41.23$, $SD = 10.15$). The lowest job satisfaction component was Job Rotation and Promotion ($M = 34.65$, $SD = 9.77$).

The analysis of each item on the JSQ revealed that most employees were highly valued the company's diversification strategy ($M = 6.12$, $SD = 1.14$) and felt very proud to work for this company ($M = 6.02$, $SD = 1.12$). On the other hand, most of them agreed that the pay levels were not sufficient to retain the talent ($M = 3.91$, $SD = 1.58$), it's necessary to simplify the salary structure ($M = 3.25$, $SD = 1.39$), there was an urgent need to close the talent gap ($M = 3.72$, $SD = 1.75$), and the company needed to make organizational change ($M = 3.77$, $SD = 1.48$).

A one-way ANOVA was used to test for overall job

satisfaction differences among periods of employment years. There was a significant difference among groups, $F(5, 1869) = 4.71$, $p < 0.01$. The Games-Howell method was used for post hoc comparisons. The results showed that employees with less than 3 years of employment ($M = 398.21$, $SD = 77.22$, $n = 295$) had greater job satisfaction than employees whose employment years were between 3 and 10 years ($M = 372.29$, $SD = 73.68$, $n = 315$).

A one-way ANOVA was used to test for overall job satisfaction differences among educational levels. There was a significant difference among groups, $F(8, 1866) = 2.56$, $p < 0.01$. The Sidak multiple comparison adjustment method was used to control the overall confidence level at 95%. The results showed that employees with Master's degree ($M = 398.80$, $SD = 73.35$, $n = 142$) got greater job satisfaction than employees

TABLE II
FREQUENCIES AND CATEGORIES FOR EMPLOYEE RETENTION OPTIONS

Job Retention Options (<i>n</i> = 1875)	Type	Total
Good image of the enterprise	Hygiene	1026
Good compensation	Hygiene	686
Workplace is close to my residence	Hygiene	632
High job security	Hygiene	537
Work-life balance	Hygiene	505
Organization's financial stability	Hygiene	392
Harmonious relationships with co-workers	Hygiene	371
Good benefits	Hygiene	258
Overall corporate culture	Hygiene	197
The work itself	Motivator	173
Immediate supervisor's capabilities	Hygiene	154
Opportunities to use skills and abilities	Motivator	139
Professional development	Motivator	79
Organizational innovation policy	Hygiene	76
Recognition of employee job performance	Motivator	70
Feeling safe in the work environment	Hygiene	58
Job rotation and promotion opportunities	Motivator	51
Good relationship with immediate supervisor	Hygiene	46
Autonomy and independence	Motivator	36
Smooth communication channels	Hygiene	19
Missing		120

Note: Each participant could choose no more than 3 items

with high school education ($M = 375.45$, $SD = 74.79$, $n = 721$).

B. Retention Options

In Table II, frequencies and types of job satisfaction for employee retention options were presented. The most highly rated job retention option by the participants was “good image of the enterprise” ($n = 1026$, 18.24%). The second most job retention option was “good compensation” ($n = 686$, 12.20%), and the third job most retention option was “workplace is close to my residence” ($n = 632$, 11.24%).

Only 4 chemical fiber employees chose all motivators as their job retention reasons. About 74.1% employees ($n = 1390$) selected all hygiene factors as their job retention reasons. About 25.2% employees ($n = 470$) had at least one motivator for their job retention options. About 0.70% employees ($n = 13$) did not provide any selections.

A one-way ANOVA was used to test for overall job satisfaction differences among types of job retention options. There was a significant difference among groups, $F(2, 1872) =$

14.46, $p < 0.01$. The Games-Howell method was used for post hoc comparisons. The results showed that for those participants who chose at least one motivator as their job retention options ($M = 398.55$, $SD = 68.93$, $n = 470$) had significantly greater overall job satisfaction than those who only chose hygiene factors ($M = 377.20$, $SD = 76.96$, $n = 1390$).

A one-way MANOVA was used to test whether different types of retention options differed in the degree of respondents on the 10 job satisfaction components. Significant differences were found among the three types of retention options on the dependent measures, Wilks's $\Lambda = 0.96$, $F(20, 3726) = 4.18$, $p < 0.01$. Post hoc analysis (the Games-Howell method) revealed that except "Employee Benefits," for employees who chose at least one motivator as their job retention options had significantly greater job satisfaction on the 9 subscales than those who only chose hygiene factors.

In addition, due to most employees had high school diplomas ($n = 721$, 38.45%) or college degrees ($n = 419$, 22.35%), a one-way ANOVA was used to test whether there was any significant difference in overall job satisfaction between high school-educated employees and college-educated employees. The results indicated that employees with college degrees ($M = 388.03$, $SD = 74.10$) had significant greater overall job satisfaction than employees with high school diplomas ($M = 375.45$, $SD = 74.79$), $F(1, 1138) = 7.55$, $p < 0.01$.

Therefore, a chi square test of independence was further used to examine whether there was a significant association between the two variables (types of job retention options vs. levels of educations). The results revealed association between 2 main levels of education and types of retention options, $\chi^2 = 73.34$, $p < 0.01$.

C. Thriving Facilitation Workplace Index

The average level of overall thriving facilitation workplace index reached almost to "mostly agree" ($M = 23.23$, $SD = 3.57$). The most highly valued item was "I understand how my performance fits with the organization's mission and strategy" ($M = 6.03$, $SD = 0.96$).

A one-way ANOVA was used to test for overall thriving facilitation workplace index differences among types of job retention options. There was a significant difference among groups, $F(2, 1872) = 15.33$, $p < 0.01$. The Games-Howell method was used for post hoc comparisons. The results showed that for those participants who chose at least one motivator as their job retention options ($M = 24.01$, $SD = 2.83$, $n = 470$) had significantly greater overall thriving facilitation workplace index than those who only chose hygiene factors ($M = 22.96$, $SD = 3.75$, $n = 1390$).

The Pearson product moment correlation was used to find out the relationship between overall job satisfaction, 10 subscales of job satisfaction, and the thriving facilitation workplace index. The results showed that these variables were significantly positively correlated to each other, and Pearson's correlation coefficients ranged from 0.39 to 0.88. The correlation coefficient between thriving facilitation workplace

index and overall job satisfaction was 0.61.

V. DISCUSSION

A. Job Satisfaction

This study revealed that the overall job satisfaction level among chemical fiber employees was near the "somewhat satisfied" response. Although most employees showed positive attitudes toward Corporate Image, Collaborative Working Atmosphere, and Supervisor's Expertise, there was an urgent need to conduct organizational change. According to their opinions, the company ought to exert more effort in "job rotation and promotion," "professional development," "performance management," "organizational communication," "employee benefits," and "compensation system."

By analyzing demographic characteristics of the workforce, firstly, the majority of the current employees were middle aged and older. Secondly, the turnover rate was quite low. Thirdly, for employees who served at least 21 years, more than one-third of them held managerial positions. Lastly, for employees whose periods of employment were between 3 and 10 years showed the lowest level of overall job satisfaction. The above phenomena might provide some clues why most employees dissatisfied with job rotation practice and felt that the promotion opportunities were limited and unfair.

Taken together, even though several positive aspects of the management practice were recognized by the chemical fiber employees, the challenges of workforce development and talent retention were very similar to those of traditional companies [8], [17].

B. Job Retention Options and Two-Factor Theory

Most employees put "good image of the enterprise" as their first priority on job retention. This finding echoed the results of JSQ. The second most common job retention reason was "good compensation." Even though most chemical fiber companies in Taiwan shifted their manufacturing operations to China and/or Southeast Asia, this company could still make a profit. Maybe that was one of the main reasons why most employees cherished what they had (in the country of the blind, the one-eyed man is king). And the third most common job retention option was "workplace is close to my residence." Since the average number of years in current position was more than 16 years and more than half of the chemical fiber employees served as technicians or operators, the minimum transportation costs played a relative important role for employees working in this company.

It was obvious that the top nine job retention options were related to Herzberg's hygiene factors. According to the two-factor theory, most chemical fiber employees stayed at their current jobs because this company provided basic working conditions.

While merely 25% of employees put at least one motivator to be their job retention options, the overall job satisfaction mean score for these employees revealed significantly greater than those who only chose hygiene factors. Moreover, for those

participants who chose at least one motivator as their job retention options rated significantly greater overall thriving facilitation workplace index than those who only chose hygiene factors. In other words, under similar working conditions, motivator seekers actively found their ways to think positively and gain more job satisfaction than hygiene-factor seekers. These results were consistent with the studies of [33]–[35]. Therefore, Herzberg's two-factor theory of motivation was proven valid in this study.

However, one should note that types of job retention options were related significantly to levels of education; in other words, employees with higher levels of education tended to choose motivators as their job retention options. This pattern was similar to the findings of [36].

C. Thriving Facilitation Workplace

The average level of overall thriving facilitation workplace index reached almost to "mostly agree," the result indicated that the working environments would not only encourage employees to be more productive, but would also inspire them in creating the future for both parties. In addition, the overall thriving facilitation workplace index was significantly positive correlated to the overall job satisfaction and the 10 subscales, respectively. This might provide some implications why the turnover rate was so low and why most employees felt very proud to work for this company.

VI. CONCLUSION

Through the analysis of large empirical data, this study provided an in-depth understanding of employee job satisfaction and its contributing variables for a big Chinese chemical fiber company to manage change management. After making presentations to the officials, most of them admitted that this research especially highlighted some of the very important aspects in dealing with human capital issues, such as workforce planning, succession planning, demographic changes, and clarity of performance standards. Future research might focus on evaluating the effectiveness of these follow-up strategic human resource management practices.

Although there were some limitations to this study, such as due to the nature of the sample, the results might not be representative of those outside these demographics; moreover, the self-report measures could be inflated or deflated, the research results confirmed that Herzberg's Two-Factor Theory could be a plausible one for studying job satisfaction.

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