The Relationship between Pay Satisfaction and Turnover Intention of Employees in Mobile Application Development Companies in Beijing, China[†]

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Abstract

With the development of modern technology and the prevailing of smartphones in China, the increasing demand for smartphone application has brought about the emergence of smartphone application development companies. In Beijing, the competition has become increasingly fiercer among the small meddle-size application development companies. The high turnover rate has caused unstable personnel components in development and testing teams, which will inevitable slower the program process. Therefore, this study aims to investigate the relationship between pay satisfaction and turnover intention of employees in mobile application development companies in Beijing, China.

The data were collected by questionnaire survey. The samples of this study were 301. Employees were asked to finish this research by executive order. Besides, questionnaires were posted on the IT milieu public media of Peking and Wechat Moments to collect data from participants. The findings demonstrate that all 4 factors: Pay level, raise, benefits, pay structures were found to indicate that the significant negative between 4 factors and the turnover intention respectively exists. Therefore, given the results now found in regression, a little rise in the form of "real money" to employees would enable them to have greater chances to work harder to keep their job.

Keywords: Turnover intention, Pay satisfaction, Mobile application development

Introduction

With the development and wide application of 4G technology, the traditional PC Internet has become outmoded, superseded by the mobile Internet. People can get rid of the clumsy when they used to surf the Internet by computers, and they can browse all kinds of information, learn about hot issues, buy goods and services directly on their mobile phones. The development of smart phone and has increased people's social welfare greatly. On the other hand, the needs of living a modern life provides sufficient development space for the mobile application (App) software development industry. With the rapid development of mobile Internet, users' demand for App and services has surged. At the same time, with the development of technology and the unification of development platform, the threshold of the whole mobile development market is greatly lowered, which makes the new investors could easily enter this industry. Besides, many mini-size group developers and freelance developers have the ability to develop and provide mobile services.

Small and medium-sized mobile development enterprises that have sprung up like mushrooms after rain, provide a large number of mobile Internet services. Small and medium-sized mobile development enterprises providing Internet services are developing rapidly, but there are also some developmental problems within this model. Among the problems they face, the high turnover rate problem, hampered SMEs, became more severe with the explosive growth of SMEs. At present, the total demand for human capital in SMEs in the industry is increasing, the pressure of human capital supply has increased sharply, and the competition for high quality well educated employees is increasing. Among small companies of IT industry in China, the human capital problem has become the serious problem, which restricts the development of SMEs greatly. Through extensive investigation, the company found that the high turnover

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rate and the instability of crucial employees has become a major problem which restricts the development of SMEs.

Wang (2011) found relationship between internal pay satisfaction and turnover intention of educated workers, which indicates that there is a significant negative correlation between internal pay satisfaction and turnover intention. The close relationship between educated workers' internal pay satisfaction and turnover intention is determined by their psychological needs and job characteristics. Zheng (2007) believes that the 21st century is the era of employee-oriented management, and human capital has become one of the key factors for the success or failure of enterprises. Under the circumstances of economic environment in China, despite of the bleak future of the most of industries due to the impact of covid-19 regulation policies, the App Research and Development (R&D) industry is still experiencing a rapid development. IT industry is one of the policy encouraged industry, which Peking government trying to foster to catch up with the technology gap between China and developed world. In overview, Chinese people are not satisfied with their salaries. Thus, salary is one of the important factors for people pay homage and fealty to enterprises which hired them, so, the research on Pay satisfaction has significance meaning.

When employees' pay satisfaction is seriously insufficient, it will lead to employee turnover intention and even employee turnover behavior, which will affect the normal development of enterprises. Among the top 100 internet companies in China, Beijing occupies 34, and ranks generally high. As the city where full of Internet companies, it is extremely representative on this study. Therefore, studying the relationship between employees' pay satisfaction and turnover intention in Beijing has profound practical significance for the normal operation and development of small and medium-sized enterprises: First of all, the research on pay satisfaction will help revising pay management system of mobile application development small and medium enterprises; Secondly, this study will help small and medium enterprises (SMEs) in mobile application-development industry get the best manpower allocation based on the minimum manpower cost, so as to ensure the long-term and stable development of the mobile application development small and medium enterprises. Besides, this research could conclude some constructive suggestion for small and medium-sized enterprises within industry cross the threshold and limitations of size and grow into large and medium-sized enterprises.

The main purpose of this study is to explore the relationship between employees' pay satisfaction and turnover intention in Beijing mobile development small and medium enterprises. Specifically, the research objectives are:

1) To study the level of pay satisfaction of employees in mobile application development companies in Beijing, China

2) To study the level of turnover intention of employees in mobile application development companies in Beijing, China

3) To study the relationship between pay satisfaction and turnover intention of employees in mobile application development companies in Beijing, China

Methodology

Previous studies in general

Highlighted by survey conducted by Vandenbergh and Tremblay (2008), samples indicate that the side effect of pay satisfaction (why employees feel like unsatisfied) on intended turnover is fully mediated by affective career commitment and perceived sacrifice commitment. Pay satisfaction is also significantly related to perceived commitment but it has no influence on the outcome. His research has statistically proved a universally acknowledged trick played by employer thousands of times that, if a boss doesn't have enough money to pay his employees a decent salary, he will probably promise his or her followers a bright promised future and career development to keep his followers work in high moral. This trick works and always works. But, considering the current anti-involution trend prevailing in generation Z in China, making a sweet promise to those young employees will have on actual effects to them. Therefore, this study will continue working on expanding the understanding of the relation between pay satisfaction and turnover intention.

Sun (2018) have pointed out that, under the special circumstance of bleak economy in China after

economy crisis in 2008, if a workforce serve same position with almost same workload could receive salary in huge difference differ by the business situation of company. Therefore, the employees will easily compare their own salary to the salary of those people who do the same job. Under the theory of Phenomenon-attitude-behavior Tendency. By the opinion of the author, under the circumstance of under average salary, the enterprise will have chances to suffer less from turnover rate if the company leader has set an inner-equal salary system inside of company as long as the employees have a sense of belong to the enterprise, further highlighted the importance belong. Besides, the company managers should take it seriously to the backfires of high turnover rate based on her claims. Company managers should have clear acknowledge that a new hiring member must get through break-in periods to work in his or her fully potential for the company. Break in period costs, let along the cost of the process a company to hire someone.

Put forward by Gao (2013), her study results showed that there is a significant positive correlation between high rank manager-employee pay gap and corporate performance, and it appeals as is a significant U-shaped correlation. Consider the robust proven relation between company performance and pay satisfaction mentioned above, it is reasonable to assume that this pay gap will effect company performance in IT industry as well.

If the company performance will be set as the dependant variable Y, turnover intention, pay satisfaction and pay gap will be set as all IV (instrumental variable). Considering the hypothesis that, if the company getting better in performance, employees will be more likely to stay in this company, thus, the total turnover rate will be reduced. Although the pay gap in this company is getting larger but Pay satisfaction will increase. To solve this out, interlace items will be used to reduce this multicollinearity problem, but, it is clearly that the IV "pay gap" is a partly endogenous item. Besides, bidirectional causality between pay gap and turnover rate could still be a problem. Therefore, to be clear about the factors influencing the turnover intention, have a thorough discussion about "pay gap" is absolutely necessary.

Populations and sampling

In this study, the target population of this study is those people who have a job in the IT industry in Beijing. More specifically, all the active personal working directly under the company CEO and CEO himself/herself in IT industry. Therefore, the expected targeted population will include employees from different positions, educational levels, seniorities, and rank.

Targeted population is the employees of mobile application development companies in Bejing, China. Sample random sampling (SRS) is applied to collect data for the survey. The 301 employees in 46 mobile application development companies in Beijing, China. Convenient sampling was used to select the respondents, and the questionnaires were collected online. 301 questionnaires were recovered; all questionnaires were found valid among those.

Questionnaire design and data collection

In this study, the questionnaire was used as a research tool to study the relationship between the employees' Pay satisfaction and Turnover Intention in mobile application enterprise in Beijing, China.

This study designed 15 questions from 4 dimensions to measure Pay satisfaction and Turnover Intentions, and used a Likert 5-point scale, ranging from 1 to 5: 1) strongly disagree, 2) less agreeable, 3) neutral, 4) agree, and 5) strongly agree. The main data collected through the questionnaire will be divided into the following 2 parts:

Part I: The measurement of the respondent's pay satisfaction level mainly measures the employee's actual feeling of the internal pay.

Part II: The measurement of the respondents' turnover intention. This study adopts the turnover intention scale proposed by Heneman. (1985).

From the perspectives of demographic variables and model assumptions, the content of the questionnaire is divided into 3 parts: The first part is the basic information, which is set as a control variable in the form of multiple-choice questions, mainly including education, seniority, position, rank.

Data analysis

After the population bias problem checks out, descriptive statistics analysis was used. Then, correlation

analysis was use to observe preliminary results. Finally, the multiple regression analysis was adapted to prove all assumed hypotheses.

Results and discussion

Responding Profiles

The targeted respondents included in this study include employees in all positions of application developing company including testing employees, financial employees, front desk employees, administrative employees, and customer service employees as shown in **Table 1**.

Table 1 Responding profiles.

Attribute	Category	Frequency	Percent (%)
Educational level	Junior high school and below	15	4.98 %
	Senior high school/technical secondary school	38	12.62 %
	Undergraduate (still receiving higher education)	36	11.96 %
	Bachelor (Graduated from higher education)	116	38.54 %
	Master and above	96	31.89 %
Seniority	1 - 3 years	28	9.30 %
	4 - 5 years	109	36.21 %
	6 - 10 years	103	34.22 %
	11 - 15 years	57	18.94 %
	More than 15 years	4	1.32 %
Position	Administrative personnel	4	13.95 %
	Management personnel	63	20.93 %
	Sales personnel	85	28.24 %
	Technical personnel	111	36.88 %
Rank	Employees	112	37.21 %
	Sergeant level managers	108	35.88 %
	Middle managers	62	20.60 %
	Senior managers	19	6.31 %

According to the **Table 1**, 31.89 % of participants have an educational degree higher than bachelor, which means that the IT industry is a technology intensive industry. The majority of workforce is made up by the employees of undergraduate degree and bachelor degree, which made up 11.96 and 38.54 % respectively and 50.5 % in add-up the total sample. Participants without college education made up the lowest proportion of the total sample, with only 53 participants, it made up the 17.6 % of the total sample. About seniority, workforce with 4 - 5 years of seniority and 6 - 10 years of seniority made up the majority of the proportion in the sample. People with 4 - 10 years of seniority made up the 70.4 % of the total sample. Only less than 30 % of participants have seniority of less than 3 years or more than 10 years. As indicated by **Table 1**, technical personal and sales personal have made up the 36.88 and 28.24 %, respectively and 65.12 % add-up in total in the proportion. **Table 1** indicates that the employees and sergeant level managers has made up the majority of the samples of participants. Those 2 categories have made up 73.09 % of the total sample. Apparently, the collected data revealed the general situation of industry.

Descriptive analysis

Descriptive analysis is a good method to measure the overall situation participants on their scores on each factor. **Table 2** presents mean and standard deviation to measure the situation.

Table 2 Means and standard deviations of questions about 4 factors.

Item	Mean	S.D.
I am satisfied with my present pay.	3.15	0.95
My current pay is competitive in the same industry.	3.08	0.94
I think my input is proportional to my pay.	3.18	0.74
I am satisfied with the pay increase I was given last time.	2.99	0.84
I am satisfied with the current pay growth rate and frequency by the company.	3.1	0.84
I think the pay increase in different position is fair.	3.13	0.89
The company offer a variety of employee welfare.	3.13	0.83
The company pays high welfare expenses for its employees	3.08	0.86
I am satisfied with the overall welfare offered to me by the company.	3.07	0.74
The pay difference of different positions (departments) in the company is reasonable.	3.24	0.92
I think the pay of high-ranked officers are reasonable.	3.03	0.81
I think the pay of the co-workers of my rank are reasonable.	3.15	0.78

Those results showed the statistic situation of the 4 factors The results show that the minimum of means in 12 items is 2.99, and the maximum of the means is 3.24. The range of means of each question is among 2.99 and 3.24. This result indicates that the employees are generally satisfied with their pay. The minimum standard deviation of the 12 items is 0.74 and the maximum of the 12 items is 0.95. This result means that the variance of the question is at the generally acceptable range and the results are distributed in normal distribution.

Table 3 Means and standard deviations of questions about turnover intention.

Item	Mean	S.D.
I often think of quitting my present job.	2.45	0.9
I don't intend to make long-term career development in my present position.	2.39	0.84
I often search recruitment information in my spare time.	2.4	0.91
I prefer to work in another company if I have the chance.	2.5	0.85

Those results showed that the means of turnover intention are among 2.39 to 2.5, standard deviation of the questions are among 0.84 to 0.91. This result meant that most of the participants have a low turnover intention and the results are subjected to normal distribution and is evenly distributed.

Reliability test and correlation analysis

Based on the result of reliability test, the Cronbach's α was wound within the acceptable range. Here are the results.

Table 4 Reliability test.

Variable	Cronbach's α Coefficient
Turnover intention	0.772
Pay satisfaction	0.884

Pearson Correlation Coefficient was widely used by scholars around the world to determine the correlations among the variables. Here are the correlation results of the data. Among all the correlations, the correlation between Pay level and Benefits, and the correlation between Structure and Pay level were found the 2 highest correlations. Based on this result, setting Pay-level*Structure and Pay-level*Benefits as 2 interlace item to reduce the possible multicollinearity is a wise way to conduct this study.

Table 5 Correlations.

Variables	Pay level	Raise	Benefits	Structure
Pay level	1			
Raise	0.5673**	1		
Benefits	0.7285**	0.5497**	1	
Structure	0.7138**	0.4987**	0.6576 **	1

Table 6 Multiple regression results.

Variables	β Coefficient	VIF
Pay level	−0.1771412***	1.3133
Rise	−0.0923801**	1.1071
Benefits	−0.080955**	1.1923
Structure	−0.052218*	1.5089
R^2	0.523	
$\triangle R^2$	0.511	
F	30.85	
VIF	2.0092	

Table 7 Hypothesis test results.

No.	Hypothesis	Results
H1	Pay satisfaction of employees has a correlation with turnover intention. The higher the pay satisfaction, the lower the turnover intention.	Accepted
H1a	Pay satisfaction on pay level of employees has a correlation with turnover intention. The higher the pay satisfaction, the lower the turnover intention.	Accepted
H1b	Pay satisfaction on raise of employees has a correlation with turnover intention. The higher the pay satisfaction, the lower the turnover intention.	Accepted
H1c	Pay satisfaction on benefits of employees has a correlation with turnover intention. The higher the pay satisfaction, the lower the turnover intention.	Accepted
H1d	Pay satisfaction on pay structure of employees has a correlation with turnover intention. The higher the pay satisfaction, the lower the turnover intention.	Accepted

Conclusions

The finding showed that the employees with college admission make up the majority of the participants. This result confirmed the commonsense that application development is a knowledge-intensive industry. With the young and vigorous workforce, the whole industry has a prosperous future, unlike other dying industries. As the descriptive statistics shows that employees with fewer than 10 years of seniority make up the majority of the workforce. Unlike the low turnover rate in the state-owned companies and institutions, the lower seniority rate means that the IT industry and app development industry is a brand new industry. Within this industry, employees are participating in the very same job in different companies. So, it is obvious that the relatively high turnover rate is a result of homogeneous work requirements. To those employees who are taking crucial tech-related positions, their positions can be hardly replaced.

As the statistic shows that, many participants who generally satisfied with their current pay but still actively looking for another job. This phenomenon means that there are other factors that cannot be concluded into the model that makes them considering the possibility of job change in spite of the satisfied pay. Factors like overtime working stress, overall job burden, the irrational meeting frequencies might play a crucial part in high turnover intention. Therefore, although putting more resources to increase overall pay satisfaction is still the most direct way of stabilizing the company employee integrity, the unreasonable managerial method and unfair workload might push the most important employees to leave the company in the long run.

Research implications

As can be seen from the regression results, the pay level plays a major role in employees' pay satisfaction. The β of this factor is noticeably larger than the rest of the factors' β. During 2022, the overall economic situation was gets worse and college graduates can barely see hope. Under this situation, the lay-off was taking within the whole IT industry. As a by-product of large size lay-off, the supply of labor force has overwhelmed the demand. Under the crush of periodic unemployment, those who already have a job would want more real money instead of benefits and a sense of fairness in the job. So, a high paid job became a more precious job which employees turned to work harder to keep.

Factors like benefits, rise, and pay Structure has lower β than the pay level. But, when considering the employee maintenance expenses as a whole, the fairer pay structure and more benefits might still be a good way to stabilize the turnover intention. The promotion opportunities are limited, and the pay rise costs. Admittedly, the nominal tank promotion without an actually pay rise might rise employees' morale in the short run. But, the rank-promoted employees will definitely expect a raise in salary because they regard themselves as people who take more important positions. It is a wise idea that companies could negotiate with the union (if exists) about the usage of welfare money and use them more efficiently. Once a sense of belonging was established in the company, employees will be more likely to take the stress and stay rather than leave.

Research limitations and suggestions for future study

There are only 301 samples in this study. Although Cronbach's α result is within acceptable rate, the reliability of the questionnaire is still questionable. The regression results like F could have achieved better results with a larger sample size.

In the future study, the following study-improving methods are recommended: firstly, keep focusing on improving the reliability and validity of the questionnaire. Use matured and robust questionnaires while conducting research. Secondly, conduct the research more deeply with panel data. Discriminating the differences between the different company sizes and different company sorts might be helpful. Lastly, narrow down the range of research participants to conduct a study focusing on the turnover intention of development and testing programmers. The specific research into the more specific field of the IT industry might gain inspiring and promising results.

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