

International
Institute of
Social Studies

The Erasmus logo is a stylized, handwritten-style script of the word "Erasmus" in a dark blue color.

Factors affecting employees' duration in jobs in Ho Chi Minh City, Vietnam

A Research Paper presented by:

Nguyen Le Hong Loan
(Vietnam)

in partial fulfilment of the requirements for obtaining the degree of
MASTER OF ARTS IN DEVELOPMENT STUDIES

Major:

Economics of Development

Members of the Examining Committee:

Dr. Truong Dang Thuy

Dr. Matthias M. Rieger

The Hague, The Netherlands

Disclaimer:

This document represents part of the author's study programme while at the International Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

Inquiries:

International Institute of Social Studies
P.O. Box 29776
2502 LT The Hague
The Netherlands

t: +31 70 426 0460
e: info@iss.nl
w: www.iss.nl
fb: <http://www.facebook.com/iss.nl>
twitter: [@issnl](https://twitter.com/issnl)

Location:

Kortenaerkade 12
2518 AX The Hague
The Netherlands

December 2021

Contents

<i>List of Tables</i>	<i>vi</i>
<i>List of Figures</i>	<i>vi</i>
<i>List of Appendices</i>	<i>vi</i>
<i>Abstract</i>	<i>viii</i>
Chapter 1 Introduction	1
1.1 Research problem	1
1.2 Research objectives and research questions	2
1.3 Scope of the research	3
1.4 Structure of the research	3
Chapter 2 Literature review	4
2.1 Theoretical foundation	4
2.2.1 The labor turnover from a theoretical view	4
2.2.2 The organization theoretical	5
2.2.3 Human resources development	7
2.2.4 The withdrawal process models	8
2.2 Empirical studies	11
2.2.1 Demographic determinants	11
2.2.2 Working environment determinants	11
2.2.3 Job satisfaction	12
2.2.4 Turnover intention, intention behaviour	13
2.2.5 Alternative opportunities	13
2.2.6 Job duration	14
2.2.7 Turnover decision, decision to quit	14
Chapter 3 Research methodology	15
3.1 Analytical framework	15
3.2 Econometric models	16
3.2.1 Analysis approaches	16
3.2.2 Description of variables	18
3.2.3 Econometric approaches	21
3.3 Data	22
3.3.1 Questionnaire	22
3.3.2 Data collection method and sampling	22
Chapter 4 Research results	24
4.1 Descriptive statistics	24
4.2 Results	30
4.2.1 Multicollinearity	30
4.2.2 Kaplan-Meier curves	31
4.2.3 Good of fitness testing	34

4.2.4 Proportional hazards assumption testing	35
4.2.5 Regression for parametric survival analysis	39
4.2.6 Survival function curves	41
4.3 Discussion	45
Chapter 5 Conclusions and policy implication	48
5.1 Conclusions	48
5.2 Policy implications	49
5.3 Limits of the study and suggestion for further research	50
<i>Appendices</i>	<i>52</i>
<i>References</i>	<i>67</i>

List of Tables

Table 3.1: Dependent variables in regression	18
Table 3.2: Independent variables in regression.....	19
Table 3.3: Additional variables in descriptive statistic	20
Table 4.1: Descriptive statistics.....	24
Table 4.2: Descriptive statistics for continuous variables	25
Table 4.3: Cumulative Incidence Rates of Turnover by Baseline Variables.....	27
Table 4.4: Correlation summary.....	29
Table 4.5: Muticollinearity testing.....	30
Table 4.6: The good of fitness testing.....	35
Table 4.7: The PH assumption testing.....	35
Table 4.8: Results of Survival Regression Analyses	40

List of Figures

Figure 2.1: Mobley's model	10
Figure 3.1: Proposed analytical framework	16
Figure 4.1: Kaplan-Meier survival curves for all variables	31
Figure 4.2: Kaplan-Meier survival curves for generation and marital status groups.....	31
Figure 4.3: Kaplan-Meier survival curves for education and job level groups.....	32
Figure 4.4: Kaplan-Meier survival curves for attention and interaction groups.....	32
Figure 4.5: Kaplan-Meier survival curves for happiness and salary groups	33
Figure 4.6: Kaplan-Meier survival curves for awards and job vision groups	33
Figure 4.7: Kaplan-Meier survival curves for contribution and job liability groups	34
Figure 4.8: Kaplan-Meier survival curves for alternative job and job offer groups	34
Figure 4.9: Exponential probability plot for all variables.....	42
Figure 4.10: Exponential probability plot for dependents and experiences groups.....	42
Figure 4.11: Exponential probability plot for attention and sociable groups	43
Figure 4.12: Exponential probability plot for interactions and public information groups.....	43
Figure 4.13: Exponential probability plot for happiness and salary groups	44
Figure 4.14: Exponential probability plot for awards and contribution groups	44
Figure 4.15: Exponential probability plot for looking jobs and job offer groups.....	45

List of Appendices

Appendix 1: Generation	52
Appendix 2: Questionnaire.....	52
Appendix 3: Frequency of variables.....	55
Appendix 4: Cumulative incidence rates of turnover by baseline variables	58
Appendix 5: Kaplan-Meier estimate for workers	63

List of Acronyms

PAPI	Public Administration Performance Index
Cox PH	Cox Proportional Hazards
AFT	Acceleration Failure Time
MLE	Maximum Likelihood Estimation
AD	Anderson Darling testing
VIF	Variance Inflation Factor
PL	Product-Limit method

Abstract

Current employee turnover surveys focus on predicting turnover by measuring demographics, work environment, organizational commitment, and alternative job opportunities. The analytical technique commonly used in these studies is logistic regression that does not incorporate time as a variable of interest. Therefore, this paper uses a survival analysis technique with a time variable to test the turnover model with a sample of 312 employees from various industries in Ho Chi Minh City. The estimates of the survival function and the risk indicate that with the increase in time, the likelihood of staying with the company decreases sharply in the short term, but after a particular time, the risk of leaving the job disappears. The analytical method is selected through hypothesis evaluation of Cox PH model, distribution model test. The test shows that the parametric method with exponential distribution provides a rationale analysis for the turnover model. In particular, factors such as the number of dependents, years of experience, management interest, salary, and emerging job replacement opportunities significantly predict turnover while happiness at work does not. The results from the parametric model regression are consistent with previous studies on work environment factors, organizational commitment, and alternative job opportunities that have a strong influence on employee turnover. The implication of these findings is to help organizations plan and implement employee retention policies that are appropriate over time.

Keywords

Labour economics, Human behaviours, Job satisfaction, Voluntary turnover, Alternative job opportunity, Human resources development, Job duration, Survival model

Chapter 1 Introduction

1.1 Research problem

Besides the most critical concerns such as finance and business strategy, organizations must also pay special attention to human resources. For organizations, their production and business activities are maintained and operated by the workforce. Similarly, for the workforce, an organization is where employees spend most of their time at work (March & Simon, 1993). The relationship between the workforce and the organization reflects the organization's labor mobility, human resources policies and labor performance. In addition, this connection is a two-way partnership; hence, the labor turnover is generated by both the workers and the organization. When the organization lays off employees, it creates the labor turnover; that is involuntary turnover. Conversely, when employees leave the organization for some reason, it also creates the labor turnover and that is voluntary turnover.

Conversely, when the decision to terminate the job is made on the part of the employee, this is voluntary turnover. The interaction and association between organizations and their employees, mainly voluntary turnover, attract the attention of not merely organizations but also scholars (Kim *et al.*, 2017; Mobley, 1977; Price, 1977; Hulin *et al.*, 1985; Muchinsky & Morrow, 1980; Carsten & Spector, 1987; Munch *et al.*, 2008; Boockmann & Steffes, 2010; Lambert, Hogan, & Barton, 2001; Porter & Steers, 1973). Voluntary turnover is out of the organization's direct control because the decision-making power is not in their hands. In response to the workforce quitting, Mobley and his team (1978, 1979) propose a theoretical causal framework to indicate the withdrawal process. The model shows a correlation between job dissatisfaction, alternative opportunities, and quitting the job. The working environment, including the culture and features of the company, is vital and severe to generate the employees' satisfaction. Hence, satisfaction is the critical intermediating variable between the working environment and the withdrawal intention (Lambert, Hogan, & Barton, 2001). Moreover, the job duration is strongly affected by enterprise features such as training programs opportunities, firm institutions (Boockmann & Steffes, 2010). In addition, a high voluntary turnover also causes problems such as a high cost of replacement, included training cost, employment department cost, loss of output, and scrap, waste, and rectification costs (Wild & Dawson, 1972). Therefore, the systematic and determination of the influence of those factors on the employee's decision to quit or job duration of employees is an extremely necessary job in human resource management and business study.

Voluntary labor turnover and employee resignation are no longer a new problem globally because the increase in turnover has a profound effect on a company's operations and costs. This matter in Vietnam, however, is not addressed. Studies are usually performed on specific companies or divisions of a company. There are some studies on several industries in some particular localities, but it is not enough to generalize on a larger scale (Bui & Chang, 2018; Giao *et al.*, 2020; Nguyen & Tran, 2021). Hence, the research tends to overall the issue in the big picture by removing a border among industries and companies, focusing on analysis and examine the change in behavior and decision of the Ho Chi Minh City workforce.

The workforce in Vietnam is having a mix of generations in recent years. According to the General Statistics Office (2021) statistics, the labor force between 15 and 24 accounts for 12.8% of the total number of employees across the country in 2018. The labor force between 25 and 49 accounted for 60.2% of employees nationwide in 2018. Workers from the age group 15 to 24 belong to generation Z, while those aged 25 and over belong to Millennials and Baby Boomers. Thus, the young workforce of the new generation - generation Z - is gradually entering

the labor market and replacing the Boomers generation. In general, and Vietnam, the companies in the world, have a division between different ages of workers in the same working environment. In addition, characteristics, behavior, personality, expectations, and views on work and life also differ between generations (Gayle, 2019). However, the existing studies do not focus on this divergence to evaluate in detail the differences in cognition and behavior towards work of different generational groups. Therefore, in addition to the general assessment of the factors affecting the employee's job duration, the division of working-age groups for analysis is necessary to understand the needs and desires of each group that the company has appropriate policies to attract and retain talents.

According to Sullivan (2009), each turnover rate figure has a different implication. In detail, if the rate is lower than 5%, the human resources situation at the business is stable. If the rate is between 5% to 8%, the company is having problems with human resources. At the same time, the rate from 8% to 10% seems like a warning to businesses because human resources are falling into instability and volatility. Finally, the enterprise needs to review all human resource uncertainties and compare the external conditions and environment when the rate tends to be over 10%.

In the case of Viet Nam, turnover rates are increasingly high, especially in big cities like Ho Chi Minh City. A survey published at the Vietnam Happiness at Work Summit 2019, organized by Anaphase organization in Ho Chi Minh City, Vietnam on October 4, 2019, indicates that at the employee level, those with a monthly salary of less than 10 million Vietnam Dong have the highest quit rate, at 29%. With higher levels of work such as Team Leader, Manager, and Director, the higher the salary, the more they show their intention to quit. In addition, the quitting rate among young employees is much higher than that of other groups. Even when they are satisfied with their jobs, more than 17% intend to quit their jobs. Thus, salary, bonus, and benefits from the company are no longer critical determinants of an employee's long-term commitment (Linh, 2019). In simple terms, the job duration, or the decision to quit the employees' job in Ho Chi Minh City, is impacted by multiple factors from various aspects of the job and personal status, not merely demographic factors and income.

1.2 Research objectives and research questions

Given the high voluntary labor turnover in Vietnam in general, and in Ho Chi Minh City in particular, this study aims to determine the factors and the degree of influence of these factors on the employee's decision to quit and their job duration. Based upon the theoretical framework regarding withdrawal process (Mobley, 1977; Mobley *et al.*, 1978, 1979), the influence of human resources management on productivity, development, cultural, and job duration (Ichniowski *et al.*, 1995; Chalofsky, Rocco, & Morris, 2014), this study studies quitting decision and its factors for the case of Vietnamese labor market. Specifically, the research examines six factors that impact employees' decision to quit, including demographic factors, work environment factors, organizational elements, job's satisfaction, turnover intent, and alternative job opportunities.

First, in detail, the paper surveys the factors affecting employees' decision to quit. Second, it considers the impact of these factors on the decision to quit of employees by classifying groups of factors with significant influence, medium influence, and low influence. Next, it evaluates and discusses the influence of those factors in Ho Chi Minh City market. Then, it gives some recommendations base on the results obtained. Finally, it suggests the intention to expand research for the future. According to the purpose of the study, this paper is generated from two critical questions related to the elements that affect the employees' job duration and decision to quit, and the policies to support the companies maintain the stable status of human resources.

1.3 Scope of the research

Ho Chi Minh City is distinguished as the economic locomotive of Vietnam when three consecutive years from 2016 to 2018 achieved a growth rate of more than 8% (Hien, 2019). Notably, the city's GRDP reached \$57 billion in 2018, accounting for more than 23% of the country's economic size (Hien, 2019). Likewise, Ho Chi Minh City is also a place where many main offices of the world's leading multinational companies in Vietnam are found (VietnamCredit, 2020). Regarding the city's immigration situation, according to PAPI's report on the provincial public administration and governance performance index in Vietnam in 2020, Ho Chi Minh City became the most chosen location when 22% the number of respondents selected this one as the place they would like to move to (Centre for Community Support and Development Studies, Centre for Research and Training of the Vietnam Fatherland Front, rtanalytics, & United Nations Development, 2021). With the importance of Ho Chi Minh City in economic and social development, the research concentrates on surveying and analyzing data of workers in Ho Chi Minh City.

Furthermore, topics related to human resources development, labor force, and organization are rich, such as organizational behavior analysis, human resource management, future human resource development, corporate culture, and productivity management (Hansen & Lee, 2009; Chalofsky, Rocco, & Morris, 2014; Ichniowski *et al.*, 1995). Nevertheless, the study only focuses on analyzing the determinants affecting job duration and decision to quit of employees in the current complex generation period. Therefore, analytical data was collected in the form of an online survey with a target of at least 300 respondents. The limitation of online survey also is detected in the research methodology to have an awareness and appropriate solution for reducing an bias and uncorrected results. Furthermore, because the study aims to determine and evaluate the influence of factors on job duration, the research employs a survival model with right censoring data. Hence, the duration of the study is limited from the end of the survey – July 2021 – backward. Side by side, the advantage of using the survival model allows the study to predict the future trend of determinants affecting job duration as a foundation for proposing policies for businesses in the short term.

1.4 Structure of the research

To clarify the issues from an academic perspective, the rest of the study includes chapter 2 – literature review, chapter 3 – research methodology, chapter 4 – research results, and chapter 5 – conclusions and policy implications.

The main context of the literature review section essentially deals with the central theories and concepts use in the study. Simultaneously, this section also examines empirical studies to build ideas and analytical frameworks of the research. When it comes to research methodology, the first part of this chapter is devoted to an introduction of the analytical framework; the second part introduces the econometric model for data analysis and validation; the last part presents the dataset, including sources of data, collection method, and data structure. The following chapter presents results. The final chapter discusses conclusions and policy implications. Furthermore, the chapter reflects on strengths and limitations of the research, as well as proposes avenues for further research.

Chapter 2 Literature review

The turnover phenomenon has attracted much interest from researchers from fields such as psychology, economics, and organization. Many previous studies have offered different theoretical models to conceptualize the dynamics of turnover. The large amount and variety of papers on turnover, offering various causal frameworks and generating different relationships, illustrate the importance and complexity of this issue.

This chapter discusses the relevant background literature on employee turnover that helps to support the empirical model and interpret the results. First, economic theories related to turnover are presented. Second, empirical studies on turnover-related factors are considered.

2.1 Theoretical foundation

To set the groundwork for the empirical study, this part proposes a few theoretical deliberations based on the labor turnover theoretical, the organization theoretical, the human resource development theory, and the withdrawal process model.

2.2.1 The labor turnover from a theoretical view

When talking about labor turnover or employee turnover, this concept is usually understood as the percentage of employees who leave the organization and are replaced by newly recruited within a specified period (Mayhew, 2019; Prachi, 2020; Roder, 2019). In simple terms, employee turnover represents the extent to which an employee moves across the membership boundaries of an organization (Price, 1977). Accordingly, determining whether an individual's actions are employee turnover is based on two main factors: the movement of individuals and the determination of the membership boundaries of an organization. Although labor mobility can be considered on both the individual and organizational levels, this study clarifies the relationship between factors and individual mobility. There are two essential criteria for determining the membership boundaries of an organization (Price, 1977). The first is the recognition of an individual as a member of the organization. For this to happen, the member must recognize himself or herself as a company person, and the organization confirms him or her as a participant of the system. Second, the identification of membership boundaries of an organization can be determined through the degree of interaction between members within the organization and between members inside and outside the organization. Specifically, members within the same organization have more significant interaction than members outside the organization (Price, 1977). For instance, the number and degree of interaction among the members of company A are more than the level of interaction among the members of company A and company B in the term of company A and company B are two independent companies.

When it comes to labor turnover, there are two kinds of matter, including voluntary turnover and involuntary turnover (Wild & Dawson, 1972). On the whole, the involuntary turnover under the organization's action such as layoffs, retirement, and restructure and reduce workforce, whereas the voluntary turnover is initiated by the individual (Price, 1977). It is evident from the equity theory that the employee tends to terminate their employment with companies if the jobs are perceived to be inequitable (Pritchard, 1969). The approach of this research considers the movement of the individual as their decision. Thus, voluntary labor turnover is the primary objective of analysis.

Voluntary labor turnover receive considerable attention from scholars because of its costs as well as its consequences (Abraham & Farber, 1987; Dustmann & Meghir, 2005; Mobley, Horner, & Hollingsworth, 1978; Porter & Steers, 1973; Price, 1983; Wild & Dawson, 1972). Along with

that are the questions that attracted their curiosity as to how long employees stay in their job or the determinants that influence their exit. Many studies related to determinants of labor turnover are published, such as job satisfaction and job performances (Locke, 1969; Lyons, 1971; Martin, Price, & Mueller, 1981), job attitude (Kraut, 1975), organization commitment (Angle & Perry, 1983), turnover intention (Steel & Ovalle, 1984), alternative opportunities (Hulin, Roznowski, & Hachiya, 1985). Moreover, organization features such as institutions also play a severe role for job duration when the institutional establishment like works councils and training opportunities strongly affect exit jobs (Boockmann & Steffes, 2010). In like manner, Wild and Dawson (1972) also point out that the five leading causes of voluntary turnover are general dissatisfaction with job, dissatisfaction with any aspect of the job, desire to improve security pay, the existence of a “restless” roving class of worker, and desire to accompany other leavers. However, besides these reasons, the condition leading to voluntary work termination is the availability of jobs elsewhere, better pay in other jobs, and alternative sources of adequate income. Thus, to terminate the job, the employee must have both causes and conditions to form the decision.

2.2.2 The organization theoretical

One of the reasons to generate the importance and vitality of the organization is that they have a bearing on so many aspects of daily life and society since employees spend at least a third time of day with them and almost their activities incur around communities (March & Simon, 1993). Other than that, the existence of the organization is for a common purpose. The organization must also deal with the changes over time to achieve the goal and the efficiency (Cummings, Worley, & Donovan, 2019). To catch the aim of the organization, the tasks are shared among the members of the business. However, the interest and meaning of each work, in general, are based on workers' standpoint. Similarly, some employees satisfy with what they do, while the rest are not (Black *et al.*, 2019). With that in mind, the contribution and attitude of employees with their job vary across each other. The effects of the jobs on employees may cause their excitement, curiosity, and motivation. On the other hand, the job's pressure also causes workers' tedious, stress, and demotivation. From this perspective, one of the employers' missions is to explore and transform work pressures into alternative activities that inspire the employees and create organizational productivity to avoid their give up (Black *et al.*, 2019).

When it comes to organizational equilibrium, this status reveals the success of the organization to encourage their employees to continue to participate with the company. Thus, it is a premise to organizational survival (March & Simon, 1993). The Barnard-Simon theory (Barnard, 1968; Simon 1976) regarding organizational equilibrium is the foundation of motivation's theory and proposes a set of conditions that organizations can utilize to motivate and keep their employees going. According to those facts, the organization is a system of people working together in which the company pays for their contribution (Schermerhorn *et al.*, 2012). The participant only goes on his or her cooperation when the inducement from the organization is more significant than what he or she is asked to contribute—furthermore, the organization is based upon the contribution of different partners to offer the inducement. Thus, the organization's existence prolongs as the contributions are agreeable to turn out enough inducements to employees (Simon, Smithburg, & Thompson, 1950). The inducements are all types of payments that companies offer to their workers, including salary, bonus, benefits, rewards, and others (March & Simon, 1993). Considering that, the employees tend to stay with a company when the balance of inducement utilities is larger than the contribution utilities and vice versa. As a result, the inducements-contributions balance of the company reflects their employee's perception with the participation on the organization (March & Simon, 1993). The literature regarding job attitudes suggest that job satisfaction is the primary and vital element affecting workers' emotion and perception leading to their behavior and decision (Atchison &

Lefferts, 1972; Lambert, Hogan, & Barton, 2001; March & Simon, 1993; Mobley, 1977; Porter & Steers, 1973; Schermerhorn *et al.*, 2012; Singh & Loncar, 2010).

Additionally, organizational commitment is identified as one of the variables impacting employee engagement (Kim *et al.*, 2017; Schermerhorn *et al.*, 2012; Angle & Perry, 1983; Mowday, Steers, & Porter, 1979). One of the foundation theories about organizational commitment is built by Becker (1960) called the Side-bet theory. The theory indicate that commitment as a direction to connect the members to consistent lines of activity and would be break if the activity is terminated. The consistent lines of activity in organizational commitment consider maintaining employees in the organization (Meyer & Allen, 1984). In the light of Becker's work, side bets, in general, have around five forms, including generalized cultural expectations indicate components creating behavior such as the duration that one should engage with the organization, self-presentation reveals the one embark on displaying a specific style to perform a consistent image, impersonal bureaucratic arrangements are sets of policies that the organization offers to encourage or reward their employees and induce their long-term engagement, individual adjustments to social positions illustrate person efforts to familiar with a situation while getting him or her out of the right ring for other situations, non-work concerns display side bets making outdoor the organization (Powell & Meyer, 2004). While Becker (1960) state that commitment comes with awareness of the costs of stopping the engagement, commitment is also gestated as an affective orientation to the organization (Porter *et al.*, 1974). To conceptualize organizational commitment, Allen and Meyer (1990); Meyer and Allen (1991) propose a three-component framework reflecting three general components, including affective commitment, continuative commitment, and normative commitment. The core difference between those components is mindsets. Thus, they are expected to grow as different routes and influence job attitude and job behavior (Powell & Meyer, 2004). All in all, although organizational commitments have various forms and various ways to approach, they have specific implications for the decision of employees.

Another approach to organizational theories is the theory of work's features. Hackman and Oldham (1976) job characteristics theory describes five core job characteristics that affect job-related outcomes through three psychological states. Five core job characteristics are autonomy, feedback, skill variety, task identity, and task significance. Work-related outputs include motivation, satisfaction, performance, and absenteeism, and turnover. This theory supports the discovery of how job characteristics affect job performance, especially satisfaction and turnover. Many studies conduct based on job characteristics theory support the validity of this theory. Skill diversity is the degree to which an employee must perform multiple activities or manipulate multiple devices or processes using different skills (Hackman & Oldham, 1974; Hackman & Oldham, 1976; Sims, Szilagyi, & Keller, 1976). Jobs with a high diversity make employees more dynamic, creative, and productive. Coelho and Augusto (2010) interpret that task identity is similar to skill variety, making employees feel that their work is meaningful and promotes employee motivation and creativity. Hackman and Oldham (1976) define task significance as to how work impacts the organization or other people. When employees feel their influence on others, they will work more actively. Hackman and Oldham (1974) identify autonomy as the degree of freedom, independence, and totality that a job gives employees planning work and deciding the steps to perform that job. According to Coelho and Augusto (2010), autonomy encourages employees to implement new ideas and learn from experience proficiently using job-related skills. Feedback is the extent to which employees receive clear and direct information about their performance while at work (Hackman & Oldham, 1974). When employees do not receive feedback, they will not have a basis to evaluate their performance and reduce work motivation. When receiving feedback, employees feel encouraged to explore different courses of action to achieve better performance (Earley *et al.*, 1990). Leaders need to provide feedback to employees to improve areas of concern and gain a better understanding of the nature of work (Coelho & Augusto, 2010). Research by Said and Munap (2010) shows a significant relationship

between job satisfaction and the five core factors of job characteristics theory: autonomy, feedback, skill variety, task identity, and task significance. Arches (1991) also demonstrate that control over decision-making and autonomy has a relationship with job satisfaction. This view is also supported by some studies such as Anderson (1984) and Colarelli, Dean, and Konstans (1987). It can be summed up that the work of Hackman and Oldham (1974) is a suitable approach when studying turnover.

2.2.3 Human resources development

The theory of human resources development can be summarized in three basic philosophical perspectives, performance, learning, and humanistic. Swanson and Iii (2001) define performance as accomplishing units of results and outputs relative to a common goal. Performance systems are organized to accomplish a specific purpose. From a performance point of view, human resources development aims to promote the accomplishment of organizational goals by enhancing the capabilities of individual employees and improving their performance in the organization. The learning perspective is seen as the focus of human resources development. Organizations that genuinely care about a learning perspective will have greater satisfaction, productivity, and efficiency. Chalofsky (1992) point out that human resources development is mainly concerned with enhancing learning capacity and intervening in learning to optimize the development and effectiveness of people and organizations. Learning promotes growth and promotes performance, meaning in work, and job satisfaction. Chalofsky, Rocco, and Morris (2014) and Neck and Milliman (1994) argue that the humanist perspective is multidimensional, transformative, and manifests through one's ability to find meaning in one's daily life and the ability to create a meaningful world. This perspective represents two approaches to personal growth and organizational growth (Dirkx, 1996). Roughly, development allows individuals to realize their potential, find meaning in work, experience work, and create meaning from experience.

Research human resources development deals with the relationship between organizational learning culture and organizational structures and concepts. For example, Egan, Yang, and Bartlett (2004) explores the relationship between job satisfaction, motivation to transfer learning to the work environment, and turnover intentions. In addition, the human resources development study bases on the psychological theory of Shuck, Reio, and Rocco (2011) conclude that a work environment with the active participation of employees would optimize job satisfaction, organizational commitment, position, and work-related benefits.

On top of that, Maslow (1943) define human needs arrange in a hierarchy. The emergence of a need depends on the satisfaction of the need that precedes it (Lester, 2013). According to this point, interpreting this theory, people must be satisfied from the lowest needs and then gradually increase to the higher needs. In other words, the desire to satisfy the lower need is more potent than the higher need. Maslow's hierarchy of needs is used to study human behavior motivation. Maslow's need theory is often illustrated as a pyramid. The pyramid of the needs includes "physiological needs," "safety needs," "belonging and love needs," "social needs" or "esteem needs," and "self-actualization needs." This descriptive approach makes it easy to measure different types of satisfaction, especially job satisfaction (Udechukwu, 2009). According to the theory, needs explain behavior, and behavior reflects attitudes. Therefore, Udechukwu (2009) suggest the need to motivate the behavior and the behavior to promote attitudes to quit. Furthermore, needs reflect employee satisfaction, so it is essential to take care of those needs. Maslow divided the hierarchy of five needs into two groups, respectively, internal and external. Robbins and Judge (2015) argue that the outer group includes physiological needs, safety needs that can be easily satisfied, such as salary, work contract, and accommodation. Meanwhile, the inner group includes belonging, esteem, and self-actualization needs that must be satisfied from within the individual. Teck-Hong and Waheed (2011)

conclude that when needs are met, it will create job satisfaction. In contrast, unsatisfied needs will create behaviors that lead to leaving the company to find job satisfaction in another company.

Furthermore, Herzberg's motivation-hygiene theory is a practical approach to motivating employees. Factors such as achievement, recognition, and promotion create motivation. Hygiene factors such as personal relationships, wages, and company policies are related to employee dissatisfaction (Herzberg, 1971). Although Hygiene factors help prevent dissatisfaction, they do not lead to satisfaction. They only help avoid feeling bad in the workplace (Teck-Hong & Waheed, 2011). Motivational factors can develop job satisfaction (Robbins & Judge, 2015). Robbins and Judge (2015) suggest that according to Herzberg's motivation-hygiene theory, job satisfaction and dissatisfaction result from different causes. Satisfaction depends on motivational factors, while dissatisfaction is the result of hygiene factors. Udechukwu (2009) state that if the company meets the hygiene factors well corresponding to the needs of the employees, the working environment will be good. On the contrary, if it is not met, it will create job dissatisfaction. When hygiene factors are met, job satisfaction emerges when the organization implements motivational factors to motivate employees.

Likewise, expectancy-value theory (Vroom, 1964) is a cognitive-motivational theory in which the motivation of individuals to strive for or choose a particular goal is seen as a function (multiplier) of their expectations to achieve the desired and the incentive value or value of a particular goal. According to Feather (1990), who applied expectancy-value theory to the unemployment context, value can be derived from more general values since the values will act as standards or criteria that determine the attitudes and behaviors of people. Thus, in addition to paying attention to individuals' evaluations of job-specific aspects such as skill opportunities, diversity, and influence (Feather & O'Brien, 1986), expectancy-value theory pays the most attention to the concept of value employment or employment commitment.

In behavior planning, Westaby (2003) explains in the theory of planned behavior that the primary determinant of behavior is intention. The theory hypothesizes that attitudes, subjective norms, and perceived control are the main determinants of turnover intention. Attitude represents an employee's evaluation of the behavior's performance. In addition, subjective criteria assess the social pressure employees must receive when performing the behavior. Finally, cognitive control represents how easy or difficult it is to perform a behavior (Ajzen, 1991; van Breukelen, van der Vlist, & Steensma, 2004) conclude that the intention to quit under the influence of three factors from the theory of planned behavior such as attitude, subjective norm, and perceived control, proved to be a good predictor of turnover.

Last but not least, self-regulation theory is a system of conscious personal management that involves guiding one's thoughts, behaviors, and feelings to succeed in goals (Baumeister & Vohs, 2007). Self-regulation is defined as influencing a system derived from itself to regulate its behavior (Bedny & Karwowski, 2006). Self-regulation provides integration of the cognitive, executive, evaluative, and emotional motivational aspects of functioning. According to the relationship between performance and satisfaction, a low level of satisfaction reflects the exhaustion of regulatory resources (Carver & Scheier, 1981). Heidemeier and Moser (2019) study the self-regulation of the relationship between job performance and job satisfaction, in which job performance leads to job satisfaction. In a general sense, self-enhancers with high goal performance orientation often achieve high performance and job satisfaction.

2.2.4 The withdrawal process models

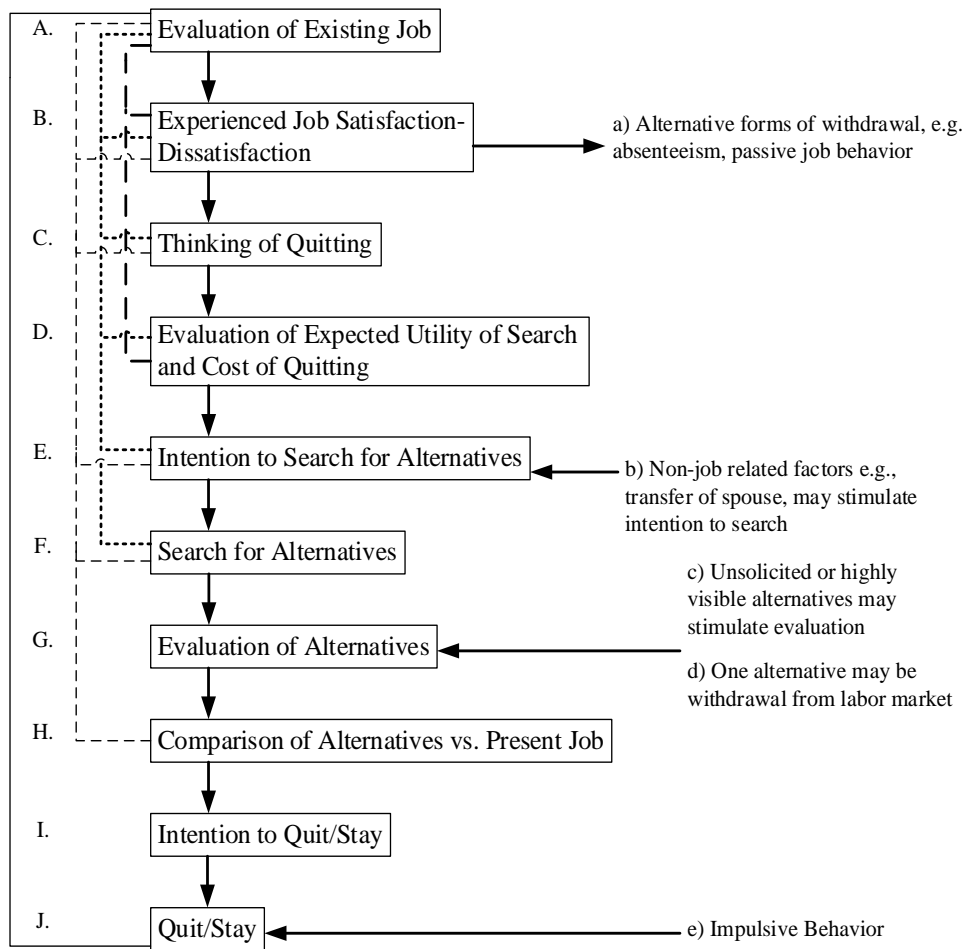
Many different conceptual models were designed to explain and identify the factors that affect an employee's decision to quit. In particular, the works of March and Simon (1993),

Mobley (1977), and Price (1977) are evaluated as three prominent models and receive much attention from experts.

The March and Simon (1993) model show that intention to leave and the ease of job termination directly lead to an employee's termination of employment. While the intention to leave and job satisfaction have a negative relationship, the ease of termination positively correlates with alternative job opportunities. The two factors that determine an individual's willingness to leave the organization are their perceived "desirability" of movement and their perceived "ease" of movement (March & Simon, 1993). The interaction of these two variables is directly related to the decision to switch jobs. In Jackofsky (1982) study, significant correlations are consistent with the March and Simon (1993) model. The relationship between satisfaction and turnover is negative in those who perceived greater ease of movement and greater desirability of movement. Allen and Griffeth (1999) suggest that when both visibility and reward contingency is high, the relationship between performance and turnover is low. High-performance employees tend to have high ease of movement, but their desirability is relatively low compared to low-performance employees. The desirability of movement is believed to be the starting point of the turnover process. When assessing the ease of movement, Allen and Griffeth (1999) predict that low performers showed a low to the moderate likelihood of turnover. Employees who leave the organization are high performers attracted by job offers. Besides, some employees show a high desire to quit, but the ability to move efficiently is low. For this reason, these employees feel stuck in the organization. Employees in this situation may be forced to use various coping or adaptation mechanisms to work or adopt deviant workplace behaviors such as vandalism and violence. Overall, the March and Simon (1993) model provides a more detailed analysis of the factors related to turnover intention.

Like March and Simon (1993), the model of Mobley (1977) also displays a correlation between job dissatisfaction, alternative opportunities, and withdrawal decision. However, Mobley's work highlights that he structuralizes this problem into a process and points out the factors affecting employee satisfaction and the intermediate steps between job dissatisfaction and the decision to leave. In detail, the withdrawal process includes 10 blocks from A to J presented in Figure 2.1. The process begins when the employees evaluate their current job and review their job feelings (Block A and Block B). Many studies point out the criteria to assess the satisfaction of employees with the organization (March and Simon (1993), Carsten & Spector, 1987; Hulin, Roznowski, & Hachiya, 1985; Lambert, Hogan, & Barton, 2001; Singh & Loncar, 2010). Overall, one of the enormous consequences of job dissatisfaction is driving thinking about quitting (Mobley, Horner, & Hollingsworth, 1978). This behavior is presented in Block C, where there is a negative relationship between job satisfaction with frequency of thinking about terminating the job (Mobley, 1977). The thought about quitting boosts the employees to evaluate and review the expected utility of search and the costs of exit (Block D). Thus, if the costs of quitting the current job higher than the expectation about search's utility, the workers would reconsider their thinking. By contrast, if search utility expectation is higher than the costs of quitting the job, the employees would consider searching for an alternative and tend to search the job outside (Block E and Block F). The studies regarding the ease of searching the alternative job opportunity prove that the easier it is to find a replacement job, the more likely employees are to terminate their current job (Boockmann & Steffes, 2010; Hulin, Roznowski, & Hachiya, 1985). When the employees find something, they evaluate and compare what they found with their current job (Block G and Block H). If the alternative one is better than the current one, they tend to form an intention to quit the current job, followed by a termination (Block I and Block J), and vice versa (Mobley, 1977). Generally, the withdrawal model of Mobley (1977) reveals in detail the steps followed by the evaluation and the thought of employees before giving the decision.

Figure 2.1: Mobley's model



Source: Mobley (1977)

Price (1977) also presents that job satisfaction influences an employee's decision to quit, in which job opportunities are a crucial factor affecting the relationship between job satisfaction and decide to resign. His studies indicate that the stayers have a lower performance rating in the organization than the leavers. Thus, the better people often leave the organization because they have an easier time finding other jobs. In addition, the model of Price and Mueller (1986) identify nine variables associated with job satisfaction: routinization, centralization, instrumental communication, integration, pay, distributive justice, promotional opportunity, role overload, and professionalism. Routinization is the level of repetition of work in an organization. Centralization is the degree of concentration of power. Instrumental communication is the extent to which information is formally communicated to an organization's employees. Integration is the friendliness of employees in their work team. Pay is the money and equivalents that employees receive from serving the organization. Distributive justice is the level of rewards and punishments that depend on performance. Promotional opportunity is the potential growth of a career vertically. Role overload is the extent to which demands of the jobs are excessive. Professionalism is the degree of dedication to occupational standards of performance. These factors positively correlate with job satisfaction, except for routinization, centralization, and role overload. Through affecting job satisfaction, these factors indirectly influence the employee's decision to quit (Price & Mueller, 1986).

From the above fundamental framework and theories, job satisfaction and intention to leave are necessary conditions in the withdrawal model. In contrast, the ease of alternative opportunities outside is a sufficient condition for an individual to decide. Thus, the voluntary turnover function include two main components, the necessary and the complete condition.

2.2 Empirical studies

2.2.1 Demographic determinants

Demographics variables are a fundamental factor used to predict turnover intention, and most turnover studies use this variable to analyze some basic statistics. Demographic data related to turnover intention is captured by basic information such as age, gender, or socio-economic-related information such as occupation, education, income, marital status.

Research by Arnold and Feldman (1982) and Mobley *et al.* (1979) show that age and income level are negatively correlated with job leave. Older workers tend to stay in their current jobs longer (Ng & Feldman, 2009). In contrast, the study of Healy, Lehman, and Mcdaniel (1995) shows that age provides very little information to assess the intention to leave employees. Whereas education level shows a positive relationship with turnover, studies show that highly educated employees tend to turn more (Berg, 1991; Cotton & Tuttle, 1986). On the other hand, marital status and dependents decrease turnover (Federico, Federico, & Lundquist, 1976; Marsh, R. M., & Mannari, 1977).

There are many views on the relationship between gender and turnover. For example, some studies suggest that women tend to quit their jobs more often than men (Cotton & Tuttle, 1986; Weisberg & Kirschenbaum, 1993). Meanwhile, a study by Berg (1991) suggests that there is no relationship between gender and turnover. Finally, Summers and Hendrix (1991) find that men tend to quit job more than women.

Lambert, Hogan, and Barton (2001) attempt to study the causal process of voluntary turnover by a structural measurement model combining four key antecedents of turnover: demographic factors, work environment, job satisfaction, and turnover intent. Few studies focus on work-family conflict. Research by Haar (2004), Ghayyur and Jamal (2012), and Erdwins *et al.* (2001) are interested in family factors indicating the family size, marital status, and work-family conflict has a positive relationship with turnover. Regarding work experience, there are some studies such as Kirschenbaum and Mano-Negrin (2002) and van der Heijden (2018). In studies on the influence of experience and turnover, researchers conclude that experience exhibits a negative relationship with turnover. Workers with many years of experience tend to stick around longer.

2.2.2 Working environment determinants

The autonomy is given to employees, organizational structure, and communication between employees and management, can affect job satisfaction and lead to intention to quit (Lane *et al.*, 2010). According to research by Sousa-Poza and Sousa-Poza (2000) and Gazioglu and Tansel (2006), the working environment covers both physical working conditions and social working conditions.

Employees work at high performance when they feel comfortable with the conditions of the working environment and have the full support of facilities, colleagues, and management. According to the studies of Jamal (1984) and Moore (2000), employee dissatisfaction with the working environment is a fundamental reason for the intention to quit. Research by Mano-Negrin and Tzafirir (2004) shows that poor and unfavourable working conditions are the main reasons employees intend to quit. As Asriani and Riyanto (2020), feeling comfortable about the working environment can reduce employees' stress and boredom towards their work. Therefore, a favourable working environment is vital to optimizing goals, work performance, and employee retention.

A work environment with little supervision and little support from management leads to job stress and increases intention to leave. Besides, Petterson and Arnetz (1998), Shahu and Gole

(2008), and Ali Shah *et al.* (2010) consider that interaction among employees is critical to accomplish organizational goals. Furthermore, he describes how information must be communicated correctly and promptly for the organization to function correctly. Overview, the work environment is the factor that appears every day in the organization, so it is necessary to evaluate the relationship between factors in the work environment and turnover.

A few researchers focus on assessing the impact of management support on employees' intention to change jobs, such as Newman, Thanacoody, and Hui (2011), Kalidass and Bahron (2015), and Gentry *et al.*, 2007. The results of these studies indicate that when receiving management's attention, employees will reduce job turnover. In addition, research trends on the working environment are also of interest to researchers. Tews, Michel, and Allen (2014); Feeley, Hwang, and Barnett (2008) indicate that a fun, friendly working environment is a positive factor that helps reduce turnover in organizations. Besides, Brawley and Pury (2016) analyzing the relationship between turnover and information-sharing show a negative relationship. Working environment with many open colleagues, sharing information will help employees connect with the organization.

2.2.3 Job satisfaction

Job satisfaction is the most commonly studied industrial and organizational psychology topic (Spector, 1997). It is the extent to which an employee feels about some personal aspect or all aspects of their job. According to Hackman and Oldham (1975), job satisfaction is defined as a measure of the extent to which employees are satisfied and happy with their work. Robbins and Judge (2015) define job satisfaction as a positive feeling about one's job and the result of evaluating the characteristics of the job. More broadly, Vecchio, Hearn, and Southey (1996) define job satisfaction as expressing one's thoughts, feelings, and attitudes towards work. Satisfaction is influenced by the employee's experience, the job itself, interactions with colleagues, and job expectations.

Mobley (1977) affirms that job satisfaction is the most frequently researched topic regarding turnover. The study concludes that job dissatisfaction would lead to new job-seeking behaviour and intention to change jobs. Randhawa (2007) concludes that keeping job satisfaction and intention to change had a significantly negative relationship. In summary, job satisfaction is closely related to employee turnover intention and decision to quit. Therefore, this is a factor that cannot be ignored when researching turnover.

A series of studies between job satisfaction, turnover intention, and decision-making were also presented to evaluate hospital employee turnover by Mobley, Horner, and Hollingsworth (1978). An empirical test for the female nurse on job performance and turnover of Lyons (1971). Some recent studies, such as Azeez, Jayeoba, and Adeoye (2016) investigate the nature of the relationships between job satisfaction, intention to change job, and commitment to the organization. The study also assess the influence of job satisfaction, intention to leave, and commitment to the organization. Research by Kurniawaty, Ramly, and Ramlawati (2019) explores the effects of working environment, stress, and job satisfaction on leaving banking employees. Jaharuddin and Zainol (2019) evaluate the association between work-life balance, job engagement, and turnover intention. AK (2018) focuses on a series of factors such as job satisfaction, job stress, organizational culture, organizational commitment, salary, organizational justice, promotional opportunity, demographic variables, leadership styles, and organizational climate to evaluate intention turnover.

Learn more about factors related to job satisfaction; the study by Al-Ali *et al.*, 2019; Judge *et al.*, 2001, examining the influence of job happiness on job satisfaction and turnover show that job happiness has a positive relationship with job satisfaction and a negative relationship with turnover. One of the factors related to organizational commitment is salary and bonus. This aspect is also of interest to many researchers (Grissom & Mitani, 2016; Lum *et al.*, 1998; Schuck

& Rabe-Hemp, 2018). It is a fact that low wages affect turnover. Besides, Bhatnagar (2014), de Gieter and Hofmans (2015), and Williams, McDaniel, and Nguyen (2006) add that in addition to the salary, the satisfaction of the reward system also helps reduce the intention of employees to switch jobs. Another study by Takawira, Coetzee, and Schreuder (2014) indicate that engagement and work engagement also positively impact keeping employees engaged for longer.

2.2.4 Turnover intention, intention behaviour

Mobley, Horner, and Hollingsworth (1978) argue that turnover intention occurs when employees think about leaving the organization and finding another job. There is also another view that the turnover intention is believed to result from reduced performance due to the absence and delay of employees (Mitra, Jenkins, & Gupta, 1992). In this state, the employee can still decide on steps to quit or decide to quit. It is inevitable that employees move to another company or get fired from a company.

Dess and Shaw (2001) divide turnover into two categories, including voluntary turnover and involuntary turnover. A voluntary turnover is when an employee does not want to continue with their current job and looks for work at another organization. An involuntary turnover occurs when an employee is unfit for work and is fired from the organization. Both types of turnover cause severe costs to the organization. These costs are related to search, recruitment, and training activities (Chan & Ao, 2019). Turnover intention is a process that includes thinking about changing jobs, intention to look for another job, and deciding to quit Price (1983). Several studies (Griffeth, Hom, & Gaertner, 2000; Vardaman *et al.*, 2008) also suggest that intention to change jobs is the factor that leads to the employee's decision to quit the job.

In general, turnover intention measures whether an employee plans to leave their position or organization. Therefore, determining the intention to leave is essential to help determine the likelihood of employees leaving and reducing the overall turnover rate. In addition, replacing employees who leave the job can impact productivity, costs, and overall organizational performance. Therefore, turnover intention is of particular interest in turnover labor studies.

In Vietnam, empirical studies on turnover intention are diverse in many fields. Giao *et al.* (2020) investigate the impact of emotional intelligence on turnover intention in the banking industry in Vietnam. The study specifically explores the role of work-family conflict and job burnout and the moderating effect of perceived organizational support. Huynh (2020) evaluate a sample of about 300 employees in the logistics sector in Vietnam to find out the relationship between job stress, dissatisfaction, and intention to quit employees' jobs. Finally, Nguyen and Tran (2021) study of the relationship between job satisfaction and the work intention of preventive health workers in Vietnam conclude that this relationship could not be determined.

2.2.5 Alternative opportunities

Amarkwaa and Anku-Tsede (2015) argue that alternative work opportunities refer to the availability of alternative, attractive and attainable jobs in the labour market. Job availability is primarily about quantity, and attractiveness is about salary, motivation, and whatever satisfaction the opportunity brings. Moreover, obtaining alternative work is determined by the skills and experience required on the job (Mueller & Price, 1990). Empirical research by Allen and Meyer (2000) determine that employees' perception of alternative employment opportunities is the cause of turnover. Alternative opportunities may exist when employees feel that employers in other companies can better meet employee needs (Henryhand, 2009). Many analytical studies show a positive relationship between work substitution and turnover (Abdul Rahman, Raza Naqvi, & Ismail Ramay, 2008). That shows that the labour market is very dynamic. Employees' intention to quit will increase if they are aware of attractive and beneficial job opportunities.

Essentially, alternative employment opportunities are perceived before the actual search and evaluation of specific alternatives. That means that employees' attributes such as education, skills, job satisfaction play an important role in shaping perceptions of alternative work (Albalawi *et al.*, 2019). Hulin, Roznowski, and Hachiya (1985) focus on explaining job quitting behavior and psychology by giving an explanation based on the direct influence of economic factors on employment, the role of alternatives to quitting jobs, and the relevance of alternative activities to jobs. Several other studies focus on alternative job opportunities, such as Dardar, Jusoh, and Rasli (2012), and Abdul Rahman, Raza Naqvi, and Ismail Ramay (2008). These studies conclude a positive relationship between alternative job opportunities and receiving an alternative job offer and employees' ability to switch jobs.

2.2.6 Job duration

Job duration refers to the number of years employee services in a job. That is a variable that affects different employee attitudes, including job satisfaction and intention to quit. According to research by Clark, Oswald, and Warr (1996) and Oshagbemi (2000), job satisfaction tends to increase with employee's working time. This finding is confirmed with two basic assumptions. First, employees who are dissatisfied with their jobs tend to quit early. Conversely, those who are satisfied with their jobs continue to work (Oshagbemi, 2000). Second, long-time employees tend to adjust themselves to the workplace conditions, leading to increased satisfaction at work (Mottaz, 1987). In contrast, Clark, Oswald, and Warr (1996) state that employees who work long tenure tend to be bored and have reduced job satisfaction.

Research on the role of job duration in employee turnover indicates that job service time is negatively related to both intended and actual turnover (Cotton & Tuttle, 1986). The negative impact of job duration on turnover intention is based on the side-bet theory of Becker (1960). This theory indicates that costs accumulate over a while, making it difficult to separate from regular activities. Thus, long-term employees find it challenging to quit despite job dissatisfaction because they accumulate some sunk costs or invest in the organization they work for (Meyer & Allen, 1984).

2.2.7 Turnover decision, decision to quit

The decision to quit creates a potential risk for employees when taking the act of leaving the organization. However, turnover studies do not fully explore the role risk plays in exit decisions (Vardaman *et al.*, 2008). Before deciding to quit, workers regularly search and learn about outside job opportunities. When they get new information, they decide to quit their current company as soon as their expected present value becomes lower than an alternative or not working the job (Lévy-Garboua, Montmarquette, & Simonnet, 2007).

Chapter 3 Research methodology

3.1 Analytical framework

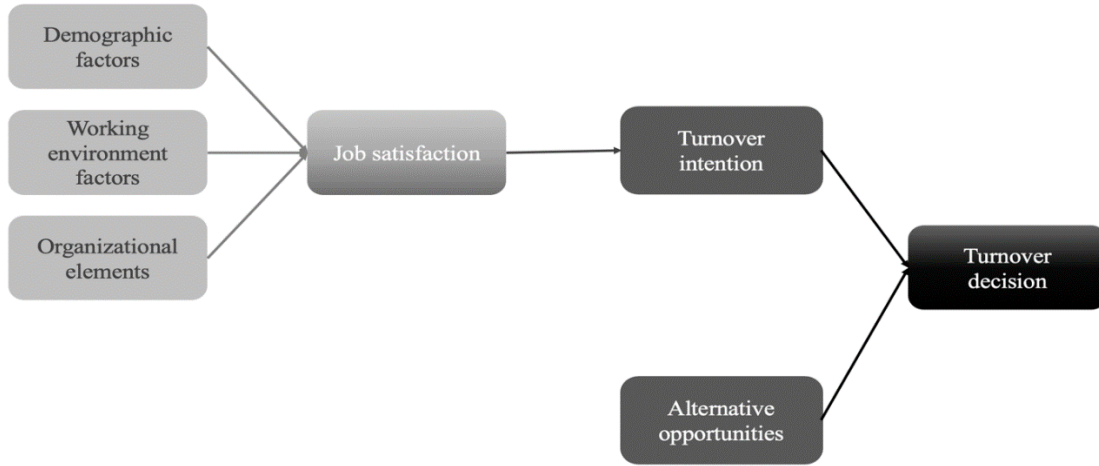
According to the labor turnover theoretical (Price, 1977; Wild & Dawson, 1972), the organizational theoretical (March & Simon, 1993; Barnard, 1968; Simon, 1976), the organizational commitment (Allen & Meyer, 1990; Meyer & Allen 1991; Becker, 1960), the theory of work's features (Hackman & Oldman 1974), human resources development, Needs Theories (Maslow, 1943), Organizational behavior (Schermerhorn *et al.*, 2012), and the works of March and Simon (1993), Mobley (1977), and Price (1977) about the withdrawal process, the research proposes an analytical framework for a job duration of an employee or the process leading to the terminational decision as Figure 3.1. The framework covers six factors that influence the decision to quit the job, including demographic factors, working environment factors, organizational elements, job satisfaction, turnover intention, and alternative opportunities.

The diversity in the demographic factors can consider identity-based differences such as gender, sexual orientation, age, and race (Black *et al.*, 2019). The demographical diversity requires the management must understand their team characterized clearly to get a reasonable offer and solution to treat them fairly and suitable in all areas of the organization. According to (Black *et al.*, 2019), there is three demographical diversity in the workplace with unlimited features. The first is the surface level, where diversity accounts for an individual's visible features like age, body size, visible disabilities, race, or sex. The second is deep-level diversity represents impalpable characteristics such as attitudes, values, beliefs, emotions. The final type of diversity is hidden diversity covers characterized by being that deep-level and be controlled by individuals who foster them, including sexual orientation or mental illness. The diversity in demographic factors impacts the employee's attitude through how the management behaves in the organization and forms their satisfaction level with the organization. Besides demographic factors, job satisfaction is usually measured by Job Descriptive Index, including five facets: the work itself, supervisor quality, relationships with co-workers, promotion opportunities, and pay (Schermerhorn *et al.*, 2012). To get the overview, the study divides those facets into two groups elements: working environment factors covering the work itself and relationships with co-workers; organizational elements containing quality of supervisor, promotion opportunities, and pay. In detail, the work itself and relationships with co-works represent the responsibility, interest in work, social interaction (Schermerhorn *et al.*, 2012). Thus, those elements should be grouped into one. The rest of the facets reveal management support in both physical and virtual, future career, benefits, and income (Schermerhorn *et al.*, 2012). Hence, it is appropriate to group them as elements coming from the organization. Principally, three groups' elements are demographic factors, working environment factors, and organizational elements that connect with employees' job satisfaction.

The workers have an intention to think about job termination when their job satisfaction is harm (Mobley, 1977). Furthermore, the connection between attitudes and behavior is tentative when the attitudes reflect an intended behavior, and this action may or may not be performed (Schermerhorn *et al.*, 2012). Thus, job satisfaction is one of the core factors that directly influence job termination decisions. In the same manner, after collecting some opportunities, the workers would review and evaluate their alternative chances before deciding (Mobley, 1977). As Wild and Dawson (1972) interpret in their work, the conditions leading to the employee's decision is an available job outside with better offers or alternative income opportunities. As a result, alternative opportunities are the second core component in the withdrawal process.

The proposed framework includes both causes and conditions pushing the employees to make final decisions. The causes comprise factors proving their satisfaction and forming their intention while the conditions build in their alternative feasibility. The combination of those elements is the impulse to come to the final step in the process.

Figure 3.1: Proposed analytical framework



3.2 Econometric models

3.2.1 Analysis approaches

To define the relation of factors on the decision of workers under economic view, the study frames an empirical model to observe the job duration of employees through a set of variables build-up from six critical components of the proposed analytical framework. Remarkably, the employee's job duration roles as dependent variables, whereas independent variables are a collection of the six primary components in the analytical framework. Besides, the study keeps track of the organization's workers' job duration from starting till terminating. Regarding empirical studies, there are many studies relating to job duration apply this model may be mentioned as the work of Bernhard to found out the determinants impacting job duration for male workers in Germany, the work of Jakob on the research of homeownership, job duration, and wages for the case of Denmark. Thus, the appropriate econometric method is survival analysis. Survival analysis is also known as the time to event analysis that is usually used as a popular method in medicine to observe the survival duration of patients in treatment. Basically, survival analysis allows to research, determine the period until the event happens to the research objects.

In terms of data, the independent variables of survival analysis are time variables with starting and ending points associated with a binary variable to define whether the event occurred. Align with this feature, the research subjects of this study are divided into two main groups. The censored group includes people who have not changed jobs in the past three years. The event group includes individuals who have changed jobs in the past three years. When it comes to distributions of the survival model, they are usually presented by three functions: survival function, density function, and hazard function (Lee & Wang, 2003; Machin *et al.*, 2006; Kleinbaum & Klein, 2011).

The survival function is denoted by $S(t)$ and used to define the probability that a research object survives longer than the observed period and used to define the probability that a research object survives more protracted than the observed period t :

$$S(t) = P(T > t) \tag{3.1}$$

where T is known as survival time of research object.

The density function of survival time T is denoted as $f(t)$ while the cumulative density function is denoted as $F(t)$, where $F'(t) = f(t)$. The cumulative density can be calculated from density function and has a form:

$$F(t) = \int_0^t f(s)ds = P(T \leq t) \quad (3.2)$$

From (1) and (2), the survival function is also revealed as:

$$S(t) = 1 - P(T \leq t) \quad (3.3)$$

The hazard function $h(t)$, in other words, also is called as instantaneous failure rate represents conditional failure rate of survival time T . In simple terms, the hazard function can be computed by cumulative density function $F(t)$ and density function $f(t)$:

$$h(t) = \frac{f(t)}{1-F(t)} \quad (3.4)$$

Similarly, the cumulative hazard function can be defined from the hazard function and has a form:

$$H(t) = \int_0^t h(x)dx = -\log S(t) \quad (3.5)$$

So, when t equals 0, $S(t)$ would equal 1, and $H(t)$ would equal 0. By contrast, when t reaches infinity, $S(t)$ would take the value at 0, and $H(t)$ equal infinity. The linkage between those functions is that the two of them can be easily found out when one of them is known. From this implication, the study should use the survival function to compute and estimate the hazard rate and vice versa.

Regarding the estimation and regression in survival analysis, there are various models and analytical methods suitable for each data type and research objective. However, in general, methods in survival analysis are also divided into three main schools: non-parametric method, semi-parametric method, and parametric methods. For detail, the non-parametric method using in this study names Kaplan-Meier survival curves to estimate the survival probability of the observation. The Kaplan-Meier survival probability at failure time $t_{(f)}$ is estimated as:

$$\hat{S}(t_{(f)}) = \hat{S}(t_{(f-1)}) \times \hat{Pr}(T > t_{(f)} | T \geq t_{(f)}) \quad (3.6)$$

where $\hat{S}(t_{(f)})$ is the estimation of survival probability at failure time $t_{(f)}$, while $\hat{S}(t_{(f-1)})$ is the probability of surviving past the previous failure time $t_{(f-1)}$. More to the points, the Kaplan-Meier estimation does not require any kind of distribution with the data as the feature of the non-parametric approach.

Concerning the semi-parametric estimation, this method uses the Cox Proportional Hazards (Cox PH) model estimating the elements that impact the hazard ratio. The Cox Proportional Hazards model does not require the data to conform to any kind of distribution. However, the regression coefficients in the model still need to be estimated. Therefore, the Cox Proportional Hazards model is also known as the semi-parametric method, and the usual likelihood estimation is also replaced by partial likelihood estimation. In general, the Cox Proportional Hazards function takes a form:

$$h(t) = h_0(t) * e^{\sum_{i=1}^p \beta_i X_i} \quad (3.7)$$

where $h(t)$ is hazard function at time t while $h_0(t)$ denotes baseline hazard function, X_i represents the value of variable X , and β_i is the regression coefficient for corresponding X_i . The most important assumption of the Cox PH model is that the hazard ratio must be constant over time. Therefore, the study must take the assumption test before analyzing the coefficients of the model.

Relating to data that an outcomes' distribution is well-defined, parametric methods are powerful and effective model evaluation and testing techniques. For example, one of the simplest distributions of parametric survival studies is the exponential distribution (Epstein & Sobel, 1953). In survival analysis, many parametric models are the acceleration failure time (AFT) models describing the factors that impact the contraction of survival time. The survival function of exponential distribution then follows as:

$$S(t) = e^{(-\lambda t)} \quad (3.8)$$

where λ constants over time and denotes as parameter which reparametrized for regression parameters. The constant parameter λ is estimated by AFT form:

$$\frac{1}{\lambda} = e^{\alpha_0 + \sum_{i=1}^p \alpha_i X_i} \quad (3.9)$$

while the proportional hazards (PH) form of λ denotes as:

$$\lambda = e^{\beta_0 + \sum_{i=1}^p \beta_i X_i} \quad (3.10)$$

where $\beta_i = -\alpha_i$, the regression coefficient for corresponding variables X_i . Furthermore, the coefficients of the exponential model are estimated by maximum likelihood estimation (MLE).

According to the data characteristics and the research's aim, the study would use non-parametric methods to evaluate the volatility trend as well as build and draw the first conclusions of the parameters. In addition, to make the conclusion more reliable, the study also proposes to apply the regression model to check the regression coefficients of the parameters. In sum, the study takes both graphical and regression to examine the results.

3.2.2 Description of variables

According to the analytical framework and the survival studies, as well as the feature of the research topic, the study employs primary data to analyze and take discussions. Correspondingly, the survey is conducted, including a set of dependent variables, and the rest are independent variables.

Regarding dependent variables, the dependent variables of survival analysis should cover both an event and a time to event. Align with these facts, the first component in the dependent variable set is "*Event*" which reveals whether the employee job termination with the past 3 years. The second and third variables are "*Start date*" and "*End date*" which illustrated the job starting date and job ending date of an employee.

Table 3.1: Dependent variables in regression

Components	Meaning	Variables	Type
Decision to quit / Job duration	Job changed	Event	Binary (Yes/No)
	Job duration	Start date	Continuous (Month/Year)
		End date	Continuous (Month/Year)

Regarding the independent variables (X_i), the first part of the independent components contains demographic factors including generation, gender, marital status, education level, number of dependents and children, the field of work, job level, and total experience years. The second part of independent variables carries working environment factors comprising management attention, employee's trust, colleagues sociable, interaction, working space, facilities, and public information. The following part is organization: employee's emotion with the job, salary, insurance, training programs, rewards, travel, working time, pressure, work vision, contribution, liability, and self-decision level. The final part of independent variables indicates alternative opportunities factors embracing alternative jobs outside such as finding jobs and other offered, ease to find an alternative job, other incomes, and expected job duration of the respondent.

Table 3.2: Independent variables in regression

Components	Meaning	Variable	Type	Supporting literature
Demographic factors	Generation	Gen	Categories	Mobley <i>et al.</i> (1979)
	Gender	Sex	Categories	Price (1977)
	Marital status	Status	Categories	Marsh and Mannari (1977)
	Education level	Edu	Categories	Price (1977)
	Number of dependents/ children	Dependents	Continuous (Numerical)	Marsh and Mannari (1977)
	Field of work	Industry	Categories	-
	Job level	Level	Categories	Price (1977)
	Total years of experiences	Exp	Continuous (Years)	Price (1977)
Working environment	Management's attention	Attlevel	Categories – Likert scale from lowest score at 1 to highest score at 5	Hom <i>et al.</i> (2012)
	Employee's trust	Trustlevel	Categories – Likert scale from lowest score at 1 to highest score at 5	Hom <i>et al.</i> (2012)
	Colleagues' sociable level	Sociable	Categories – Likert scale from lowest score at 1 to highest score at 5	Hom <i>et al.</i> (2012)
	Interactions level with colleagues	Interaction	Categories – Likert scale from lowest score at 1 to highest score at 5	Hom <i>et al.</i> (2012)
	Comfortable level of workplace	Environment	Categories – Likert scale from lowest score at 1 to highest score at 5	Asriani and Riyanto (2020)
	Company's facilities	Facilities	Categories – Likert scale from lowest score at 1 to highest score at 5	Asriani and Riyanto (2020)
	Public information in company	Sharing	Binary (Yes/No)	Asriani and Riyanto (2020)
Organization elements	Employee's emotion with job	Happy	Categories – Likert scale from lowest score at 1 to highest score at 5	Brown <i>et al.</i> (2011)
	Salary	Salary	Categories	Hom <i>et al.</i> (2012)
	Insurance	Insurance	Binary (Yes/No)	Dale-Olsen (2006)
	Training programs	Training	Binary (Yes/No)	Moncarz <i>et al.</i> (2009)
	Rewards and recognition	Award	Binary (Yes/No)	Langove & Isha (2017)
	Opportunities of business travel domestic and abroad	Travel	Binary (Yes/No)	Dale-Olsen (2006)
	Actual working time per week	Workinghours	Continuous (Hours)	Price (1977)
	Job stress	Pressure	Categories – Likert scale from lowest score at 1 to highest score at 5	Arshadi & Damiri (2013)
	Work vision	Vision	Categories – Likert scale from lowest score at 1 to highest score at 5	-
	Worker contribution in general goals	Contribution	Categories – Likert scale from lowest score at 1 to highest score at 5	-

	Job liability	Liability	Categories – Likert scale from lowest score at 1 to highest score at 5	-
	Job's satisfaction	Self-decision	Categories – Likert scale from lowest score at 1 to highest score at 5	Vecchio, Hearn, and Southey (1996)
Alternative opportunities	Looking or applying jobs outside	Alternative	Binary (Yes/No)	Amankwaa and Anku-Tsede (2015)
	Level of ease to find alternative jobs	Altease	Categories – Likert scale from lowest score at 1 to highest score at 5	Amankwaa and Anku-Tsede (2015)
	Job offers from outside	Otheroffered	Binary (Yes/No)	Amankwaa and Anku-Tsede (2015)
	Other sources of income besides salary	Otherincome	Binary (Yes/No)	Wild and Dawson (1972)
	Expected current job duration	Durexpected	Continuous (Years)	Price (1977)

In addition to the variables used in the regression model and the graph, the analysis uses some more variables as a descriptive statistic to examine the trends and attitudes of the respondents towards the question asked. Those factors include age, management interest, employees' trust in management, employee satisfaction with salary, employee's working style, and factors that promote job leave.

Table 3.3: Additional variables in descriptive statistic

Components	Meaning	Variable	Type	Supporting literature
Demographic factors	Age	Age	Continuous (Years)	Mobley <i>et al.</i> (1979)
Working environment factors	Management interest	Attention	Binary (Yes/No)	Hom <i>et al.</i> (2012)
	Employee's trust in management	Trust	Categories	Hom <i>et al.</i> (2012)
Organization elements	Employee satisfaction with salary	Salexpectation	Categories	Hom <i>et al.</i> (2012)
	Management supporting in staff's promotion	Promotionsupport	Categories	Carson <i>et al.</i> (1994)
	Career growth	Careerdev	Categories	Nawaz & Pangil (2016)
	Annual travel, activities, team building	Activities	Binary (Yes/No)	-
	Complex skills level required	Skills	Categories – Likert scale from lowest score at 1 to highest score at 5	Hackman and Oldham (1974)
	Job influence	Influence	Categories – Likert scale from lowest score at 1 to highest score at 5	-
	Job's satisfaction	Style	Binary (Decision-maker/Follower)	Vecchio, Hearn, and Southey (1996)

		Satisfaction	Categories – Likert scale from lowest score at 1 to highest score at 5	Vecchio, Hearn, and Southey (1996)
Alternative opportunities	Factors that promote job leave	Quitting motivation	Categories	Amankwaa and Anku-Tsede (2015)

3.2.3 Econometric approaches

In line with the proposed analysis method and the variables, the research uses two software to run the econometric approaches, including Minitab 19 for the Anderson Darling test and Stata/MP 14.0 for the rest stages.

The study first would take some descriptive statistics and coefficients correlation tests to examine whether there is any violation or inappropriate in the data. In the next stage, the research estimates the model with the non-parametric method. In particular, the study employs Kaplan-Meier graphs as a descriptive variable tool to discover the influence of variables in the model and draw out some very first conclusions about the data.

After taking a review with Kaplan-Meier graphs, the research proceeds with the multicollinearity test to review the pair-wise correlation among independent variables before taking the regression. The first model's approach is the Cox Proportional Hazards model. The critical assumption of the Cox Proportional Hazards model states that the hazard ratio is constant over time. Therefore, when applying the Cox Proportional Hazards in analysis, the validation of assumption must be tested. In line with this requirement, the study conducts the Schoenfeld residuals test with the null hypothesis is that the slope equals 0 for each covariate in the model. Nevertheless, the test's result reveals that there is an assumption violation with detail is showed in Chapter 4. Therefore, the Cox Proportional Hazards model is not appropriate in this situation. The study then continues with the remedy for the Cox Proportional Hazards model by using the stratified Cox PH model. However, the violated variables are more than the acceptability. Thus, the stratified Cox PH model cannot be applied as well. In general, the semi-parametric analysis is not fitting with the data of the study.

In the light of these facts, besides the graphical, the study conducts the Anderson Darling (AD) test with null hypotheses states that the data follow a specified distribution to examine the distribution of the data and implement the parametric studies. The results showing in Chapter 4 in both graphical and distribution testing illustrate that the data follows an exponential distribution. Hence, the research would utilize the exponential regression model. In addition, the study performs the regression with robust standard error from initial to avoid the problems with heteroskedasticity. Also, the Wald test is exploited in the regression with the null hypothesis that the coefficient equals zero to assess whether there is a relationship between the regressors and the dependent variable.

Finally, after completing with regression function, the study next progresses with post-estimation analysis to explore the degree of volatility and impact of component variables on the job duration of employees.

In short, the process of analyzing the influence of factors on job duration goes through five main stages. The first is to summarize and preliminarily evaluate the data source. The second is to use non-parametric analysis methods to overview the influence of variables on the job duration. The third is fitting the regression model. The fourth is to utilize the exponential regression model to test the relationship between factors and job duration. The final is the post-estimation analysis.

3.3 Data

With the aim to reflect the employee's behavior in the most accurate way, the study would employ primary data as critical data for analysis. The study then deploys Stata to run a regression model and examine some predictions and estimations for data trends.

3.3.1 Questionnaire

Following the type of data, the study proposes a questionnaire regarding elements affecting employees' job termination. In detail, the questionnaire includes three main parts: the title, the informed consent statement, and the parts of the question. The survey title is "Factors affecting employees' decision to quit their jobs in Ho Chi Minh City," which covers the short notice about the purpose of the survey, the subject of the survey, and the location of the survey. Concerning the informed consent statement, this part mentions the introduction of the research team, the purposes of research, research ethic, the structure of the questions sheet, and contact information of the research team.

Concerning the questions part of the survey, the first section would seek answers about the general status of respondents regarding their job duration and decision. The variables in this section are Event, Start date, and End date. About End date, the question only asks for the people who have changed their job in the past 3 years. For the people who do not change their job, the End date would be recorded as the survey's date. The second section of the questions part is demographic factors containing 7 questions representing 8 variables in the model. In which, the variable Gen is taken from the question about lifetime of the variable Age and is divided according to the generation defined line (Dimock, 2019). The detail information about age and generation is showed in Appendix 1. The following section in question list requests information of working environment factors. There are 9 questions in this section representing 9 variables. The following section is organizational elements, there are 20 questions around the management, benefits, and work features. The last section in the survey examine the answers about alternative opportunities covering 6 questions that express 6 variables regarding alternative jobs and incomes. To be specific, the questionnaire is shown in Appendix 2.

3.3.2 Data collection method and sampling

The survey takes place in Ho Chi Minh City, Viet Nam. Also, the questionnaire is conducted online through the online tool – Google Form. For good measure, the survey has 2 language versions: English and Vietnamese. The responders then can take their answers with the language that they are most familiar with. Additionally, the questions are also interviewed in two tenses: the simple tense, which exploits questions for the current job of people who do not change their job in the past three years; the past tense which takes advantage of inquiring about the previous job of people who changed their job in the past three years. The online survey is released randomly to companies, businesses, organizations in Ho Chi Minh City, Vietnam through the network of researcher. In detail, the survey is sent online through email and social media to the people in the researcher's network; and then, the survey is spread out to relatives of those people within Ho Chi Minh City. The timeframe to take the survey is 3 weeks from the day that the survey was sent out.

With the online survey method, the data would be collected in a short time with a large amount. Furthermore, the survey is directly sent to the potential and strategic subject are the labor force in Ho Chi Minh City. However, other problems that need to consider are restrictions in the way to collect the sample. First and foremost is a duplication of the sample, which means that a person may give multiple responses instead of one response to each person. To limit and control this issue, the study would review and remove answers with about 90% coincidence

from the same responding time to avoid biased. Additionally, the survey is sent out randomly to multiple parties; the data may be skewed to one side and do not reflect the whole picture of the market because the responders belong to some critical industries. Therefore, the survey tends to specify as many industries as possible.

In general, there are 318 samples collected from the survey. Of which, 6 answers are missing data. The remaining one is complete and can be utilized for analysis.

Chapter 4 Research results

4.1 Descriptive statistics

The questionnaire surveys 318 workers in Ho Chi Minh City in many fields using the same measurement and the exact period. Of the 318 samples collect, 312 (98.1%) fully completed the questionnaire, and 6 (1.9%) partially completed the questionnaire.

Table 4.1 extracts from Appendix 3 shows the statistics of the variables. Of those surveyed, 57.05% were female, 42.31% were male, and 0.64% were the different genders. By age, 24.04% of survey participants were under 25 years old, and 49.36% are between 26 and 30 years old. In general, the youth labor force makes up most of the population, with 73.4% of people under 30 years old and 26.6% of people over 30 years old. By generation, 4.17% belongs to Generation X, 79.17% belongs to Generation Y, and 16.35% belongs to Generation Z. It can be seen that Generation Y is the primary workforce, and Generation Z is the new human resource for the future labor market. 33.97% of survey respondents are married, and 63.14% are single. Survey participants with more than 2 dependents account for 15.39%, those with 1 dependent account for 19.87%, and those without dependents account for 64.74%.

The current workforce has a high level of knowledge, with the survey respondents with high school, bachelor, and master's degrees or higher at 8.33%, 73.72%, and 17.95%, respectively. Survey participants are distributed mainly in the 7 most prominent areas. The two areas with the highest number of respondents are logistics and M&E, with 14.74% and 11.86%, respectively. Sectors other than the 7 listed account for 31.09%. Among the respondents, 50% are employees, 21.47% are specialists, 17.31% are team leaders or seniors, 3.53% are experts, and 7.69% are managers. The number of survey participants with less than 5 years of experience is 54.17%, from 5 to 10 years of experience account for 28.84%, and more than 10 years of experience account for 16.99%.

The respondents with a salary below 20 million VND account for 74.36%, and over 20 million VND only account for 25.64%. Respondents with essential working hours of 40 hours/week account for 34.94%, from 40-48 hours/week account for 35.89% and over 48 hours/week account for 29.17%. The number of respondents who do not change jobs in the past 3 years account for 41.35%, and those who change jobs in the past 3 years were 58.65%. The number of people looking for alternative work is 58.65%. Besides, the number of people who is offered other jobs in a recent year was 54.49%. Regarding the intention to work, those survey who intend to work for less than 2 years are 67.4%, those who plan to continue working for 2 to 5 years are 27.84%, and plan to work for more than 5 years is 27.84%. 4.76%.

Table 4.1: Descriptive statistics

Variables	N	%	Variables	N	%
Gender			Job level		
Female	178	57.05%	Officer/Associate	156	50%
Male	132	42.31%	Executive	67	21.47%
Others	2	0.64%	Leader/Senior	54	17.31%
Age			Specialist	11	3.53%
<= 30 yrs.	229	73.40%	Manager or higher	24	7.69%
<=25 yrs.	75	24.04%	Number of experiences		
26-30 yrs.	154	49.36%	< 5 years	169	54.17%
> 30 yrs.	83	26.60%	5-10 years	90	28.84%
Generation			>10 years	53	16.99%

Baby Boomers	1	0.32%	Range of salary		
Gen X	13	4.17%	Under 10 mil.	84	26.92%
Y/Millennials	247	79.17%	10 mil. - under 20 mil.	148	47.44%
Gen Z	51	16.35%	20 mil. - under 30 mil.	45	14.42%
Marital status			From 30 mil. to above	35	11.22%
Single	197	63.14%	Job changed		
Married	106	33.97%	No	129	41.35%
Others	9	2.88%	Yes	183	58.65%
Number of dependents/children			Looking or applying jobs outside		
0	202	64.74%	No	129	41.35%
1	62	19.87%	Yes	183	58.65%
>=2	48	15.39%	Job offer from another company		
Education level			No	142	45.51%
High school or lower	26	8.33%	Yes	170	54.49%
Bachelor's degree	230	73.72%	Expected job duration		
Master's degree or higher	56	17.95%	< 2 years	210	67.40%
Industry			2 - 5 years	87	27.84%
Banks	30	9.62%	>5 years	15	4.76%
IT	22	7.05%			
Mechanical/Engineering	37	11.86%			
Real estate	27	8.65%			
eCommerce	23	7.37%			
Health care	30	9.62%			
Logistics	46	14.74%			
Others	97	31.09%			

Summary statistics on 5 continuous variables for those who change jobs and do not change jobs within the past 3 years are presented in Table 4.2. The average age of survey participants is 29 years old, expressed by a mean value 28.92. In addition, those who have changed jobs in the past 3 years have an average age of 28 years, and those who have not changed jobs have a median age of 30 years. Meanwhile, the number of years of work experience of the respondents was 6.69 years. Those who change jobs have an average of 5.97 years of experience, the group that do not change jobs was 7.71 years. The average number of dependents of survey participants is about 1 person. The average number of working hours per week of those surveyed is 46.58 hours, roughly equivalent to the common 6-day, 8-hour workday in Vietnam. The average working hours of those who change jobs and do not change jobs are 47.43 hours and 45.4 hours, respectively. In addition, the average number of years expected to stay with the job of survey respondents is 2.53 years. Thus, those who change jobs in the past 3 years are expected to stay in a new job for about 2.38 years less than those who do not changed jobs expected to continue working for an additional 2.74 years. Variables on the number of dependents and the number of years expected to continue working are not statistically significant.

Table 4.2: Descriptive statistics for continuous variables

Variable	Job changed				Total		p. value
	No		Yes		Mean	S.D.	
	Mean	S.D.	Mean	S.D.			
Age	29.92	6.83	28.22	4.79	28.92	5.77	0.010
Number of experiences	7.71	5.86	5.97	4.32	6.69	5.08	0.003

Number of dependents/children	0.62	0.90	0.50	0.96	0.55	0.94	0.276
Working hours	45.40	9.64	47.43	9.25	46.58	9.45	0.062
Expected job duration	2.74	3.61	2.38	1.79	2.53	2.74	0.279

Table 4.3 extracts from Appendix 4 summarizes the analysis of job change rates of 21 statistically significant variables. The number of workers at risk of job change within the past 3 years is presented under the subcategory of each risk factor associated with a job change. Use the chi-square test to find a significant difference in job-change rates between a list of several variables using a significance level of about 0.05. Workers with a high level of education tend to have a higher job change rate ($p=0.028$). Among the surveyed fields, workers in the eCommerce industry have the highest job change rate at 82.61%, followed by the Logistics industry at 69.57% (acceptable significance $p=0.064$). In addition, the position of expert and expert has a higher job change rate than the leader and manager ($p=0.001$). Management's attention and internal communication issues affect the job change rate; specifically, the job change rate will be significant when these activities are poorly performed. Management interest is less likely to cause job change at 80% ($p=0.007$). Employees who do not trust management are also more likely to change jobs ($p=0.024$). In addition, low workplace comfort and job satisfaction also caused job change. It seems that uninsured workers almost always change jobs. Of the 29 experimental subjects, 22 subjects changed jobs because they do not receive insurance, accounting for 75% ($p=0.048$). The rate of job change occurs more often for workers with low wages and wages that do not meet expectations. Regarding the promotion support from the leadership, when employees do not receive this support, there is a greater risk of changing jobs. Similarly, a job without a clear direction and vision also causes job change in workers ($p=0$). However, the reward and recognition regimes are less likely to cause significant job change ($p=0.018$). The factor of job satisfaction is considered a lot when studying job change. Statistics show that job dissatisfaction creates many job changes ($p=0.03$). The variables in the group of alternative work options show that when workers look for other jobs and receive a job offer, a high job transfer rate of $>70\%$ ($p=0$). The motivation for changing jobs accounts for a high percentage of the reasons for changing to a new field. Besides, the number of employees who have a significant motivation to change jobs when they have a higher salary, about 130 observers, up to 68 employees decided to change jobs ($p=0$). Another aspect is that income other than basic salary shows that workers with extra income will have a higher rate of job transfer.

Table 4.3: Cumulative Incidence Rates of Turnover by Baseline Variables

Variable	Job changed			p value	Variable	Job changed			p value
	Number of persons at risks	Number	Percent			Number of persons at risks	Number	Percent	
Range of salary									
Under 10 mil.	84	68	80.95%		No	131	87	66.41%	0.018
10 mil. - under 20 mil.	148	78	52.70%	0	Yes	181	96	53.04%	
20 mil. - under 30 mil.	45	19	42.22%		Job satisfaction				
From 30 mil. to above	35	18	51.43%		Very little	4	4	100.00%	0.03
Salary's expectation									
Do not meet expectation	175	115	65.71%		Little	34	25	73.53%	
Meet expectation	130	64	49.23%	0.015	Normal	143	88	61.54%	
Over expectation	7	4	57.14%		Much	114	56	49.12%	
					Very much	17	10	58.82%	
Management supporting in staff's promotion									
No	50	38	76.00%		Looking or applying jobs outside				
Yes	135	68	50.37%	0.0066	No	129	51	39.53%	0
Not sure	127	77	60.63%		Yes	183	132	72.13%	
Career development plan									
No	94	71	75.53%		Job offer from another company				
Yes	120	54	45.00%	0	No	142	53	37.32%	0
Not sure	98	58	59.18%		Yes	170	130	76.47%	
Work vision									
Very little	18	12	66.67%		Quitting motivation				
Little	42	35	83.33%		New fields and professions	32	29	90.63%	0
Normal	108	71	65.74%	0	Better salary	130	68	52.31%	
Much	118	54	45.76%		Work less stressful	22	13	59.09%	
Very much	26	11	42.31%		Better working environment	58	40	68.97%	
					More reputable company	34	18	52.94%	
					Higher position	36	15	41.67%	
					Other sources of income besides salary				
					No	143	75	52.45%	0.041
					Yes	169	108	63.91%	

The group of variables working environment, job satisfaction, organization, and job replacement shows a strong relationship with a job change in the respondents. 21 out of 44 variables show a statistically significant relationship with the change factor in work (Table 4.4). In particular, a strong positive correlation is seen in finding alternative jobs (0.326) and receiving new job offers (0.396) with changing jobs. On the other hand, an education level (0.146) and income sources other than basic salary (0.116) show a lower positive correlation. Most of the factors have an average negative correlation with a job change, such as age (-0.125), the number of years of experience (-0.165), the interest of management (-0.219), level of interest (-0.194), level of trust in management (-0.134), satisfaction with the working environment (-0.123), level of information sharing (-0.207), job happiness (-0.138), salary level (-0.251), salary expectation (-0.158), career orientation (-0.126), insurance policy (-0.112), recognition (-0.134), work vision (-0.261), contribution level (-0.129), job satisfaction (-0.158), motivation to quit (-0.124).

Table 4.4 also shows the relationship between the variables and the survival time of the job transfer event. Two variables showing a robust positive relationship are age (0.546) and years of experience (0.554). In addition, the lower positive relationship is also shown in some variables such as gender (0.123), marital status (0.325), the number of dependents (0.241), position (0.265), management's interest (0.243), level of interest (0.112), level of information sharing (0.187), happiness with work (0.177), salary (0.43), career development plan (0.117), insurance (0.257), activities (0.133), job vision (0.254), skills (0.123), and job satisfaction (0.221). However, there are a few variables that show a negative relationship, such as generation (-0.463), seeking alternative work (-0.236), and a job offer from another company (-0.164).

Table 4.4: Correlation summary

Variable	Job changed	Survival time
Age	-0.125 *	0.546 *
Generation	0.077	-0.463 *
Gender	0.025	0.123 *
Marital status	-0.012	0.325 *
Education level	0.146 *	0.029
Number of dependents/children	-0.069	0.241 *
Industry	0.080	-0.046
Job level	-0.103	0.265 *
Number of experiences (years)	-0.165 *	0.554 *
Management attention	-0.219 *	0.243 *
Level of Attention	-0.194 *	0.112 *
Believe in management	0.004	-0.046
Level of believe in management	-0.134 *	0.086
Colleagues's sociable level	-0.029	0.083
Level of interactions with colleagues	0.021	0.079
Comfort level of workplace	-0.123 *	0.108
Company's facilities	-0.077	0.050
Public information	-0.207 *	0.187 *
Happy with job	-0.138 *	0.177 *
Range of salary	-0.251 *	0.430 *
Salary's expectation	-0.158 *	0.020
Management supporting in staff's promotion	-0.037	-0.014

Career development plan	-0.126 *	0.117 *
Insurance	-0.112 *	0.257 *
Annual travel activities/team building	-0.031	0.133 *
Training programs	-0.059	0.077
Awards and recognition	-0.134 *	0.030
Travel opportunities	-0.045	0.097
Actual working hours (hours)	0.099	0.054
Work pressure	0.039	-0.018
Work vision	-0.261 *	0.254 *
Complex skills level required	-0.105	0.123 *
Worker contribution in general goals	-0.129 *	0.067
Job influence to another departments/colleague	0.014	0.038
Job liability required	-0.064	-0.024
Job style	0.015	0.062
Levels of self-decision	-0.077	0.084
Job satisfaction	-0.158 *	0.221 *
Looking or applying jobs outside	0.326 *	-0.236 *
Level of ease to find an alternative job	0.101	-0.106
Job offer from another company	0.396 *	-0.164 *
Quitting motivation	-0.124 *	0.061
Other sources of income besides salary	0.116 *	-0.012
Expected job duration (years)	0.078	-0.036

**Correlation is significant at the 0.05 level*

4.2 Results

4.2.1 Multicollinearity

Multicollinearity in a multiple regression exists when an independent variable is highly correlated with other independent variables (Allen, 1997). Multicollinearity weakens the statistical significance of an independent variable. One way to detect multicollinearity is to use a variance inflation factor (VIF) metric, which measures the correlation and strength of correlation between predictors in a regression model. A VIF value of 1 indicates no correlation between a given regressor and any other explanatory variable in the model. A VIF value of 1 to 5 indicates a moderate correlation between a given explanatory variable and other explanatory variables in the model, but this is usually not severe enough to warrant attention. On the other hand, a VIF value greater than 5 indicates a severe possible correlation between a given and other explanatory variables in the model. In this case, the coefficient estimates and the p-value in the regression output may not be reliable. Table 4.5 presents the results of the multicollinearity test of 4 continuous variables. All VIF values give values less than 5, none less than 1. This result shows a moderate correlation but not severe enough that multicollinearity is not an issue in the regression model.

Table 4.5: Muticollinearity testing

Variable	VIF	SQRT VIF	Tolerance	R-Squared
Number of dependents/children	1.52	1.23	0.6598	0.3402

Number of experiences (years)	2.65	1.63	0.3778	0.6222
Actual working hours (hours)	1.41	1.19	0.7096	0.2904
Expected job duration (years)	1.27	1.13	0.7877	0.2123

4.2.2 Kaplan-Meier curves

First, the paper uses a non-parametric method to analyze survival data before applying a suitable theoretical distribution. Non-parametric or distribution-free methods are pretty easy to understand and apply. However, they are less efficient than parametric methods when the survival time follows the theoretical distribution and more efficient when the appropriate theoretical distribution is unknown. Thus, the main goal is to find a model for the data so that estimates obtained by non-parametric methods and graphs can help choose a distribution. Specifically, the article uses the product-limit (PL) method of estimating the survivorship function developed by Kaplan and Meier (1958).

The Kaplan-Meier survival function shown in Figure 4.1 describes the exponential distribution. According to Figure 4.1 and Kaplan-Meier survival estimate (Appendix 5) data, the cumulative survival probability decreases to 75% at month 17th, 50% at month 40th, and 25% at month 85th. Besides, the cumulative survival probability after 121st about 10 years remains unchanged at 19.94%.

Figure 4.1: Kaplan-Meier survival curves for all variables

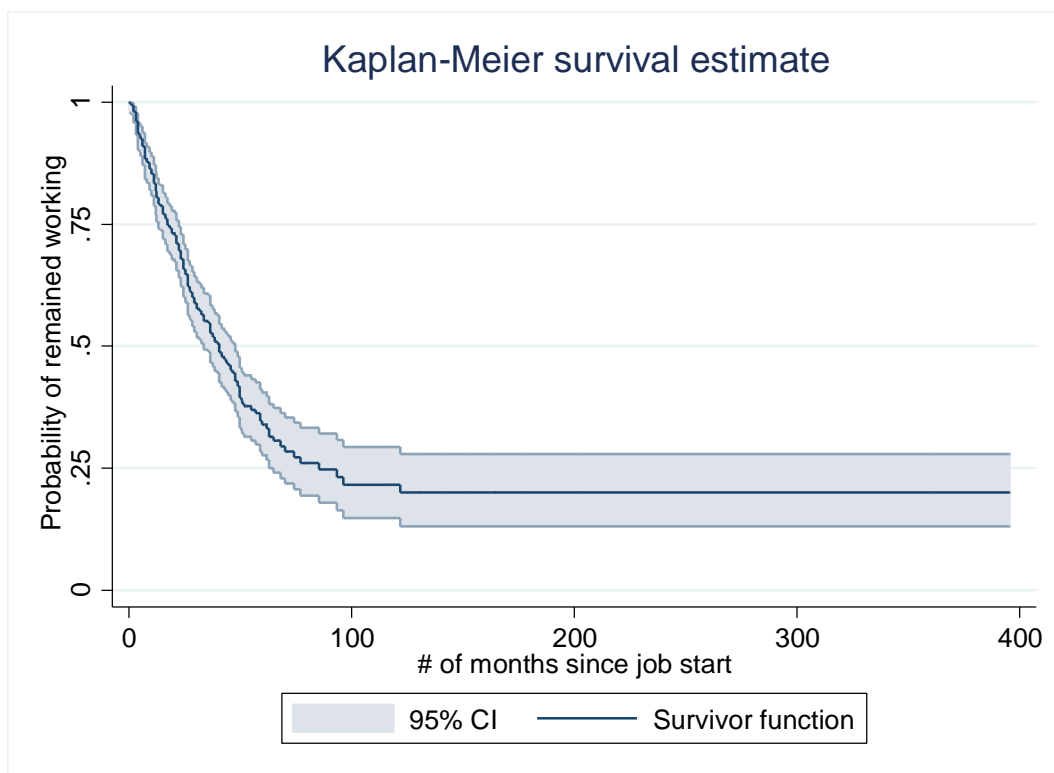
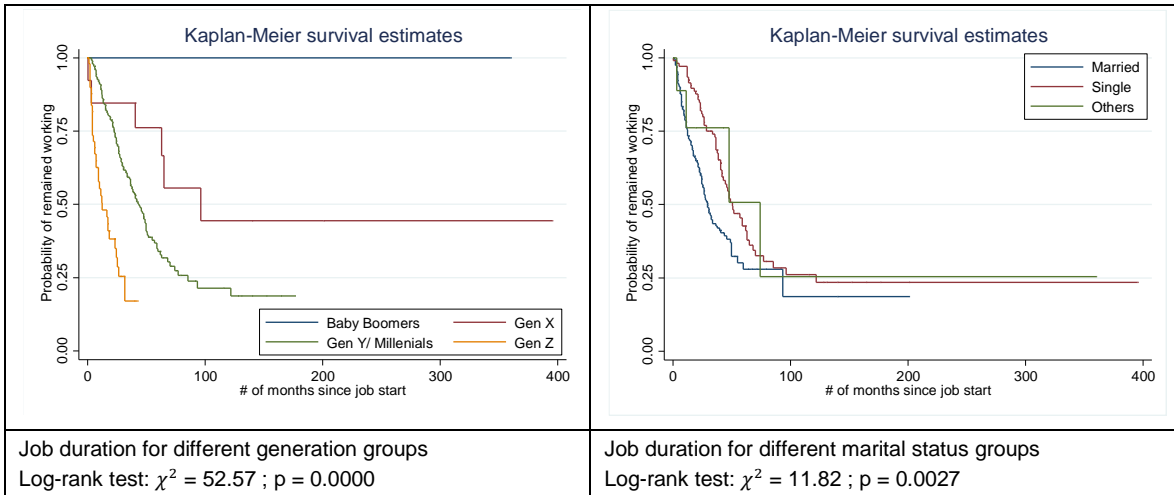


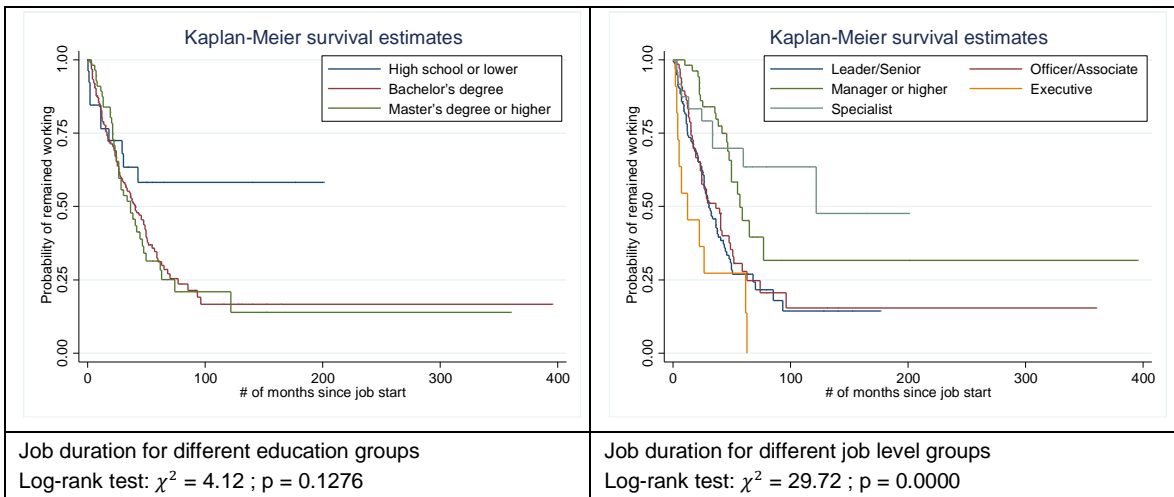
Figure 4.2 depicts the working-time survival probabilities of groups by generation and by marital status. The chart shows that the older generation, like Baby boomers and Gen Y, has a higher survival rate. In addition, Generation Z has a very rapidly decreasing estimated survival curve. Log-rank test also shows that there is a difference between generation groups ($p=0.0000$). In addition, the chart also shows that single people have a higher survival rate than married people, and there is a clear difference between these groups ($p=0.0027$).

Figure 4.2: Kaplan-Meier survival curves for generation and marital status groups



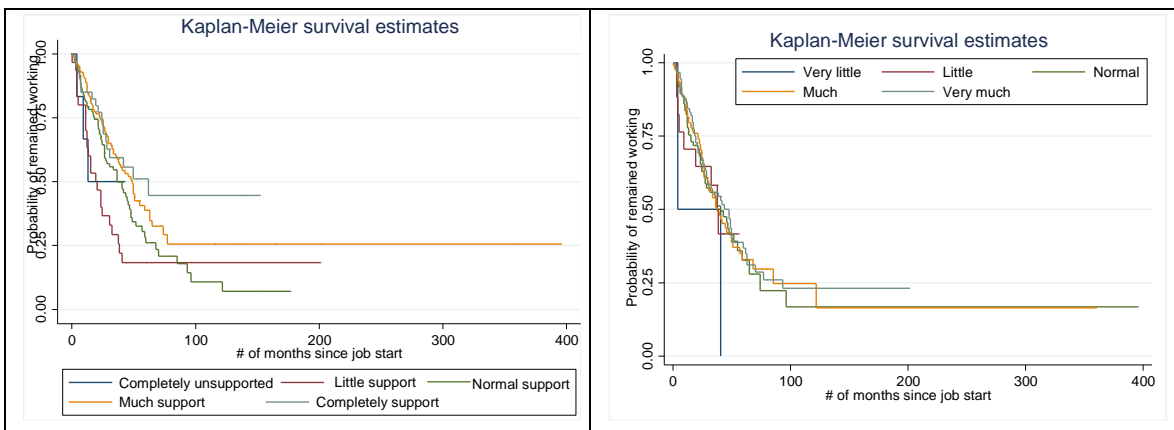
According to Figure 4.3 depicting the survival curve for the education and job levels, only the job level group shows a difference ($p=0.0000$). Thus, the graph shows that the higher the job level, the more likely it is not to switch jobs.

Figure 4.3: Kaplan-Meier survival curves for education and job level groups



Similarly, Figure 4.4 shows the estimated survival curve for the level of attention and interaction with colleagues. The log-rank test here shows that only the graph of management interest shows differences between groups. The graph shows that the higher the level of management support, the higher the survival rate. Conversely, the curve of the low support group tends to decrease the survival rate very quickly.

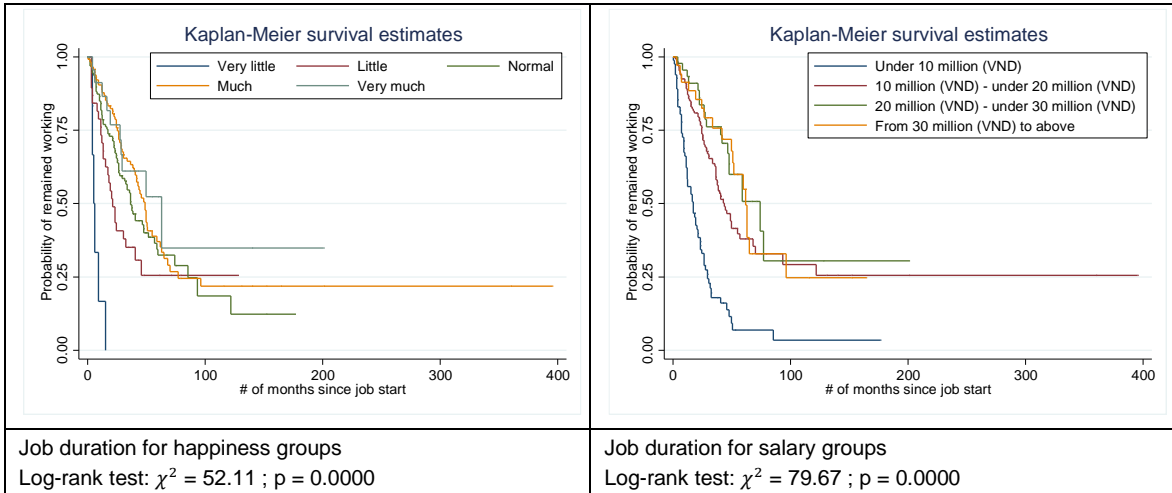
Figure 4.4: Kaplan-Meier survival curves for attention and interaction groups



Job duration for different level of attention groups Log-rank test: $\chi^2 = 14.42$; $p = 0.0061$	Job duration for different level of interations with colleagues groups Log-rank test: $\chi^2 = 2.35$; $p = 0.6723$
--	---

Figure 4.5 shows that happiness at work and the higher the salary, the greater the survival rate. Both histograms have log-rank tests at the significance level ($p=0.0000$). This shows, as mentioned above, that there is a difference between happiness and salary groups.

Figure 4.5: Kaplan-Meier survival curves for happiness and salary groups



The estimated survival curve for job prospects shows that jobs with prospects have a higher survival rate. The group of industrial outlook levels also shows a significant difference with the log test of significance ($p=0.0000$) (Figure 4.6). In contrast, the reward and recognition curves do not show a difference between whether or not rewards are applied. Similarly, Figure 4.7 shows the contribution curve and the legality of the work, but there is no difference between groups.

Figure 4.6: Kaplan-Meier survival curves for awards and job vision groups

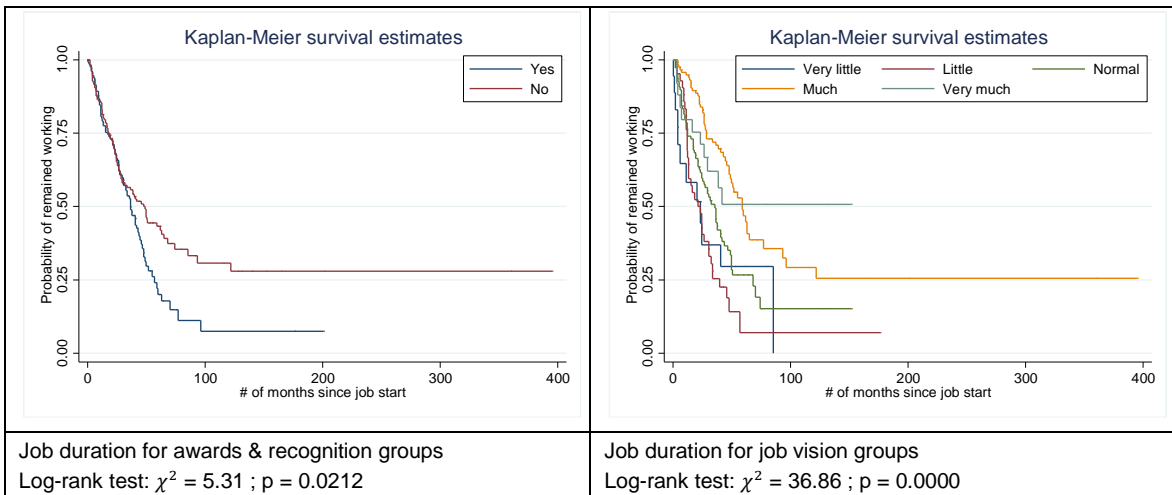


Figure 4.7: Kaplan-Meier survival curves for contribution and job liability groups

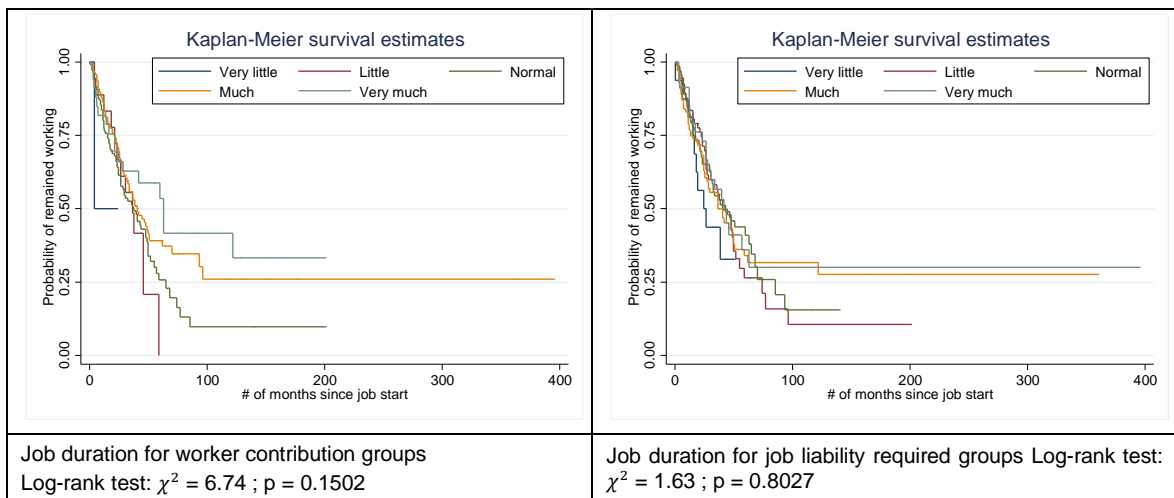
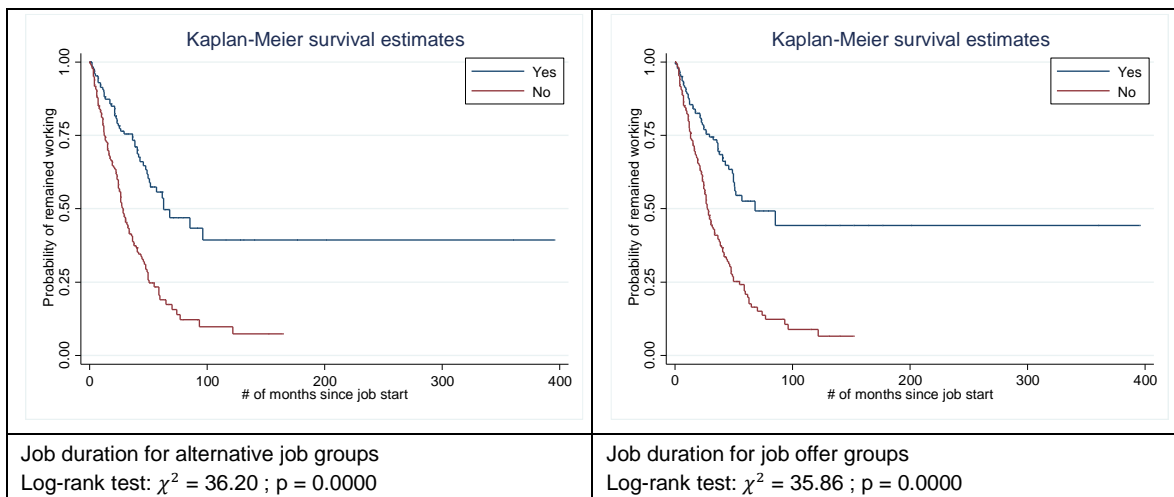


Figure 4.8 depicts the probability of surviving the working time of groups with or without alternative work or other job offers. Again, the log-rank test shows that both cases are significant; there is a difference between the yes and no groups. Specifically, in replacement jobs and other job offers, employees will have a higher rate of job retention if they find a replacement job and have a job offer from another company.

Figure 4.8: Kaplan-Meier survival curves for alternative job and job offer groups



4.2.3 Good of fitness testing

Although the results from the non-parameter method show the above analysis, it is not advisable to rush to conclude the difference between groups in univariate analysis by log-rank test. Therefore, the article needs to conduct multivariate analysis by parameter or semi-parameter method. First, the article determines the distribution format to apply to the model. Then, to ensure that the exponential distribution fits the model as predicted from the graph, the article uses the goodness of fit test to evaluate all distributions. Table 4.6 presents the goodness of fit test showing that distributions such as exponential, 2-parameter exponential, gamma, and logistic can be applied. Overall, the model can apply the exponential distribution to survival and hazard functions.

Table 4.6: The good of fitness testing

Distribution	Anderson-Darling Test	p value	likelihood-ratio test
Normal	12.953	<0.005	
Box-Cox Transformation	35.018	<0.005	
Lognormal	1.373	<0.005	
3-Parameter Lognormal	0.352	*	0.000
Exponential	1.543	0.028	
2-Parameter Exponential	1.600	0.022	1.000
Weibull	1.365	<0.010	
3-Parameter Weibull	1.397	<0.005	1.000
Smallest Extreme Value	26.714	<0.010	
Largest Extreme Value	2.661	<0.010	
Gamma	1.053	0.013	
3-Parameter Gamma	1.098	*	1.000
Logistic	5.142	<0.005	
Loglogistic	0.597	0.082	
3-Parameter Loglogistic	0.338	*	0.118
Johnson Transformation	0.261	0.703	

4.2.4 Proportional hazards assumption testing

This section evaluates the suitability of the Cox PH model is applied. The basic assumption in the Cox model is that hazards are proportional (PH), meaning that hazard is relatively constant over time with different levels of predictors or covariates. The PH assumption in any covariate is a strong one. However, given the complexity of biological and physiological reactions and linkages of the occurrence of a survival event, this assumption rarely has a solid justification. Table 4.7 presents the test results of the PH assumption. The global test reveals that there is no violation at 10% significant level. However, when it comes to the detail testing in each variable, there are many variables violating the assumption. In summary, violating the PH assumption can lead to biased effect estimates in the Cox regression analysis. Therefore, the study proceeds to use the parameter method with exponential distribution.

Table 4.7: The PH assumption testing

Variable	rho	chi2	df	Prob>chi2
Generation				
Baby Boomer/ Gen X	0.0193	0.80	1	0.3703
Gen Y/Millennials	(base)			
Gen Z	0.0247	2.91	1	0.0883
Gender				
Female	(base)			
Male	0.0009	0.00	1	0.9719
Others	0.0000			
Marital status				
Single	0.0519	2.83	1	0.0924
Married	0.0660	3.60	1	0.0577
Others	(base)			
Education level				

High school or lower	(base)			
Bachelor's degree	0.0863	18.24	1	0
Master's degree or higher	0.0626	14.33	1	0.0002
Number of dependents/children	0.0535	4.29	1	0.0383
Industry				
Banks	-0.0286	1.12	1	0.2902
IT	0.0875	8.74		0.0031
Mechanical / Engineer	(base)			
Real estate	0.0393	1.45	1	0.2285
eCommerce	-0.0114	0.21	1	0.6493
Health care	0.0626	6.49	1	0.0108
Logistics	-0.0292	1.20	1	0.2739
Others	-0.0848	5.66	1	0.0173
Job level				
Officer/Associate	(base)			
Executive	0.0690	7.47	1	0.0063
Leader/Senior	0.0456	2.25	1	0.1334
Specialist	-0.0317	1.07	1	0.3004
Manager or higher	-0.0071	0.06	1	0.8103
Number of experiences (years)	0.0045	0.05	1	0.8268
Level of Attention				
Completely unsupported	(base)			
Little supported	-0.0008	0.01	1	0.9422
Normal supported	-0.0020	0.04	1	0.8464
Much supported	-0.0020	0.04	1	0.8466
Completely supported	-0.0006	0.00	1	0.9574
Level of believe in management				
Very distrustful	(base)			
Distrustful	-0.0537	7.13	1	0.0076
Normal	-0.0195	1.94	1	0.1636
Trustful	-0.0255	2.46	1	0.1167
Very trustful	-0.0332	3.91	1	0.0481
Colleagues's sociable level				
Very little	(base)			
Little	-0.0056	0.22	1	0.6408
Normal	-0.0082	0.52	1	0.4717
Much	-0.0066	0.32	1	0.5707
Very much	-0.0083	0.51	1	0.4751
Level of interactions with colleagues				
Very little	(base)			
Little	0.0241	0.00	1	0
Normal	0.0267	0.21	1	0.6438
Much	0.0452	0.67	1	0.4143
Very much	0.0000	0.00	1	1

Comfort level of workplace					
Very little	(base)				
Little	0.0347	1.17	1		0.2794
Normal	0.0263	0.79	1		0.3731
Much	0.0262	1.10	1		0.2941
Very much	0.0307	1.47	1		0.225
Company's facilities					
Very little	(base)				
Little	-0.0556	3.98	1		0.046
Normal	-0.0194	0.38	1		0.5386
Much	-0.0220	0.94	1		0.3315
Very much	-0.0362	1.82	1		0.1777
Public information					
No	(base)				
Yes	0.0148	0.71	1		0.3992
Happy with job					
Very little	(base)				
Little	0.0022	0.05	1		0.8291
Normal	0.0020	0.04	1		0.8455
Much	0.0025	0.06	1		0.8111
Very much	0.0065	0.38	1		0.5352
Range of salary					
Under 10 mil.	(base)				
10 mil. - under 20 mil.	-0.0937	10.34	1		0.0013
20 mil. - under 30 mil.	-0.1014	17.24	1		0
From 30 mil. to above	-0.1103	20.32	1		0
Insurance					
No	(base)				
Yes	0.0162	0.75	1		0.3869
Training programs					
No	(base)				
Yes	-0.0447	1.81	1		0.1785
Awards and recognition					
No	(base)				
Yes	-0.0447	1.81	1		0.1785
Travel opportunities					
No	(base)				
Yes	-0.0035	0.02	1		0.8895
Actual working hours (hours)	0.0351	1.70	1		0.1925
Work pressure					
Very little	(base)				
Little	-0.0063	0.04	1		0.8408
Normal	0.0660	6.76	1		0.0093
Much	0.0407	1.29	1		0.2568

Very much	0.0210	0.88	1	0.3478
Work vision				
Very little	(base)			
Little	-0.0092	0.15	1	0.6964
Normal	0.0014	0.00	1	0.9599
Much	0.0142	0.31	1	0.5763
Very much	-0.0411	3.40	1	0.0653
Worker contribution in general goals				
Very little	(base)			
Little	0.0000			
Normal	-0.0016	0.58	1	0.448
Much	-0.0237	0.79	1	0.3742
Very much	-0.0296	1.33	1	0.2492
Job liability required				
Very little	(base)			
Little	-0.0722	8.01	1	0.0047
Normal	-0.0252	1.21	1	0.2717
Much	-0.0623	6.25	1	0.0124
Very much	-0.0776	10.33	1	0.0013
Levels of self-decision				
Very little	(base)			
Little	0.0218	1.78	1	0.1825
Normal	0.0083	0.29	1	0.5925
Much	-0.0003	0.00	1	0.987
Very much	0.0083	0.37	1	0.5432
Looking or applying jobs outside				
No	(base)			
Yes	0.0053	0.11	1	0.7348
Level of ease to find an alternative job				
Very difficult	(base)			
Difficult	0.0441	2.75	1	0.0974
Normal	0.0445	3.88	1	0.0488
Easy	0.0627	7.51	1	0.0061
Very easy	0.0011	0.01	1	0.9084
Job offer from another company				
No	(base)			
Yes	0.0340	2.01	1	0.1563
Other sources of income besides salary				
No	(base)			
Yes	-0.0137	0.25	1	0.6153
Expected job duration (years)	-0.0686	3.41	1	0.0649
Global test		111.84	83	0.0191

4.2.5 Regression for parametric survival analysis

Table 4.8 shows the regression results of the parameter model with exponential distribution. For example, given the variable “generation” the coefficients of Gen X and Gen Z are 0.855 and 0.464 with $p > 0.05$, respectively. That suggests that generational influence does not change the risk of job transfer. Similarly, variables in the demographics group such as marital status, education level, occupational field, and job level also have $p > 0.05$, which does not show statistical significance. Therefore, these variables do not affect the job duration. On the other hand, the variable “Number of dependents” has a coefficient of -0.24 and a significance level of $p < 0.05$. Therefore, there is a negative effect of the number of dependents on the length of time worked. Moreover, a high number of dependents reduces the probability of job transfer. In addition, the employee's number of years of experience also has a negative impact on the job duration.

Next, with the working environment variables group, many variables show the relationship with a statistical significance level $p < 0.05$. For the variable “level of attention” the coefficient of the dummy is “Little supported” 3.496; “Normal supported” 3,694; “Much supported” 3,384; “Completely supported” 3,427. These values are all statistically significant, $p < 0.05$. This result indicates that the level of management concern has a positive effect on job duration. In addition, the low-to-high group of interest levels exhibits coefficient values approximately 3 times higher than the baseline. Similarly, the variable “colleague friendliness” with a positive coefficient and $p < 0.05$ represents a positive relationship with the length of time employees serve the organization. In contrast, for the variable “interaction with colleagues”, the coefficient values of the levels little, normal, much and very much are -15,226, -15,449, -15,457, -15,315, respectively. All have a statistical significance level $p < 0.05$. That represents a negative relationship between engagement and duration. Following the same trend, insider information sharing also shows a negative relationship with coefficient = -0.5, $p < 0.05$. Besides, although showing a certain relationship with job duration, the remaining variables have no clear statistical significance. For example, the variable “management confidence” with a positive coefficient and $p > 0.05$, the variable “workplace comfort” with a negative coefficient and $p > 0.05$, and the variable “equipment, company infrastructure” do not show a certain trend.

Next to the group of organizational factors, most of the variables are statistically significant, showing a negative relationship with the length of work. The levels of job happiness include little, normal, much, and very much, with coefficients of -3.07, -2.91, -2.65, and -2.88, respectively. A statistical significance level $p < 0.05$ shows that working time is negatively affected by happiness level. Along the same lines as happiness levels, salary also negatively affects how long employees served the organization. The coefficient of salary from 10 million to less than 20 million is -0.5, the coefficient of salary from 20 million to under 30 million is -1.02, and the coefficient of salary above 30 million is -0.91. All have a statistical significance level $p < 0.05$. Similarly, recognition and reward with coefficient = -0.5 also show a negative effect. With the variable “contribution to the general goal”, the coefficient is positive and $p < 0.05$. This value means that the contribution level has a positive effect on the duration of work. Besides, the coefficients of the levels also show a significant difference for the base level; the coefficient is about 13. On the other hand, most of the remaining variables in the group of factors of the organization are not statistically significant. Therefore, these variables do not show an impact on job duration. For example, insurance scheme, training program, travel opportunities, number of hours worked, work pressure, job vision, degree of legal work required, and degree of self-determination at work. All have a significance level $p > 0.05$.

Finally, with the factor group of alternative job opportunities, two variables show statistical significance $p < 0.05$. The variable “Looking or applying for jobs outside” has a coefficient = 0.357, which shows that looking for alternative jobs positively affects job duration. Similarly, the variable “Job offer from another company” also positively affects the time to serve the

organization with a coefficient = 0.71. In summary, in each group of primary factors, a few variables show a particular impact on job duration.

Table 4.8: Results of Survival Regression Analyses

_t	Coef.	S.E	_t	Coef.	S.E
Generation			Happy with job		
Gen X/Baby Boomer	0.855	0.6088	Very little	1	(base)
Gen Y/Millennials	1	(base)	Little	-3.07*	1.1001
Gen Z	0.464	0.2626	Normal	-2.91*	1.1174
Gender			Much	-2.65*	1.1584
Female	12.74*	1.0967	Very much	-2.88*	1.2051
Male	12.93*	1.1238	Range of salary		
Others	1	(base)	Under 10 mil.	1	(base)
Marital status			10 mil. - Under 20 mil.	-0.50*	0.2466
Single	0.268	0.4022	20 mil. - Under 30 mil.	-1.02*	0.3638
Married	0.664	0.3930	From 30 mil. to above	-0.91*	0.4358
Others	1	(base)	Insurance		
Education level			No	1	(base)
High school or lower	1	(base)	Yes	-0.63	0.3375
Bachelor's degree	0.487	0.4315	Training programs		
Master's degree or higher	0.775	0.4697	No	1	(base)
Number of dependents/children	-0.24*	0.1194	Yes	0.081	0.2020
Industry			Awards and recognition		
Banks	0.802*	0.3829	No	1	(base)
IT	0.675	0.4098	Yes	-0.55*	0.1839
Mechanical / Engineer	1	(base)	Travel opportunities		
Real estate	0.352	0.3890	No	1	(base)
eCommerce	0.887*	0.3974	Yes	0.264	0.1816
Health care	1.308*	0.4067	Actual working hours		
Logistics	0.638	0.3373	Very little	0.010	0.0091
Others	0.426	0.3378	Work pressure		
Job level			Very little	1	(base)
Officer/Associate	1	(base)	Little	-0.41	0.3352
Executive	0.234	0.2020	Normal	-0.02	0.3269
Leader/Senior	-0.12	0.2596	Much	0.219	0.2918
Specialist	1.022*	0.3803	Very much	-0.04	0.3592
Manager or higher	-0.69	0.3852	Work vision		
Number of experiences (years)	-0.11*	0.0347	Very little	1	(base)
Level of Attention			Little	0.073	0.4234
Completely unsupported	1	(base)	Normal	-0.31	0.3816
Little supported	3.496*	0.9271	Much	-0.85*	0.3736
Normal supported	3.694*	0.9876	Very much	-1.06	0.5479
Much supported	3.384*	0.9780	Worker contribution in general goals		
Completely supported	3.427*	0.9675	Very little	1	(base)
Level of believe in management			Little	13.64*	1.7640
			Normal	13.77*	1.9029

Very distrustful	1	(base)	Much	13.84*	1.7592
Distrustful	0.169	0.4342	Very much	13.82*	1.8775
Normal	0.260	0.4137	Job liability required		
Trustful	0.194	0.4513	Very little	1	(base)
Very trustful	0.589	0.5431	Little	0.027	0.3982
Colleagues's sociable level			Normal	-0.26	0.4238
Very little	1	(base)	Much	-0.38	0.3663
Little	3.200*	1.2498	Very much	-1.02*	0.3979
Normal	2.799*	1.2000	Levels of self-decision		
Much	2.952*	1.2180	Very little	1	(base)
Very much	2.536*	1.2649	Little	1.134	0.6128
Level of interactions with colleagues			Normal	0.570	0.5930
Very little	1	(base)	Much	0.704	0.6009
Little	-15.22*	1.9772	Very much	1.005	0.6609
Normal	-15.49*	1.9171	Looking or applying jobs outside		
Much	-15.45*	1.9901	No	1	(base)
Very much	-15.31*	1.8147	Yes	0.357*	0.1706
Comfort level of workplace			Level of ease to find an alternative job		
Very little	1	(base)	Very difficult	1	(base)
Little	-0.04	0.5674	Difficult	0.092	0.2621
Normal	-0.73	0.6440	Normal	0.523	0.3407
Much	-0.79	0.6513	Easy	0.265	0.3386
Very much	-0.41	0.7001	Very easy	-1.78*	0.7537
Company's facilities			Job offer from another company		
Very little	1	(base)	No	1	(base)
Little	-0.05	0.5460	Yes	0.710*	0.2095
Normal	0.179	0.5180	Other sources of income besides salary		
Much	0.491	0.5620	No	1	(base)
Very much	0.101	0.5839	Yes	0.224	0.1887
Public information			Expected job duration (years)	-0.01	0.0380
No	1	(base)	_cons	-19.1*	1.9585
Yes	-0.50*	0.2015			

4.2.6 Survival function curves

Next, the article presents survival function graphs with exponential distribution for statistically significant variables on regression results. Figure 4.9 shows the survival function of all data as an exponential distribution. Looking at this survival function, it can be seen that only about 80% of the workers are still in the job for longer than about 12 months. The graph predicts that the proportion of workers who work longer than 10 years will be around 20%.

Figure 4.9: Exponential probability plot for all variables

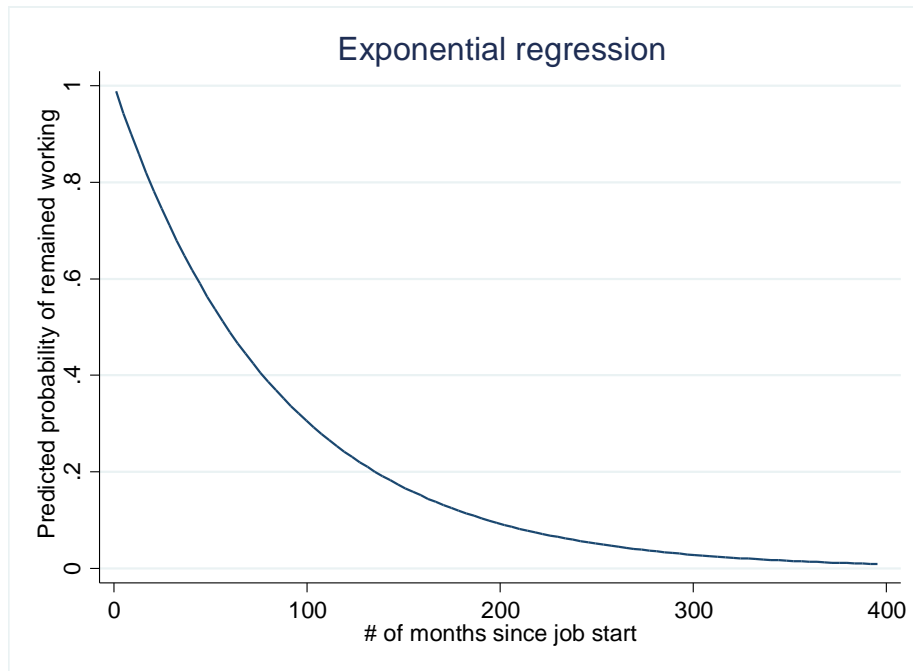
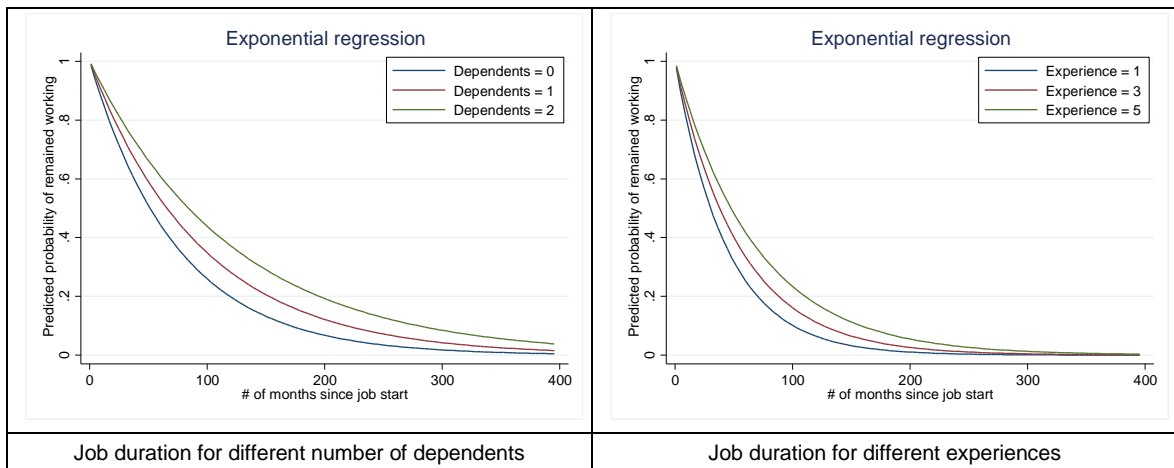


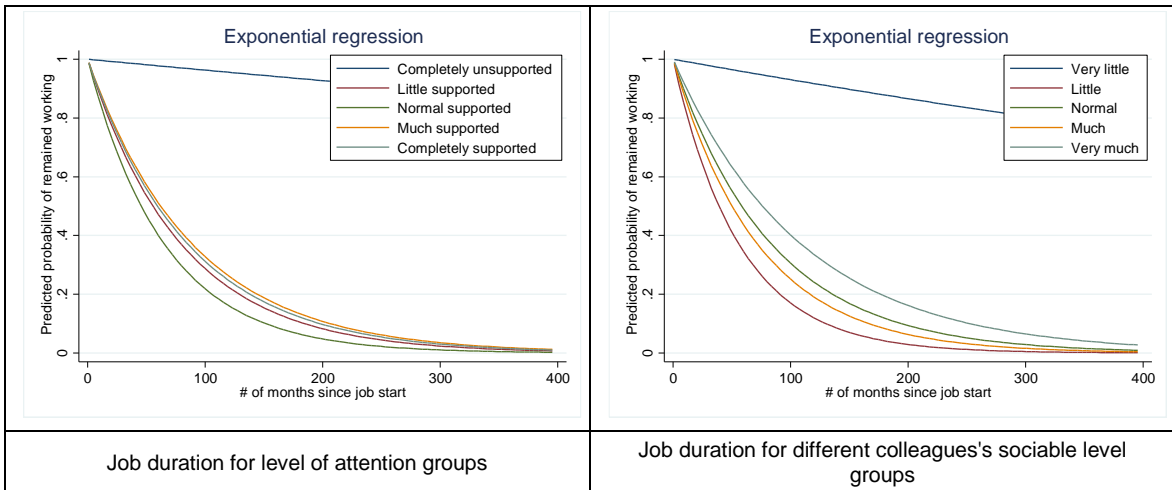
Figure 4.10 shows two survival function graphs for two variables, dependents and work experience. The survival function graph of different dependents shows that the lower the number of dependents, the lower the ability to keep the job, and the shorter the service time at the organization—similarly, the lower the work experience, the lower the job retention rate.

Figure 4.10: Exponential probability plot for dependents and experiences groups



With the two graphs in Figure 4.11, the curve of the “Completely unsupported” or “Very little” group can be ignored because the number of observations is relatively small. The graph of the variable of management interest shows that a high level of interest means a high retention rate. On the co-worker sociability side of the chart, a high degree of sociability also indicates high retention and length of time.

Figure 4.11: Exponential probability plot for attention and sociable groups



Similarly, the survival function of the level of interaction with colleagues (Figure 4.12) shows that the high interaction group predicts the ability to serve the organization longer than the low interaction group. In addition, the survival function of the group of information sharing indicates that the group of employees who do not share information in the company will have a higher probability of maintaining their job.

Figure 4.12: Exponential probability plot for interactions and public information groups

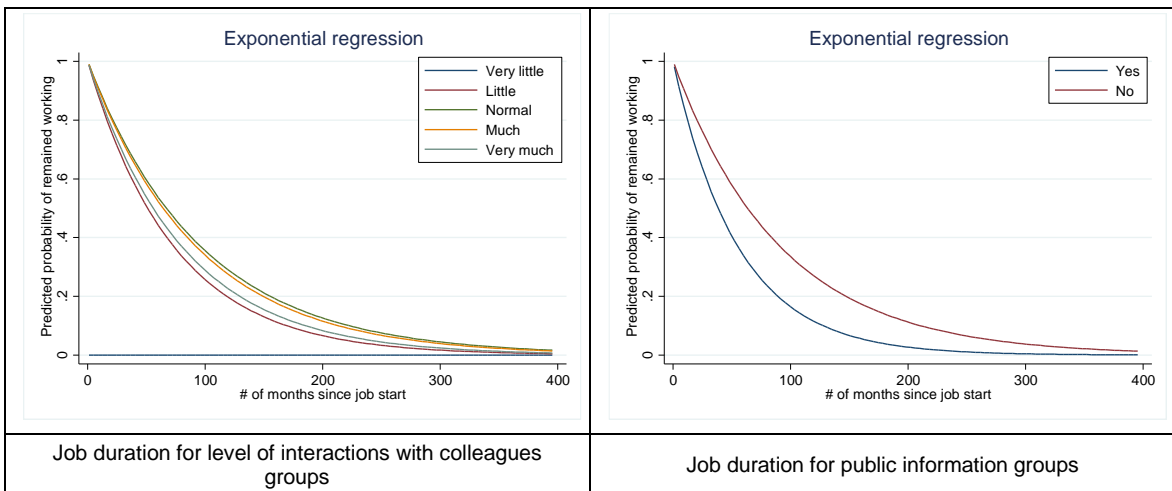
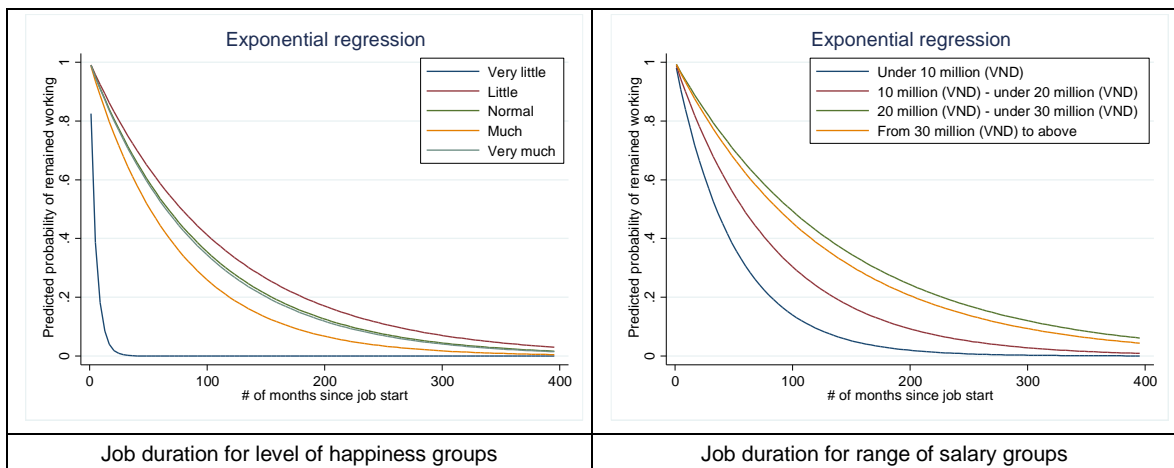


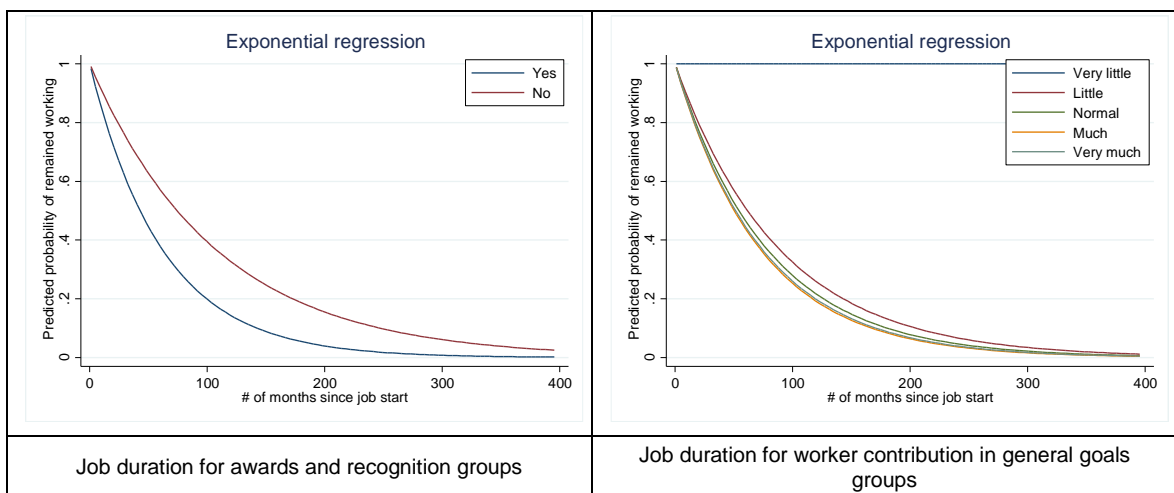
Figure 4.13 graph of group happiness at work shows a complex trend. The deficient happiness group had a very rapid decrease in the probability of staying employed. Moreover, the high happiness group shows low job retention. In contrast, the group with the lowest level of happiness had the highest probability of staying at work. That shows that the happy group is less effective in keeping employees working for a long time than the better group. Regarding the survival function of the salary group, the high salary group gives a higher probability of job retention.

Figure 4.13: Exponential probability plot for happiness and salary groups



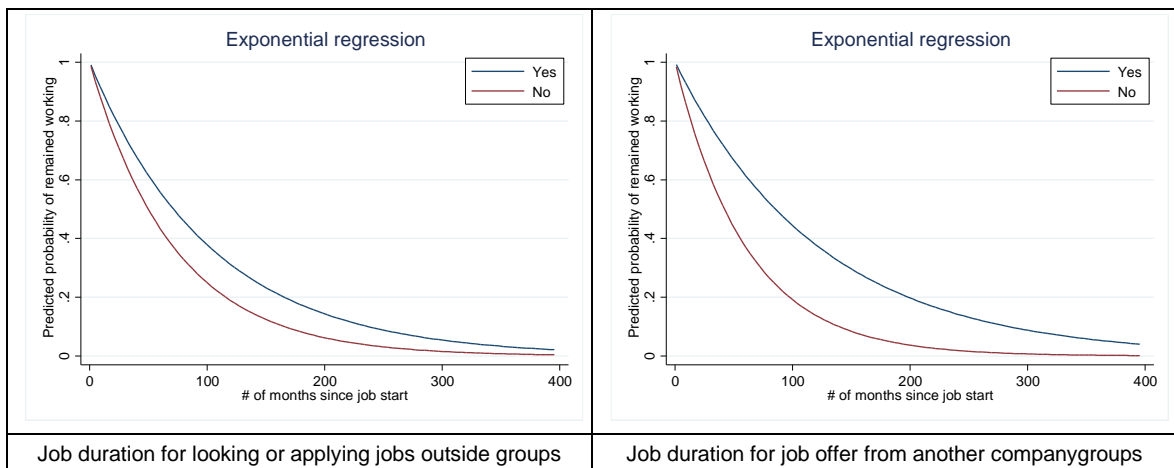
Next, whether or not the reward and recognition regime is divided into two groups is shown on the graph (Figure 4.14). The graph shows that the group with a reward system is predicted to have a higher job retention rate. The other graph shows the survival function of the contribution to the common goal. The curve on the graph shows that the group that contributes less is more likely to keep the job than the group that contributes more.

Figure 4.14: Exponential probability plot for awards and contribution groups



Finally, Figure 4.15 presents two graphs of the variables belonging to the group of alternative job opportunities. The first graph of the status of alternative job search. The group of workers who applied for other jobs tended to keep their jobs longer. Similarly, the remaining graph represents the survival function of the status group that received the alternative work proposal. This graph also shows that the group of workers who received a new job offer also had a higher probability of keeping their jobs than those who did not receive the offer.

Figure 4.15: Exponential probability plot for looking jobs and job offer groups



4.3 Discussion

The study's results imply that even great organizations face the loss of a few workers from time to time. The reasons for the workforce to leave the company are not simply salary, as people often see. For companies in Ho Chi Minh City, Vietnam, the analysis results show that the factors determining the ability of employees to stay long-term with the organization belong to 4 main groups.

First, the group of demographic factors shows the current employee turnover trend. Basic employee retention measures are tailored to each demographic. For example, the number of dependents in the family is a prominent factor influencing an employee's leave. These results support the view that family size and the number of children positively affect turnover reported in Haar (2004) and Ghayyur and Jamal (2012). Similarly, the research results of Erdwins *et al.* (2001) indicates that an increase in the number of children will put more pressure on female workers to switch jobs. Therefore, the number of dependents reflects the employee's responsible attitude towards the family. That is, the greater the family responsibilities, the greater the number of dependents. One of the problems workers face with young children or elderly parents is balancing work and family time. Besides, the high cost for a large family is also a pressure on employees. It is the reason that motivates workers to look for jobs with more free time or higher income.

The results from the article also show that the number of years of work experience also affects the ability of employees to stick with the organization. Experienced employees tend to stay with the company longer. The number of years of experience also reflects the labor trends of different generations of workers according to their respective ages. The young generation like Gen Z is young workers with little work experience who switch jobs more often. Experienced workers are baby boomers, and Gen Xers often stay at a company for a long time. Younger workers have less commitment to their jobs, and when it comes to job-hopping, young people often expect wage growth. Besides, young people often have more needs. They seek new work that is more meaningful and fulfills more of their personal needs. With long-term employees, they choose stability and longer-term attachment to the organization. Previous studies (Kirschenbaum & Mano-Negrin, 2002; van der Heijden *et al.*, 2018) also support the view that the more experienced employees are, the more they will stick with the organization.

Second, the group of factors related to the working environment. Variables that affect employee retention include management concern, co-worker friendliness, interaction, and internal information sharing. When considering the management's concern, the article shows that employees will have less intention to rotate jobs when receiving more support from

superiors. This result is consistent with the study of Newman, Thanacoody, and Hui (2011) and Kalidass and Bahron (2015). Their research shows that increasing management support and organizational commitment can reduce employees' intention to change jobs. Gentry *et al.* (2007) also conclude that management support plays an essential role in retaining employees in the organization. However, a study by Eisenberger *et al.* (2002) found no relationship between management interest and intention to change jobs.

One factor related to the working environment is the sociability of colleagues. A friendly colleague is a factor that motivates employees to stick with the organization for a long time. The survival function curve also shows that the friendlier the coworker is, the higher the employee retention is. Tews *et al.* (2014) view that fun and sociability at work is a means to help develop friendships in the workplace, creating attachment to the organization.

The level of interaction with colleagues shows a significant and negative relationship with employee retention time. However, on the survival function of each level group, the graph shows that groups with high engagement are more likely to stay longer. This result means that overall, for employees with high engagement levels, the possibility of job transfer can still happen. However, dynamic, active employees with high social networking interaction will stick with the company longer than other employees. Research by Feeley *et al.* (2008) does not support this view. Their research results show that employees with active communication and interaction networks are more likely to stay in the organization.

In addition, the disclosure of internal information also affects the ability of employees to change jobs. Research results show a negative relationship between disclosure and job retention time. That means that organizations regularly release information that will cause dissatisfaction among employees and risk quitting. Management sharing much information does not create positive motivation for employees. On the other hand, the discussion of informal information among employees is also a cause of confusion and decision to quit. Another view of Brawley and Pury (2016) is that sharing information will increase cohesion among employees. That will motivate employees to stay with the organization for longer. This view is appropriate when shared information is information about benefits, knowledge, and work experience.

Third, grouping factors related to the organization. Organizational commitment is the psychological attachment of employees to the organization. Therefore, organizational commitment predicts job variables such as revenue, work performance. Variables related to organizational weakness are presented in the results, such as job happiness, salary, reward system, and the level of contribution to the overall goal of employees. The level of happiness in the regression results shows a negative relationship with the employee's ability to stay at work. However, according to the survival function curve graph, there is no difference between groups of happiness levels. That means that there is no evidence of a relationship between happiness and turnover. A review of previous research by Al-Ali *et al.* (2019) indicates that happiness is negatively related to switching jobs. Happy employees have more energy and find meaning in their work. As a result, they are less likely to leave the organization and look for another job. In addition, the work of Judge *et al.* (2001) also supports this view.

From the perspective of an organization, salary is a means of encouraging employee engagement, influencing the intention and behavior of employees to switch jobs (Lum *et al.*, 1998). People with high salaries will stay with the organization longer than the results can be seen from the analysis. A high salary satisfies many basic needs of employees. That increases satisfaction and motivates employees to stay with the organization for a long time. Conversely, low wages make employees more inclined to look for other, more lucrative jobs. Some studies support this view, such as Schuck and Rabe-Hemp (2018) and Grissom and Mitani (2016). With the survival model analysis, it is found that employees tend to leave their jobs significantly in the period of 1 year to 2 years of working. However, it is necessary to balance the interests between the organization and the employees.

Besides salary, reward and recognition regimes show a negative relationship with job duration. Employees who are rewarded and recognized tend to leave the organization sooner. Research by Bhatnagar (2014), Williams *et al.* (2006), and de Gieter and Hofmans (2015) do not support the above results and suggests that rewards and recognition will reduce the intention of employees to change jobs. However, the results in the article mean that in practice, organizations that reward and recognize employee achievements are significant, dynamic organizations. Therefore, the employees of these organizations are also in great demand, and the ability to find alternative work is also higher than those of the organizations without a reward system.

When considering the level of contribution of workers to the common goal, the results show that highly dedicated workers have a higher risk of switching jobs. Dedication is characterized by substantial involvement and pride in one's work, along with a sense of meaning, passion, and inspiration. The article results show that people who contribute a lot do not necessarily stick with the organization for a long time. Employees who contribute a lot but do not feel worthy of being rewarded will have the thought of finding another job to satisfy themselves. The view expresses here is in contrast to the study of Takawira *et al.* (2014). Previous research suggests that job embeddedness, work engagement significantly and negatively predict intention to quit.

Finally, the factors related to alternative job opportunities include finding alternative jobs and receiving job offers. Workers look for other job opportunities to satisfy personal needs. Regression results show that workers who seek alternative jobs tend to keep their jobs longer. However, the previous study by Dardar *et al.* (2012) show that alternative job opportunities positively correlate with the ability to switch jobs. The results of this study imply that workers are looking for alternative jobs but are not satisfied with those opportunities. In the current actual situation, although the labor market is also quite bustling, the epidemic is a factor of concern when considering job transfer.

Similarly, when employees receive another job offer, they stay in their current job longer. That means that the employee has a comparison between the replacement job and the current job. This comparison is often favorable, helping employees have more motivation to stick with the organization for a long time. Research by Abdul Rahman *et al.* (2008) suggest that receiving other career opportunities will promote employees' willingness to quit if workers perceive lucrative and attractive opportunities. The assertion that employees receive other job offers will be more beneficial and risky only when those jobs are not attractive and do not meet the needs of workers. It means that in the current situation, it is more difficult to find another job. Available job opportunities are not necessarily lucrative and attractive jobs.

In addition, survival analysis allows for a better understanding of when factors play an important role in the labor turnover of organizations. Without the ability to observe time, it is difficult to get a clear picture to predict whether an employee will stay with the company long enough. The combination of survival analysis and the theoretical views about turnover gives an organization quite enough data to make predictions and build appropriate HR policies for each period. This research shows that using survival analysis, recruiters can know when turnover occurs so that they can assess the factors that influence those periods as well as the potential to disrupt the functioning of the organization.

Chapter 5 Conclusions and policy implication

5.1 Conclusions

The impact of job turnover includes increased costs of recruiting, hiring, training, reducing productivity, and reducing morale. Therefore, high employee turnover has a direct effect on the company's revenue and profit. Staffing and productivity-related costs caused by turnover are responsible for the decline in revenue and profit. Funds spent on finding, recruiting, and training will not generate a profit. Loss of productivity is a negative consequence of turnover for the organization. Leaving employees will cause a sudden drop in productivity, making it difficult to get the job done. Besides, it also takes a certain amount of time for new employees to reach total productivity to replace left employees.

Companies with fewer employees will be more severely affected as a single worker can take on many roles and is difficult to replace. So an organization with a high turnover rate can struggle with attracting and retaining top talent. This study focuses on finding out the factors affecting the job duration of employees leaving the organization and determining the probability of an employee remaining in the organization for each period so that the organization can adjust the policy corresponding to each employee. The relationship between factors and turnover helps to understand the factors that cause turnover to control turnover rates and predict employees' intention to leave so that the organization can support timely intervention to retain employees.

The survival analysis method is valuable in determining the probability of a subject's survival before a particular event. In other words, survival analysis allows insight into the timing of factors influencing employee turnover events. Without this ability, it will be difficult for the company to determine the commitment status of an employee. Another advantage of survival analysis is the consideration of the time of event occurrence. In this article, the survival analysis using the censorship case must cover a situation where an employee remained in the job after the study ended or had left for some time during the study because of other reasons without the event of leaving the job (Singer & Willett, 1991). Like most other processes, the regression process excludes censored cases from the analysis, causing information obtained about employees up to the time of departure to be lost. The existence function predicts the probability that the employee will continue to operate after the current period. In contrast, the danger function gives the conditional probability that an employee will leave in the next period, given that that employee survived until that time. Therefore, the possibility of a loss of important information due to case exclusion from the analysis was avoided in this study.

The employee turnover survival model uses in the article is highly effective in predicting the percentage of employees remaining with the company. The regression results of the parametric method show that employees have a decreasing probability of keeping their jobs over time and a significant decrease over 2-5 years of service. Demographic factors indicate that the number of dependents and years of experience affect the risk of quitting. As a result, the more dependents and years of experience, the longer they stay with the company. The work environment affects turnover through management interest, co-worker sociability, interaction, and information sharing. Managers who care more about employees will have a better connection between employees and the organization. Besides, a friendly working environment also helps employees to work long-term at the organization. In addition, the results also show that employees with high engagement and motivation are more likely to leave the company. In addition, regular disclosure of information also negatively affects employee engagement. Factors related to organizational commitment such as salary, bonus scheme, and level of dedication also impact employees' ability to move. Finally, the effect of wages shows that higher wages will retain workers longer.

Meanwhile, the level of happiness shows an unclear relationship, which does not help predict the changing jobs of employees. The company's reward and recognition system creates a higher level of demand in employees, which promotes the ability of employees to find other jobs and leave the company. In addition, employees with high levels of dedication also show a lower probability of sticking. Finally, the alternative job opportunity factor group shows that those seeking or receiving other job offers are more likely to stay at work longer.

This paper uses survival analysis for the first time to study the turnover of organizations in Ho Chi Minh City. Some other studies on turnover, such as Assefa *et al.* (2017) and Madariaga, Oller, and Martori (2018) prefer to use the Cox PH model but did not test the assumptions of this model, so the reliability of the results is not high. Therefore, this study evaluates the appropriateness of all three methods in survival analysis. The evaluation results show that the Cox proportional hazard - Cox PH model method is unsuitable for the collected data sample. On the other hand, the non-parameter and parameter methods are suitable for the data. Besides, the article also chooses the appropriate exponential distribution for the survival function. On the other hand, the study also compares survival between groups of levels, status within factors related to turnover. Overall, the study's contribution provides the ability to forecast the turnover trend of employees in Ho Chi Minh City in the current period and gives an overview of the time of job rotation to design appropriate governance policies.

5.2 Policy implications

In the previous chapter, the research examines and discusses the critical elements affecting the quitting decision and length of job duration of employees. In this part, the research would recommend some policies to deal with the issue. Following the discussion, the study divides the attempt schemes following the essential factors groups.

With the group of demographic factors, policies should mainly focus on the family condition of employees and maintain the attachment of experienced employees. Employers should understand that employees need to care for their families, thereby offering appropriate support policies to retain employees. One progressive policy that pays special attention to employees' families is family-friendly policies (Frye & Breugh, 2004). High-performance policy options include maternity leave, childcare, telecommuting, scholarships for children, and health insurance for loved ones. These benefits will help employees feel secure to work but still take good care of their families.

In addition, human resource management activities should focus on maintaining the attachment of experienced people. Unique benefits for those who have served the company for a long time include increased days off, reduced working hours, seniority salary. These benefits provide workers with a solid incentive to continue working with their employers. That will help improve the overall turnover rate of the whole organization and maintain the highest level of work efficiency. On the other hand, organizations now offer various programs to attract and retain young workers for young workers. For example, many large companies often apply for long-term training programs with clear career orientation for young employees. In addition, benefits that increase with the number of years of service also encourage employee engagement.

Policies related to the employee's working environment should focus on developing the relationship between management and employees and the relationship between employees. Managers in Vietnam have a clear opportunity to retain employees by demonstrating strong personal commitment and care for each employee. Improving manager support can go in many ways. Simple ways to show good bonding with employees is to remember personal events that are important to employees, such as birthdays and employment anniversaries (Tymon *et al.*, 2011). Other actions managers should take to increase support include respecting individual opinions, empowering trust, and discussing career direction regularly.

To enhance the interaction and sociability of the employees, the organization needs to carry out team-building activities regularly. Team building is an ongoing process that helps a workgroup grow into a cohesive unit. Team members share expectations to accomplish group tasks and trust and support each other and respect each other's differences. Organizing regular group activities and building a happy working environment will encourage employees to become more social. That can increase employee engagement with the organization. On the other hand, the issue of information sharing also needs to be concerned by the organization. Information sharing must take place in the workplace and an organized manner. Those who have the right to disclose information should be trained to communicate to avoid confusion and suspicion. For all workers, communication must be controlled. The human resource management department must actively screen and correct unorthodox information to minimize psychological instability among employees.

Concerning an organization's commitment to wages, the objectives of the wage policy should focus on attracting and retaining the best possible workforce considering the organization's resources, motivating the workforce, achieving high performance, and keeping labor costs within the organization's reach. The organization can adjust the policy, the time of salary increase is more suitable to retain employees. Besides, improving the excellent quality and skills to create more value to raise employees is a harmonious measure that benefits both the organization and employees. Accompanying the salary policy is the reward system. Reward strategy involves designing and implementing reward policies and practices that support employees in the organization, providing a motivated and productive workforce. Reward strategies include salary (bonus and incentive), benefits (holiday, insurance), and personal development opportunities. Nevertheless, the organization also needs to consider the regimes and create particular ties with employees because if employees receive many benefits efficiently, they still tend to seek higher needs.

Conclusively, the organization needs to limit the risks of knowing that employees are looking for alternative work. While some retention efforts can delay employee departures, the most brilliant move an organization can make is to seek out additional resources. In addition, the company also needs to re-evaluate the importance of employees who are intending to leave. If the employee is worth fighting for, a friendly negotiation should be conducted to keep them. In general, when it comes to predicting employees' intention to change jobs, the organization should take a holistic look at personal problems, working environment, salary, organizational commitment, and have an appropriate strategy to avoid employee departure and its consequences.

5.3 Limits of the study and suggestion for further research

Regarding the limitation of the study, the weaknesses come from the data of the study. First and foremost, although there is no strong signal of multicollinearity, the doubt still exists, and the issue is not resolved from the root. Specifically, 9 variables have the VIF index is over 2 points in the regression model. The problem may cause a slight bias in regression results. The second limitation that needs to mention is the data collection once the survey was taken online. As a result, the data may subsist bias when a person takes the survey more than one.

Besides, the survey design is likely to exist endogenous bias caused by simultaneous causality. It means that several independent and dependent variables cause each other, and causal effects run reciprocally simultaneously. Specifically, the higher the job satisfaction, the longer the time with the organization will be and vice versa. Also, another possibility of endogeneity is errors-in-variables, which refers to problems that arise when variables are imperfectly measured. Survey data is presented as cross-section data, whereas decision-making to change jobs is a dynamic decision that goes through many complex stages. The study also cannot consider and correct

for the heterogeneity of the data which could lead to bias and inaccuracies. For example, research data on factors affecting job change decisions are collected through survey questionnaires at a certain time, in contrast to the fact that these data often change over time and this change leads to different turnover decisions. Endogeneity can occur due to the omission of variables in the model. If variables such as productivity, job security, and work ethic are omitted because the data are not measured, the causal relationships caused by them will not be represented in the model, thus creating endogenous problems. In addition, sampling bias can also occur due to the failure to ensure the proper randomization of a population sample. The data may be exaggerated or understated and not representative of the complete population. Some of those surveyed may have exaggeratedly answered as very satisfied or very dissatisfied with their work. Reporting bias can also occur because the nature and direction of the results focus on the presentation of job duration. In this study, there was a selection of factors affecting job duration, which may cause outcome reporting bias. Although the data is handled and cleaned up before regressing, those biases once still may hold out.

Another problem with the data is that the research took place in the sensitive period with the subsistence of the Covid-19 pandemic affecting the life and job of people; therefore, the survey may be indirectly impacted by the situation when the pandemic influences the respondent in both physical and spiritual. Hence, the answer may have accurately reflected the current situation, but not much value for forecasting in the long-term future. Because the pandemic is seen as a breaking point for research, it is not considered a typical situation in the future. Nevertheless, the data is acceptable and applies as a warning to the employer due to the chaos in the particular period of the labor market. It also can be utilized for predicting but in a short time only.

According to the limitation of the research and the expansion of the topic, the study would propose some further research to make up for the shortcomings and accomplish the topics related to the labor economy. The first direction is to study and learn about human resources development. The topics relate to human resources development are varied and wide, including some highlight fields such as management and leadership, workforce development, and innovation and technology. The second suggestion considers the organizational behaviors related to optimizing organizational structure, motivation, and working environment. However, the research must view the problems from economic aspects instead of psychological aspects. Specifically, the researchers should examine the issues by costs and benefits for both the company and the employee. The following proposal is the police investigation. To maintain a sustainable workforce to develop the company, find out the factors that impact the job duration or decision to quit the organization is not enough to resolve the issue and construct the target; therefore, learning on labor policies is one of the most critical and severe studies when talking about labor economy. Align with this trend, experimental research on policy implementation is also a potential study to evaluate the appropriateness of the policies. Finally, the last consideration is research methodology. The studies can apply various methods; thus, finding new methods and models to analyze the problems with high value and less bias are encouraged. The study on the labor economy is various and motivates the researchers to explore and contribute to the whole picture.

Appendices

Appendix 1: Generation

Generation	Year of born
Baby Boomers	1946 – 1964
Generation X	1965 – 1980
Generation Y/Millennials	1981 – 1996
Generation Z	1997 – 2012

Appendix 2: Questionnaire

Section	Variable/ Measurement	Question	
		For people who have changed their job in the last 3 years	For people who have not changed their job in the last 3 years
Decision to quit, job duration	Event	Have you changed your jobs in the past three years?	Have you changed your jobs in the past three years?
	Start date	When did you start your previous job?	When did you start your current job?
	End date	When did you end your previous job?	-
Demographic factors	Age	What is your age?	What is your age?
	Sex	What is your gender?	What is your gender?
	Status	What is your marital status?	What is your marital status?
	Edu	What is your highest level of education?	What is your highest level of education?
	Dependents	How many are your dependents/children?	How many are your dependents/children?
	Industry	Which field did you work in your previous job?	What is the field you work in?
	Level	What was your job level in your previous job?	What is your job's level?
	Exp	How much are your total years of experience up to now?	How much are your total years of experience up to now?
Working environment factors	Attention	In your previous company, have managers cared to help you solve the problem?	Do managers care to help you solve the problem?
	Att level	How supportive your manager has been when you had a problem?	How supportive your manager is when you have a problem?
	Trust	Could you trust the management at your previous company?	Can you trust the management at your current company?
	Trust level	How was your trust with the manager in the previous company?	How is your trust with the manager?
	Sociable	Have your colleagues in the previous company been friendly and interested in your contribution/performance?	Are your colleagues friendly and interested in your contribution/performance?
	Interaction	Have you had good interactions with colleagues at the previous company?	Do you have good interactions with colleagues?
	Environment	Has the working environment been pleasant and comfortable in the previous company?	Is the working environment pleasant and comfortable?
	Facilities	Have the previous company's facilities served your work well?	Do the company's facilities serve your work well?
	Sharing	Have managers in the previous company opened to communication and information sharing with	Do managers open to communication and information sharing with

		employees (except for confidential information)?	employees (except for confidential information)?
Organization elements	Happy	How happy have you been in your previous job?	How happy are you in your current job?
	Salary	What range was your previous salary?	What range is your salary?
	Sal expectation	Did the salary meet your expectation in terms of your previous job level and your tasks?	Does the salary meet your expectation in terms of your current job level and your tasks?
	Promotion support	Has the manager in the previous company supported your career promotion?	Does the manager support the promotion of employees in the current company?
	Insurance	Has the previous company had individual insurance benefits for employees?	Does the current company have individual insurance benefits for employees?
	Career dev	Has management in the previous company provided a clear career direction for employees?	Does management provide a clear career direction for employees?
	Activities	Has the previous company organized annual travel activities/team building for employees?	Does the current company organize annual travel activities/team building for employees?
	Training	Have training programs been conducted regularly at the previous company?	Are training programs conducted regularly at the current company?
	Award	Has the previous company had awards and recognition for employees' work results?	Does the current company have awards and recognition for employees' work results?
	Travel	Has your previous job had the opportunity to travel domestically/overseas?	Does your current job have the opportunity to travel domestically/overseas?
	Working hours	How many hours have you actually worked per week at your previous company?	How many hours do you actually work per week?
	Pressure	In your previous company, have problems caused you to worry after work?	Do work problems cause you to worry after work?
	Vision	Has your previous job had a long-term vision?	Does your current job have a long-term vision?
	Skills	Has your previous job required many things and use many skills (task variety)?	Does your current job require many things and use many skills (task variety)?
	Contribution	How much contribution has your previous job had in general goals?	How much contribution does your current job have in general goals?
	Influence	How much influence has your previous job had to another colleague/department?	How much influence does your current job have on another colleague/department?
	Liability	How much liability has your previous job required?	How much liability does your current job require?
	Style	Have you wanted to be a decision-maker or follower in work?	Do you want to be a decision-maker or follower in work?
	Self-decision	How many levels of self-decision have there been in your previous work?	How many level of self-decision are there in your work?
Satisfaction	How have you been satisfied with your previous job?	How are you satisfied with your current job?	
Alternative opportunities	Alternative	Did you look or apply for any outside job in the past year?	Did you look or apply for any outside job in the past year?
	Alt ease	How easy is it to find an alternative job nowadays?	How easy is it to find an alternative job nowadays?
	Other offered	Did you receive a job offer from another company in the past year?	Did you receive a job offer from another company in the past year?
	Quitting motivation	What factor motivates you to switch to another job the most?	What factor motivates you to switch to another job the most?

	Other income	Do you have other sources of income besides basic salary?	Do you have other sources of income besides basic salary?
	Dur expected	How long have you expected to be in your current job?	How long have you expected to be in your current job?

Appendix 3: Frequency of variables

Variable	N	%	Variable	N	%
Age			Management supporting in staff's promotion		
<= 30 years old	229	73.40%	No	50	16.03%
>30 years old	83	26.60%	Yes	135	43.27%
Generation			Not sure	127	40.71%
Baby Boomer	1	0.32%	Career development plan		
Gen X	13	4.17%	No	94	30.13%
Gen Y/Millennials	247	79.17%	Yes	120	38.46%
Gen Z	51	16.35%	Not sure	98	31.41%
Gender			Insurance		
Female	178	57.05%	No	29	9.29%
Male	132	42.31%	Yes	283	90.71%
Others	2	0.64%	Annual travel activities/team building		
Marital status			No	75	24.04%
Single	197	63.14%	Yes	237	75.96%
Married	106	33.97%	Training programs		
Others	9	2.88%	No	139	44.55%
Education level			Yes	173	55.45%
High school or lower	26	8.33%	Awards and recognition		
Bachelor's degree	230	73.72%	No	131	41.99%
Master's degree or higher	56	17.95%	Yes	181	58.01%
Number of dependents/children			Travel opportunities		
0	202	64.74%	No	168	53.85%
1	62	19.87%	Yes	144	46.15%
>2	48	15.38%	Actual working hours (hours)		
Industry			<= 40 hours	109	34.94%
Banks	30	9.62%	40 - 48 hours	112	35.90%
IT	22	7.05%	> 48 hours	91	29.17%
Mechanical / Engineer	37	11.86%	Work pressure		
Real estate	27	8.65%	Very little	23	7.37%
eCommerce	23	7.37%	Little	59	18.91%
Health care	30	9.62%	Normal	76	24.36%
Logistics	46	14.74%	Much	106	33.97%
Others	97	31.09%	Very much	48	15.38%
Job level			Work vision		
Officer/Associate	156	50.00%	Very little	18	5.77%
Executive	67	21.47%	Little	42	13.46%
Leader/Senior	54	17.31%	Normal	108	34.62%
Specialist	11	3.53%	Much	118	37.82%
Manager or higher	24	7.69%	Very much	26	8.33%
Number of experiences (years)			Complex skills level required		
<5 years	169	54.17%	Very little	4	1.28%
5 - 10 years	90	28.85%	Little	19	6.09%

> 10 years	53	16.99%	Normal	80	25.64%
Management attention			Much	143	45.83%
No	49	15.71%	Very much	66	21.15%
Yes	263	84.29%	Worker contribution in general goals		
Level of Attention			Very little	2	0.64%
Completely unsupported	6	1.92%	Little	18	5.77%
Little supported	30	9.62%	Normal	117	37.50%
Normal supported	107	34.29%	Much	141	45.19%
Much supported	126	40.38%	Very much	34	10.90%
Completely supported	43	13.78%	Job influence to another departments/colleague		
Believe in management			Very little	4	1.28%
No	36	11.54%	Little	32	10.26%
Yes	161	51.60%	Normal	74	23.72%
Not sure	115	36.86%	Much	145	46.47%
Level of believe in management			Very much	57	18.27%
Very distrustful	12	3.85%	Job liability required		
Distrustful	37	11.86%	Very little	16	5.13%
Normal	119	38.14%	Little	67	21.47%
Trustful	106	33.97%	Normal	92	29.49%
Very trustful	38	12.18%	Much	101	32.37%
Colleagues's sociable level			Very much	36	11.54%
Very little	4	1.28%	Job style		
Little	13	4.17%	Follower	87	27.88%
Normal	70	22.44%	Decision-maker	225	72.12%
Much	152	48.72%	Levels of self-decision		
Very much	73	23.40%	Very little	12	3.85%
Level of interactions with colleagues			Little	39	12.50%
Very little	2	0.64%	Normal	100	32.05%
Little	17	5.45%	Much	127	40.71%
Normal	86	27.56%	Very much	34	10.90%
Much	115	36.86%	Job satisfaction		
Very much	92	29.49%	Very little	4	1.28%
Comfort level of workplace			Little	34	10.90%
Very little	7	2.24%	Normal	143	45.83%
Little	32	10.26%	Much	114	36.54%
Normal	90	28.85%	Very much	17	5.45%
Much	130	41.67%	Looking or applying jobs outside		
Very much	53	16.99%	No	129	41.35%
Company's facilities			Yes	183	58.65%
Very little	5	1.60%	Level of ease to find an alternative job		
Little	43	13.78%	Very difficult	49	15.71%
Normal	93	29.81%	Difficult	93	29.81%
Much	123	39.42%	Normal	92	29.49%
Very much	48	15.38%	Easy	71	22.76%

Public information			Very easy	7	2.24%
No	53	16.99%	Job offer from another company		
Yes	259	83.01%	No	142	45.51%
Happy with job			Yes	170	54.49%
Very little	6	1.92%	Quitting motivation		
Little	38	12.18%	New fields and professions	32	10.26%
Normal	127	40.71%	Better salary	130	41.67%
Much	117	37.50%	Work less stressful	22	7.05%
Very much	24	7.69%	Better working environment	58	18.59%
Range of salary			More reputable company	34	10.90%
Under 10 mil.	84	26.92%	Higher position	36	11.54%
10 mil. - under 20 mil.	148	47.44%	Other sources of income besides salary		
20 mil. - under 30 mil.	45	14.42%	No	143	45.83%
From 30 mil. to above	35	11.22%	Yes	169	54.17%
Salary's expectation			Expected job duration (years)		
Do not meet expectation	175	56.09%	< 2 years	110	35.26%
Meet expectation	130	41.67%	2 - 5 years	150	48.08%
Over expectation	7	2.24%	>5 years	13	4.17%

Appendix 4: Cumulative incidence rates of turnover by baseline variables

Variable	Job changed			p value
	Number of persons at risks	Number	Percent	
Age				
<= 30 years old	229	142	62.01%	0.679
>30 years old	83	41	49.40%	
Generation				
Baby Boomer	1	0	0.00%	0.386
Gen X	13	6	46.15%	
Gen Y/Millennials	247	144	58.30%	
Gen Z	51	33	64.71%	
Gender				
Female	178	102	57.30%	0.185
Male	132	81	61.36%	
Others	2	0	0.00%	
Marital status				
Single	197	116	58.88%	0.677
Married	106	63	59.43%	
Others	9	4	44.44%	
Education level				
High school or lower	26	10	38.46%	0.028
Bachelor's degree	230	134	58.26%	
Master's degree or higher	56	39	69.64%	
Number of dependents/children				
0	202	122	60.40%	0.295
1	62	39	62.90%	
>2	48	22	45.83%	
Industry				
Banks	30	15	50.00%	0.064
IT	22	13	59.09%	
Mechanical / Engineer	37	18	48.65%	
Real estate	27	13	48.15%	
eCommerce	23	19	82.61%	
Health care	30	14	46.67%	
Logistics	46	32	69.57%	
Others	97	59	60.82%	
Job level				
Officer/Associate	156	96	61.54%	0.001
Executive	67	46	68.66%	
Leader/Senior	54	22	40.74%	
Specialist	11	10	90.91%	
Manager or higher	24	9	37.50%	
Number of experiences (years)				

<5 years	169	113	66.86%	
5 - 10 years	90	45	50.00%	0.67
> 10 years	53	25	47.17%	
Management attention				
No	49	41	83.67%	
Yes	263	142	53.99%	0
Level of Attention				
Completely unsupported	6	3	50.00%	
Little supported	30	24	80.00%	
Normal supported	107	70	65.42%	0.007
Much supported	126	68	53.97%	
Completely supported	43	18	41.86%	
Believe in management				
No	36	27	75.00%	
Yes	161	84	52.17%	0.024
Not sure	115	72	62.61%	
Level of believe in management				
Very distrustful	12	8	66.67%	
Distrustful	37	26	70.27%	
Normal	119	73	61.34%	0.188
Trustful	106	59	55.66%	
Very trustful	38	17	44.74%	
Colleagues's sociable level				
Very little	4	3	75.00%	
Little	13	11	84.62%	
Normal	70	41	58.57%	0.253
Much	152	83	54.61%	
Very much	73	45	61.64%	
Level of interactions with colleagues				
Very little	2	2	100.00%	
Little	17	9	52.94%	
Normal	86	50	58.14%	0.752
Much	115	66	57.39%	
Very much	92	56	60.87%	
Comfort level of workplace				
Very little	7	7	100.00%	
Little	32	26	81.25%	
Normal	90	52	57.78%	0.005
Much	130	66	50.77%	
Very much	53	32	60.38%	
Company's facilities				
Very little	5	4	80.00%	
Little	43	26	60.47%	0.583
Normal	93	59	63.44%	

Much	123	68	55.28%	
Very much	48	26	54.17%	
Public information				
No	53	43	81.13%	0
Yes	259	140	54.05%	
Happy with job				
Very little	6	6	100.00%	
Little	38	26	68.42%	
Normal	127	76	59.84%	0.058
Much	117	65	55.56%	
Very much	24	10	41.67%	
Range of salary				
Under 10 mil.	84	68	80.95%	
10 mil. - under 20 mil.	148	78	52.70%	0
20 mil. - under 30 mil.	45	19	42.22%	
From 30 mil. to above	35	18	51.43%	
Salary's expectation				
Do not meet expectation	175	115	65.71%	
Meet expectation	130	64	49.23%	0.015
Over expectation	7	4	57.14%	
Management supporting in staff's promotion				
No	50	38	76.00%	
Yes	135	68	50.37%	0.0066
Not sure	127	77	60.63%	
Career development plan				
No	94	71	75.53%	
Yes	120	54	45.00%	0
Not sure	98	58	59.18%	
Insurance				
No	29	22	75.86%	
Yes	283	161	56.89%	0.048
Annual travel activities/team building				
No	75	46	61.33%	
Yes	237	137	57.81%	0.589
Training programs				
No	139	86	61.87%	
Yes	173	97	56.07%	0.301
Awards and recognition				
No	131	87	66.41%	
Yes	181	96	53.04%	0.018
Travel opportunities				
No	168	102	60.71%	
Yes	144	81	56.25%	0.425
Actual working hours (hours)				

<= 40 hours	109	59	54.13%	
40 - 48 hours	112	61	54.46%	0.46
> 48 hours	91	62	68.13%	
Work pressure				
Very little	23	15	65.22%	
Little	59	31	52.54%	
Normal	76	45	59.21%	0.595
Much	106	60	56.60%	
Very much	48	32	66.67%	
Work vision				
Very little	18	12	66.67%	
Little	42	35	83.33%	
Normal	108	71	65.74%	0
Much	118	54	45.76%	
Very much	26	11	42.31%	
Complex skills level required				
Very little	4	2	50.00%	
Little	19	12	63.16%	
Normal	80	55	68.75%	0.268
Much	143	79	55.24%	
Very much	66	35	53.03%	
Worker contribution in general goals				
Very little	2	1	50.00%	
Little	18	13	72.22%	
Normal	117	76	64.96%	0.222
Much	141	76	53.90%	
Very much	34	17	50.00%	
Job influence to another departments/colleague				
Very little	4	2	50.00%	
Little	32	18	56.25%	
Normal	74	44	59.46%	0.993
Much	145	85	58.62%	
Very much	57	34	59.65%	
Job liability required				
Very little	16	10	62.50%	
Little	67	44	65.67%	
Normal	92	52	56.52%	0.74
Much	101	57	56.44%	
Very much	36	20	55.56%	
Job style				
Follower	87	50	57.47%	
Decision-maker	225	133	59.11%	0.792
Levels of self-decision				
Very little	12	6	50.00%	0.51

Little	39	26	66.67%	
Normal	100	63	63.00%	
Much	127	70	55.12%	
Very much	34	18	52.94%	
Job satisfaction				
Very little	4	4	100.00%	
Little	34	25	73.53%	
Normal	143	88	61.54%	0.03
Much	114	56	49.12%	
Very much	17	10	58.82%	
Looking or applying jobs outside				
No	129	51	39.53%	
Yes	183	132	72.13%	0
Level of ease to find an alternative job				
Very difficult	49	26	53.06%	
Difficult	93	49	52.69%	
Normal	92	57	61.96%	0.242
Easy	71	48	67.61%	
Very easy	7	3	42.86%	
Job offer from another company				
No	142	53	37.32%	
Yes	170	130	76.47%	0
Quitting motivation				
New fields and professions	32	29	90.63%	
Better salary	130	68	52.31%	
Work less stressful	22	13	59.09%	
Better working environment	58	40	68.97%	0
More reputable company	34	18	52.94%	
Higher position	36	15	41.67%	
Other sources of income besides salary				
No	143	75	52.45%	
Yes	169	108	63.91%	0.041
Expected job duration (years)				
< 2 years	110	54	49.09%	
2 - 5 years	150	95	63.33%	0.17
>5 years	13	4	30.77%	

Appendix 5: Kaplan-Meier estimate for workers

Time of event	No. of workers turnover	Stay at the start of the month	Probability of survivors at the end of time	Std. Error	[95% Conf. Int.]	
0.2	1	312	0.9968	0.0032	0.9775	0.9995
1	1	311	0.9936	0.0045	0.9746	0.9984
2.033	4	308	0.9807	0.0078	0.9575	0.9913
3	1	304	0.9775	0.0084	0.9533	0.9892
3.033	2	303	0.9710	0.0095	0.9450	0.9848
3.067	3	301	0.9613	0.0109	0.9329	0.9779
4.033	2	298	0.9549	0.0118	0.9250	0.9730
4.067	4	296	0.9420	0.0133	0.9095	0.9630
4.1	2	292	0.9355	0.0139	0.9018	0.9579
5	1	290	0.9323	0.0143	0.8980	0.9553
5.1	2	288	0.9258	0.0149	0.8905	0.9501
6.033	1	286	0.9226	0.0152	0.8867	0.9474
6.067	3	282	0.9128	0.0160	0.8754	0.9393
6.1	1	279	0.9095	0.0163	0.8716	0.9366
7.067	5	278	0.8931	0.0176	0.8530	0.9228
7.133	3	272	0.8833	0.0183	0.8419	0.9144
8.067	0	269	0.8833	0.0183	0.8419	0.9144
8.1	1	268	0.8800	0.0185	0.8382	0.9116
8.133	1	267	0.8767	0.0187	0.8345	0.9087
9.1	1	266	0.8734	0.0190	0.8308	0.9059
9.167	2	265	0.8668	0.0194	0.8235	0.9001
9.2	1	263	0.8635	0.0196	0.8198	0.8973
10.1	1	262	0.8602	0.0198	0.8162	0.8944
10.13	2	261	0.8536	0.0202	0.8089	0.8886
11.13	1	259	0.8503	0.0204	0.8053	0.8857
11.17	4	258	0.8371	0.0211	0.7908	0.8740
11.2	1	254	0.8339	0.0213	0.7873	0.8711
12.17	5	253	0.8174	0.0221	0.7694	0.8563
12.2	4	248	0.8042	0.0227	0.7551	0.8444
13.13	1	244	0.8009	0.0228	0.7516	0.8414
13.17	0	243	0.8009	0.0228	0.7516	0.8414
13.2	3	241	0.7909	0.0233	0.7409	0.8324
14.2	1	238	0.7876	0.0234	0.7373	0.8294
15.17	1	237	0.7843	0.0235	0.7338	0.8263
15.23	3	236	0.7743	0.0239	0.7232	0.8172
15.27	1	233	0.7710	0.0241	0.7196	0.8142
16.23	2	232	0.7643	0.0243	0.7126	0.8081
16.3	1	230	0.7610	0.0244	0.7090	0.8050
17.23	3	229	0.7510	0.0248	0.6985	0.7958
17.3	1	226	0.7477	0.0249	0.6950	0.7927

18.2	1	225	0.7444	0.0250	0.6915	0.7896
18.23	0	224	0.7444	0.0250	0.6915	0.7896
18.33	1	222	0.7410	0.0251	0.6880	0.7865
19.27	1	221	0.7377	0.0252	0.6844	0.7834
19.3	2	215	0.7308	0.0254	0.6772	0.7770
20.27	0	213	0.7308	0.0254	0.6772	0.7770
20.3	1	212	0.7274	0.0256	0.6736	0.7738
21.27	1	211	0.7239	0.0257	0.6699	0.7706
21.3	3	210	0.7136	0.0260	0.6591	0.7610
21.37	1	207	0.7101	0.0261	0.6555	0.7578
22.3	2	206	0.7033	0.0263	0.6483	0.7513
22.33	1	202	0.6998	0.0264	0.6446	0.7481
22.37	1	201	0.6963	0.0265	0.6410	0.7448
23.3	1	200	0.6928	0.0266	0.6373	0.7415
23.33	2	199	0.6858	0.0268	0.6301	0.7350
23.37	2	196	0.6788	0.0269	0.6228	0.7284
24.33	3	194	0.6683	0.0272	0.6119	0.7185
24.37	3	191	0.6579	0.0274	0.6011	0.7086
25.33	1	187	0.6543	0.0275	0.5974	0.7052
25.37	1	186	0.6508	0.0276	0.5938	0.7019
25.4	1	179	0.6472	0.0277	0.5900	0.6985
26.37	4	178	0.6326	0.0280	0.5750	0.6846
26.4	3	174	0.6217	0.0282	0.5638	0.6743
27.4	2	170	0.6144	0.0283	0.5563	0.6673
27.43	1	165	0.6107	0.0284	0.5525	0.6637
28.4	1	164	0.6070	0.0285	0.5486	0.6602
28.43	2	163	0.5995	0.0286	0.5410	0.6530
29.37	1	158	0.5957	0.0287	0.5371	0.6494
29.4	1	155	0.5919	0.0288	0.5332	0.6457
29.43	1	154	0.5880	0.0288	0.5292	0.6421
30.37	1	153	0.5842	0.0289	0.5253	0.6384
30.4	1	152	0.5804	0.0290	0.5214	0.6347
30.47	1	148	0.5764	0.0290	0.5174	0.6310
31.43	0	147	0.5764	0.0290	0.5174	0.6310
31.5	1	145	0.5725	0.0291	0.5133	0.6271
32.43	1	144	0.5685	0.0292	0.5092	0.6233
32.47	1	139	0.5644	0.0292	0.5050	0.6194
33.47	2	138	0.5562	0.0294	0.4966	0.6116
33.53	1	135	0.5521	0.0295	0.4924	0.6077
34.47	0	134	0.5521	0.0295	0.4924	0.6077
35.5	1	133	0.5479	0.0295	0.4882	0.6037
36.5	4	131	0.5312	0.0298	0.4711	0.5876
36.53	1	127	0.5270	0.0298	0.4669	0.5836
37.53	1	126	0.5228	0.0299	0.4626	0.5795

37.57	1	121	0.5185	0.0300	0.4582	0.5754
38.53	2	120	0.5099	0.0301	0.4495	0.5670
38.57	0	118	0.5099	0.0301	0.4495	0.5670
39.5	1	115	0.5054	0.0301	0.4449	0.5628
39.57	0	114	0.5054	0.0301	0.4449	0.5628
40.57	1	112	0.5009	0.0302	0.4403	0.5584
40.6	0	111	0.5009	0.0302	0.4403	0.5584
40.63	3	107	0.4869	0.0304	0.4260	0.5449
41.57	1	104	0.4822	0.0305	0.4213	0.5404
41.6	1	103	0.4775	0.0306	0.4165	0.5359
42.57	0	102	0.4775	0.0306	0.4165	0.5359
42.67	1	90	0.4722	0.0307	0.4110	0.5309
43.6	1	89	0.4669	0.0308	0.4056	0.5258
44.6	1	86	0.4615	0.0309	0.4000	0.5207
45.63	2	85	0.4506	0.0311	0.3888	0.5104
46.67	1	82	0.4451	0.0312	0.3832	0.5051
47.67	2	81	0.4341	0.0314	0.3720	0.4946
47.73	1	78	0.4286	0.0315	0.3663	0.4893
48.7	2	77	0.4174	0.0316	0.3550	0.4785
49.7	4	73	0.3946	0.0319	0.3320	0.4565
50.67	1	68	0.3888	0.0320	0.3261	0.4508
50.73	1	67	0.3830	0.0320	0.3203	0.4452
51.67	1	65	0.3771	0.0320	0.3144	0.4395
51.73	0	64	0.3771	0.0320	0.3144	0.4395
52.77	0	63	0.3771	0.0320	0.3144	0.4395
54.73	0	61	0.3771	0.0320	0.3144	0.4395
54.8	1	51	0.3697	0.0323	0.3067	0.4326
55.77	0	50	0.3697	0.0323	0.3067	0.4326
56.8	1	49	0.3621	0.0325	0.2989	0.4256
58.8	2	48	0.3470	0.0328	0.2834	0.4114
59.83	1	46	0.3395	0.0330	0.2757	0.4042
60.87	0	43	0.3395	0.0330	0.2757	0.4042
61.87	0	42	0.3395	0.0330	0.2757	0.4042
61.9	1	41	0.3312	0.0332	0.2672	0.3965
62.9	2	40	0.3147	0.0335	0.2503	0.3809
63.9	0	38	0.3147	0.0335	0.2503	0.3809
64.97	1	35	0.3057	0.0338	0.2411	0.3725
66.93	0	34	0.3057	0.0338	0.2411	0.3725
67.97	1	28	0.2948	0.0343	0.2294	0.3629
70.03	1	27	0.2838	0.0347	0.2180	0.3530
71	0	26	0.2838	0.0347	0.2180	0.3530
74	1	25	0.2725	0.0351	0.2062	0.3428
75.1	0	24	0.2725	0.0351	0.2062	0.3428
77.07	1	23	0.2606	0.0355	0.1939	0.3321

79.1	0	22	0.2606	0.0355	0.1939	0.3321
85.23	1	19	0.2469	0.0362	0.1795	0.3202
91.27	0	18	0.2469	0.0362	0.1795	0.3202
93.37	1	16	0.2315	0.0371	0.1631	0.3071
96.37	1	15	0.2161	0.0377	0.1473	0.2935
115.6	0	14	0.2161	0.0377	0.1473	0.2935
121.8	1	13	0.1994	0.0383	0.1305	0.2790
127.8	0	12	0.1994	0.0383	0.1305	0.2790
130.9	0	11	0.1994	0.0383	0.1305	0.2790
140	0	10	0.1994	0.0383	0.1305	0.2790
152.1	0	8	0.1994	0.0383	0.1305	0.2790
164.3	0	6	0.1994	0.0383	0.1305	0.2790
176.5	0	5	0.1994	0.0383	0.1305	0.2790
200.8	0	4	0.1994	0.0383	0.1305	0.2790
360.2	0	2	0.1994	0.0383	0.1305	0.2790
395.6	0	1	0.1994	0.0383	0.1305	0.2790

References

- Abdul Rahman, Raza Naqvi, S. M. M., and Ismail Ramay, M. (2008) "Measuring Turnover Intention: A Study of IT Professionals in Pakistan," *International Review of Business Research Papers*, 4(3), pp. 45–55.
- Abraham, K. G. and Farber, H. S. (1987) "Job Duration, Seniority, and Earnings," *The American Economic Review*, 77(3), pp. 278–297.
- Ajzen, I. (1991) "The theory of planned behavior," *Organizational Behavior and Human Decision Processes*, 50(2), pp. 179–211. doi: 10.1016/0749-5978(91)90020-t
- AK, B. (2018) "Turnover Intention Influencing Factors of Employees: An Empirical Work Review," *Journal of Entrepreneurship & Organization Management*, 07(03). doi: 10.4172/2169-026x.1000253
- Al-Ali, W. *et al.* (2019) "The Mediating Effect of Job Happiness on the Relationship between Job Satisfaction and Employee Performance and Turnover Intentions: A Case Study on the Oil and Gas Industry in the United Arab Emirates," *Journal of Business & Retail Management Research*, 13(04). doi: 10.24052/JBRMR/V13IS04/ART-09.
- Albalawi A.S *et al.* (2019) "Perceived Organizational Support, Alternative Job Opportunity, Organizational Commitment, Job Satisfaction and Turnover Intention: A Moderated-Mediated Model," *Organizacija*, 52(4), pp. 310–324. doi: 10.2478/orga-2019-0019.
- Ali Shah, I. *et al.* (2010) "Measuring push, pull and personal factors affecting turnover intention: A case study of university teachers in Pakistan," *Review of Economic and Business Studies*, 3(1), pp. 167–192.
- Allen, D. G. and Griffeth, R. W. (1999) "Job Performance and Turnover: A Review and Integrative Multi-Route Model," *Human Resource Management Review*, 9(4), pp. 525–548. doi: 10.1016/S1053-4822(99)00032-7.
- Allen, M. P. (2007) "The problem of multicollinearity," in 1997th (ed.) *Understanding Regression Analysis*. Boston, MA: Springer, pp. 176–180. doi: 10.1007/978-0-585-25657-3_37
- Allen, N. J. and Meyer, J. P. (1990) "The Measurement and Antecedents of Affective, Continuance and Normative Commitment to the Organization," *Journal of Occupational Psychology*, 63(1), pp. 1–1.
- Allen, N. J., & Meyer, J. P. (2000) "Construct Validation in Organizational Behavior Research: The Case of Organizational Commitment," In R. D. Goffin and E. Helmes (ed.) *Problems and Solutions in Human Assessment*. Boston, MA: Springer, pp. 285–314. doi: 10.1007/978-1-4615-4397-8_13
- Amankwaa, A. and Anku-Tsede, O. (2015) "Linking Transformational Leadership to Employee Turnover: The Moderating Role of Alternative Job Opportunity," *International Journal of Business Administration*, 6(4), pp. 19–29. doi:https://doi.org/10.5430/ijba.v6n4p19
- Anderson, C. H. (1984) "Job Design: Employee Satisfaction and Performance in Retail Stores," *Journal of Small Business Management*, 22, p. 9.
- Angle, H. L. and Perry, J. L. (1983) "Organizational commitment: Individual and organizational influences," *Work and Occupations*, 10(2), pp. 123–146. doi: 10.1177/0730888483010002001
- Arches, J. (1991) "Social Structure, Burnout, and Job Satisfaction," *Social Work*, 36(3), pp. 202–206. doi:10.1093/sw/36.3.202
- Arnold, H. J. and Feldman, D. C. (1982) "A Multivariate Analysis of the Determinants of Job Turnover," *Journal of Applied Psychology*, 67(3), pp. 350–360. doi: 10.1037//0021-9010.67.3.350.
- Arshadi, N. and Damiri, H. (2013) "The Relationship of Job Stress with Turnover Intention and Job Performance: Moderating Role of Obse," *Procedia - Social and Behavioral Sciences*, 84, pp. 706–710. doi: 10.1016/j.sbspro.2013.06.631.

- Asriani, I. and Riyanto, S. (2020) "The Impact of Working Environment, Compensation, and Job Satisfaction on Turnover Intention in Public Service Agency," *IOSR Journal of Business and Management*, 22, pp. 13–19. doi: 10.9790/487X-2205061319
- Tsion Assefa *et al.* (2017) "Survival Analysis to Measure Turnover of the Medical Education Workforce in Ethiopia," *Human Resources for Health*, 15(1), pp. 23–23. doi: 10.1186/s12960-017-0197-0.
- Atchison, T. J. and Lefferts, E. A. (1972) "The Prediction of Turnover Using Herzberg's Job Satisfaction Technique," *Personnel Psychology*, 25(1), pp. 53–64. doi: 10.1111/j.1744-6570.1972.tb01090.x
- Azeez, R. O., Jayeoba, F. I. and Adeoye, A. O. (2016) "Job Satisfaction, Turnover Intention and Organizational Commitment," *BVIMSR Journal of Management Research*, 8(3), pp. 102–114.
- Barnard, C. I. (1968) *The functions of the executive*. Cambridge: Harvard University Press.
- Baumeister, R. F. and Vohs, K. D. (2007) "Self-Regulation, Ego Depletion, and Motivation: Motivation and Ego Depletion," *Social and Personality Psychology Compass*, 1(1), pp. 115–128. doi: 10.1111/j.1751-9004.2007.00001.x.
- Becker, H. S. (1960) "Notes on the Concept of Commitment," *American Journal of Sociology*, 66(1), pp. 32–40. doi: 10.1086/222820
- Bedny, G. and Karwowski, W. (2006) "The Self-Regulation Concept of Motivation at Work," *Theoretical Issues in Ergonomics Science*, 7(4), pp. 413–436. doi: 10.1080/14639220500078559.
- Berg, T. R. (1991) "The Importance of Equity Perception and Job Satisfaction in Predicting Employee Intent to Stay at Television Stations," *Group & Organization Studies*, 16(3), p. 268–284. doi: 10.1177/105960119101600303
- Bhatnagar, J. (2014) "Mediator Analysis in the Management of Innovation in Indian Knowledge Workers: The Role of Perceived Supervisor Support, Psychological Contract, Reward and Recognition and Turnover Intention," *The International Journal of Human Resource Management*, 25(10), pp. 1395–1416. doi: 10.1080/09585192.2013.870312.
- Black, S. *et al.* (2019) *Organizational behavior*. Houston, Texas: OpenStax, Rice University. Available at: <https://openstax.org/details/books/organizational-behavior> (Accessed: September 12, 2021).
- Boockmann, B. and Steffes, S. (2010) "Workers, Firms, or Institutions: What Determines Job Duration for Male Employees in Germany?," *Industrial and Labor Relations Review*, 64(1), pp. 109–127. doi: 10.1177/001979391006400105
- Brawley, A. M. and Pury, C. L. S. (2016) "Work Experiences on Mturk: Job Satisfaction, Turnover, and Information Sharing," *Computers in Human Behavior*, 54, pp. 531–546. doi: 10.1016/j.chb.2015.08.031.
- Brown, E.A. (2011). "Hospitality management graduates' perceptions of career factor importance and career factor experience and the relation with turnover intentions". *Iowa State University*. doi:10.31274/ETD-180810-2113.
- Bui, L. T. T. and Chang, Y. (2018) "Talent Management and Turnover Intention: Focus on Danang City Government in Vietnam," *International Review of Public Administration*, 23(4), pp. 219–236. doi: 10.1080/12294659.2018.1552403.
- Carson, P. P. *et al.* (1994) "Promotion and Employee Turnover: Critique, Meta-Analysis, and Implications," *Journal of Business and Psychology*, 8(4), pp. 455–466. doi: 10.1007/bf02230960
- Carsten, J. M. and Spector, P. E. (1987) "Unemployment, Job Satisfaction, and Employee Turnover: A Meta-Analytic Test of the Muchinsky Model," *Journal of Applied Psychology*, 72(3), p. 374. doi: 10.1037/0021-9010.72.3.374
- Carver, C. S. and Scheier, M. F. (1981) "Self-Consciousness and Reactance," *Journal of Research in Personality*, 15(1), pp. 16–29. doi: 10.1016/0092-6566(81)90003-9.

- Centre for Community Support and Development Studies, Centre for Research and Training of the Vietnam Fatherland Front, rtanalytics, and United Nations Development Programme (2021) “PAPI Full Report 2020,” *PAPI Reports* [Online]. Available at: <https://papi.org.vn/eng/bao-cao/> (Accessed: September 6, 2021)
- Chalofsky, N. (1992) “A Unifying Definition for the Human Resource Development Profession,” *Human Resource Development Quarterly*, 3(2), pp. 175–82. doi: 10.1002/hrdq.3920030208
- Chalofsky, N., Rocco, T. S. and Morris, M. L. (2014) *Handbook of human resource development*. San Francisco, CA: Wiley. Available at: <https://onlinelibrary.wiley.com/doi/book/10.1002/9781118839881> (Accessed: September 12, 2021).
- Chan S.H.J and Ao C.T.D (2019) “The Mediating Effects of Job Satisfaction and Organizational Commitment on Turnover Intention, in the Relationships between Pay Satisfaction and Work-Family Conflict of Casino Employees,” *Journal of Quality Assurance in Hospitality and Tourism*, 20(2), pp. 206–229. doi: 10.1080/1528008X.2018.1512937.
- Chandra, V. and Harindran, A. (2017) *Research methodology*. Pearson Education India. Available at: <https://learning.oreilly.com/library/view/~/9789353067090/?ar?orpq&email=^u> (Accessed: September 12, 2021)
- Clark, A., Oswald, A. and Warr, P. (1996) “Is Job Satisfaction U-Shaped in Age?,” *Journal of Occupational and Organizational Psychology*, 69(1), pp. 57–81. doi: 10.1111/j.2044-8325.1996.tb00600.x.
- Coelho, F. and Augusto Mário (2010) “Job Characteristics and the Creativity of Frontline Service Employees,” *Journal of Service Research*, 13(4), pp. 426–438. doi: 10.1177/1094670510369379
- Colarelli, S. M., Dean, R. A. and Konstans, C. (1987) “Comparative Effects of Personal and Situational Influences on Job Outcomes of New Professionals,” *Journal of Applied Psychology*, 72(4), pp. 558–566. doi: 10.1037//0021-9010.72.4.558.
- Cotton, J. L. and Tuttle, J. M. (1986) “Employee Turnover: A Meta-Analysis and Review with Implications for Research,” *The Academy of Management Review*, 11(1), pp. 55–70. doi: 10.2307/258331
- Cummings, T. G., Worley, C. G. and Donovan, P. (2019) *Organization development and change*. Andover: Cengage Learning.
- Dale-Olsen, H. (2006) “Wages, Fringe Benefits and Worker Turnover,” *Labour Economics*, 13(1), pp. 87–105. doi: 10.1016/j.labeco.2004.03.005.
- Dardar, A. H. A., Jusoh, A. and Rasli, A. (2012) “The Impact of Job Training, Job Satisfaction and Alternative Job Opportunities on Job Turnover in Libyan Oil Companies,” *Procedia - Social and Behavioral Sciences*, 40, pp. 389–394. doi: 10.1016/j.sbspro.2012.03.205.
- De Gieter, S. and Hofmans, J. (2015) “How Reward Satisfaction Affects Employees’ Turnover Intentions and Performance: An Individual Differences Approach,” *Human Resource Management Journal*, 25(2), pp. 200–216. doi: 10.1111/1748-8583.12072.
- Dess, G. G. and Shaw, J. D. (2001) “Voluntary Turnover, Social Capital, and Organizational Performance,” *The Academy of Management Review*, 26(3), pp. 446–456.
- Dimock, M. (2019) *Defining generations: Where Millennials end and Generation Z begins*. Available at: <https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/> (Accessed: July 30, 2021).
- Dirkx, J. M. (1996) “Human Resource Development As Adult Education: Fostering the Educative Workplace,” *New Directions for Adult and Continuing Education*, 1996(72), pp. 41–47. doi: 10.1002/ace.36719967207
- Dustmann, C. and Meghir, C. (2005) “Wages, Experience and Seniority,” *The Review of Economic Studies*, 72(1), pp. 77–108. doi: 10.1111/0034-6527.00325

- Earley, P. C. *et al.* (1990) "Impact of Process and Outcome Feedback on the Relation of Goal Setting to Task Performance," *The Academy of Management Journal*, 33(1), pp. 87–105. doi: 10.2307/256353
- Egan, T. M., Yang, B. and Bartlett, K. R. (2004) "The Effects of Organizational Learning Culture and Job Satisfaction on Motivation to Transfer Learning and Turnover Intention," *Human Resource Development Quarterly*, 15(3), pp. 279–301. doi: 10.1002/hrdq.1104
- Eisenberger R *et al.* (2002) "Perceived Supervisor Support: Contributions to Perceived Organizational Support and Employee Retention," *The Journal of applied psychology*, 87(3), pp. 565–73. doi: 10.1037/0021-9010.87.3.565
- Epstein, B. and Sobel, M. (1953) "Life Testing," *Journal of the American Statistical Association*, 48(263), pp. 486–502. doi: 10.1080/01621459.1953.10483488.
- Erdwins *et al.* (2001) "The Relationship of Women's Role Strain to Social Support, Role Satisfaction, and Self-Efficacy," *FAMILY RELATIONS*, 50, pp. 230–238. doi: 10.1111/j.1741-3729.2001.00230.x
- Feather, N. T. (1990) "The effects of unemployment on work values and motivation," In U. Kleinbeck, H.-H. Quast, H. Thierry, and H. Häcker (ed.) *Work motivation*, pp. 201–230 [Online] Available at: <https://archive.org/details/workmotivation0000unse/page/n5/mode/2up> (Accessed: September 12, 2021).
- Feather, N. T. and O'Brien, G. E. (1986) "A Longitudinal Study of the Effects of Employment and Unemployment on School Leavers," *Journal of Occupational Psychology*, 59(2), pp. 121–144. doi: 10.1111/j.2044-8325.1986.tb00219.x.
- Federico, S. M., Federico, P.-A. and Lundquist, G. W. (1976) "Predicting Women's Turnover As a Function of Extent of Met Salary Expectations and Biodemographic Data," *Personnel Psychology*, 29(4), pp. 559–566. doi: 10.1111/j.1744-6570.1976.tb02079.x
- Feeley, T. H., Hwang, J. and Barnett, G. A. (2008) "Predicting Employee Turnover from Friendship Networks," *Journal of Applied Communication Research*, 36(1), pp. 56–73. doi: 10.1080/00909880701799790.
- Frye, N. K. and Breugh, J. A. (2004) "Family-Friendly Policies, Supervisor Support, Work-Family Conflict, Family-Work Conflict, and Satisfaction: A Test of a Conceptual Model," *Journal of Business and Psychology*, 19(2), pp. 197–220. doi: 10.1007/s10869-004-0548-4
- Gayle, L. (2019) *How Generation Z Is Transforming the Workplace*. Available at: <https://www.financialexecutives.org/FEI-Daily/August-2019/How-Generation-Z-Is-Transforming-the-Workplace.aspx> (Accessed: September 6, 2021).
- Gazioglu, S. and Tansel, A. (2006) "Job Satisfaction in Britain: Individual and Job Related Factors," *Applied Economics*, 38(10), pp. 1163–1171. doi: 10.1080/00036840500392987.
- General Statistics Office (2021) *Labor force aged 15 and over by age group*. Available at: <https://www.gso.gov.vn/px-web-2/?pxid=V0233&theme=D%C3%A2n%20s%E1%BB%91%20v%C3%A0%20lao%20%C4%91%E1%BB%99ng> (Accessed: July 30, 2021).
- Gentry, W. A. *et al.* (2007) "The Influence of Supervisory-Support Climate and Unemployment Rate on Part-Time Employee Retention," *Journal of Management Development*, 26(10). doi: 10.1108/02621710710833432
- Ghayyur, M. and Jamal, W. (2012) "Work-Family Conflicts: A Case of Employees' Turnover Intention," *International Journal of Social Science and Humanity*, pp. 168–174. doi: 10.7763/ijssh.2012.v2.90
- Giao, H. N. K. *et al.* (2020) "The Effect of Emotional Intelligence on Turnover Intention and the Moderating Role of Perceived Organizational Support: Evidence from the Banking Industry of Vietnam," *Sustainability*, 12(5), pp. 1857–1857. doi: 10.3390/su12051857.

- Griffeth, R. W., Hom, P. W. and Gaertner, S. (2000) "A Meta-Analysis of Antecedents and Correlates of Employee Turnover: Update, Moderator Tests, and Research Implications for the Next Millennium," *Journal of Management*, 26(3), pp. 463–488. doi: 10.1016/S0149-2063(00)00043-X.
- Grissom, J. A. and Mitani, H. (2016) "Salary, Performance, and Superintendent Turnover," *Educational Administration Quarterly*, 52(3), pp. 351–391. doi: 10.1177/0013161x15627677
- Haar, J. M. (2004) "Work-Family Conflict and Turnover Intention: Exploring the Moderation Effects of Perceived Work-Family Support," *New Zealand Journal of Psychology*, 33(1), p. 35-39.
- Hackman, J. R. and Oldham, G. R. (1976) "Motivation through the Design of Work: Test of a Theory," *Organizational Behavior and Human Performance*, 16(2), pp. 250–279. doi: 10.1016/0030-5073(76)90016-7.
- Hackman, J. R. and Oldham, G. R. (1975) "Development of the Job Diagnostic Survey," *Journal of Applied Psychology*, 60(2), pp. 159–170. doi: 10.1037/h0076546.
- Hackman, J. R., Oldham, G. R., and Department of Sciences, Yale University. (1974) *The job diagnostic survey : an instrument for the diagnosis of jobs and the evaluation of job redesign projects*. Technical Report No. 4. New Haven, Connecticut: Yale University.
- Hansen, C. D. and Lee, Y.-teen (eds) (2009) *The cultural context of human resource development*. Houndmills, Basingstoke, Hampshire: Palgrave Macmillan. doi: 10.1057/9780230236660.
- Healy, M. C., Lehman, M., and Mcdaniel, M. A. (1995) "Age and Voluntary Turnover: A Quantitative Review," *Personnel Psychology*, 48(2), pp. 335–345. doi: 10.1111/j.1744-6570.1995.tb01760.x.
- Heidemeier, H. and Moser, K. (2019) "A Self-Regulation Account of the Job Performance-Job Satisfaction Relationship," *European Journal of Social Psychology*, 49(6), pp. 1313–1328. doi: 10.1002/ejsp.2573.
- Henryhand, C. J. (2009) *The Effect of Employee Recognition and Employee Engagement on Job Satisfaction and Intent to Leave in the Public Sector*. Available at: <https://www.proquest.com/dissertations-theses/effect-employee-recognition-engagement-on-job/docview/305165551/se-2?accountid=13598> (Accessed: September 12, 2021).
- Herzberg, F. (1971) *Work and the Nature of Man*. Available at: <https://archive.org/details/worknatureofman00herz> (Accessed: September 12, 2021).
- Hien, P. (2019) *Economic scale of Ho Chi Minh City reaches 57 billion USD*. Available at: <https://tphcm.chinhphu.vn/quy-mo-kinh-te-tphcm-cham-moc-57-ty-usd> (Accessed: September 6, 2021).
- Hom PW *et al.* (2012) "Reviewing Employee Turnover: Focusing on Proximal Withdrawal States and an Expanded Criterion," *Psychological bulletin*, 138(5), pp. 831–58. doi: 10.1037/a0027983.
- Hulin, C. L., Roznowski, M. and Hachiya, D. (1985) "Alternative Opportunities and Withdrawal Decisions: Empirical and Theoretical Discrepancies and an Integration," *Psychological Bulletin*, 97(2), pp. 233–250. doi: 10.1037//0033-2909.97.2.233.
- Huynh (2020) "Impacts of Job Stress and Dissatisfaction on Turnover Intention. a Critical Analasys of Logistics Industry – Evidence from Vietnam," *International Journal of Economics and Business Administration*, Viii(Issue 4), pp. 914–929. doi: 10.35808/ijeba/640.
- Ichniowski, C. *et al.* (1995) *The effects of human resource management practices on productivity*. Cambridge, MA: National Bureau of Economic Research (NBER working paper series, working paper no. 5333). Available at: <https://www.nber.org/papers/w5333> (Accessed: September 12, 2021).
- Jackofsky, E. F. (1982) *Integration of job performance in the prediction of turnover : a process model*. Ph.D's dissertation. Richardson, Texas: The University of Texas at Dallas.

- Jaharuddin, N. S. and Zainol, L. N. (2019) "The Impact of Work-Life Balance on Job Engagement and Turnover Intention," *The South East Asian Journal of Management*, 13(1). doi: 10.21002/seam.v13i1.10912.
- Jamal M (1984) "Job Stress and Job Performance Controversy: An Empirical Assessment," *Organizational behavior and human performance*, 33(1), pp. 1–21. doi: 10.1016/0030-5073(84)90009-6
- Judge, T. A. *et al.* (2001) "The Job Satisfaction-Job Performance Relationship: A Qualitative and Quantitative Review," *Psychological Bulletin*, 127(3), pp. 376–407. doi: 10.1037//0033-2909.127.3.376.
- Kalidass, A. and Bahron, A. (2015) "The Relationship between Perceived Supervisor Support, Perceived Organizational Support, Organizational Commitment and Employee Turnover Intention," *International Journal of Business Administration*, 6(5). doi: 10.5430/ijba.v6n5p82
- Kaplan, E. L. and Meier, P. (1958) "Nonparametric Estimation from Incomplete Observations," *Journal of the American Statistical Association*, 53(282), pp. 457–481. doi: 10.1080/01621459.1958.10501452
- Kim, S., Tam, L., Kim, J.-N., & Rhee, Y. (2017). Determinants of employee turnover intention. *Corporate Communications: An International Journal*, 22(3), pp. 308–328. doi: 10.1108/ccij-11-2016-0074
- Kirschenbaum, A. and Mano-Negrin, R. (2002) "Past Work Experience, Present Opportunities and Turnover Decisions: The Case of Israel's Medical Sector Employees," *Personnel Review*, 31(5), pp. 518–539. doi: 10.1108/00483480210438744.
- Kleinbaum, D. G. and Klein, M. (2012) *Survival Analysis: A Self-Learning Text*. 3rd edn. New York, USA: Springer.
- Kraut, A. I. (1975) "Predicting Turnover of Employees from Measured Job Attitudes," *Organizational Behavior and Human Performance*, 13(2), pp. 233–243. doi: 10.1016/0030-5073(75)90047-1.
- Kurniawaty, Mansyur Ramly and Ramlawati (2019) "The Effect of Work Environment, Stress, and Job Satisfaction on Employee Turnover Intention," *Management Science Letters*, 9(6), pp. 877–886. doi: 10.5267/j.msl.2019.3.001.
- Lambert, E. G., Lynne Hogan, N. and Barton, S. M. (2001) "The Impact of Job Satisfaction on Turnover Intent: A Test of a Structural Measurement Model Using a National Sample of Workers," *The Social Science Journal*, 38(2), pp. 233–250. doi: 10.1016/S0362-3319(01)00110-0.
- Lane, K. A. *et al.* (2010) "A Study of Nurse Faculty Job Satisfaction in Community Colleges in Florida," *Teaching and Learning in Nursing*, 5(1), pp. 16–26. doi: 10.1016/j.teln.2009.05.001.
- Langove, N. and Isha, A. S. N. (2017) "Interpersonal Conflict and Turnover Intention: The Mediating Role of Psychological Well-Being," *Global Business and Management Research: An International Journal*, 9(1), pp. 153–161.
- Lee, E. T. and Wang, J. (2003) *Statistical Methods for Survival Data Analysis*. Hoboken, NJ, United States: Wiley.
- Lester, D. (2013) "Measuring Maslow's Hierarchy of Needs," *Psychological Reports*, 113(1), pp. 15–17. doi: 10.2466/02.20.pr0.113x16z1
- Lévy-Garboua, L., Montmarquette, C. and Simonnet, V. (2007) "Job Satisfaction and Quits," *Labour Economics*, 14(2), pp. 251–268. doi: 10.1016/j.labeco.2005.08.003.
- Linh, P. (2019). *Anphabe holds Happiness At Work Summit 2019 in HCMC*. Available at: <http://vneconomicstimes.com:8081/article/business/anphabe-holds-happiness-at-work-summit-2019-in-hcmc> (Accessed: October 6, 2021).
- Locke, E. A. (1969) "What is job satisfaction?," *Organizational Behavior and Human Performance*, 4(4), pp. 309–336. doi: 10.1016/0030-5073(69)90013-0

- Lum, L. *et al.* (1998) “Explaining Nursing Turnover Intent: Job Satisfaction, Pay Satisfaction, or Organizational Commitment?,” *Journal of Organizational Behavior*, 19(3), pp. 305–320.
- Lyons, T. F. (1971) “Role Clarity, Need for Clarity, Satisfaction, Tension, and Withdrawal,” *Organizational Behavior and Human Performance*, 6(1), pp. 99–110. doi: 10.1016/0030-5073(71)90007-9.
- Machin, D., Cheung, Y. B. and Parmar, M. K. B. (2006) *Survival analysis : a practical approach*. 2nd edn. Chichester, England: Wiley. doi: 10.1002/0470034572.
- Madariaga R, Oller R and Martori J.C (2018) “Discrete Choice and Survival Models in Employee Turnover Analysis,” *Employee Relations*, 40(2), pp. 381–395. doi: 10.1108/ER-03-2017-0058.
- Madera, J. M., Dawson, M. and Neal, J. A. (2014) “Managing Language Barriers in the Workplace: The Roles of Job Demands and Resources on Turnover Intentions,” *International Journal of Hospitality Management*, 42, pp. 117–125. doi: 10.1016/j.ijhm.2014.06.004.
- Mano-Negrin, R. and Tzafrir, S. S. (2004) “Job Search Modes and Turnover,” *Career Development International*, 9(5), pp. 442–458. doi: 10.1108/13620430410550727
- March, J. G., & Simon, H. A. (1993) *Organizations*. 2nd edn. Cambridge, Massachusetts: Wiley-Blackwell.
- Marsh, R. M. and Mannari, H. (1977) “Organizational Commitment and Turnover: A Prediction Study,” *Administrative Science Quarterly*, 22(1), pp. 57–75. doi: 10.2307/2391746
- Martin, T. N., Price, J. L. and Mueller, C. W. (1981) “Job Performance and Turnover,” *Journal of Applied Psychology*, 66(1), pp. 116–119. doi: 10.1037/0021-9010.66.1.116.
- Maslow, A. H. (1943) “A theory of human motivation,” *Psychological Review*, 50(4), pp. 370–396. doi: 10.1037/h0054346.
- Mayhew, R. (2019) *Employee Turnover Definitions & Calculations*. Available at: <https://smallbusiness.chron.com/employee-turnover-definitions-calculations-11611.html> (Accessed: September 8, 2021).
- Meyer, J. P. and Allen, N. J. (1984) “Testing the ‘side-Bet Theory’ of Organizational Commitment: Some Methodological Considerations,” *Journal of Applied Psychology*, 69(3), pp. 372–378. doi: 10.1037/0021-9010.69.3.372.
- Meyer, J. P. and Allen, N. J. (1991) “A Three-Component Conceptualization of Organizational Commitment,” *Human Resource Management Review*, 1(1), pp. 61–89. doi: 10.1016/1053-4822(91)90011-Z.
- Mitra, A., Jenkins, G. D. and Gupta, N. (1992) “A Meta-Analytic Review of the Relationship between Absence and Turnover. (includes Appendices),” *Journal of Applied Psychology*, 77(6), p. 879–889. doi: 10.1037/0021-9010.77.6.879.
- Mobley, W. H. (1977) “Intermediate Linkages in the Relationship between Job Satisfaction and Employee Turnover,” *Journal of Applied Psychology*, 62(2), pp. 237–240. doi: 10.1037/0021-9010.62.2.237.
- Mobley, W. H. *et al.* (1979) “Review and Conceptual Analysis of the Employee Turnover Process,” *Psychological Bulletin*, 86(3), pp. 493–522. doi: 10.1037//0033-2909.86.3.493.
- Mobley, W. H., Horner, S. O. and Hollingsworth, A. T. (1978) “An Evaluation of Precursors of Hospital Employee Turnover,” *Journal of Applied Psychology*, 63(4), pp. 408–414. doi: 10.1037//0021-9010.63.4.408.
- Moncarz, E., Zhao, J. and Kay, C. (2009) “An Exploratory Study of Us Lodging Properties’ Organizational Practices on Employee Turnover and Retention,” *International Journal of Contemporary Hospitality Management*, 21(4), pp. 437–458. doi: 10.1108/09596110910955695
- Moore, J. E. (2000) “One Road to Turnover: An Examination of Work Exhaustion in Technology Professionals,” *MIS Quarterly*, 24(1), pp. 141–168. doi: 10.2307/3250982

- Mottaz, C. J. (1987) "Age and Work Satisfaction," *Work and Occupations*, 14(3), pp. 387–409. doi: 10.1177/0730888487014003004.
- Mowday, R. T., Steers, R. M., and Porter, L. W. (1979) "The measurement of organizational commitment," *Journal of Vocational Behavior*, 14(2), pp. 224–247. doi: 10.1016/0001-8791(79)90072-1
- Muchinsky, P. M. and Morrow, P. C. (1980) "A Multidisciplinary Model of Voluntary Employee Turnover," *Journal of Vocational Behavior*, 17(3), pp. 263–90.
- Mueller, C. W. and Price, J. L. (1990) "Economic, Psychological, and Sociological Determinants of Voluntary Turnover," *The Journal of Behavioral Economics*, 19(3), pp. 321–335. doi: 10.1016/0090-5720(90)90034-5.
- Munch, J. R., Rosholm, M. and Svarer, M. (2008) "Home Ownership, Job Duration, and Wages," *Journal of Urban Economics*, 63(1), pp. 130–145. doi: 10.1016/j.jue.2007.01.003.
- Nawaz, M. S., and Pangil, F. (2016) "The relationship between human resource development factors, career growth and turnover intention: The mediating role of organizational commitment," *Management Science Letters*, pp. 157–176. doi: 10.5267/j.msl.2015.12.006
- Neck, C. P. and Milliman, J. F. (1994) "Thought Self-leadership," *Journal of Managerial Psychology*, 9(6), pp. 9–16. doi: 10.1108/02683949410070151.
- Newman, A., Thanacoody, R. and Hui, W. (2011) "The Effects of Perceived Organizational Support, Perceived Supervisor Support and Intra-organizational Network Resources on Turnover Intentions," *Personnel Review*, 41(1), pp. 56–72. doi: 10.1108/00483481211189947.
- Ng, T. W. H., & Feldman, D. C. (2009) "Age, Work Experience, and the Psychological Contract," *Journal of Organizational Behavior*, 30(8), pp. 1053–1075.
- Nguyen, Q. A. and Tran, A. D. (2021) "Job Satisfaction and Turnover Intention of Preventive Medicine Workers in Northern Vietnam: Is There Any Relationship?," *Health Services Insights*, 14, pp. 117863292199517–117863292199517. doi: 10.1177/1178632921995172.
- Titus Oshagbemi (2000) "Is Length of Service Related to the Level of Job Satisfaction?," *International Journal of Social Economics*, 27(3), pp. 213–213.
- Petterson, I.-L. and Arnetz, B. B. (1998) "Psychosocial Stressors and Well-Being in Health Care Workers. the Impact of an Intervention Program," *Social Science & Medicine*, 47(11), pp. 1763–1772. doi: 10.1016/S0277-9536(98)00245-7.
- Porter, L. W. and Steers, R. M. (1973) "Organizational, Work, and Personal Factors in Employee Turnover and Absenteeism," *Psychological Bulletin*, 80(2), pp. 151–176. doi: 10.1037/h0034829.
- Porter, L. W. et al. (1974) "Organizational Commitment, Job Satisfaction, and Turnover among Psychiatric Technicians," *Journal of Applied Psychology*, 59(5), pp. 603–609. doi: 10.1037/h0037335.
- Powell, D. M. and Meyer, J. P. (2004) "Side-Bet Theory and the Three-Component Model of Organizational Commitment," *Journal of Vocational Behavior*, 65(1), pp. 157–177. doi: 10.1016/S0001-8791(03)00050-2.
- Prachi, M. (2020) *What is Labour Turnover? Definition, Causes, Effects, Types, Strategies*. Available at: <https://theinvestorsbook.com/labour-turnover.html> (Accessed: September 8, 2021).
- Price, J. L. (1977) *The study of turnover*. Ames, IA: Iowa State University Press.
- Price, J. L. (1983) "Reviewed Work: Employee Turnover: Causes, Consequences, and Control," *Industrial and Labor Relations Review*, 36(3), pp. 506. doi: 10.2307/2523037
- Price, J. L. and Mueller, C. W. (1986) *Handbook of organizational measurement*. Marshfield, Mass.: Pitman.
- Pritchard, R. D. (1969) "Equity Theory: A Review and Critique," *Organizational Behavior and Human Performance*, 4(2), pp. 176–211. doi: 10.1016/0030-5073(69)90005-1.
- Randhawa, G. (2007) "Relationship between Job Satisfaction and Turnover Intentions : An Empirical Analysis," *Indian Management Studies Journal*, 11(1), pp. 149–159.

- Robbins, S. P. and Judge, T. (2015) *Organizational behavior*. 15 Edition. Harlow: Pearson.
- Roder, N. (2019) *What Is Employee Turnover (and Why It Matters)*. Available at: <https://www.zenefits.com/workest/what-is-employee-turnover-and-why-it-matters/> (Accessed: September 8, 2021).
- Said, N. A. and Munap, R. (2010) "Job characteristics and job satisfaction: A relationship study on supervisors performance," *2010 IEEE International Conference on Management of Innovation & Technology*. doi: 10.1109/icmit.2010.5492732
- Sashkin, M. (1982) "WORK REDESIGN J. R. Hackman and G. R. Oldham Reading, MA: Addison-Wesley, 1980, xxvii + 330 pp," *Group & Organization Studies*, 7(1), pp. 121–124. doi: 10.1177/105960118200700110
- Schermerhorn, J. R. *et al.* (2012) *Organizational behavior*. 12th edn. Hoboken, NJ: Wiley. Available at: <https://learning.oreilly.com/library/view/organizational-behavior-12th/9781118213650/> (Accessed: September 12, 2021).
- Schuck A.M and Rabe-Hemp C.E (2018) "Investing in People: Salary and Turnover in Policing," *Policing*, 41(1), pp. 113–128. doi: 10.1108/PIJPSM-09-2016-0137.
- Shahu, R. and Gole, S. V. (2008) "Effect of Job Stress and Job Satisfaction on Performance: An Empirical Study," *AIMS International Journal of Management*, 2, pp. 237–246.
- Shuck, B., Reio, T. G. and Rocco, T. S. (2011) "Employee Engagement: An Examination of Antecedent and Outcome Variables," *Human Resource Development International*, 14(4), pp. 427–445. doi: 10.1080/13678868.2011.601587.
- Simon, H. A. (1997) *Administrative behavior : a study of decision-making processes in administrative organizations*. Fourth edn. New York: Free Press.
- Simon, H. A., Smithburg, D. W., and Thompson, V. A. (1950) "Public Administration," *American Political Science Review*, 45(1), pp. 233–234. doi: 10.2307/1950908
- Sims, H. P., Szilagyi, A. D., and Keller, R. T. (1976) "The Measurement of Job Characteristics," *Academy of Management Journal*, 19(2), pp. 195–212. doi: 10.5465/255772
- Singer, J. D. and Willett, J. B. (1991) "Modeling the Days of Our Lives: Using Survival Analysis When Designing and Analyzing Longitudinal Studies of Duration and the Timing of Events," *Psychological Bulletin*, 110(2), pp. 268–290. doi: 10.1037//0033-2909.110.2.268.
- Singh, P. and Loncar, N. (2010) "Pay Satisfaction, Job Satisfaction and Turnover Intent," *Relations industrielles*, 65(3), pp. 470–490. doi: 10.7202/044892ar.
- Sousa-Poza, A. and Sousa-Poza Andrés A (2000) "Taking Another Look at the Gender/job-Satisfaction Paradox," *Kyklos*, 53(2), pp. 135–152.
- Spector, P. E. (1997) *Job satisfaction : application, assessment, cause, and consequences*. Thousand Oaks, CA: Sage (Advanced topics in organizational behavior).
- Steel, R. P. and Ovalle, N. K. (1984) "A Review and Meta-Analysis of Research on the Relationship between Behavioral Intentions and Employee Turnover," *Journal of Applied Psychology*, 69(4), pp. 673–686. doi: 10.1037/0021-9010.69.4.673.
- Sullivan, J. (2009) *Not All Employee Turnover Is Bad — Celebrate "Losing the Losers"*. Available at: <https://drjohnsullivan.com/uncategorized/not-all-employee-turnover-is-bad-celebrate-losing-the-losers/> (Accessed: September 7, 2021).
- Summers, T. P. and Hendrix, W. H. (1991) "Development of a Turnover Model That Incorporates a Matrix Measure of Valence-Instrumentality-Expectancy Perceptions," *Journal of Business and Psychology*, 6(2), pp. 227–245.
- Swanson, R. A., & Iii, E. H. F. (2001) *Foundations of Human Resource Development*. 1st edn. Available at: <https://archive.org/details/foundationsofhum0000swan> (Accessed: September 12, 2021).
- Takawira, N., Coetzee, M., and Schreuder, D. (2014) "Job embeddedness, work engagement and turnover intention of staff in a higher education institution: An exploratory study," *SA Journal of Human Resource Management*, 14(1). doi: 10.4102/sajhrm.v12i1.524

- Teck-Hong T and Waheed A (2011) "Herzberg's Motivation-Hygiene Theory and Job Satisfaction in the Malaysian Retail Sector: The Mediating Effect of Love of Money," *Asian Academy of Management Journal*, 16(1), pp. 73–94.
- Tews, M. J., Michel, J. W., & Allen, D. G. (2014). Tews, M. J., Michel, J. W. and Allen, D. G. (2014) "Fun and Friends: The Impact of Workplace Fun and Constituent Attachment on Turnover in a Hospitality Context," *Human Relations-New York*, 67(8), pp. 923–946.
- Jr, W. G. T., Stumpf, S. A. and Smith, R. R. (2011) "Manager Support Predicts Turnover of Professionals in India," *Career Development International*, 16(3), pp. 293–312.
- Udechukwu, I. I. (2009) "Correctional Officer Turnover: Of Maslow's Needs Hierarchy and Herzberg's Motivation Theory," *Public Personnel Management*, 38(2), p. 69.
- University of Minnesota Libraries Publishing. (2017) *Organizational Behavior*. Available at: <https://open.lib.umn.edu/organizationalbehavior/> (Accessed: September 12, 2021).
- Van Breukelen, W., Van der Vlist, R., and Steensma, H. (2004) "Voluntary employee turnover: combining variables from the 'traditional' turnover literature with the theory of planned behavior," *Journal of Organizational Behavior*, 25(7), pp. 893–914. doi: 10.1002/job.281
- Van der Heijden, B. I. J. M. et al. (2018) "Job Characteristics and Experience As Predictors of Occupational Turnover Intention and Occupational Turnover in the European Nursing Sector," *Journal of Vocational Behavior*, 108, pp. 108–120.
- Vardaman, J. et al. (2008) "Should I Stay or Should I Go? The Role of Risk in Employee Turnover Decisions," *Human Relations*, 61(11), pp. 1531–1563.
- Vecchio, R. P., Hearn, G., and Southey, G. (1996) *Organisational Behaviour: Life at Work in Australia*. Sydney, Australia: Harcourt Brace.
- VietnamCredit (2020) *Top 9 multinational companies in Vietnam*. Available at: <https://baocaocongty.com/top-9-cong-ty-da-quoc-gia-tai-viet-nam/> (Accessed: September 6, 2021).
- Vroom, V. H. (1964) *Work and Motivation*. Oxford, England: Wiley.
- Weisberg, J. and Kirschenbaum, A. (1993) "Gender and Turnover: A Re-Examination of the Impact of Sex on Intent and Actual Job Changes," *Human Relations*, 46(8), pp. 987–1006. doi: 10.1177/001872679304600805.
- Westaby, J. D. (2003) "The Integrative Reason Model and Employee Turnover: New Links in Behavioral Intention Modeling," *Academy of Management Proceedings*, 2003, Pg1.
- Wild, R. and Dawson, A. (1972) *Labour turnover : theories and remedial action*. Bradford, Eng.: MCB (Management Decision) (Management decision monograph series, vol. 1972; no. 3).
- Williams ML, McDaniel MA and Nguyen NT (2006) "A Meta-Analysis of the Antecedents and Consequences of Pay Level Satisfaction," *The Journal of applied psychology*, 91(2), pp. 392–413.